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OFFICIAL ORGAN of THE BRITISH GLIDING ASSOCIATION

Editor: ALAN E. SLATER



Aerodynamic Efficiency: A Gull in soaring flight behind a steamer.

Photo by John McClure Patterson, American Pictorial News Service, U.S.A.

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The New B.G.A.

THE Special General Meeting convened to revise the constitution of the British Gliding Association has now done so, just in time for announcement here. In future the Association's affairs will be under the control of the gliding clubs; thus the requirements of the Air Ministry have been met, and the question of the best method of distributing the Government's subsidy to gliding can now be discussed with the Ministry. An important addition was made to the new rules already circulated. A club which is not actually affiliated to the Association can nevertheless become an "associated club," with the same privileges but for the fact that it would have no vote on the Council.

It appears that the Air Ministry agrees that the subsidy is not to be limited to "affiliated" clubs; conversely, however, it can be said that the mere fact of affiliation alone will not be taken as sufficient qualification for subsidy. We think it only right that an affiliated club without any security of tenure of a good site should not expect to secure any public money, while a club with this primary necessity might expect assistance whether affiliated to the B.G.A. or not.

This should clear up any misconception arising out of recent statements in the Press. We wish here to dissociate ourselves in the strongest possible terms from this Press campaign, which has been carried on by the former Hon. Secretary of the B.G.A. It was entirely unauthorised by the Council of the Association, which, in fact, has taken the first possible opportunity of expressing its disapproval. Members of the gliding community in all parts of the country are very naturally infuriated by what looked like an attempt to stir up ill-feeling and distrust between the clubs. Fortunately no obvious damage has yet been done, as was evident to anyone who attended the very friendly informal discussion between club representatives when the General Meeting was over.

The purpose of this discussion was to give the newly formed Subsidy Committee of the B.G.A. a chance to hear everybody's views before getting to work. This "Subsidy Committee" is limited to a personnel of three, and it should be understood at once that they have no power to distribute any public money; they are a purely advisory body, and can only submit recommendations. We are asked by them to request all clubs desirous of claiming a grant from the subsidy to submit a list of

immediate requirements and the estimated cost of same; we are also asked to state that special consideration will be given to clubs which can submit a scheme of development covering the next five years. This should be done as early as possible, and the particulars sent to the Subsidy Committee of the British Gliding Association at the latter's present address, 19, Berkeley Street, London, W.1.

This, we may say, is not likely to be the Association's London home much longer. The Air League, which has hitherto very kindly housed the Association, is now expanding its activities, and requires the offices for its own use, so the B.G.A. headquarters will shortly be transferred to 66, Victoria Street, S.W.1, the office of the new Hon. Secretary, who is to be Mr. F. D. Bradbrooke. Our readers probably need no introduction to Mr. Bradbrooke, who is well known not only as an aeroplane and glider pilot, but also as founder and editor of that excellent contemporary of ours, *Aeropilot*. We take this opportunity of welcoming him in his additional capacity as the Association's Secretary.

Our Cover Picture

The photograph of a seagull in soaring flight, reproduced on our front cover, is a reminder of two things: first, that it was the spectacle of bird flight, especially when carried out with motionless wings, which first turned men's thoughts towards the conquest of the air; and secondly, that students and practitioners of human soaring flight, *and no others*, are in the direct line of succession of those ancient dreamers, and that they alone can claim to have made those dreams come true. What with the Press telling everyone that people take up gliding in order that, later on, they can easily learn to fly with the additional engine required to lift a load of bombs, it is about time that the origin and true purpose of soaring flight be once more made clear. Flying without an engine—*real flying*—has now become recognised as one of several quite sane and normal methods of going up in the air, but one whose special attraction is in its comparatively recent mastery and in its wealth of yet unexplored possibilities.

The photo referred to was taken by Mr. John McClure Patterson, of Dayton, Ohio, during one of his visits to Europe. We have twice had the pleasure of meeting Mr. Patterson at the German Rhön Competitions, and readers who were at the Huish meeting of 1933 will remember him well.

The Technique of Safe Pilotage

By H. C. BERGEL

(Continued)

2. Approaching

If one undershoots the aerodrome on a power plane one opens the throttle and "rumbles" in at the expense of one's pride but not one's pocket. If one overshoots, one also opens the throttle and pretends that the first shot was only a manoeuvre to get a close view of the wind-sock. Too easy! Yet all power pilots who are worth calling pilots take care to practise side-slips and tail-wagging against the day when the engine will not be in a condition to pull them along.

How infinitely more important is it, therefore, for a glider pilot—whose every landing is a forced landing—to learn the arts of losing height without gaining forward speed.

And, actually, side-slipping is one of the easiest and the safest of aerial manoeuvres. Tail-wagging is more difficult because it is a little more risky, and is only better than a slip at very low heights—so low that there would not be comfortable room to put one wing firmly down.

Both slipping and tail-wagging are done with the controls in the same positions. It merely depends on which control is used first. In a slip (sorry if this is elementary) the stick is put hard over one way, and when the wing is down, the opposite rudder is used to hold the nose up and keep the machine from turning. In a tail-wag, the rudder is put hard over till the machine is skidding along sideways, and then opposite aileron is used to keep the wing from automatically assuming bank. So in both cases one ends up with opposite rudder and stick, and elevator roughly central. Both can be done either way (in fact the ultimate perfection of tail-wagging is a series of short sharp flat turns or slides to either direction). Both can be got out of very easily and quickly by simultaneous centring of rudder and aileron. But the side-slip is the safer because—if you should happen to stall—no spin can develop until the wing has come right up and over into a spin in the direction in which rudder has been applied. This gives ample warning and time for correction.

In fact, I have heard an irresponsible pilot say that the quickest way possible to come out of a slip is to stall the machine deliberately (but not completely). The lower wing will then come sailing up, and the machine can be caught when it is level, the rudder straightened, and the nose put down. He justifies this method by stating that when in the slip the stalling speed is higher than normal. Therefore when the machine resumes its level position it is no longer stalled, and is therefore under full control. This seems to be most risky in anything less than a 45° slip (when the stalling speed certainly is abnormally high), and is not really to be recommended even then. So don't do it unless you *know* the machine is going to crash its wing into the ground anyhow. And preferably don't do it even then.

There are many varieties of combined slip-and-landing.

There is the straight approach into wind—a slip right or left slightly across wind—and then a straightening out again into wind. (This sometimes leaves a little

drift on, which may necessitate a very slight turn out of wind just before touching down.)

Probably the best and neatest slip approach is one started cross wind, with a slip into the eye of the wind. This is held on as long as may be wanted, then the rudder is eased right off, the aileron is eased partly off, and the slip becomes a gentle, unhurried turn into wind from which there remains no drift to spoil the perfect landing.

And there is finally another slip which should never be used except in real emergency—to get into a not-too-big field surrounded by highish trees. This is a deliberately over-banked turn, through 180° or even 360°, so that the machine is simultaneously turning round into wind in a comparatively small radius and side-slipping off its height without gaining an excess of forward speed. But this is really a stunt that needs very accurate judgment, and therefore quite a bit of practice—which the unfortunate glider pilot seldom or never has the opportunity for.

Just as the slip can be merged into a turn, so it can be merged into a tail-wag. For instance, if your speed has risen too high during the slip, and your lower wing is beginning to pick up blades of grass or sheep or things, take off the aileron control almost completely, and leave on most of the rudder control. You will then advance crabwise through the air, losing speed pretty rapidly, until the time comes for the rudder to be flicked over, the wings levelled up, and a landing made still short of the far hedge.

Anyone who has seen Collins's firm and beautiful handling of the RHÖNADLER in slips and tail-wags will agree that a good pilot can be known more quickly by the accuracy and resourcefulness of his approaches than by anything else in the whole game of flying. So let's all resolve to learn the easy arts of slipping and tail-wagging. Apart from the fact that it is very good fun to do, it is an excellent investment.

[In his next article Mr. Bergel will reply to questions which have been asked him regarding his first two articles. Any further questions should be sent in by February 20th.]

In Short

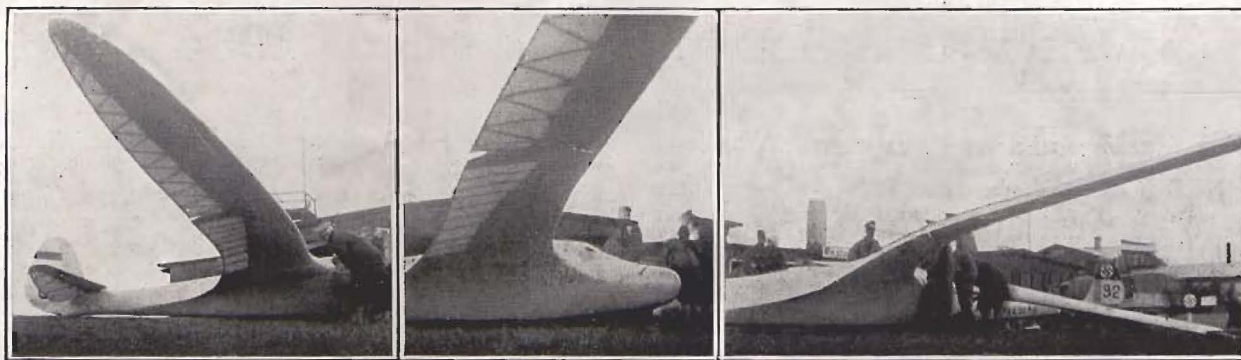
Swiss lady soars.—Gritli Schaad, who recently passed her "C" soaring test, is the first Swiss lady pilot to do so.

* * *

Real Flying Doesn't Count.—The Air Ministry has ruled that flying time in a glider may not count towards the three hours' annual flying required of aeroplane pilots as a necessary qualification for the renewal of their "A" licence.

* * *

Bird Flight on the Films.—C. A. Lejeune, film critic of *The Observer*, announces that Alexander Korda is to set to work shortly on a full-length history of aviation, and adds: "It will begin with studies of birds and clouds in flight and proceed, through the experiments of Icarus, Leonardo da Vinci, and the mediæval pioneers, to the latest developments of aviation in this year of grace. A tentative scenario is being prepared by Antoine de St. Exupéry, the French air ace and author of 'Night Flight.'"



The Niedersachsen, type Göttingen IV, at last year's German Soaring Competitions. Note the careful stream lining of the cockpit roof (whose transparency is masked in the photograph by reflected light); also the smooth curves by which the wing root is faired into the body, and how far the fairing is carried back towards the tail.

The "Niedersachsen": A Bird-Like Design

[During last year's annual soaring competitions in Germany one of the machines, built to a new design known as GÖTTINGEN IV., attracted much attention owing to its bird-like appearance due to the manner in which the wing roots were faired into the body, and to the careful streamlining of all its parts. Its performance did not come up to expectation, partly owing—we were told—to the fact that its weight came out 50 kgms. heavier than was intended. During the meeting, however, the pilot, Wöckner, made 8 flights on it totalling 5 hours, reaching once a height of 2,264 feet above the mountain top. The following description, written by Fr. Freytag, has been translated from "Flugsport." —ED.]

GÖTTINGEN IV., of the soaring flight division of the Göttingen District Flying Group, is a cantilever shoulder-wing machine with the fairing well carried through from the wing into the fuselage. Span 16 m. (52.5 ft.), area 16 sq. m. (172 sq. ft.), all-up weight about 250 kg. (551 lbs.).

The wing has an elliptical outline and continues organically into the fuselage. In the inner part the wing has a flame-shaped form with an upward swing; from there onwards it runs horizontally to the wing-tip. In its outer part the wing is single-spar; in its inner part an auxiliary spar branches off, which takes over the torsion and also the frontal stresses in the fuselage. The torsion tube [i.e. that part of the wing covering which is of plywood and therefore takes over the torsional stresses in the wing] stretches as far as over the spar in the single-spar portion, while in the two-spar portion it is brought back as far as the auxiliary spar.

At the junction with the fuselage the wing has a comparatively strongly cambered and thick section, which runs out into a symmetrical one at the wing tip. The aerodynamic twist ["wash-out"] of the wing is $-5^{\circ}20'$. The centre-section between the wings has a junction of elliptical section with the cockpit in front; behind also it has an elliptical junction with the fuselage.

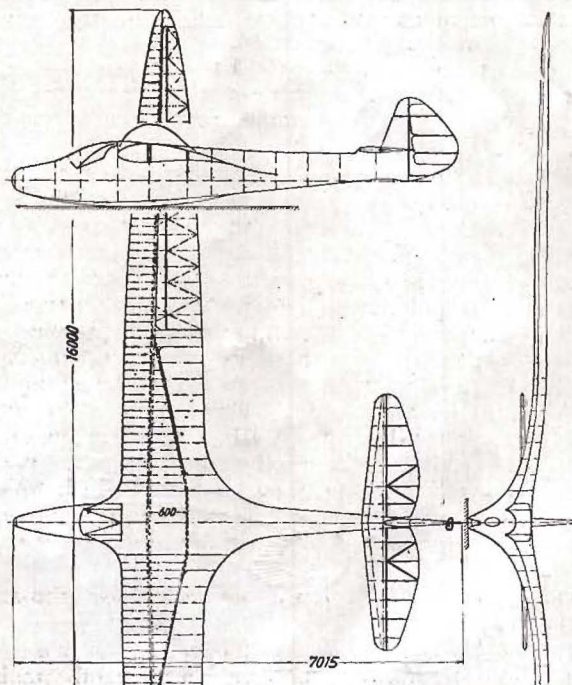
The structure of the fuselage consists of shaping bulkheads with, in part, intervening diagonal supports, and two main bulkheads which represent a continuation of the spars and take up the flight loads. Further out, longerons are included, to take up bending loads caused

by the tail surfaces. The whole fuselage is covered with plywood, which takes up the torsional stresses. The cockpit is completely covered; the cover is easily removable. At the rear the fuselage carries the rudder fin, which is rigidly connected to it, and is likewise wholly covered with plywood.

The rudder is connected to the last bulkhead of the fuselage, which is also the spar of the rudder fin. The elevator fin is connected to the fuselage by "V" struts, and is adjustable during flight. The fittings are bent from sheet steel and welded. Each wing is attached to the fuselage with 4 bolts.

Control is by the normal control-stick. The ailerons are actuated by push-rods and cables with increasing action (differential working). Elevator control is likewise partly by push rods, partly by cables, while the rudder is actuated by pedals and cables.

Optimum speed, 60 km. (37.3 miles) per hour, at which the sinking rate is 0.716 m. (2 ft. 4.2 ins.) per second. Gliding angle 1 in 24.



Segelflugzeug „Göttingen IV, Niedersachsen“.

Advanced Soaring: Lessons of 1934

By P. A. WILLS

1. The Machine and its Equipment

THERE is no doubt that 1934 will prove the starting-point of advanced soaring in this country, and that during 1935 the flights of a few pilots in 1934 will be duplicated and improved upon by pilots all over the country. And, since advanced soaring is the surest way to attract general interest in gliding and new members to gliding clubs, I want to put in writing the knowledge and experience obtained recently, so that everyone can save the time otherwise required to learn the technique from scratch all over again.

By advanced soaring I propose to mean the utilisation of up-currents other than ordinary slope up-currents. I do not pretend to more than very average scientific knowledge; I simply propose to record what I believe I have learnt in various cross-country flights in the past year.

In the first place, then, the pilot must have gained "C" standard, and must have acquired confidence and fair skill in ordinary slope soaring. I am a believer in hours' flying for this: an *ab initio* pilot should do at least 15 hours' slope soaring before trying anything more advanced.

For a machine, one of 40 ft. span or over, with a sinking speed (actual) of not more than 3 ft./sec. is necessary. Manufacturers' and designers' calculated sinking speeds seem often pretty optimistic; for the reader's guidance therefore I would say that the actual sinking-speed of the SCUD or WREN appears to be just about 3 ft./sec., that of the PROFESSOR better, say, 2.8 ft./sec. Manœuvrability is important for accurate circling in thermal up-currents. An enclosed cockpit is a great help in keeping the pilot warm and unruffled on a long flight.

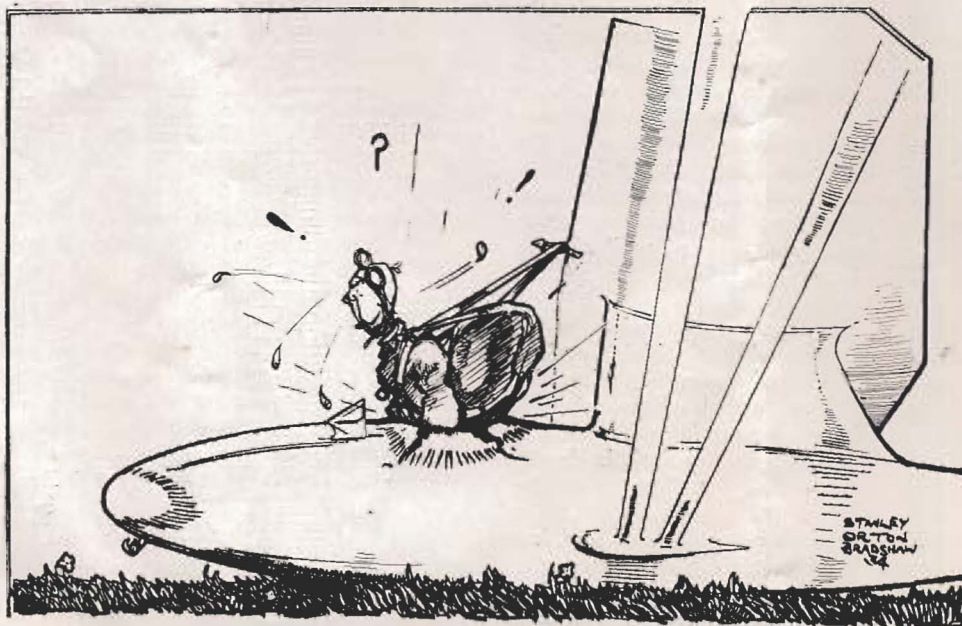
The equipment of a machine for advanced soaring is as important as the machine itself. For the start,

the essentials are an air-speed indicator, an altimeter (pocket or wrist type will do, but one fixed in the machine is better), a barograph, and a good rate-of-climb indicator. Of the latter, a liquid type is marketed at the low price of £2 2s.; this is satisfactory, but is rather liable to give difficulties during transport, necessitating frequent re-filling, a job apt to be tiresome on the morn of a soaring day. Another drawback is that these instruments are not calibrated. A vacuum-cell type is more expensive: no suitable instrument seems to be made in England at present, but a very good French type can be obtained for about £7.

Concerning recording barographs a whole article could be written. Let it be said at once that for motorless flight there is at present no such thing as a satisfactory recording barograph. Two types are available. The "gasometer" type has a revolving cylinder and a long pen connected to a multiple vacuum-cell. It is expensive to buy, heavy, and awkwardly big to stow in the machine; it is a delicate instrument, and though accurate when new, after the jolting of a few car journeys or winch launches the mechanism gets bent and thereafter the machine is unreliable. Moreover, the jolt of a launch or landing tends to splash the ink in the pen; if the pen is well filled the chart is smudged or blotted; if it is lightly filled the chart is quite often found virgin after a particularly interesting flight.

The alternative is a neat pocket barograph of French make. This can sometimes be bought cheaply second-hand, though new it cost over £11. It is small and handy, and can be set and carried in the pocket at any angle. It will also stand a deal of jolting, but is very inaccurate and also suffers from blotting of the chart, etc., though not so badly as the other type.

It is vital to get an instrument calibrated usefully for the requirements of soaring. A height-scale of 0—10,000 or 15,000 ft. and a time-scale of 1 rev. of



"Make sure BEFORE buying a parachute that it will fit into the seat of your sailplane."

the chart in 3—6 hours is suitable. A slower rate of revolution is useless.

I recommend a sailplane with a special cupboard in the centre-section or elsewhere in which a "gasometer" type can be stowed; if this cannot be fitted, the French instrument is preferable. Both instruments give me a pain in the neck.

Will some kind soul design and construct for the gliding movement say a dozen sensible recording barographs that will stand a lot of jolting without fouling their charts or damaging their innards? A tiny swivelling mirror attached to the vacuum chamber, reflecting the light from a torch bulb on to a strip of sensitised film, the whole in a light-proof box and driven by a torch battery, might do it. If a second mirror, connected to a temperature-recording bar on the outside of the box, simultaneously recorded the temperature on the same film, some really useful data could be obtained. The chief drawback to this idea is that the record would not be visible until after the film had been developed and fixed. Cannot our tame geni do something here?

With the above equipment the technique of circling in thermal currents can be practised, and when the pilot has got this well taped it is necessary to fit the following: a parachute, harness (for inverted flying, may it never be needed!), compass, turn-&-bank indicator.

I have not had enough experience of these to be able to give much advice. The normal flying-speed of a sailplane is insufficient to work the usual aeroplane-type of turn indicator in which the gyroscope is spun by a venturi, so some special instrument is necessary here again. Oh, and make sure *before* buying a parachute that it will fit into the seat of your sailplane (said he bitterly).

(To be continued)

NOTE.—Since the above was written, it has been learned that a new type of variometer, or rate-of-climb indicator, invented and manufactured in this country, is about to be put on the market, probably for about £6. It is an improved version of the instrument used by Mr. Collins on his cross-country and altitude flights in the RHÖNADLER last year, and is claimed to be more sensitive than any instrument of the kind yet produced.

Sensitivity of Birds' Ear-drums.—The human ear-drum is sensitive to sudden alterations of atmospheric pressure caused by rapid changes of height, and the suggestion has been made in this journal that the ear-drums of birds may be even more sensitive, and that it is by this means that they are able to detect small changes of height and thus find the up-currents which enable them to soar. An example of this sensitivity is the reaction of some birds to distant gunfire which is inaudible to the human ear. The December *Meteorological Magazine* reports some investigations into the audibility of salvos fired in the English Channel on September 27th last, some 30 miles off the Dorset coast. Pheasants were disturbed in Hampshire, Oxfordshire, Kent and Suffolk (in the latter case over 200 miles away), and the comment is made: "Why pheasants are affected by airwaves which cannot be perceived by the human ear and are presumably infra-sonic is not known. It is a nice problem for the physiologist."

News from Hornberg.—Miss Joan Meakin, who has been staying at the Hornberg Soaring School, near Stuttgart, with Wolf Hirth and Mrs. Hirth, writes that there have been great changes since she was there last in 1933. They have large new hangars, petrol pumps, new accommodation for at least twice as many pupils, and a fine new swimming bath. There are many new machines of different types, which they very cleverly sling up in the hangar roof. From May till December last, 900 hours have been flown at the school. Martin Schempp has just begun the construction of Miss Meakin's new sailplane which she is to use for her displays in the spring.

* * *

Jungfrauoch Meeting.—An international gliding contest is to be held on the Jungfrauoch, Switzerland, from September 4th to 18th, according to *The Times*, which states that "Champion gliders from the whole world are expected to compete." Some flights from the Jungfrauoch were made in June, 1931, by Gunter Groenhoff and Willi Farner, and were described in *THE SAILPLANE* of August 28th, 1931. It will be remembered that Groenhoff found difficulty in taking off in the rarified air; on the first launch half the FAFNIR's elevator was knocked off by a wall, and on the second he left his rudder behind, but each time he got down safely into the valley. Later, he took off from the north side of the Jungfrau when there was a south wind blowing, and actually got lift from the reverse northerly eddy blowing up the lee slope of the mountain.

* * *

Swiss Duration Record.—Our Swiss Correspondent, Otto Frischknecht, writing from Arosa, sends the following information:—Last year the duration record has been broken three times. On June 16th Hermann Schreiber, of Berne, made a flight of 7 hrs. 15 mins. on a KASSEL 20. At 12.25 on October 14th, rather late in the day for an attempt on the record, Marcel Godinat took off in his SPYR III., a home-built high-performance sailplane; his flying time was 8 hrs. 45 mins., and during the last three hours he had to fly in the dark. This was a very fine performance, as Godinat had got his "C" certificate only a week before. On November 21st this record was again broken by Hermann Schreiber with a flight of 10 hrs. 15 mins. on a SPYR III. machine. The same day two other flights of 5 hrs. 50 mins. each and one flight of 4 hrs. 30 mins. were made.

* * *

Gannets in Slow Motion.—At the Leicester Square Theatre, London, there is being shown a short but excellent film depicting the life of gannets, a large proportion of the "shots" showing their flight (flapping, soaring, starting and landing) in slow motion. It was the only film in the programme to win audible applause, yet the management appear to think so little of it (there are no highly-paid "stars") that it is omitted altogether from the afternoon performances, and even what there is of it is curtailed, to judge by the "stills" shown outside. At the time of going to press it is being shown at 12.4, 6.54 and 9.19, so the thing to do is to go in at 6.50 and see it twice. "The Scarlet Pimpernel" is the principal item on the programme.

In reply to our enquiry, the Manager of the theatre states that the film will be showing "roughly until the 20th or the 27th February."

Correspondence

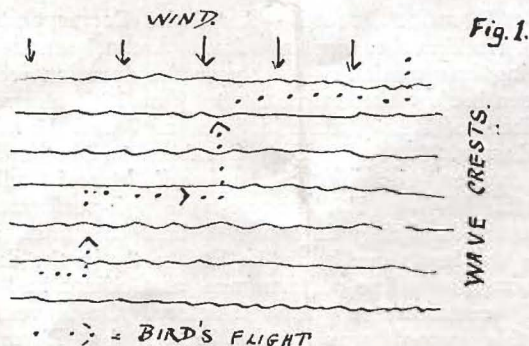
The Flight of the Albatross

[The two following letters on this subject should prove particularly interesting. Dr. Mottram made his observations between the Cape and Tasmania; his request for information on the circulation of air over waves will be granted in the next issue. Mr. Hamilton's letter is of special value in that this is probably the first record by a fully qualified soaring pilot of first-hand observations of albatross flight; he is a "C" licence pilot, trained by the London Gliding Club in 1931-2.—Ed.]

SIR,

I have read with much interest and pleasure Mr. Latimer-Needham's several articles on the flight of birds. Though he appears to have dealt adequately with the flight of most birds, when he comes to the albatross in my opinion he has omitted much which ought to be taken into account, if we are thoroughly to understand their amazing flight.

I have never seen them flying over a calm sea, and when waves are present then I have observed that their flight is always closely correlated to the waves. They take a zigzag course, one leg along the trough of the wave and the other leg at right angles to the waves and up wind. In Fig. 1 their course is shown in plan.



Thus they can fly up wind at an angle of 45 deg. by a series of short tacks, one across wind and one up wind. When on the trough of the wave they fly close down to the water and on the lee side of the waves as shown in Fig. 2 (as if they were living on an upward eddy there). Having proceeded thus for from 50 to 100 yards, they then make a quick right angle turn up wind, and when banking the lower wing tip often cuts through the top of the wave, hence a name for them: "shearwaters" (see Fig 3). At the crest of the wave they flatten out, and then shoot upwards and forwards up wind, rising to a height of about 50 feet and forward for about 50—100 yards (see Fig. 4). They then turn sharply through 90 deg. and skim down at great speed into the trough of a convenient wave, and proceed as before described.

I am not able to explain how it is that they are able to progress thus at high speeds with never a single flap of the wings. It is evident that they are taking advantage of varying wind speeds, as well as varying vertical movements of the air related to the waves. It

is necessary to have an intimate knowledge of the motions of the air in the neighbourhood of waves. Perhaps one of your correspondents would give us a dissertation on this subject, so that we could formulate what to look for when next we have an opportunity of watching these birds of wondrous flight. There is no need to go to the Pacific Ocean; there are several species of petrels off our coasts, which behave exactly like the albatross but on a less stupendous scale.

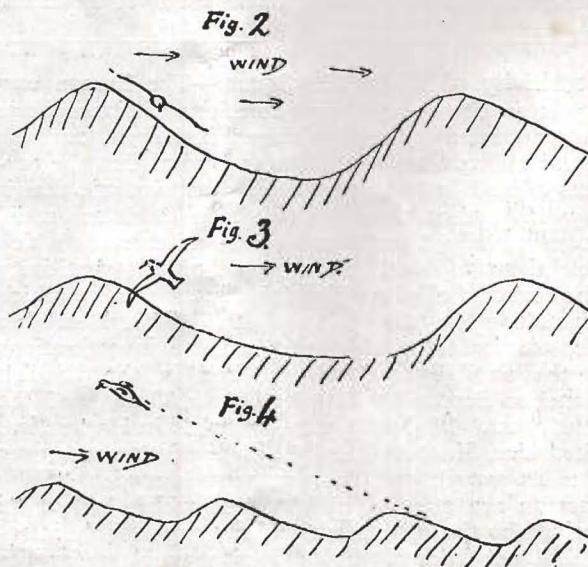
J. C. MOTTRAM.

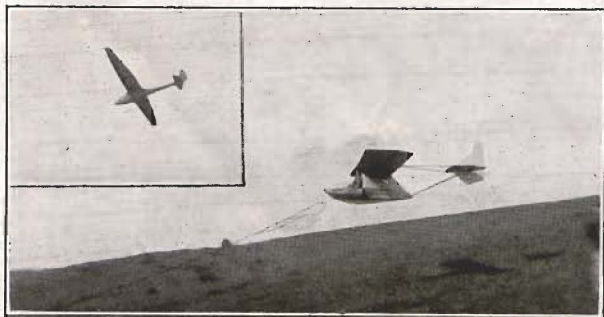
SIR,

I read with much interest Captain Needham's article XIV. on Bird Flight in which he describes the methods used by the albatross in soaring flight. It might be of some interest if I describe one or two of my own personal observations of the flight of ocean birds.

Firstly, the shearwater, which, in making use of a combination of wind deflection soaring and dynamic soaring, is enabled to travel in a general direction against the wind, not with it, as in the case of pure dynamic soaring.

While travelling west across the Australian Bight against a storm from a direction approximately W.S.W. I watched a shearwater for fifteen minutes, and during that time, without flapping, it kept level with the ship, flying in a big zig-zag course alternately close to, and then far from, the side of the ship. It would rise almost vertically over the crest of a big wave, due both to the deflected current and to the fact that the wind speed increased with height, until it had reached its maximum possible altitude, then it would retract its wings and go into an almost vertical dive into the trough of the wave in front and flatten out a few inches above the surface. It would then continue at great speed in the "dead" air to leeward of the advancing wave and parallel to it, either working towards or away from the ship. The rollers not being in truly parallel lines but mostly criss-crossed, the bird





F. M. Hamilton starting from Dunstable Downs in a "Dagling." Inset: Making a sharp turn in the "Professor" during a soaring flight of 35 minutes on December 4th, 1932. Unlike the albatross he is keeping his nose well down on the turn for fear of stalling.

would always pick a roller whose crest was not quite at right angles with the wind direction, and thus found it possible not only to fly against the wind but to be able to keep up with the ship, giving an air speed in the ship's direction of something like 40 m.p.h. While remembering the erratic course taken by the bird, an actual air speed of considerably more than this figure must have been attained.

From my own observations I am led to believe that the albatross and other sea-birds are unable to soar by making use of the fact that friction alone over the water slows down the air at the surface, as described by Capt. Needham in his article, possibly because the friction is not great enough. In suggesting this I am quite aware that the plover and, I think, the ibis perform in this way over land, where the friction might be expected to be greater. I contend that there must be fairly large waves which allow a bird to soar simultaneously by wind deflection and dynamically, making use of the "dead" air in the troughs of the waves. I have three reasons for believing this. Firstly, I have never seen an albatross nor any other bird soaring dynamically over land-locked water, where waves are of small size even in a strong wind. I have seen quite a number but always in flapping flight or soaring over an obstruction. Secondly, in watching ocean birds soaring other than in the up-current over a ship, they always fly down into the hollow and up over the crest of a wave, and, thirdly, the following incident. While running with rather a big following sea between the Cape and Australia I was watching about 200 sea-birds of all descriptions soaring behind the ship, travelling with the wind in this case, and all soaring in the same manner, down into the hollow and up over the crest. A sudden squall came up from a direction at right angles to ours and approximately parallel to the wave crest lines. As soon as the squall struck us, about half the birds settled on the water and the other half attempted to continue to soar but had to resort to a lot of flapping. Not a single one, as far as I could see, continued pure soaring flight. The reason for this, I believe, was that the wind blowing parallel to the waves had the same speed in the hollows as on the crests, was not deflected upwards by the crests, and that the frictional slowing-up on the water was insufficient for pure dynamic soaring. The fact that none of the birds attempted to soar in the new up-current to windward of the ship I do not think in any way extraordinary, because in a strong wind a bird's wings would have to be retracted to such an extent for it to keep pace, that it would be in danger of colliding with the side of the ship. This statement is

borne out by the fact that I have seen birds soaring in this manner only in light to moderate winds.

I might describe one more incident which demonstrates a method of soaring in a dead calm which is sometimes used by the albatross. One morning, there being no wind but an occasional very heavy roll, I noticed six albatrosses flapping behind the ship on the look-out for refuse. Suddenly one bird started flying off to one side and was almost immediately followed by the five others. I watched and, at first, wondered why, but soon realised that the first one had seen an extra large roller coming towards us, crest parallel to our direction, the others had followed, and that they were now "sitting" on the advancing front and soaring with about six inches to spare! On reaching the ship they discarded the roller at the prospect of food, but a short time later the performance was repeated.

From the above remarks one might conclude that the particular method of soaring used by an ocean bird depends more on the wind strength than any other factor. In a dead calm the albatross soars in front of an advancing roller; in a light to moderate wind any sea-bird will soar over a ship or a cliff; while in a strong wind the combination of wind deflection and dynamic soaring appears to be the only method used.

F. M. HAMILTON.

The "Wren" Sailplane

SIR,

We were extremely interested to read "Die-Hard's" article in last month's *SAILPLANE* under the heading, "Those WRENS: Then, Now, and To Be," and we are indeed greatly indebted to him for his outspoken praise and comments on the high qualities of this British sailplane.

It may seem unbelievable, but nevertheless "Die-Hard" was unaware at the time of writing of the developments that have been taking place (see the advertisement columns of present issue) in which most, if not all, of the refinements called for in his article are being incorporated in an improved WREN, to be called the Dunstable "Kestrel."

"Die-Hard" at least will be pleased to note that full attention has been given to the various points mentioned, viz.: landing skid, tail skid, fuselage well clear of ground; rudder mounted on three hinges with increased spacing of hinges; improved fuselage shape; tail-holding grip, etc. Apart from all this, the aerodynamic qualities of wing and tail have been looked into, resulting in some modifications to the tail unit, whilst the *KESTREL* will be generally more robust.

In the penultimate paragraph, "Die-Hard" states correctly that "the possibilities of the WREN design are far from being exhausted," and foreshadows certain other developments. It is too early yet to give away secrets, but we hope that a future model, with an even better performance, notably a finer gliding angle for cross-country work, at present being carefully prepared, will not fail to come completely up to "Die-Hard's" anticipations, and that our "home-grown" British products will continue to build up the prestige already earned by the WREN.

THE DUNSTABLE SAILPLANE CO.,

E. F. NEEDHAM.
J. B. G. GRICE.

News from the Clubs

Derbyshire Gliding Club

The "Golden Wren's" Activities.

Sunday, November 25th.—Site: Eyam Edge and Bradwell Edge. Wind S.W. 10 to 15 m.p.h. (Contour map herewith.)

This is going to be one of our most used sites. It consists of an almost unbroken ridge four miles long facing south (Eyam Edge), with a right-angle spur at its western end leading on to another ridge three miles long facing west (Bradwell Edge). A road runs part way along Eyam Edge upon which is situated a very friendly pub.—"The Barrel."

Robertson pioneered the site, taking off just outside "The Barrel" in a very gentle S.W. wind. The best lift was on the West Slope, but owing to a small dead patch he was unable to get round the corner without the risk of going to the bottom, so he unselfishly confined himself to a small portion of the South Slope. A. L. Slater, with no thought of the next man to worry him, took the risk and managed to get on to the West Slope, making a beat of about five miles and gaining 550 ft.

Flying time for the day, 1 hour 15 minutes.

Wednesday, December 26th.—Site: Eyam Edge. Wind S., 20 m.p.h. at ground level. Quantities of very grey and foggy looking (though sharply defined) cloud extending from 500 ft. to 800 or 900 ft. above the hill top.

Smith had a day out by himself, and taking off from "The Barrel" soon reached the cloud level, 500 ft. By carefully observing the shape and size of a cloud as it approached, one was able to decide whether to go through it or dodge it. Never having flown in clouds before, Smith did not venture into the thickest of them, but he sometimes lost sight of the ground for as much as 15 seconds at a time, quite long enough for the first experience.

Definite lift was noticeable in these clouds, and on one occasion, when a convenient formation of small ones came along, it was possible to work out from the hill, hopping from one to another and gaining height. The maximum height gained was 750 ft., and the beat used was the whole four miles of the South Slope.

Flying time for the day, 1 hour 45 minutes.

Monday, December 31st.—Site: Rowsley Bar. Wind W. about 15 m.p.h. Rowsley Bar is a 400 ft. ridge facing west, but largely shielded by opposite hills. A gap in these opposite hills is formed by the River Wye and through this gap (or so we thought) the wind has a free run at Rowsley Bar.

Smith took off first and found the conditions not too pleasant, less lift than had been anticipated, and very bumpy—not violent bumps, but very persistent ones which are worse. A good indication of the pleasantness of flying conditions is the length of time after the take off that one takes a deep breath and thinks, "that's better!" In this case it was a good ten minutes. Unfortunately there is no landing field at the top, and in the valley there are all sorts of up and down bumps which make the landing approach none too easy.

Dismantling the machine, getting a lift to the top, bringing the trailer down ("Why don't you teach me to drive, dear?") packing up, getting to the top again by a seven mile detour, rigging, and another launch was accomplished in a little over two hours. Not bad, though we sez it. . .

Slater was the pilot this time, but the wind had dropped somewhat, changing the conditions from unpleasant to impossible, and after ten minutes' struggle he had to turn out across the valley and land.

Rather a disappointing site; nevertheless, something accomplished. Flying time for the day, 1 hour.

Dorset Gliding Club

Maiden Newton, Sunday, January 20th.—As the N.E. wind was unfavourable for launches from the hill top, the DAGLING was dragged to the valley bottom, where intensive primary instruction was carried out; here three learners and one new member were given, between them, 27 launches. The more advanced members were then launched from as far up the slope as could be reached by the only car available and, after all members had had "refreshers," the meeting closed. With 75 per cent. of our mechanical transport out of action, 34 launches was thought good, considering the meeting was not started very early. Lunch was taken in the club house round a cheery fire; three lady friends assisted in various ways, and in the afternoon a member of the Wiltshire Gliding Club was an interested spectator.



Leicestershire Air Sports Club

Sunday, November 25th.—Considering the uninviting weather, a respectable number of members turned out and did a useful day's training without any mishap. As we packed up for the day, A. E. Coltman, a new member, a power pilot, called at the field with the original ALBATROSS, which was designed by Capt. C. H. Latimer-Needham. Coltman had acquired it that afternoon from Mr. J. Granger, the designer of the tailless aeroplane "Archaeopteryx."

Sundays, December 2nd and 9th.—Rain, and lots of it. No flying.

Sunday, December 16th.—The ALBATROSS was rigged and checked over. Coltman made three flights and Mr. Headley, our instructor, one. Launched by the winch. (These were Coltman's first flights in a glider or sailplane.) Coltman, from a height of only 40 ft., flew the ALBATROSS into the adjoining field, which is some gliding angle compared with the B.A.C. II., which has to be at over 100 ft. to clear the hedge into the same field. Many people collect to see our flying efforts each Sunday, and all appear to be very interested. We welcome all visitors.

Monday, December 24th.—Six Hills. Several members took advantage of the weather and hibernated to the flying ground and put in a good day's flying.

During 1934, from April onwards, the sturdy B.A.C. II. has been launched 600 times, mostly by the winch method, all from a flat field. Our instructor, F/O L. E. Headley, made the longest glide to date, covering over 1,000 yards from a winch launch of 300 ft.

Wednesday, December 26th.—A. E. Coltman flew another member, R. Polendine, over to Beeby in the Aero Club's "Moth," and took aerial photographs of our new flying ground there. Beeby is only six miles from Leicester and this ground is ideal for our purpose: "A" and "B" licence training. This site incorporates two large fields, 800 yards and 600 yards long, running S.W. to N.E., joining each other on a hill of about 100 ft. height.

Thursday, December 27th.—A newly acquired Chevrolet saloon car which is to be used for auto-towing, and the ALBATROSS sailplane, were taken to the new site at Beeby.

Sunday, January 6th.—Beeby, wind N., 10-15 m.p.h. We decided to use the smaller N.E. field. The ALBATROSS was test-flown. The Chevrolet then pulled the sailplane up to 150 ft. Coltman released half way down the field, and making a quick turn, returned over the field with the wind, at speed, and disappeared from sight over the hill into the larger field, finally landing perfectly down hill and down wind. Even with its undercarriage fitted, the ALBATROSS has a fine angle of glide; about a mile was covered in this flight, mostly with a slight tail wind. Coltman has been flying power machines since 1928, but states he has had no real thrills until he took up gliding.

A dance is arranged for next month to assist the club funds. New members are now joining and the club hopes to double its membership during 1935.

Southdown Gliding Club

Review of 1934.

The club's review of the past year's activities, which we have received, reports a considerable increase in the number of new members, and the number of inquiries as to membership has steadily increased as the year advanced. The club still maintains its lead among all provincial clubs for the highest number of certificates gained to date.

Site.—The club opened the year with its operations centred at Steep Down, Lancing, but within a short time it was realised that the site would not provide for the desired progress in flying activities; moreover, an increased rental is now being asked for continued tenancy of the site. Accordingly, during the summer



G. A. Little, of the Southdown Club, well up towards the alto-cumulus at Sutton Bank in the "Tern."

an extensive survey of the downland immediately to the north of Brighton was begun, with the object of finding a centralised all-round site, and negotiations are now in progress with the Commissioner of Crown Lands and with other authorities concerned for the acquisition of gliding rights in that area. The selected terrain consists of three contiguous centres which should provide facilities for all types of present-day gliding and soaring; it embraces a four-way training site up to "C" standard, a site similar to Sutton Bank, and a "Dunstable" type westerly site about 500 ft. high. Flying tests have been carried out on it. It is very accessible, having roads leading in from N., S., E. and W., a bus service from Brighton, and even a railway station. It is hoped that, with anticipated State help, a hangar, workshop, and club house will be established there in 1935.

Equipment.—During the year four members completed the construction of two secondary machines and a two-seater dual control sailplane, all for private use; other private machines are in course of construction. The club's PRÜFLING was disposed of as a contra to repairs costs for other machines. The remaining machines have been partly or entirely rebuilt, and now comprise one R.F.D. trainer, one secondary machine, one dual-control sailplane, and one high-efficiency sailplane (variable span). It is proposed to acquire tapered wings for the latter; also a new secondary machine. Mr. R. F. Dagnall has presented a launching rope and a hangar screen, Mr. Reffell a reconditioned Morris car, and Dr. Hackworth sundry materials and a donation. Transport, etc., includes two modified Trojan retrievers, Chrysler auto-towing car, Morris auto-launcher, two trailers, hand trolley, drums of cable, small marquee, etc.

Expenditure.—This, as compared with last year, is expressed in percentages. The chief increases are: petrol and oil for launching and retrieving, 500 per cent. (due to increased flying); entrance fees, 500 per cent.; subscriptions, 50 per cent.; flying fees, etc., over 100 per cent. Administrative expenses are down by 40 per cent. The club has once again been able to pay its way and to close the year in credit.

Flying.—A "flights grading committee" was set up to deal with the graduation of pilots to higher types of machine, and in flying exercises.

Members represented the club at the B.G.A. Competitions at Sutton Bank, and Messrs. Reffell and Little again put up flights of marked height and distance out-and-return on the TERN.

A fund has been opened to provide a memorial to the late J. A. Lawford, whose loss the club records with deep regret.

The report concludes with a summary of the club's principal achievements, and those of the clubs which it has absorbed during the last four years.

The office of the club is at 7A, First Avenue, Hove, Sussex. Telephone: Hove 4335.

Yorkshire Gliding Club

December 2nd.—After several dull week-ends it was a happy change to see so much bustle and enthusiasm on the field. There was no fog, no rain, and a steady eight-mile wind from the north gave us a chance of a little more winch launching practice.

Stedman's face was aglow with cheerful anticipation. His two-seater had at last made its reappearance, with certain improvements and stressed for everything one could think of, even including ordinary gliding. Several novices were ground-slid on DICKSON, while others were kite-flown by winch. All made progress and DICKSON remained intact. Then we started on the two-seater, and Stedman, with his young son as passenger, climbed to 300 ft. and made an elegant circuit over the hangar, back over Boar's Head Gill, landing within 50 yards of his starting point. This sort of thing continued throughout the rest of the day, the two-seater carrying, ultimately, seven passengers, and climbing repeatedly to 500 ft. before Stedman cast off. Nearly everybody's appetite for gliding had been appeased and dinner in the club house was taken with relish.

Meanwhile another small party had journeyed to the East Coast in search of an electric lighting plant, a generous gift from an interested donor. This party returned about 5 p.m., having dismantled the plant ready for loading on our lorry on the following Sunday.

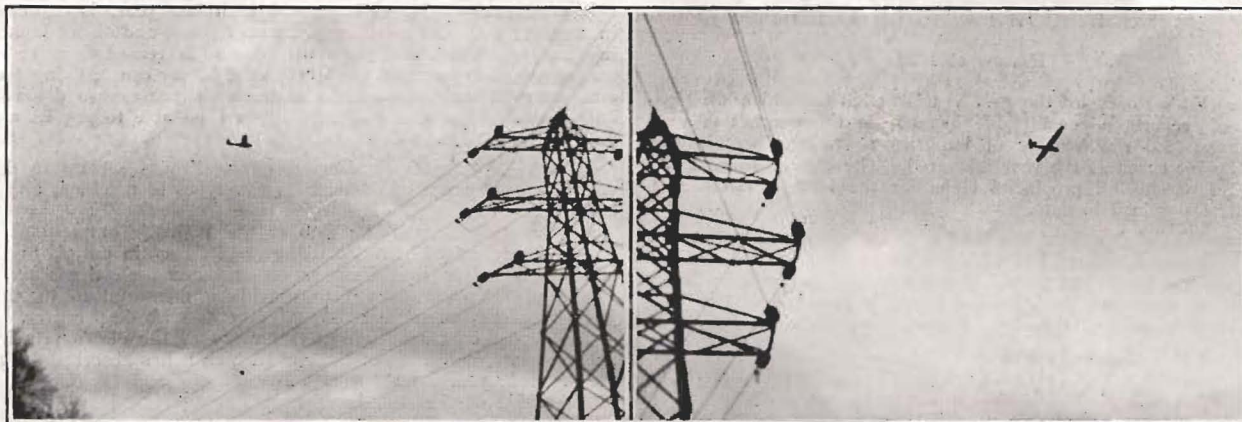
On **December 16th** the lighting plant was unloaded from the lorry, which sighed perceptibly as the last of the storage batteries was removed from her deck. After some tinkering, the engine of the plant was started. It danced about on the workshop floor and the engineering and electrical party danced with it in exultation. Then the engine stopped so the E. & E. party played with it the whole of the afternoon, which was thereafter punctuated by occasional rhythmic explosions and spasmodic gasping gurgles. Meanwhile DICKSON was flipped and trundled about the moor by the training squad.

December 23rd.—BAT-HOLS was dismantled and stripped for overhaul. Later the ground engineer reported that her condition was astonishingly good, and his only exhibit of anticipated wreckage was a handful of rib biscuits.

The building had by this time been completely wired by Rayton; the lighting plant was firmly laid in concrete, and the clubhouse pleasingly lined with asbestos fibre sheeting, so the place was well set for the lively Christmas party which we enjoyed on December 30th. After a day's DICKSON training in which everybody, "A's," "B's" and "C's" as well as novices, took part, we "fell to" on the festive repast prepared by Mrs. Cox and other ladies in the festooned and balloon-decorated clubroom. There was so much mistletoe about that one could neither intentionally, nor even accidentally, avoid standing under a bunch. The ladies, who had turned up in force, performed their duties excellently. Late in the evening everybody departed in high spirits.

January 6th.—Again STEDMAN spent the day carrying passengers on circuits of the moor. The wind was northerly, and no soaring could be attempted. DICKSON had another busy day on the end of the winch cable, and at 4 p.m. she was returned for minor repairs.

January 13th was dead calm. The STEDMAN 2-seater was launched with a passenger, but the difficulty of climbing led to an early abandonment of passenger flying. Hols was winched a little more satisfactorily with Cox and, afterwards, Hastwell, but a continuous snowfall put an end to the day's flying.



The London Club's "Grunau Baby" makes its first soaring flight, well above the power cables on the way to Whipsnade.

London Gliding Club

Saturday, December 29th.—The hill-hauling winch was got ready before lunch. With a west wind of force 5 (Beaufort scale, not m.p.h.) even the PRÜFLING could soar. Baker kept it up for 17 minutes, Challier for 14 minutes, and Bell flew it for 20 minutes and landed back at the hill-top; it must be over a year since the old veteran (the PRÜFLING, not Bell) had such an experience.

FALCON was flown for a time by Bergel and Ivanoff (each landing on top), and then Collins took it up and put it through a course of aerobatics, including spins but excluding loops.

Sunday, December 30th.—The Desoutter GRUNAU BABY, finished by Slingsby, was given its aerial baptism in the form of two ground-hops by Collins. A fierce wind from the south enabled him to keep his height along the hangar ridge nearly to where the rabbit warren begins.

Saturday, January 5th.—Good wind from N.W.; not an easy direction, yet Keeble, Payne and Baker flew the PRÜFLING, Baker doing 8 minutes and landing on the Bastion. Richardson soared the FALCON.

Sunday, January 6th.—Wind N.N.W. What with a fierce down-current along by the Bowl and another nasty patch in lee of the Bastion, close by the launching spot, nobody in the old days would dream of going off the top into such a wind. Soaring winds in 1931 were from S.W. to N.W. by W. In 1935, however, they are south by west all the way round to north-nor-west.

An area of lift was found over the power wires, where the slope has a bit of north in it before turning round the Whipsnade Bump. The FALCON and Green WREN (ex Yellow WREN) managed to work up to 200 feet above the top, first over the poles and then over the higher pylons. Nicholson was in the WREN, while Ivanoff and Morland had two flights each (up to 45 minutes a time) in the FALCON. Finally, a FALCON pilot undershot and landed on the hedge, with nothing worse than a little damage to the plywood nose.

Collins took the GRUNAU BABY for its first soaring flight, and did some mild aerobatics high above the power cables. Later, Bergel took it up for a brief 10 minutes.

Saturday, January 12th.—W.N.W. wind and much good soaring.

GRUNAU BABY was flown by Collins, Bergel, Nicholson and Dewsbery, with landings on top. Bergel, who got up to 500–550 feet, reported it at first very bumpy with odd patches of lift about, then at about 3.10 the bumps suddenly went, leaving nothing but the ordinary hill lift behind. Evidently there was an unexpectedness about the lift distribution, as one pilot made two approaches to a hill-top landing and another four.

FALCON was soared by Ivanoff (20 mins.) and Morland, and several pilots flew the PRÜFLING. DÄGLING was glided off the top by several others, and enabled Restall and the other Collins to get their "B" certificates.

Sunday, January 13th.—A southerly air gradually faded during the day, the frosty ground gradually becoming a sea of mud. At least seven machines were used, ranging from ground-hops to some minutes of soaring in the GRUNAU BABY. No breakages. Not a crease in the air. An amazingly large attendance. Universal good humour.

Sunday, January 20th.—Gentle N.E. wind. Two machines spent the day ground-hopping, one of which was later transferred to the top to get some "A's" and a "B." These were obtained

in no uncertain style. The first pilot hurtled the machine over the edge of the hill at a height of about two feet and proceeded to make a direct attack upon the ground; relenting, he (or she) pulled the machine up into a 1 in 5 climb, stalled on the top and, in another access of rage, again made a furious attack upon the ground, only to relent again and, pulling the machine out at a height of not more than 10 feet, proceeded to make the normal landing required by the "A" certificate conditions.

The next pilot also did a very decorative flight, curvetting gracefully hither and thither in a series of dives, stalls and incipient spins. Again a normal landing drew a sigh of relief from the frightened band of spectators on the hill-top.

After this two more certificates were obtained, the flights being positively spectacular in their steadiness.

The pilots who obtained "A's" were Miss Evans and Messrs. McLellan and Fox, while Paget obtained a "B," and we mercifully leave the reader to guess which was which.

A New Variometer.—G. E. Collins brought along for inspection his new variometer, which he is about to put on the market. It is the invention of Mr. Collins, Senr., of Cambridge, and is an improved version on that used on last year's cross-country flights in the RHÖNADLER. The time lag, for the indicator to return to normal from any distance, was under one second, and it certainly reacted a great deal quicker than the German instrument it was matched against.

Dance.—The first club dance to be held during the five years' existence of the club has been fixed (provided enough entries are promised) for Saturday, February 23rd, at the De Vere Hotel, Kensington, from 9 p.m. to 2 a.m.

Review of 1934.

We have received the annual review of the past year's activities of the club, which has been prepared earlier than usual, instead of waiting to be read at the Annual General Meeting. Its appearance is timely, as showing the Press that the real gliding movement in this country consists of the clubs, whose members get into the air and fly. We can only give a bare outline of what the review contains.

Membership and Finance.—The membership totals 230. There has been an increase of 55% during the year, and about 75% of the new members have had no previous flying experience. The receipts from flying fees have doubled. The cost of maintenance per machine is reduced, in spite of increased staff. Last February, through the generosity of Lord Wakefield, and of Mr. C. E. Hardwick, a member, the club was enabled to purchase the freehold of its gliding ground of 117 acres.

Flying.—During the year 92 Royal Aero Club gliding certificates were obtained by members, and two members obtained the international "Silver C" certificate. Pupils have come not only from the British Isles, but from Australia, Austria, Belgium, Canada, France, Germany, Holland, Kenya, Poland, Russia, Sweden, Switzerland, and the West Indies. Three instructional camps were held during the summer, in addition to the usual week-end (and, in summer, mid-week) meetings. Three excursions were made by members to explore the soaring possibilities in other parts of the country with their own machines. Beachy Head, Sutton Bank and North Wales were visited, several soaring flights being made in each case. In addition, many members attended the National Competitions at Sutton Bank in September, where the club was represented by 6 machines which did 68 hours and 30 mins. flying between them.

Excluding instructional flights and flights of less than 5 minutes' duration, the club's total flying time for the year is 420 hours 45 minutes.

Cross-country Flying.—The most notable feature of the year has been the development of cross-country and altitude flying, and the total distance covered in the former was 518 miles. The following is a list of these flights, and other flights of interest:—

March 18th.—Dunstable to Chelmsford, 45 miles, by G. E. Collins in KASSEL two-seater with a passenger. Dunstable to Latchingdon (Essex), 56 miles, by P. A. Wills in PROFESSOR (British distance record). Dunstable to Hertford, 19 miles, by S. Humphries in CRESTED WREN.

April 20th.—Duration flight of 5½ hours by Collins in RHÖNADLER.

April 22nd.—Dunstable to Rayleigh (Essex), 53 miles, by Collins in RHÖNADLER.

May 14th.—Duration flight of 8 hrs. 8 mins. by E. L. Mole in FALCON (British duration record at the time).

July 14th.—Duration flight of 5½ hours by Wills in SCUD II.

July 15th.—Dunstable to Hanworth Aerodrome, 31 miles (across wind), by Collins in RHÖNADLER. Dunstable to Abridge Aerodrome, 33 miles, by Wills in SCUD II.

July 29th.—Dunstable to Blakesware (Herts), 25 miles, by Collins in RHÖNADLER.

August 5th.—Dunstable to Holkham Bay (Norfolk) 98 miles, by Collins in RHÖNADLER (new British distance record). Sutton Bank (Yorks) to Rudston, 37 miles, by J. P. Dewsbury in BLUE WREN. Sutton Bank to Kirby Moorside Aerodrome, 16 miles, by Wills in SCUD II (official British height record, 4,514 feet).

August 19th.—Dunstable to Ware (Herts), 26 miles, by Wills in SCUD II. Dunstable to Luton and back, by Collins in RHÖNADLER; max. height en route, 4,500 feet.

September 3rd.—Sutton Bank to Osmotherly and back, 11 miles, by Collins in RHÖNADLER.

September 4th.—Thunderstorm flights from Sutton Bank (Yorks):—G. M. Buxton flew SCUD II. to Middlesbrough, 22 miles; maximum height en route, 8,323 feet (new British altitude record). Dewsbury flew BLUE WREN to Whitby, 31 miles. Collins flew RHÖNADLER to Pickering, 18 miles.

September 5th.—Sutton Bank to Ingleby Grenhow, 18 miles, by Wills in SCUD II.

Harrogate Aircraft Club

Mr. Addyman writes that the S.T.G. (Standard Training Glider) was launched six months ago and has been in constant use ever since. It has stood up like a battleship to the various buffeting it has received from beginners, with whom it has proved extremely popular. After a few weeks it inspired such confidence that members forgot it could be stalled and went in for a height competition. The winner pulled the nose almost up to the zenith and then landed on the launching hook, at the same time putting both feet through the two bottom panels, which were quickly replaced and are still *in situ*. Many of the new members can now handle it well, particularly Harman and Sharples, with West and Smith not far behind. Considerable attention is being paid to cross-wind landings, which after a long glide give one three chances of getting into a suitable field instead of one, and the advanced members can now bring them off satisfactorily.

In the middle of January, the S.T.G. being withdrawn for a look-over, the ZEPHYR was lent to the club instead, and everyone tried it, with rather mixed results. The advanced members were delighted with its all-round view and its silky flying, and made some excellent flights. The beginners, however, could make nothing of it, as it was rather too nimble for them. The ZEPHYR and the S.T.G. are designed to land quite differently. The S.T.G. sits down firmly and stays put, and anyone making a mistake knows all about it behind for the next week. The ZEPHYR, on the other hand, will not land heavily, and a pilot who knows how to do his Telemark and Christiania Swings on ski can also do them on the ZEPHYR. Recently, for instance, when the ZEPHYR had been flown from the top of Healthwaite Hill, the pilot was just preparing to scrape over the second fence when a horse was noticed evolving on the chosen landing place. A banked turn would have put the lower wing into the hedge, so the ZEPHYR was put down instantly on the ground at speed and a left-hand Christiania was done on the near side of the cross hedge, the machine coming to rest in the corner of the field facing up hill.

One day recently it came on to snow, and the S.T.G. got a thin covering on the top of the wings, but although the snow was at no time more than ¼ in. thick, nobody succeeded in getting the machine off the ground. Even Master Addyman Junior

(weight 5 stone) could do nothing more than a ground slide of 100 yards. So it wasn't just the extra weight, but the spoilt aerofoil which caused the trouble.

[Some time ago, when the London HOLS DER TEUFEL was out on a snowy day, someone brushed the snow off one wing only, just as the machine was about to take off. The pilot flew down with his stick hard over on one side to keep himself from doing a half-roll the other way; his not to reason why—until afterwards.—Ed.]

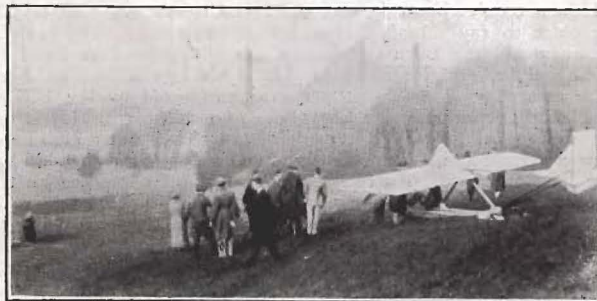
Midland Gliding Club

The following notes have been contributed by the club:—

December 26th.—The deed was done by no less a person than the Editor himself with the aid of a dishcloth, and lo, the "stick" of our first Slingsby DAGLING was unveiled! The Editor followed this up by a hefty "ground hop." There were 15 flying members present, and six non-flying. All members had two flights, and some three. About 34 "hops" in all were put in. The wind was blowing three-quarter-ways down the hill, but hops of about 50 to 80 yards were possible on the flat at the bottom.

The thrill of the afternoon was provided by Tim Healy, a power pilot, who, after a perfect first hop, forgot momentarily that he had not got an engine, and after a normal take-off and flattening out, then proceeded to climb again, and reached the astonishing height of 30 ft. whence followed a complete stall. Fortunately he put the stick well forward at the critical moment and thereby managed to just bring her out before touching.

Good flights were put in by I. Lawrence, Commander Williams, and O. Jones, the latter two being *ab initio* first flights.



The Midland Club's inaugural meeting at Handsworth: ready to make the first flight.

Every member left the ground, and the average length of flight was 40 yards. The machine was returned intact to a nearly completed hangar at the top.

December 29th and 30th.—The wind was still blowing down the hill, but the hangar was complete. There was quite a good turn up and about 60 hops were made during the week-end. The best performances were put in by Commander Williams and J. Horrell, while our treasurer excelled himself with two perfect first flights of about 50 yards each. The machine duly returned intact to the hangar.

January 5th and 6th.—At last the wind blew up the hill, and members now had an opportunity of getting a better "feel" of the machine. About 50 to 60 flights were made during the week-end, averaging 125-200 yards, and substantial progress was made. The quality of the hops was excellent. Power pilots, however, showed an inclination to pull. The machine returned intact once again to the hangar in the evening with much rejoicing.

January 12th and 13th.—The wind was again blowing up the hill, and on Saturday afternoon about 25 flights were made. The first real thrill occurred when Osmo Jones took off for his first hop from the top, and kicked on a little left rudder as he took off. He then proceeded to do a climbing turn, and reached a height of about 25 feet, with the left wing well down. Whether the angels whispered to him or whether he heard the agonised cries of his colleagues is not reported, but he was observed to push the stick full forward and centralise rudder, which enabled him to just get out in a down wind landing on to the hill-top. Many fervent prayers were muttered!

Sunday was another excellent day with an unbroken record of promising "hops." B. Vigers, of Imperial Chemicals, Northwich, did his first stuff on the Saturday, and on the Sunday went off the top and had two quite good flights. He is intending forming a branch of the Midland Club at Northwich, Cheshire.

Jersey Gliding Club

Sunday, November 25th.—No flying had been possible on the three previous Sundays for various reasons, and although no wind worth speaking of from any direction was available, it was not raining, so we decided something must really be done.

We now have the ZöGLING out at our usual site and the DAGLING is to emerge again in the spring with a nacelle. Anyway, we carted the ZöGLING out and rigged complete with the new flying wires as specified by the B.G.A. Owing to the lack of wind we had a very fast time. Five members had flights, and we all had practice at landing round about 30 m.p.h., which is no doubt useful experience.

Sunday, December 23rd.—Another fine Sunday at last, and there was no hesitation on the part of the early members as to whether the ZöGLING was to be rigged or not. Consequently she had been carted out and was ready for flying by 11 a.m. There was a nice wind blowing from S.W., which is from our most suitable direction, and we had a good day's sport and found the ZöGLING behaving better with the helpful wind. The best timed flight was one of ten seconds, which is also the best on the machine so far. Bright spots on our horizon are three possible new members.

Sunday, December 30th.—Rather gusty conditions prevailed and our best time on the ZöGLING has now risen to 13½ seconds, so we are not losing much ground.

It seems, unfortunately, that our most favourable wind, i.e., S.W., prevails mostly in the winter; we have certainly been blest with that when it has been otherwise suitable on recent Sundays. We have not, however, done a full term yet so we have hopes of better progress when the evenings begin to lengthen.

Two of the probable new members had shots to-day and seem quite keen.

I do not quite know if we count, and, if we do, that this is the place to say things, but our members heartily endorse the sentiments of the Furness Club re the *real* difficulties faced by gliding clubs, and I am afraid that if we had waited until we were assured of the income per year suggested by the B.G.A. we should not have done much gliding on this earth. [It is the Air Ministry, not the B.G.A., which has insisted that a club must have a certain minimum subscription and flying membership before it can affiliate. No restriction has yet been imposed on the right of any club to earn a portion of the subsidy, and there is certainly nothing to stop every club in the country from doing as much gliding as it can.—ED.]

At the present we feel we should get some really useful help if the Government would let us have an old army hut cheap to serve as a hangar, and send someone over with a decent machine to give us some instruction, advice and a few demonstrations. We have got as far as we have by book and a whole lot of work.

Devon Gliding Club

The inaugural meeting of this club was held in early January at All Saints' Institute, Exmouth, according to the *Devon Gazette*.

Capt. Corbet Bercher took the chair, and about 25 people were present. A 40-acre field near Withycombe Raleigh has been obtained, a primary Dixon glider "is being assembled," and gliding is to commence at Exmouth on April 10th. Four instructors have offered their services, three of whom are ex-R.A.F. members. Two ground engineers have been appointed. The hon. secretary is Mr. S. G. Tolman, and treasurer Mr. P. Wills (not the P. Wills who is treasurer of the B.G.A., but the local manager of Barclays Bank). The president is Mr. A. C. Reed, M.P. for Exeter. It was decided that the headquarters of the club should be the London Hotel, Exmouth. The subscription for flying members is to be two guineas; non-flying, one guinea; entrance fee, 10s. 6d.

The claim is made that this is the first gliding club to be formed in the west, but a "Barnstaple and North Devon Gliding and Aero Club" held its inaugural meeting on October 27th, 1933. Whether it has held any other meeting since then, we have not been informed.

Activities in Nottingham

An attempt is being made to re-form the Nottingham Gliding Club, which has not been active for some time. Mr. R. C. Powerbutts, of 426, Woodborough Road, Alexandra Park, Nottingham, proposes to circularise various local bodies who are likely to be interested; also to get in touch with those formerly connected with gliding in the district, and then, if prospects seem good, call a general meeting to get things started. Mr. Searby has sanctioned the use of his own private ground for primary training.

Mr. H. A. Searby, who in 1931 started what was believed to be the first British gliding school, has now completely recovered from the serious illness which caused him to close the school in 1932, his former gliding colleagues will be delighted to hear. He now wishes to help in the resuscitation of the old Nottingham Club, and writes that he has plenty of material to offer for a club's use, including a permanent schooling ground, with permanent hangar specially erected for the purpose, and with one end set off for social accommodation; also one ZöGLING in perfect condition, a secondary machine now being covered, and a towing car in excellent condition.

The school referred to was of limited scope, and was not a profit-making concern; the idea was to train beginners in the use of the controls before passing over to the Nottingham Gliding Club, where they could then take their places with the more experienced members with less risk of damage to the club's machine.

Club wanted for Somerset

A correspondent writes wishing to be put in touch with anyone in his district who is interested in gliding, with a view to forming a club. Address enquiries to: D. M. Doran, Uplands, Winscombe, Somerset.

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