THE SAILPLANE *and* GLIDER

Official Organ of The British Gliding Association

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Editorial Comments

The Grouse Have It

EVERYONE will sympathise with the Midland Gliding Club, and especially with their chairman, Mr. Hardwick, in the loss of the action which he has been defending in the Chancery Division, reported on page 60 of this issue. It is to be hoped that the club will after all be able to find the soaring site which it deserves. Mr. Hardwick has, not for the first time, let himself in for much trouble and expense for the furtherance of gliding and soaring, and we all owe him a debt of gratitude for the spirited fight he has put up, not only on behalf of his own club, but for the gliding movement as a whole.

The plain fact is that the movement has not yet built up the prestige that it needs in order to prevent its real purpose being misunderstood. When gliding is thought by most people to consist of showing as large a public as possible how clever one is at defying the laws of Nature, it is little wonder that country-lovers, backed by the local Press, should insist on its being done as far as possible from the beauties of the countryside. Even in the terms of the injunction, the act of flying a sailplane is referred to, not as a soaring flight, but as a "gliding exhibition"!

Club Representatives

If the British Gliding Association in its new form is to have the confidence of the Air Ministry in entrusting it with the administration of the gliding subsidy, the Ministry's wishes as to its constitution will have to be carried out in the spirit as well as in the letter. There has been a tendency lately for clubs to save trouble and expense by choosing some resident in London district to represent them. We think, for the reasons given above, that care should be exercised in such choice; more particularly, if anyone is willing to pay for membership of a distant club without getting anything in return but a seat on the B.G.A. Council, the club concerned should not be kept in ignorance of the policy for whose furtherance he has done so.

The old B.G.A. was torn with internal dissensions, but everyone will admire the public-spirited action of the best elements among those who disapproved of its present constitution, in putting the good of the movement before their own personal feelings and standing aside to let the new body get on with its work in a spirit of co-operation. It is up to the clubs to see that their central body is one which not only preserves that spirit but also knows its business. Would-be representatives should be asked for their qualifications for the post; particularly for a record of what they have recently done in the way of flying and of club organisation. Have they always advocated that the B.G.A. should be under the clubs' control, and that the subsidy should go primarily towards club equipment? Finally, whenever the representative attends a Council meeting, he should be required to send to his club immediately a full written report of the part he has taken in its proceedings.

German Distance Flights

ON March 8th Hans Fischer, in the sailplane WINDSPIEL, flew from Darmstadt to Saarbrücken, 87 miles. It was a "goal-flight," i.e. he intended to get there. On arriving, he estimated that he could have gone on flying for another two hours. The start was made by aeroplane-tow, and the flight lasted from 11.45 a.m. till 2.45 p.m.

Four days later, on the 12th, Hofmann flew exactly the same distance on his new machine, RHÖNSPERBER, a new design by Jacobs, of which we hope to give a description later. The flight was from Darmstadt to the Luxemburg frontier.

We give below the upper air observations at Darmstadt at 7 a.m. on each of the two days. Heights are in feet, temperature in degrees Fahrenheit, and relative humidity in percentage of the amount required for saturation. It should be noted that the 7 a.m. ground temperature (at 445 feet) would have increased later in the day.

MARCH 8TH.			MARCH 12TH.		
Ht.	*Temp.*	*R.H.*	*Ht.*	*Temp.*	*R.H.*
445	28	83	445	32	77
1,640	23	83	660	32	74
2,950	16	88	1,310	32	72
5,570	5	93	2,950	28	71
7,880	−6	98	4,600	36	61

Thus there was plenty of instability on the 8th, but the stable conditions on the 12th suggest that considerable change took place before that day's flight started.

From Here and There

Austrian Gliding Statistics.—From statements made at a recent national gathering of air pilots, the *Neue Freie Presse* gathers that there are 200 gliders and sailplanes in Austria, of which 150 belong to the unions of the Austrian Aviation Association. Between the autumn of 1933 and December, 1934, 358 gliding certificates were obtained, of which 200 were "A's," 106 "B's," and 52 "C's."

* * *

Hopes and Intentions.—An official of the Southdown Gliding Club is reported to have told the *Brighton Herald*: "It is our intention to establish on the Downs a national school for gliding—the first in the country. We hope to have this started by the end of 1936 or the beginning of 1937. On the Downs there is ample scope for auto-towing, and we hope to introduce gliding boats which can operate between the Dyke and Beachy Head."

* * *

German Coastal Competition.—The first big German soaring competition of 1935 was due to take place on the Island of Sylt (in the North Sea) from March 18th to 31st. Four new RHÖNADLERS and 12 RHÖNBUSSARDS and GRUNAU BABIES were entered; also the STORMARN, of special design (illustrated in the January SAILPLANE), with its designer and pilot, Möller. Forty pilots of the Nordmark were to demonstrate advanced soaring. The competitions at the Rotes Kliff in Sylt should be very interesting on account of the possibility of soaring at the seaside in still wintry weather, and will show whether thermal soaring can be done in March.—G. KLAPPROTH.

* * *

B.A.C. (1935), Ltd.—A company with this title has been formed, the address being Victoria Road, Feltham, Middlesex. The first directors are Robert Kronfeld ("Technical Director of Société Française d'Aviation Nouvelle") and James Lowe. The original British Aircraft Company, whose assets and goodwill the new one has presumably taken over, was founded in 1930 by the late C. H. Lowe-Wylde, who produced a series of gliders and sailplanes, and finally, by adding a motor-cycle engine to a B.A.C. VII. sailplane, the "Drone" ultra-light aeroplane. Robert Kronfeld is, of course, the well-known Austrian pioneer of soaring flight.

* * *

The "Rhönbussard": A Correction.—The wing-loading of the RHÖNBUSSARD was correctly given in our last issue as 15 kg. per sq. metre, but this was wrongly translated as 2·1 lbs. per sq. ft., whereas the correct figure should be 3·1 lbs. per sq. ft. A correspondent expresses surprise that the machine should be allowed to be dived at 155 m.p.h. but auto-towed at only 50 m.p.h. It should be remembered that climbing on a cable is done with the elevator held well up, and imposes a great strain on the structure. The figures for permissible speeds were taken from the manufacturer's circular, and the calculated performance from that and from an article in *Flugsport*; we do not profess to know how they were arrived at.

The High-diving Record.—On February 28th Clem Sohn, stunt flyer and parachutist, fastened on to himself a pair of "wings" stiffened with steel tubes, which stretched between his arms and his body, added a piece of fabric between his legs, and jumped out of an aeroplane which had taken him up 12,000 feet over Daytona Beach, Florida. On the way down he appeared to perform loops and all the usual aerobatics, with a few more besides. Then, at 2,000 feet, he closed his wings and opened a parachute which he had thoughtfully included in the outfit. This must be the nearest anyone has yet got to the sort of flying one does in dreams—nearer even than sailplaning.

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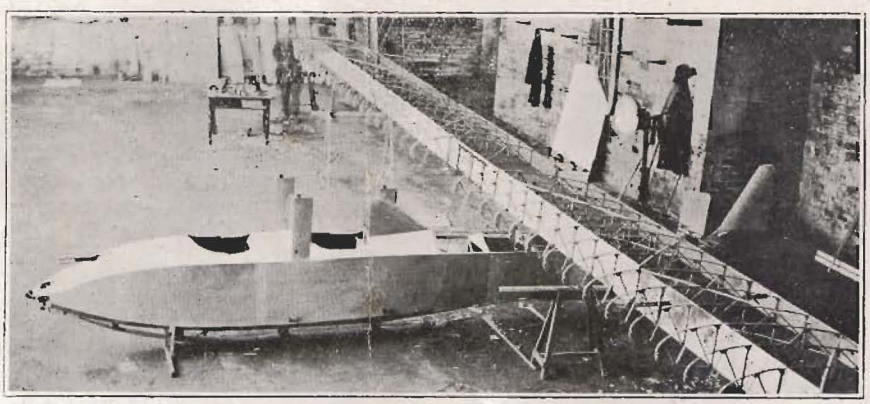
Flying Legends in the East.—We mentioned in the March issue the claim of a Turkish writer that a compatriot of his flew across the Bosphorus in the 17th century. Prof. F. H. Babinger, of Berlin, in writing to *The Times* to discountenance the story (and who wouldn't?), gives the interesting information that Dr. B. Laufer, of Chicago, who died last year, once published an admirable paper on early flying experiments in the Far East. The Hon. J. Philipps sends extracts from a translation from an Egyptian papyrus in the British Museum, dated 1600 B.C., which should push the history of gliding about as far back as it can go. The story concerns the daughter of the Prince of Naharinna, who was to be given for wife to the first suitor to fly to her window; it was some time before the winning competitor "conjured his limbs," and succeeded in making the required spot-landing. As to the possibility of such a feat, we may recall a recent statement in THE SAILPLANE that gliders can soar up the lee side of a building "to roof level—if they don't dart in at a window on the way."

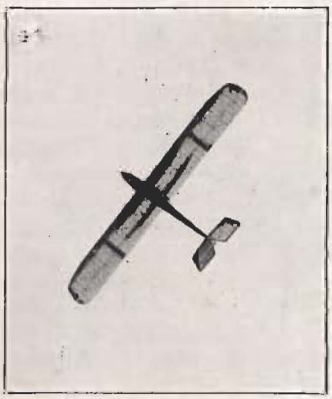
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In Parliament.—Sir P. Sassoon, asked on January 31st by Capt. Balfour (Isle of Thanet) as to the position regarding the gliding subsidy, replied: "This question has been the subject of discussion between the Air Ministry and the representatives of gliding, and as a result I hope that a concrete scheme for the allocation and administration of the proposed grant will be submitted to my department for consideration at an early date."

On March 19th Mr. Turton (Thirsk and Malton) moved as an amendment to the Air Estimates: "That, in order to educate the people of this country in the art of aeronautics and to develop home industries, this House is of opinion that further assistance should be given to the light aeroplane clubs and gliding movements, and that the manufacture of light aeroplanes and gliders in this country should be actively promoted." Lord Apsley said: "Flying as a sport will probably not last very much longer; gliding is likely to be far more popular as a sport." Sir P. Sassoon, in the course of his reply, said that, although progress in gliding had been slow, he thought those interested in it were satisfied when he announced last year that £5,000 was to be given towards the clubs. The amendment was, by leave, withdrawn.

The Stedman Two-Seater Sailplane





The Stedman two-seater before and after completion. The view on the right is from directly below.

THIS machine, known as Type TS-1, was designed by Mr. R. F. Stedman, of Leeds. The first one to be built was finished last summer, and had its trial flight on July 21st, and its first soaring flights on August 12th at Sutton Bank last year. Since then it has been flying regularly there, taking up passengers and pupils for instruction. Latest news, for instance, is that Mr. Stedman spent March 24th giving dual instruction to pupils for about 35 minutes per flight, getting up to 1,000 feet in a soaring wind. In non-soaring winds it is launched by the winch, usually going up to 500 feet before casting off the cable.

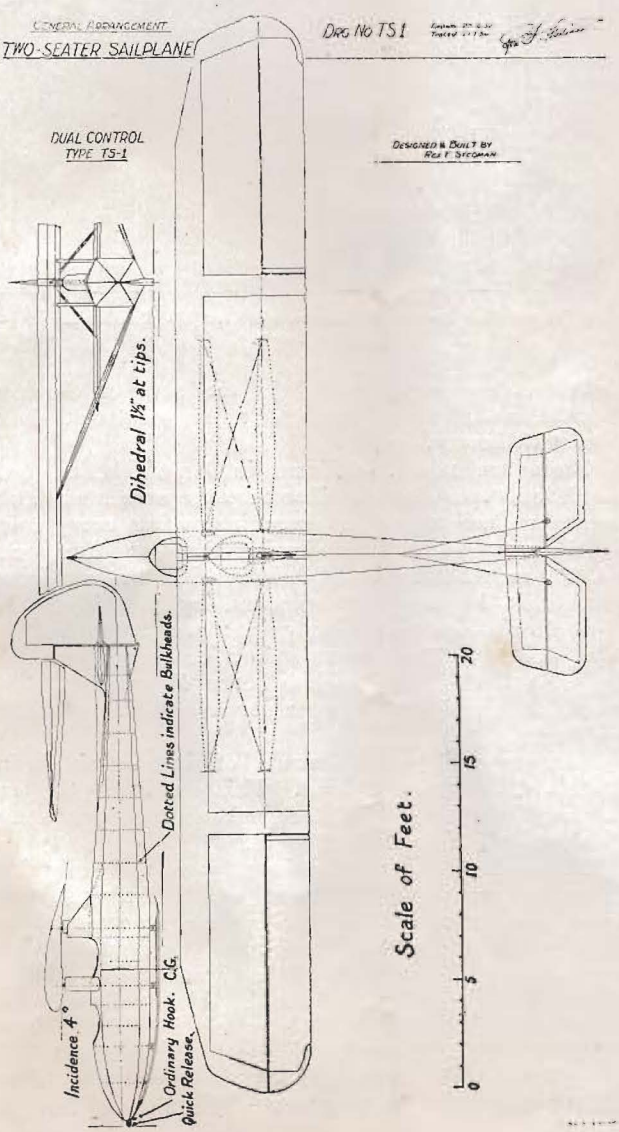
There is dual control, and both dash-boards are fitted with electric light. Two sets of instruments are provided.

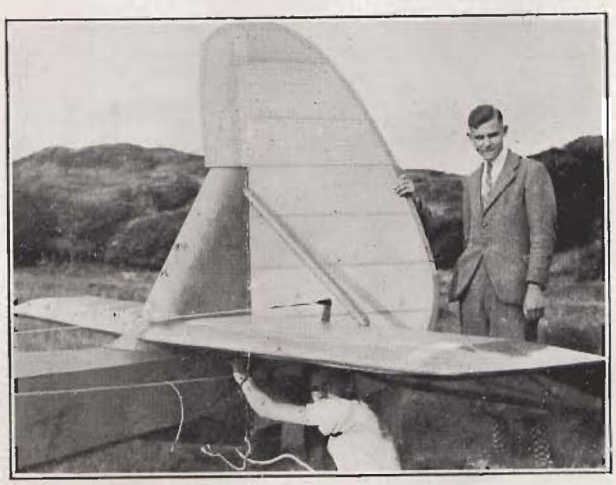
The wing section is Göttingen 535, modified in depth owing to the wing being semi-cantilever; there is wash-out of incidence at the wing-tips. The tail has R.A.E. standard tail-plane section.

Dimensions, etc., are as follows:—Span, 50 ft.; chord, 6 ft.; aspect ratio, 8·3; length, 25 ft.; area, 295 sq. ft.; weight empty, 424 lbs.; with two up, approx. 724 lbs.; loading, 2 lbs. per sq. ft. when flown solo; 2·48 lbs. per sq. ft. with passenger. The flying speed is 28 to 30 m.p.h.; stalling speed, 24 m.p.h.

During the Easter meeting at Sutton Bank the machine is expected to be giving passenger flights to the public.

Complete sets of blue prints for constructing the machine are obtainable from the designer at 67, Meadow Road, Leeds, 11.





Assembling the tail unit of the "Stedman."

Motorless Flying in Poland

By A. T. LUTOSLAWSKI

BOTH as a stepping stone towards the piloting of power planes, and as an end in itself, gliding has many fervent followers in Poland. There it is not only a sport for those who can afford it, but one for those who feel that they want to practise it.

At first spasmodic and improvised, the sport is now organised under the rules of the Aero Club of Poland, which has supreme authority over its affiliated organisations. There are ten local clubs, which share between them the territory of the country, so that only lower units can now be created.

The first impulse towards gliding came from the students, and they still form the bulk of its supporters. They have founded the centres of tuition, and the most important one, that of Bezmiechowa, owes its existence chiefly to the efforts of Mr. Lopatniuk. The workshops where the gliders are made have also been founded by the students, as were the works of the R.W.D. in Warsaw.

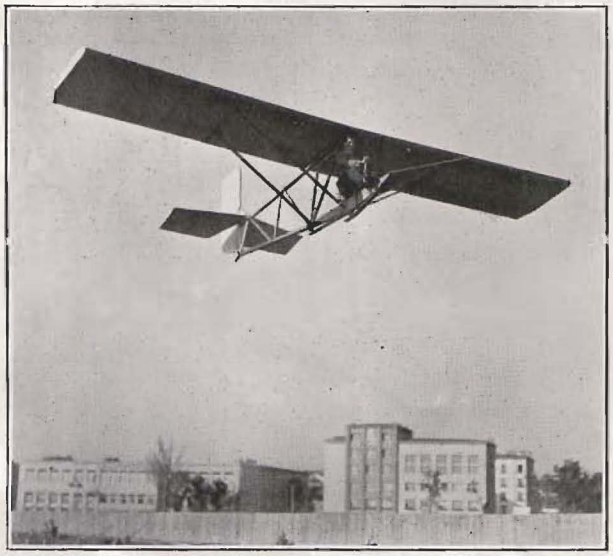
The centre has a staff of instructors and engineers, and it offers: Fortnightly courses of instruction for the "A" gliding pilot's licence, courses for the "B" and "C" licences, as well as the opportunity for "C" pilots to improve their performance. The fee is of £3 for the "A" and each of the other licences, including the cost of insurance against accident. The cost of board at the school club-house, where the catering is simple but satisfactory, works out at 2s. 6d. per day. (Poland is an agricultural country.) It will be seen that the three licences, as well as nearly two months' living, can be obtained for about £15.

Many young people from Esthonia, Latvia, Finland, Rumania, Hungary, etc., have received instruction at Bezmiechowa, taking home the well-tried designs of the RAVENS, LAPWINGS, MOSQUITOES, on which they made their first flights. The standard of gliding there is only second to that of the best Germans, and it is progressing rapidly.

Bezmiechowa was chosen because of its atmospheric conditions and of the ascending currents which it possesses. It is situated in a picturesque village near the Carpathians, and the access from the three miles distant railway station is by horse-drawn carts, which both add to the very rustic charm of that place, and offer a contrast to its prevailing activities. The men who are masters of the most modern of sports seldom see that attribute of the modern world—the motor car. Apparently the dislike for anything that is power-driven is so deeply rooted in the soul of the true Bezmiechowian that the roar of an engine would shake him with horror.



A sailplane landing at Warsaw after a 200-mile aero-tow from Lwow.



A "Scout" training glider, which weighs only 165 lbs. The tow-rope can be seen against the background of the wing.

There are now 22 gliders in Bezmiechowa, both single and two-seaters. The records were standing a month or two ago—they keep improving every week in the season—at the following figures:—Distance: ca. 130 miles, flown by Mr. Offierski in a storm front. Duration: 11 hours 58 minutes, by Mr. Mynarski. Altitude above the starting point: over 9,000 feet, by Mr. Bleicher. The women's duration record was held by Miss Modliborska with 5 hours 48 minutes. The duration record with one passenger up was of about six hours.

Another well-known centre of instruction is at Polichno, in central Poland. This one is for the less advanced student, while Bezmiechowa has become the "university" of motorless flight.

The craft used are of various types, and several of them are standardised. Some of the training types have been correctly landed with the controls left loose —a proof of their self-stabilising properties. The workshops of the students of the Lwów High Technical School (known as Polytechnic, but essentially different from what is called a Polytechnic in this country) deliver the C.W.J.-SCOUT, tuition type, for about £70, the I.T.S. training type for £150, and the thoroughbred C.W.5 BIS for about £300. The licence for the

building of a SCOUT costs, together with drawings, instructions, etc., £4. All the types are built on the principle of interchangeable parts, which are always kept in stock for immediate delivery.

Very often an outpost of gliding is formed in the following manner: A group of schoolboys (over 16 years of age) get interested and eventually secure from the Aero Club that an instructor is sent to them, generally a young fellow on his holidays, who has already been once or twice to Bezmiechowa and there got his instructor's licence (the next step to the "C" licence). With his help they build a SCOUT or a RAVEN training glider, on licence. They look about the country to find a likely hill, and they start to fly, very awkwardly at first, but the enthusiasm is never lacking.

Those that are better at it go to Bezmiechowa for a "B" and "C" course, and on their return bring with them some experience and the plans of a C.W.5 BIS or a MOSQUITO record-breaking type of the Warsaw Sailplane Manufacturing Co. To build one when there are more willing hands than can be employed does not cost very much, and if some merit is shown by the group they may get a small subsidy from the government. A MOSQUITO is eventually built, and then it is flown—then a few more.

Soon somebody begins to design a new type for himself—plans are sent for approval to the experts, and if they are found good they are executed. The boys can not only glide by then, but they know a thing or two about flying in general. Those whose standard of fitness permits them to do so will take advantage of the free flying instruction offered by the Air Force authorities—and they probably will be all the better pilots for their early efforts on the village hill. Naturally they can only be a small fraction of the total—the rest either drop the practice of the sport in later life, or they come now and then to the gliding centre, just to see if they can beat their last year's record of half an hour. And it is ridiculously cheap.

This cycle of evolution has already taken place in many small provincial towns of Poland, although most of them are rather old-fashioned. The movement is already strong enough to require help from the authorities only for the purposes of research and of the improvement of the highest class of pilots, but not for the further increase of interest in gliding.

"Glider trains" are sometimes towed for considerable distances from town to town, and although perhaps this has not yet become a practical means of transport, some eight persons can thus be taken up by means of an aeroplane normally only capable of carrying two or three.

It is generally admitted that the question of expense resulting from the high standard of safety required is almost the only serious reason barring the development of flying on a larger scale. Gliding considerably lowers the cost of tuition, and it certainly will evolve a form of light aircraft which will be both more economical and safer than the aeroplane derived from the high-powered service plane, as still are, in a more or less remote degree, practically all the types used by sportsmen of to-day.

Advanced Soaring

By P. A. WILLS

3. Lessons of 1934

THE next step is to learn to complete the dozens of necessary preparations for a cross-country flight in quick time. This is vital, because on an average thermal day favourable conditions do not prevail for more than at the most five hours, between 11 a.m. and 4 p.m., consequently there is no time to waste.

Before the start can be made, the machine has to be got out of the hangar or trailer, assembled and inspected, then taken to the top of the hill with a launching crew. Then the barograph must be set and duly sealed by some competent person. It must then be mounted in the machine in such a way that there is some hope of it continuing to work after the shock of the launch.

Then one must don every available garment. I have never yet been sufficiently clothed on a cross-country flight in an open-cockpit machine. At 5,000 feet it is some 25° colder than on the ground, so brave the jeers of the waiting launching team and put on everything: extra stockings, jerseys, coats, gloves, and parachute (if any). Now harness yourself in, have a last look round, and launch.

It is practically certain that you will go straight to the bottom.

Have a good laugh, get out and undress, remove the barograph, and see how long the whole performance has taken. It may well take two hours—this must be reduced. With the SCUD, which is a rapid assembler, it was once done in just under half an hour.



Go on doing this every available day until one of two things happens: you are lynched, instead of launched, by your fellow members, or—you click. When the great day does arrive do not hesitate, but when at a good initial height go off resolutely with the up-current.

In the last article I took it for simplicity's sake that the up-currents were ordinary cumulus-forming columns. It is possible, however, that you may strike a "front" of sorts; this is easily distinguished by the fact that it forms a line or street of clouds instead of isolated woolpacks. A small front may produce a bulk

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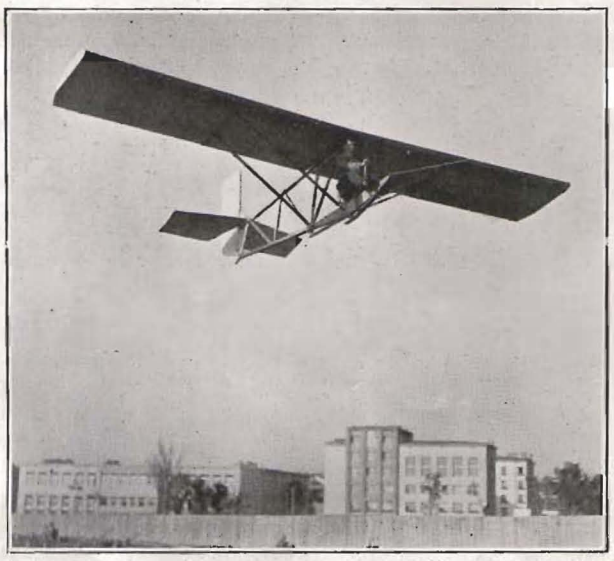
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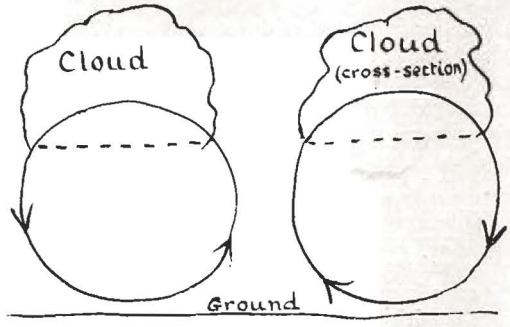
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of rising air 20 miles long and half a mile deep, and in this case accurate and narrow circles are obviously unnecessary, though in case of doubt they will not do any harm. Once well up, however, it is worth striking out along the line of the front.

On one exciting flight the sky was full of parallel sausages of white cloud with strips of blue sky dividing them. This I afterwards learnt is Sir Gilbert Walker's "cell" formation, and the vertical currents are then in the form of gigantic drain-pipes moving along their length.

It will be seen that on such a day lift can be found *alongside* the cloud-rolls, and I actually climbed beside



one roll quite 500 feet above its base, and flew alongside it for some miles with one wing almost in it and the other in clear sunshine. I want to find out on another such day if lift extends over the entire area between the two rolls of cloud.

On an ordinary thermal day the air between the areas of lift is always gently and steadily descending—2 or 3 ft./sec. is the usual figure. Thus one's normal rate of descent is sadly doubled. I wonder if from this rate of general atmospheric descent a rough figure could be calculated which would give the local proportionate areas of rising and descending air, i.e., a sort of factor of instability.

The nature of the starting-site affects the method of get-away considerably. I believe that the vertical cliff at Sutton Bank has the effect of cutting off an advancing current of rising air. It is noticeable that on an unstable day, with the sky full of cumulus everywhere else, there is nearly always a large circle of cloudless blue sky over the bowl there. On one day there the sky was full of thermals which faded out and left one at about 3,000 feet, at a point when it looked as if the base of the column reached the foot of the cliff. All the time one was circling in a clear sky. I finally got away by gliding well inland from such a thermal, and then struck another which obviously originated at the top. I think therefore the ideal site would be one about 600 feet high, with a slope of, say, 1 in 4, and a road to the top—somewhere in the west of England, for distance flights. A seaside site may not be good for advanced soaring, as a sea-breeze is presumably stable until it has warmed up by traversing a few miles of land.

We now come to dynamic lift. This is always held out as the hope of the distant future, but I believe we have been using it in mild forms all last year. It is a common experience to strike out from the hill *into the wind* as far as one can go, watching the variometer. On many days at Dunstable one can get half a mile out without loss of height. When, however, one turns downwind to retrace the course, the variometer shows a steady loss of lift the whole way back. Then there have been several flights from the Dunstable ridge over three or four miles of flat country to Ivinghoe beacon. These have been made by simply going off at varying heights over 1,500 feet in a straight line and carrying on indefinitely *into the wind*. Lastly, in certain winds at Sutton Bank there is always a patch of lift over the small wood at the top of the main road hill. Again and again one can come along at about 150 feet, and on reaching the wood, by swinging sharply *into the wind*, gain an extra 100 feet in the turbulence set up over it. This could hardly be caused by a thermal current, the wood is right on the cliff-edge, and it is not likely a thermal could originate some way out from the foot of the hill and strike the patch of air continually and exactly over the wood. Also the lift extends only about 300 feet up, which is what would happen to turbulence caused by such an obstacle. Over a flat field the surface air is comparatively slightly turbulent, but this turbulence extends to a considerable height. Over a rougher surface, say a wood, the surface air is more turbulent, but is actually smoothed out higher up.

I believe that this dynamic lift is greatest on a day when the air contains a great number of small gusts—ripples—and is not so noticeable on a day with a high wind, and fewer, larger gusts.

The scientists will by now, no doubt, have torn out their ultimate locks of hair, so I will stop.

(To be continued.)

(Illustrations by H. McClelland.)



Follow-my-Leader.—The *Star* reports that preparations are being made for an aeroplane to tow nine gliders simultaneously from Moscow to Irkutsk, over 3,000 miles. If successful, a regular service of such "air trains" will be developed, it is stated, chiefly for carrying fast freight and parcels post.

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Gliding in Norway.—The Norwegian journal, *Fly,* in an article on gliding by Prof. Watzinger, states that a gliding school has been started near Oslo under the leadership of Lieut. Lund, on the initiative of the Thorsk Aeroklubb, and has had a steadily rising attendance. There is also a gliding club at the Norwegian Technical College, who have built a HOLS DER TEUFEL type machine and flown it near Trondhjem; it is designed both for practical flying and for scientific work.

Sailplane Construction for the Amateur

By W. BUTTERFIELD

Ordering and Selection of Material

HAVING taken possession of a suitable workshop, a skeleton kit of tools, and a comprehensive set of drawings, the next step is to prepare a schedule of quantities covering all the material required to construct the machine.

If the draughtsman has done his job well a list of parts and the material required to make each part will appear on every assembly or component drawing. Components or parts which can be ordered out as standard will be clearly specified, the grade and purpose for which the material is to be used should be clearly stated, and the material specification number, when known, must be quoted. If this has been done on the drawings, the preparation of a summary schedule for ordering purposes will be an easy matter.

A typical schedule is appended.

The great advance which has taken place in aeronautical design and performance since the days of Lilienthal and Pilcher may be largely due to the improvements in materials which are now available for construction. To-day the designer can choose from a large range of material precisely the physical properties required to produce a structure of maximum strength and minimum weight, a most economical structure. The fact that the range of material is so varied may easily lead the inexperienced into trouble if the appropriate specification and methods of working are not strictly adhered to: e.g., artificially seasoned timber may become brittle; certain brands of steel require heat treatment; aluminium alloys may become little better than soft aluminium unless the special instructions for working are strictly observed; varnish is ruined by wrong use of thinners, etc.

The exact qualities of present-day materials can be accurately predicted and guaranteed, and the designer is assisted in making his choice by the very complete range of specifications issued by the British Engineering Standards Association, 28, Victoria Street, London, S.W.

For materials not included in the B.S.S. series there are the D.T.D. specifications issued by the Director of Technical Development, Air Ministry, and obtainable from H.M. Stationery Office, Adastral House, Kingsway, W.C.2.

It is a fallacy to keep on repeating that, because sailplanes and gliders are lightly loaded as compared with powered craft, any commercial material will do. Sailplanes have been known to break up in the air, and gliders to break up in a normal landing.

There seems to be a general impression amongst amateurs that anything which has been manufactured to Air Ministry Specification must necessarily be costly.

A Rough Arrangement of a Typical Material Schedule for a Sailplane

LIST OF TIMBER SCANTLINGS FOR ONE "GOLDEN EAGLE." MARK II

Drg. No.	Part No.	Description.	Material.	Specification.	No. Off.	Sizes Ordered.	Condition.	Rough Wgt.	Ordered From.
				MAIN PLANES					
100	—	Front Spar	S. Spruce	Grade A ...	2	5½" × ½" × 16' 0" ...	Machine Planed	—	Slingsby, Scarbro'
,,	—	Rear ,, ...	,,	,, ...	2	4½" × ½" × 16' 0" ...	,, ,,	—	,, ,,
,,	—	Formers	Birch Ply	Commercial	4	5½" × 5/16" × 3' 6" ...	5 Ply	—	Venesta, Ltd.
,,	—	Gussets	,,	3 v. 3 ...	2	3' 0" × 2' 6" × 1/16" ...	3 Ply	—	,, ,,
,,	—	Leading Edge ...	,,	,, ...	12	3' 0" × 2' 0" × 1 m/m	Sanded	—	A.P.P. Co., Ltd.
100/1	—	Ribs (Former) ...	S. Spruce	Grade A ...	30	Made up to Sketch	Complete ...	—	Abbott & Baynes
,,	—	,, (Compression)	,,	,, ...	8	,, ,,	,, ...	—	,, ,,
				FUSELAGE					
101	—	Longeron	S. Spruce	Grade A ...	6	½" × ½" × 18' 0" ...	M/c Planed ...	—	Abbott & Baynes
,,	—	Bulkheads	Birch Ply	3 v. 3 ...	4	3' 0" × 3' 6" × ⅛" ...	—	—	Borst Bros.
,,	—	Panels	Gaboon Ply	Commercial	12	3' 0" × 3' 0" × 1 m/m	Sanded	—	Smiths Ltd., Grimsby
,,	—	Beadings	Oregon Pe	Selected ...	6	½" × ½" × 12' 0" ...	M/c Planed ...	—	,, ,,
—	—	Skid	Ash ...	,, ...	1	4" × ¾" × 7' 0" ...	,, ...	—	Local Timber Yd.

Drg. No.	Part No.	Description.	Material.	Specification.	No. Off.	How Ordered.	Finish.	Finish'd Wgt.	Ordered From.
				MAIN PLANES					
100/2	—	Wing Root Fitting...	S. Steel ...	2 S 3 ...	6	Made up to Drg....	Finished Welded	—	Quasi-Arc Co.
,,	—	Control Column ...	,, ...	,, ...	—	,, ,, ...	,, ,,	—	,, ,,
,,	—	Torque Tube ...	,, ...	,, ...	—	,, ,, ...	,, ,,	—	,, ,,
100/3	—	Control Pulleys ...	Duraln. ...	3 L I ...	6	A.G.S. 666 ...	Finished Unit ...	—	Brown Bros.
,,	—	,, ,, ...	,, ...	,, ...	4	2-Way with Guard	,, ,, ...	—	,, ,,
100	—	Bolt, ¼" B.S.F. ...	Mild Steel	4 A I ..	14	Finished Article ...	Cadmium ...	—	Rubery-Owens
,,	—	,, 2 B.A. ...	,,	,, ...	20	,, ,, ...	,, ...	—	,, ,,
,,	—	Nut, ¼" B.S.F. ...	,,	,, ...	14	,, ,, ...	,, ...	—	,, ,,
,,	—	,, 2 B.A. ...	,,	,, ...	20	,, ,, ...	,, ...	—	,, ,,
				CONTROLS					
110	—	Ex. Flex Wire Cable	Spec. Steel.	B.L. 5 cwt.	200 ft.	One Coil	Bruntonized ...	—	Brunton's, Musselbro'

Nothing could be further from the truth; the very fact that so many of the parts in general use on aircraft have been standardised makes mass production possible, and the cost of manufacture is thereby considerably reduced.

When comparing the quotations received, a mere glance at the price quoted is not enough. It will be found profitable, when placing orders, to give preference to firms which specialise in aircraft productions, and by doing so many disappointments will be avoided.

By sending enquiries to the various firms who regularly advertise in THE SAILPLANE practical assistance is assured. These firms anticipate your requirements; they are in a position to give advice; they know how to select suitable material, also how to pack and dispatch an order with the minimum of damage in transit.

It is common practice amongst aircraft firms to inspect all material before passing it into the general stores; machined parts are also examined after each operation with a view to localising faults and detecting the trouble at its source.

The majority of the metal parts required for the construction of a primary glider or sailplane can be found in the accessory catalogues of these firms. The parts are all manufactured to aircraft specifications, consequently the amateur will be well advised to use such parts, and thereby have the satisfaction of knowing that his finished machine is equipped with sound material.

The above remarks also apply to much of the timber to be used. If a list of scantlings is prepared, the timber can be supplied in the machine-planed condition to accurate sizes, of a suitable grade and quality for the purpose described. The amateur will find the work of assembly far more interesting than the roughing out of detail parts.

It is hoped that the notes in the next article, No. 4, will be helpful in checking the quality of material and goods as they come to hand.

Correspondence

Barographs for Sailplanes

SIR,

I note Mr. Wills's desire for a barograph suitable for use on sailplanes, and may say that many years ago (about 30, I think) an instrument meeting almost all his demands was made for use with *ballons-sondes*; these weighed but a very few ounces, and gave combined temperature-pressure records, and were so light and strong that they stood the fall of some tens of thousands of feet, and the record was such that it remained readable even after some months of exposure to the weather.

I venture to think that the difficulty is not so much in designing a suitable instrument as in persuading a manufacturer that there is sufficient demand to justify the cost of development.

W. G. COLLINS,
Cambridge.

Anonymous Letters

CORRESPONDENTS who sign their letters with a pseudonym must nevertheless disclose their identity to the Editor, or their letters cannot be published.

In Short

Half a Loaf.—Item from the programme of the National League of Airmen: "Gliding must be put on a sound basis, as an economical half-way house to power flying."

* * *

The Flaw in the Streamline.—"Glider design is beautiful in the extreme. . . . The only objection at present from the æsthetic point of view is some of the enthusiastic heads you see sticking up out of them."—Capt. H. C. Biard in the *Daily Sketch.*

* * *

The Gliders' Uniform.—Although the new German Air Force will wear khaki, members of the Air Sport Union (which includes all gliding men in that country) will continue to wear the Union's sky-blue uniform, according to the *Daily Herald's* Berlin correspondent.

* * *

At Sutton Bank.—Among visiting machines at the Easter meeting at Sutton Bank, according to the Press, are two which will be flown there for the first time: the Leicester Club's ALBATROSS, and the new side-by-side two-seater designed by Mr. Slingsby on FALCON lines.

* * *

German Annual Competitions.—The date of the German soaring competitions in the Rhön Mountains has not yet been announced, but there is a gap in the instruction courses there from July 16th to August 8th, so it may be presumed that the meeting, which usually lasts a fortnight, will be held some time between these dates.

* * *

Silence is Golden.—A Noise Abatement Exhibition is to be opened on May 31st at The Science Museum, South Kensington, with the co-operation of the Anti-Noise League. Unfortunately, Miss Meakin's RHÖN-BUSSARD sailplane, which has spent the winter there, has now been removed, otherwise it might have been given an honoured place among the exhibits.

* * *

Gliders for Palestine.—Arnold Bernstein, the Hamburg Jewish shipping magnate, has presented two gliders to the Jewish Youth of Palestine, according to the *Jewish Post.* They were shipped on the steamer "Tel-Aviv," together with an instructor, and should have arrived on March 17th. No doubt they are intended for the new Anglo-Palestine Gliding Club, described in this journal in January.

* * *

First Solo.—Alfred Nesbit, aged 17, of Hollinwood, Lancs., was inspired by a gliding picture in the *Daily Mail* to spend two months building himself a light biplane glider. On March 10th he took off and crashed from 10 feet without hurting himself. The materials cost him £8. This sum is about what it costs an average gliding club to provide a year's flying for one of its members, but that isn't quite the same thing as doing it all yourself.

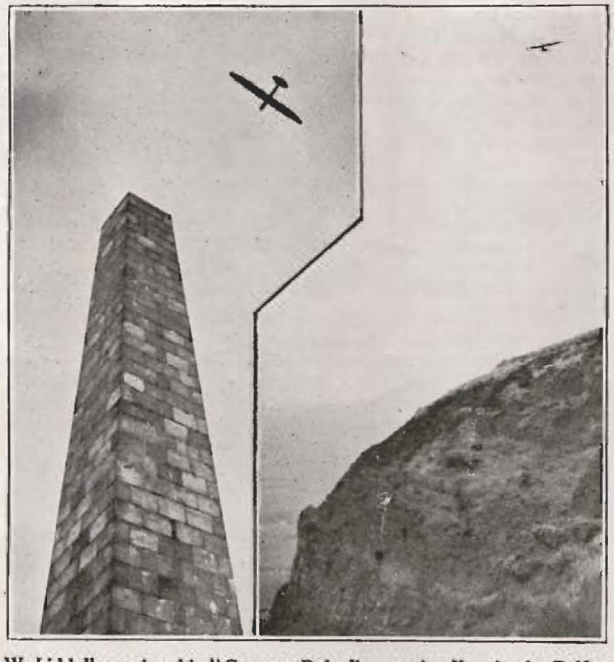
News from the Clubs

Yorkshire Gliding Club

After several wet Sundays during which the interior decoration of the clubhouse was continued, **Sunday, March 3rd,** was welcomed and a good day with the primary training squad resulted in several flights up to 25 seconds by Wordsworth in particular.

On **Sunday, March 17th,** the training squad was out again. The north wind enabled the whole length of the moor from White Horse to Casten Dyke to be used for winch launches. Stedman carried a dozen or so passengers, and was able several times to do short beats between Roulston Scar and the Dyke. The "C's" brought out HOLS, and obtained much good climbing practice on the end of the winch cable.

Ulster Gliding Club



W. Liddell soaring his "Grunau Baby" over the Knockagh, Belfast Lough; showing (left) the War Memorial on the hill top, and (right) the windward face of the hill, with Cave Hill, Belfast, faintly visible on the horizon.

Saturday, March 9th.—GRUNAU BABY II. was flown by Liddell and Mackie from the Knockagh for 1½ and ¾ hour respectively, at 600 to 800 feet. This was Liddell's first experience of this site, and we presume he was suitably impressed, especially by the famous down-draught which caught him napping and deposited him far from anywhere, when he attempted to come in for a landing. Even Mackie, who has had plenty of experience of it, admitted to being decidedly "rattled" by it. He appeared to lose some 500 feet in somewhere around 10 seconds, and came in to land at about 80 m.p.h., quite safely as it turned out.

He (Mackie) being in the south some week or two ago called in at Baldonnell and was welcomed with open arms. He actually had a flight in the new DICKSON primary, auto-towed, but was chiefly interested in the "crack" going on. From all accounts, there should be any amount of fun soon in the Free State; Baldonnell people building a GRUNAU BABY II. and the Dublin Gliding Club with no less than five SCUDS on the stocks. One is overpowered! Let us hope they all materialise.

Southdown Gliding Club

Constructionall work is proceeding. Another club machine (nacelled special R.F.D.) is almost completely re-built; and a member has almost completed the construction of a GRUNAU BABY for private use—making the sixth machine to have been constructed by club members. Plans are being drafted for the large hangar and workshop, with adjoining club house, which are shortly to be erected on the new site in the Devil's Dyke area, just to the north of Brighton. A Trojan car, specially reconstructed by the Cavendish Engineering Co., has appeared and evoked much interest. It is designed for retrieving and auto-launching, and for cable-winding purposes, the last-named being a tedious business at best by older methods.

Of the ten week-ends under review flying has proceeded on nine; that of February 24th being devoted to repairs owing to the gale and rains. Noteworthy bits of flying are the following:—

Test flights from north face of Fulking Hill, by Reffell, in the TERN (new Dyke site), in very oblique winds from a westerly direction; and first flights from the crest of a 200 ft. slope at the Lancing site by Coombes and Fripp (beginners). Also a good 27-second flight by Palmer in his own-constructed B.A.C. two-seater, from a slight eminence above ground level, also at Lancing. (All at close of 1934.) Rubick also qualified (for the second time!) for his "A" with a good steady flight of 37 seconds.

January 20th.—Armstrong soared the Palmer-B.A.C. for some nine minutes in about 10 m.p.h. of wind. A new member, Filmer, turned up with his GRUNAU BABY II. and soared it for 29 minutes, well above the hill (Lancing). Palmer had two shots at his "C," but ended with an unintentional contact with a hill-side fence, doing surprisingly little damage to the machine and none at all to himself. Much training work was done, and quite a batch are almost ready to take more "tickets."

January 27th.—Special demonstrations arranged for the Tenant Farmers of the new areas at the Devil's Dyke. Wind blowing at 35/40 m.p.h. up the north face opposite the Dyke Hotel. Filmer brought his GRUNAU BABY and put up a good show. Taking off with an almost vertical lift he went straight up to about 1,500 feet above the Weald during his first beat to the westward, and was observed to hold her down at a fast flying angle, in the gale blowing at that height, in order to keep out over the plain. Farmers fascinated (agreements provisionally concluded, drafts to be signed later!), and everybody pleased.

February 3rd.—Some good training work done. Hatcher and Jameson brought their PRÜFLING, reconstructed by the Cavendish Engineering Co., and disclosed a smart, clean, well-performing machine. Chief Ground Engineer Little pronounced the machine O.K. in every way, and Stratton made his first "motorless" flight (for some eighteen months) in it. Universal approval of the machine.

March 3rd.—More good training, and some "spot" and "directional" exercises by "A" and "B" members. Standard of flying reported as greatly improved by all these.

March 10th.—Wind 25 to 35 m.p.h. at 500 feet, and weather generally bitterly cold. Wind straight up Lancing N.E. slope. PRÜFLING soared by Little and Armstrong for longer periods, but shorter attempts by Hatcher and Jameson for their "C's" just failed, conditions being very bumpy, and the gusts very tricky at low altitudes.

The **Annual General Meeting** was held on January 27th, and the Annual Report and Statement of Accounts (subject to "Treasury" audit, by the way, and not, as a reader gathered, expressed in percentage form only) were approved. Plans for the future were outlined, though the Press in attendance gave a rather more colourful portrayal of these than was expected! Nevertheless these proposals are well in hand, and negotiations with local authorities concerned, with the Commissioner for Crown Lands and with the Brighton Road Racing Company, backed by the support of high authority, are in the last stages of successful conclusion; all of which means that the South Downs are destined to become the locale of one of the most important gliding institutions in the country; a national training centre, in fact, is foreshadowed.

Officers elected for 1935 include the following:—Chairman, R. F. Dagnall; Treasurer, Dr. V. C. Hackworth; General Secretary, A. York Bramble; Captain and Flight Secretary, G. Rubick; Chief Ground Engineer (who is also a B.G.A. Inspector), G. A. Little; Chief Instructor and B.G.A. Delegate, Capt. A. N. Stratton.

The club's President, Earl Howe, is pressing most strongly its claims for support from local interests, and prospects generally are good. The Secretary has just concluded provisional arrangements for a lease for No. 1 centre of the new triple site at the Devil's Dyke with the Brighton Road Racing Company. The Brighton Corporation are now considering a site in that area as a possible "Air Pleasure Park," so things are indeed moving!

Midland Gliding Club

We hear that 6 members obtained their "A" Certificates in the FALCON II. on March 24th: T. Healy, J. Horrell, Commander R. A. B. Williams, G. Edwards, N. Thwaite and C. Q. Meta. Eight more are nearly ready to take it, including one lady member. There are now 46 flying members, and 8 non-flying.

Mr. Hardwick, the club's chairman, writes that he was able to soar his FALCON along the belt of trees behind the hangar, gaining 30 to 40 feet along the beat, or possibly 100 feet above the launching point. The turn at the end, however, brought him too far out and he lost the lift. He is of opinion that, when the leaves are on the trees, and the wind is about 25 m.p.h., it should be possible to keep up indefinitely there. (This raises the interesting question to what extent a belt of tall trees can act as a soaring ridge; it does so chiefly by damming up the air and so causing the wind to rise up over it. One would expect the best lift, therefore, further out than it would be if the trees were solid ground. There may also be considerable slowing-up of the wind directly above the trees; this is suggested by an experience of the late Gunther Groenhoff, who was once making a steeply-banked turn low down over a wood when he was forced into a vertical "bank" and side-slipped down into the trees. Mr. Wills, in his article this month, suggests that one actually gets dynamic lift out of the turbulence over a wood at Sutton Bank, but his description of the required manœuvre sounds rather like a sharp turn into wind in dead air followed by a rise into the wind above, which is really "velocity gradient" soaring, like the albatross.—ED.)

Grouse Against Gliding.

AN action which has resulted in Midland Club members being prohibited from using the soaring site which had been acquired on the Long Mynd, Shropshire, was heard before Mr. Justice Crossman in the Chancery Division on March 12th to 15th. Mr. M. V. Wenner, of Batchcott Hall, Leebotwood, asked for an injunction to prevent the continuance of gliding meetings on and adjacent to his grouse moor. He also asked for the ending of a licence granted by Mr. A. Morris, farmer, of Wentnor, to Mr. C. E. Hardwick, of Birmingham, to whom Mr. Morris had let part of his sheep-walk on Long Mynd, on the ground that it interfered with the plaintiff's shooting rights.

Mr. Gavin Simonds, K.C. (for the plaintiff), said that the effect of meetings would be to drive birds from the district, and that gliders moving backwards and forwards on the edge of the ridge had the same effect on the birds and game as if a golden eagle were hovering. He claimed that the shooting prospects had been damaged by the holding of two gliding meetings in August, 1934, and that Mr. Wenner was entitled to his rights over the sheep-walk, and not to be fobbed off with damages.

Mr. Wenner, in the course of his evidence, said that at the second meeting he saw 40 or 50 cars and 700 people, and that the effect of gliding during the nesting season would be devastating; as it was, the damage of the first meeting was great, and the damage of the second was irreparable. His land agent, Mr. Humphrey, questioned by defendants' counsel, denied that the birds were in any case already disturbed by the hikers and setter trials. Major Crawford-Clark, solicitor, also claimed that the gliding had reduced the number of birds shot.

Mr. F. R. Evershed, K.C. (for the defendants), contended that the letting of the sheep-walk to Mr. Hardwick was not such a fundamental alteration of the character of the property as substantially to injure Mr. Wenner's rights; in any case, if injury were proved, damages and not injunction was the proper remedy.

After two former game-keepers had given evidence that the sheep-walk was a bad breeding place, the Hon. Alan Boyle, president of the Scottish Gliding Union, said he had been grouse-shooting ever since he could hold a gun, and was confident that while a glider was in the air the grouse would not move, but would afterwards show it had had no effect on them.

Mr. Hardwick, in the course of his evidence, was closely questioned by Mr. Justice Crossman on the purpose of gliding, and explained that it was looked on as a very serious business, and gliding men objected to these occasions being described as "meetings," nor did they want such numbers of spectators. Asked by the Judge what was the difference between the sailplane and the glider, he replied that the sailplane had a long wing like a seagull, and the glider a flat, squat wing like a lapwing, a partridge, or even a grouse.

Evidence was given by a resident near Castle Bromwich and by the chief aerodrome officer at Croydon that game at these places were not frightened away by the aeroplanes, and Mr. G. E. Collins, of the London Gliding Club, said that birds and game at Dunstable and Whipsnade did not mind when his sailplane passed over. Mr. Collins explained how the nature of the air currents ensured that soaring at Long Mynd did not entail flying over Mr. Wenner's land, nor did the approach to a landing do so. Major H. Petre, of the London Club, also gave evidence.

In his judgment, Mr. Justice Crossman said that the sheep-walk sporting rights were let in 1926 for 21 years at £7 a year, and the lease contained a covenant for quiet enjoyment. After that, Mr. Morris, on a promise of indemnity by Mr. Hardwick, let five acres of the sheep-walk at £15 a year for soaring and gliding. He found upon the evidence that the use of the sheep-walk for this purpose did disturb Mr. Wenner's rights substantially and sufficiently to amount to an ouster of his rights to a certain extent. He granted an injunction to restrain Mr. Morris from letting the sheep-walk or any part for gliding exhibitions so as to interfere with Mr. Wenner's quiet enjoyment of his rights. He would not deal with the question of damages, which were a small matter, but would give plaintiff his costs against defendants.

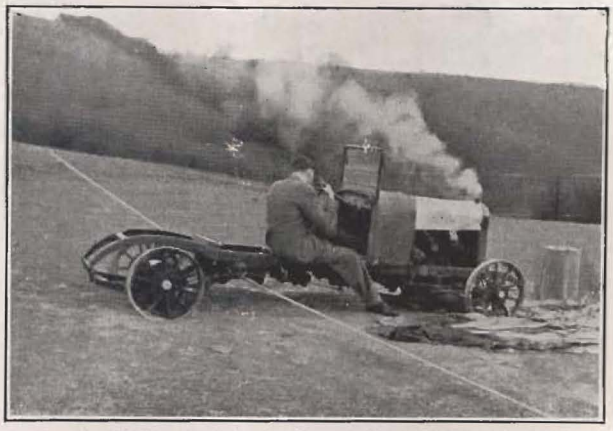
London Gliding Club

February 24th to March 10th.—The winds were impossible for soaring, but much primary instruction was put in during the first two week-ends. On the third it blew a gale from the east.

Sunday, March 17th.—A light west wind blew against the hill, and occasionally kept up the FALCON and the KASSEL two-seater (now repaired and renovated by Abbott-Baynes) for a beat or two. Machines flew down as fast as the winch magneto would allow them to be brought up again. One pilot twice glided over the power wires into the next field; otherwise no excitement. Yesterday, however, one of the ground-hoppers had demonstrated his preference for vertical rather than horizontal flight, and one Primary is temporarily out of action.

Among certificates gained, Mrs. Baker and Exner got their "B," Williams and Bergel Senior their "A," and the latter, Ellis, Furlong, Fox, Robertson and McClelland flights towards the "B."

[The news for March 24th, when a great deal of soaring was done on ten different machines, will be published next month.—ED.]



The London Club's winch for hauling machines up Dunstable Downs; photographed in the heat of the moment.

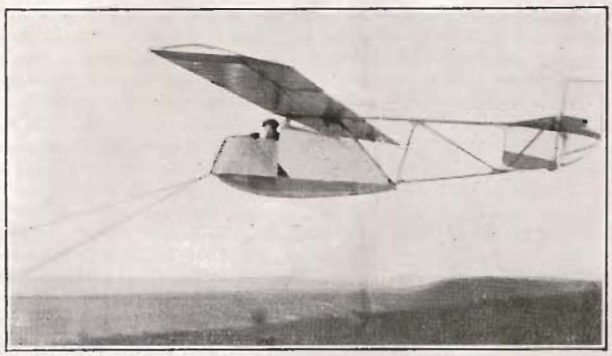
[Photo by S. Fox

Kent Gliding Club

Reports of the Kent Gliding Club's activities are not issued very frequently as the work is mostly of a routine nature and therefore not of much interest. Flying has, however, taken place every week-end since our last report was published, with the exception of three days when weather conditions were hopeless.

New members are coming in from places as far apart as Beckenham, Meopham, and Margate, and training is going ahead well. Richards, Brunning, Gelston, and Guild are up to "A" standard, while Potter and Barnsley are close behind them. One very new member, Crossley, is a "B" power pilot, and has made two or three good flights. Unfortunately, Dugdale, who has been instructing for the last year, has been transferred temporarily to Hereford. His services will be very much missed, though we hope to see him back for occasional visits.

Our old launching car, the "Valor Perfection," has now been scrapped, and we have bought a Chrysler coupé which will be a great improvement, being suitable for auto-towing and for transporting our trailers to other sites as well as for shock-cord launching.



The Cambridge Gliding Club's first machine being taken off Dunstable Downs by the Duke of Grafton. It is a "Zögling" reconditioned and "nacelled" by Messrs. Zander & Weyl, of Dunstable, who are now at work on a sailplane of original design for the Club.

Derbyshire Gliding Club

The "Golden Wren's" Activities.

It is a curious fact that, given a comparatively efficient sailplane, a Comparatively Inexperienced pilot (10 to 15 hours), a comparatively small landing field and a decent soaring wind, the tendency seems to be to undershoot rather than to overshoot. This has been done twice recently with the GOLDEN WREN, by each of our C.I. pilots. Once, by the Grace of God, a safe landing was made in the wrong field with the nose about 4 feet from the wall, and once . . . well, anyway, it's a better nose now than it ever was. The reason for this tendency is rather obscure, because, of course, undershooting is the worse of the two faults. One point that occurs to us is that behind the soaring area, where one is approaching to land, the *horizontal* component of the wind is greater, and therefore one does not make as much headway into the wind as has been anticipated.

[Another possible explanation is that the wind immediately above a hill-top may blow even faster than the wind higher up; this is because the air has to squeeze through between the hill below and the rest of the atmosphere above, just as a river flows faster where it is narrow. Such a phenomenon has been proved to exist by actual measurements above the high sand dunes at Rossitten in East Prussia.—ED.]

As the result of the two incidents quoted above, and of other less acute, the two C.I. pilots in question have agreed upon an addition of their own to Mr. Bergel's Code of Safe Pilotage, i.e. when landing anywhere other than Dunstable or Cranwell Aerodrome, never go behind the rear limit of your field, whatever height you have.

Sunday, February 10th.—Site: Riber Castle. Wind N.W., about 15 m.p.h. Robertson and Smith had their first experience of this site. The general conclusion was that it is a site only to use when the conditions are definitely good. A landing at the bottom does not look inviting, and as the good landing field is about a quarter of a mile behind the soaring slope, one has to have at least 200 ft. to reach it and turn into wind again.

Sunday, February 17th.—Site: Bradwell Edge. Wind W., 20 to 25 m.p.h. A perfect day . . . if only we could have taken advantage of it. At present no launching field is available at the top, so an attempt was made to work up from a launch about two-thirds of the way down. The attempt was a pitiful failure, all the more disappointing because of the wonderful conditions 400 ft. or more overhead. Slater maintained his launching height for a minute or two, but the end was inevitable. He did well to get down safely in a very small field already almost full of wild horses. After all, we decided, the best place to launch *is* the top as one might have supposed.

Negotiations are in progress for the lease of a permanent club site at the top of Bradwell Edge. More of this anon . . . we hope.

Sunday, February 24th.—Site: Eyam Edge. Wind S., 15 to 20 m.p.h. Slater, Smith and Robertson all flew and enjoyed themselves; the conditions were not as nice as they ought to have been, and no really comfortable height could be obtained. Robertson once reached 500 ft. for a short time, but the average ceiling was between 200 and 300 ft., not enough to get across the "funny bits" and use the whole length of the ridge.

Dr. L. du Garde Peach, who lives in the district, exposed 100 feet of film on us and didn't waste an inch of it. Dr. Peach is thoroughly interested in the whole thing, and is helping us enormously in the negotiations for the site.

Official Notices

Council Meeting

THE 64th Council Meeting of the British Gliding Association was held at 39, Victoria Street, S.W.1, on February 2nd, 1935, after the Annual General Meeting. Present: Mr. P. A. Wills (in the chair), Capt. C. H. Latimer-Needham, Messrs. W. O. Manning, C. M. C. Turner, D. Morland, E. G. Sanguinetti, G. P. Hebden, R. Cuthell, H. C. Bergel, A. D. Scarlett, N. Sharpe, E. Seaward, A. Houlberg, A. H. Stratton, J. G. Grice, D. Culver, J. Laver, L. Dugdale, R. Rolfe, Miss R. H. Sinclair, Dr. A. E. Slater.

Mr. F. D. Bradbrooke, who had kindly offered to act as secretary and give office room to the association, was appointed as Secretary, and it was resolved that Miss Smith be asked to continue as Assistant Secretary.

Mr. Manning was appointed Chairman of the Technical Committee, he having offered to take the office in succession to Capt. Latimer-Needham, who had resigned the chairmanship but was continuing to serve on the committee.

The application of the London Gliding Club for re-affiliation was accepted. Mr. Ashwell-Cooke, on behalf of the club, explained its position as regards the subsidy. Capt. Stratton (Southdown Club) expressed pleasure that the London Gliding Club had come back into the association, and he hoped that the spirit of the movement was now going to be the same as it had been in 1930 and 1931. Mr. Sanguinetti (Kent Club) said he appreciated the way the London Club had come in a spirit of friendliness.

A Subsidy Committee was appointed with one representative each of the Kent, Channel, London, and Southdown Clubs. (This committee afterwards held an informal discussion.)

Mr. Wills resigned his office of Hon. Treasurer.

Special General Meeting

A SPECIAL General Meeting of the members of the British Gliding Association was held at the Junior Institute of Engineers, 39, Victoria Street, S.W.1, on February 2nd, 1935, at 3 p.m. The meeting had been called to receive a report on the negotiations with the Air Ministry, and to approve the rules drawn up to give effect to the Ministry's requirements relative to the subsidy. Mr. P. A. Wills was in the chair.

It was unanimously resolved: "That this meeting adopts the amendments to the Rules now set before them with such modifications as desired by the Friendly Societies Acts, with the following addition to Rule 4 (1) *c*:—'That organisations being gliding clubs and not having a membership of 25 fully paid-up flying members (as above defined) may be accepted by the Council as Associated Clubs, and shall enjoy the same privileges and be bound by the same Rules as affiliated organisations, excepting that their representatives shall not be nominated to the Council nor vote at meetings of members of the association, nor shall they hold a share or shares. Associated Gliding Clubs shall not be called upon to pay an entrance fee, but shall pay such subscription as the Council shall from time to time decide.'"

Resolutions were also passed relative to the process of disaffiliation, and to the appointment of proxies at Council meetings.

In the course of the discussion the chairman read a letter from the Air Ministry to the effect that the Ministry did not regard affiliation as an essential qualification for subsidy.

Annual General Meeting

THE 5th Annual General Meeting of members of the British Gliding Association was held at 39, Victoria Street, S.W.1, on February 2nd, 1935, at 4 p.m. Mr. P. A. Wills was in the chair.

It was resolved that the President and Vice-Presidents as at present should stand for the ensuing year. Messrs. Smart and Bloor were re-appointed Auditors. Mr. L. Howard-Flanders resigned his position as Hon. Secretary at the termination of the meeting.

The meeting was adjourned, and the adjourned meeting was held at 19, Berkeley Street, W.1, on February 16th, at 12 o'clock, Mr. W. O. Manning being in the chair. In view of the technical difficulties brought about by the modifications to the Rules, this meeting was further adjourned.

The further adjournment was held at 66, Victoria Street, S.W.1, on March 8th, at 7 p.m. Major H. Petre was in the chair.

The result of the ballot for representatives of the ordinary members on the Council was declared: Messrs. J. Laver, G. M. Buxton, A. E. Slater, and D. G. Hiscox were elected.

The report of the Committee of Management of the Sutton Bank site was read and discussed.

The Sutton Bank Report

The report of the Committee of Management of the Sutton Bank Site (P. A. Wills, Norman H. Sharpe and F. N. Slingsby), in giving a brief history of the scheme, records that the committee was appointed with full powers on April 20th, 1934, and continues:

The principles on which your committee decided to work were:

(1) Full control of and responsibility for all gliding activity on the site should be vested in the Yorkshire Gliding Club for the period of the lease.

(2) The British Gliding Association, when holding annual contests on Sutton Bank, should exercise control of and responsibility for all competition flying, and the Yorkshire Gliding Club must undertake management of ground organisation, etc.

(3) Buildings and other permanent equipment of the site should be paid for out of profits resulting from the administration of the site by the club and/or out of the ordinary income of the Yorkshire Club.

(4) If the British Gliding Association should authorise a loan to be raised for the provision of buildings, etc., as above, the club must accept responsibility for repayment of such loan in accordance with (3) above, so that there should be no direct liability on the British Gliding Association to pay money out of its funds for this purpose, *but only a contingent liability in the event of the failure of the Yorkshire Club.*

Whilst No. (1) above has been confirmed in writing with the Yorkshire Club, Nos. (2), (3) and (4) have not yet been confirmed in writing, but are the subject of a gentlemen's agreement between the British Gliding Association and the Yorkshire Gliding Club, which agreement has been honourably adhered to with highly satisfactory results. The fact is that your committee felt that any step which drew Sutton Bank into the orbit of the recent internal dissensions of the association would make their work impossible. Now that those dissensions are solved, it is possible to proceed with these matters, which will be brought before the Council at an early date.

[Details are then given of the lease and of expenditure on buildings and equipment up to February, 1935. The latter amounts to £460, of which £325 was raised as a loan, and the remainder provided by the Yorkshire Gliding Club.]

With regard to the loan, this was raised at 5% p.a. with a guarantee of amortisation in not more than 4½ years. The necessary funds for its service and redemption were to come from the operation of the site under the Yorkshire Club, including income from competitions, etc., held on the site.

This income was to be applied as follows:—*First*, to meet the expenses of each meeting; *second*, to pay interest and amortisation of the loan; *third* (when, and not before, the loan is completely repaid), in such manner as may be thought fit.

It cannot be too strongly emphasised that at no time has it been suggested or intended that money from the British Gliding Association funds should be paid to the development of Sutton Bank; the Yorkshire Club must so manage the site as to make it pay for itself. Conversely, any suggestion that income from Sutton Bank should be used to meet the ordinary debts and running expenses of the British Gliding Association, particularly whilst any part of the loan is still outstanding, is unbusinesslike, and would constitute a direct breach of faith with our creditors.

[The report then goes on to describe the success of the first competitions held on the site last September, which left a credit balance of £215 18s. 7d., of which £79 10s. 8d. was transferred to the B.G.A. to meet expenses, etc., and from the remaining sum a partial repayment of the loan was made. Items which have been paid by the Yorkshire Gliding Club are mentioned.]

The report concludes:—The first consideration is, of course, the repayment of the outstanding debt to the creditors. It is possible that in the near future the Yorkshire Club may be able to raise a bank loan for this purpose, and your committee hope that the Yorkshire Gliding Club may be in a position to submit this suggestion to the Council in the not too distant future.

When this loan has been repaid, our contention will be justified that an equipped high-performance site can, given an efficient local organisation in the form of an enthusiastic club, be made to pay for itself.

The Sutton Bank scheme has demonstrated one of the most practical ways in which the British Gliding Association can help an affiliated club and foster flying without incurring expense to itself, and it is our hope and recommendation that in the future this method of development may be applied in other parts of the country where suitable sites and clubs can be found.

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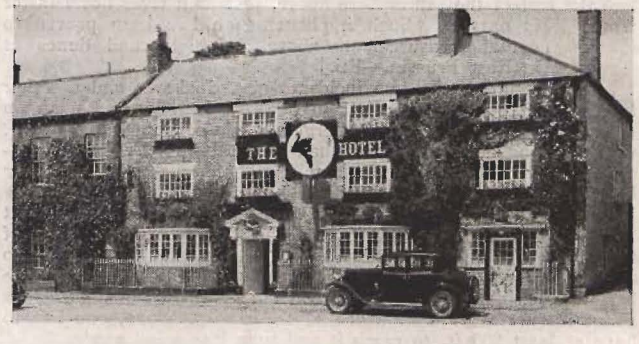
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