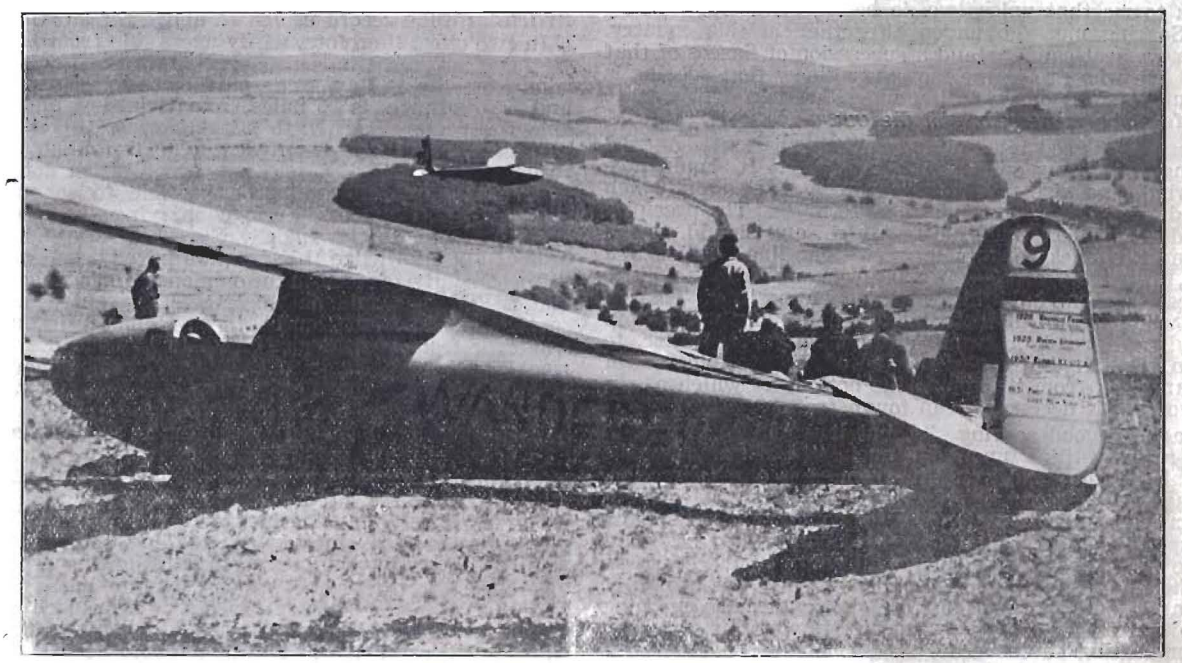
November 6, 1931 Vol. 2. No 9.

THE SAILPLANE AND GLIDER

Price 6d.

(*Founded in September*, 1930, *by* THURSTON JAMES)

A LEADER



THE "WANDERER."—An appropriate name. It was on this machine that Wolf Hirth soared over New York.

A RESIGNATION

The unfortunate thing, at the moment, is that Mr. Thurston James has found it necessary to resign the Editorship of THE SAILPLANE. For a long time it has been apparent to many, that his other business pre-occupations make a big call upon his daily round, the result being that, with the amount of concentrated thought which the paper requires, he has found it very difficult to see each issue through.

To have arrived at this decision, Mr. James has suffered mental anguish. The paper has been his pet since he founded it in September, 1930. He has nursed it and given more time to it than even he himself, cares to recall. Not only that but it has all been voluntary. Perhaps there are a few who realise what a tremendous amount of hard work is required in running a paper, and who can, therefore, appreciate, the amount of time, energy, and money, which Mr. James has contributed to the gliding movement, through the activities of THE SAILPLANE. It is impossible to express our thanks to him, but if a modest "thank you" will meet the case, we gladly offer it, and mean it, in the truest sense.

We feel that, to what heights, or depths, the paper may reach the name "Thurston James" should always be connected with it. And while we have had to take down the name from the Editorial chair, we have found for it an honoured place. We assure Mr. James, with the help of past and present contributors to whom we are more grateful than we can say, that it will be our earnest endeavour to maintain and increase the value of the publication. After all, is is the only paper in the World solely devoted to motorless flying, and as such, it must represent the whole of the gliding movement.

Our subscribers are now situated in practically every part of the World. THE SAILPLANE must, therefore, indicate the progress the movement is making within the world of aeronautics. In spite of what some may say, the gliding movement has made a place for itself. Up to the present there have been 220 "A," 64 "B," and 26 "C" glider pilot certificates obtained in this country, in about 18 months. Many achievements have been made by British pilots, on British designed and built machines, and in British weather. Further achievements are possible and will be accomplished. And while we have so many, so very many, young and enthusiastic pilots, those interested in the gliding movement need have no fear as to its future. Many shouted from the house tops that the movement, like the World War, would end in no time. The War lasted too many years, but the gliding movement will go on for ever. While the young men, and young women, take heed of this, the gliding movement will go on from strength to strength, and Mr. Thurston James will have built a memorial to himself as one of its pioneers.

AN INTERESTING LETTER ON SITES AND COMPETITIONS

Dear Sir,—The soaring season is now practically over for the year. In the last few weeks I have spoken to a number of sailplane pilots about the programme for next year. May I put forward my own view of the soaring policy desirable for 1932, in the hope of starting a profitable discussion?

To begin with, I would say a word about Balsdean. I travelled six hundred miles with Herr Magersuppe to attend this meeting, leaving good soaring sites behind us in the North. We found the International Gliding Meeting located on a site which was only suitable for primary training. On the Sunday a good soaring wind was blowing from the prevailing direction, the South-West. In these conditions soaring was impossible on any portion of the site, owing to the unsuitable nature of the ground. It was impossible to get the trailers closer than **two miles** to the soaring hill. Machines had to be towed, pulled, and hopped over this two miles, with much resultant damage. In fact, the meeting was a complete fiasco from the soaring point of view.

Those are the facts of what was done this year, and it seems to me that unless we do better next year Gliding and Soaring must go under altogether in this country. The movement cannot stand a succession of fiascos of that sort. We who are in the movement know that soaring is the future sport of flying, but unless we can demonstrate that fact the movement **will die out.**

What is a good site for a competition then? A good soaring site, in my opinion, is a precipice. It should face the wind, and rise up sharply from a level plain which extends up wind for not less than 10 miles. The precipice should be not less than 800 feet high, and should extend for several miles roughly in a straight line. In such a place, in a wind of 15—20 m.p.h., the up-current will be not less than one mile thick and the inexperienced soaring pilot will have no difficulty at all in keeping up. There should be a road or track, practicable for a trailer, to within a hundred yards of the top of the precipice and a similar track from the top to the bottom up which a car, or two cars if necessary, can tow a trailer.

That is a good soaring site, but it would be absurd to base a competition upon one such site alone. On the critical day the wind would be from some other direction, and again we should be faced with a fiasco. A competition must be based upon an area of country, in my opinion —not upon one site. An area of country must be found where such sites exist facing to all points of the compass. The headquarters must be at some town in the centre of this area, and the decision must be made each morning as to which site shall be used. Only in this way can proper soaring be ensured.

That is a new conception of a competition, perhaps, and will doubtless raise discussion. It means that the machines must be dismantled each evening, put upon the trailers, and taken back to headquarters, and taken out again next day to the fresh site. That is a lot of work; machines are altogether too difficult to erect. But nothing short of this procedure will give a satisfactory competition, in my opinion.

And now, let me come to the concrete proposal. There is no area in the South of England that fits with the specification of a competition site that I have made, except possibly the region of the Malvern Hills and Cheltenham. I have never been to Malvern, but from the O.S. map it looks a possibility. It is not so good as northern sites, but I think it might be just possible.

This country gets hillier the further North you go. I can find nothing on the O.S. map to fit my specification in the Peak District, nor anywhere in the Pennines. I have not examined Wales. But coming North again, we find the Cleveland hills in North Yorkshire. The map reference is ¼-in. to the mile Ordnance Survey, Sheet 3.

Imagine a meeting, lasting for several days at Easter, based upon Helmsley. That is a very pretty little town with a good, well run country hotel in every way suitable for a headquarters. Six miles away is Sutton Bank, on the Thirsk road.

Sutton Bank, as will be seen from the map, suits my specification in every respect for every direction of wind from W.N.W. to S., true bearings. The site is excellent for competition work, and no difficulty is likely to be experienced in obtaining permission for the use of the site, which has been frequently used by Magersuppe for joy-riding in the SCARBOROUGH two-seater. (There is a great deal of soaring done up here which never gets into THE SAILPLANE). It is probable that much of the competition flying would be done at Sutton Bank, as the prevailing wind is westerly.

Fifteen miles from Helmsley, reached from Kirbymoorside over the moors, is the Ingleby Greenhow site. This will be seen upon the map four miles South-East of Stokesley. Again, it fits my specification perfectly, the average height being 1,200 feet above the plain, rising to 1,400 ft. in precipitous slopes. The site is excellent for winds W. to N.N.E. true. It was on this site that Major Petre of the London Gliding Club established the present official British altitude record of 780 ft. above the starting point.

In two sites, therefore, easily accessible from Helmsley, we have covered winds from N.N.E. to S. For Easterly winds, the site at Ravenscar, on the coast between Whitby and Scarborough, is 30 miles from Helmsley, and is suitable for winds N., N.E. to E., S.E. true. On this site Magersuppe put up the present official British distance record; again the site suits my specification completely. Nearer to hand, it would be possible to soar well in Easterly winds upon the ridge carrying the road from Kirbymoorside to the Ingleby Greenhow site, but to the best of my knowledge this site has never been soared.

To sum up therefore, in the opinion of Herr Maggersuppe and myself, it would be possible to guarantee first-class soaring for a competition based on Helmsley in any wind whatever from S. through N. to E.S.E. South-East winds would be more difficult to cater for, but fortunately are very rare in that part of the world. Permission to use all the above sites can be obtained.

Before closing, I should like to touch upon the question of prizes. In my opinion, cash prizes are essential in order that competitors may stand some chance of recovering their expenses. It should be possible to find a benefactor or benefactors in the aircraft industry to put up prizes for such a competition totalling £50, and if this were achieved I would suggest the following scheme.

The meeting should be for one class of machines only, and should include several events. For each event a small, inexpensive silver cup should be awarded to the winner, and a scheme of marking should be drawn up by which marks are awarded to the first, second, and third in each event. This scheme of marking should be biassed in some way to the benefit of any secondary machines competing, in order that these machines may stand a chance of a cash prize in competition with the sailplanes. At the end of the meeting cash prizes are awarded in consideration of the total marks gained in the competition. First prize, £20; Second prize, £15; Third prize, £10; Fourth prize, £5. The object of these cash prizes is simply to enable competitors to stand a sporting chance of covering expenses. For this reason, the prizes are small, and as many in number as possible.

May I conclude with a disclaimer? I hold no special brief for the Cleveland Hills as the site for a competition except that I know the sites and have seen the present British records made on them. There are doubtless better sites in Scotland, and possibly in Wales, if one took the trouble to search them out.

But we can definitely guarantee good sport upon the Helmsley base. In short, then, my proposal is for an Easter four day meeting at Helmsley, with sufficient cash prizes to pay a good proportion of competitors' expenses.

(Signed) N. S. NORWAY.

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FROM "DOWN UNDER"

[We have pleasure in giving below an extract from a letter received from one of our subscribers in Toowoomba, Australia. Such praise is indeed gratifying. Thank you, Mr. Hooper.—ED.]

Glider clubs are being formed in many parts of this district and competitions and glider camps are being eagerly looked forward to for the summer holidays. We, The Toowoomba Glider Club, have only been flying a few months and at present have a list of seventy members. As our subscription is only 10/6 per annum, "finance" is always the main business of our committee meetings. We have had two schemes for the purpose of raising funds that have met with a fair measure of success. When the ship was practically complete we had it exhibited in a tent at the Agricultural show. And later, when complete it was the main object in the hall when he held a big dance, the chief function being the christening of the "Flying Fox" by properly wetting its nose with a bottle of Australia's best fizz.

The cost of materials over here is very high when compared with those in England. This and the lack of some central authority for information are holding the movement back to some considerable extent.

We have gleaned a lot of useful information from THE SAILPLANE and I shall try to describe one little alteration of the shock cord that we have found worth while.

Good Luck to THE SAILPLANE. It is a jolly fine little paper. It has instilled ambition into our Club over here and gets us thinking cloud flying instead of long kangaroo hops.

This is what we have done to our Shock Cord :—
Length of Single Rope, 40 feet; length of Shock Cord, 20 feet; length of Pulling Ropes, 20 feet.

Chief advantages are :—

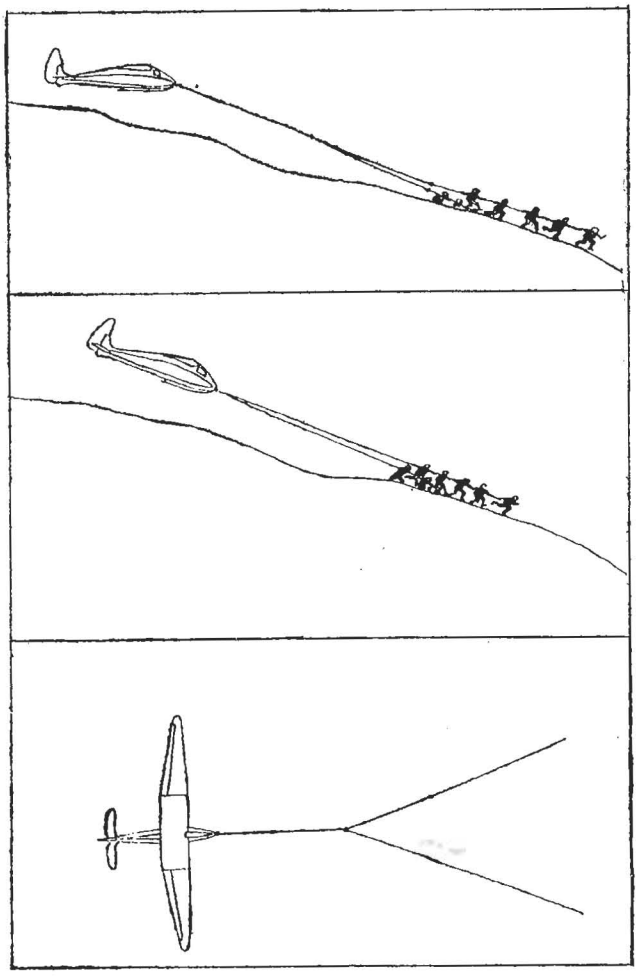
(1) The launching crews are well away when the ship passes overhead.

(2) When the crews walk out unevenly, the single rope takes up an average position.

(3) Should the shock cord break or come untied it has very little chance of hitting the pilot.

(4) It gives the machine a better forward pull when once in the air. See sketch

(5) There is much less down pull on the hook before the rope falls away. See sketch.



"GLIDING" OUT OF TROUBLE
Debtor's New Use for Air Sport

Creditors of a barber in Bratislava (Slovakia) have found that the bird has indeed flown, says Reuter from Prague. Finding that every day brought new summonses for unpaid debts he built himself a glider, collected what goods he could, and glided over the frontier into Hungary.

Czecho-Slovak debtors do not usually find it so easy to escape from the bailiffs, who have just been organised into a special "flying squad," equipped with motor-cycles and side-cars.

QUERIES IV

Q.—How is the angle of incidence determined for a sailplane?

A.—The main plane should be set to the fuselage so that the value of lift/drag for the complete machine is a maximum. The position of L/D (max.) for the wing alone can be readily found from the curves for the wing section, although it should be noted that the curve should be prepared for the particular aspect ratio employed for the sailplane wing. For the complete machine, a component of drag due to the fuselage and tail unit has to be added to the drag values for the wing. This component is obtained by dividing the total body drag by the main plane area, an average value for this being 0.0065, and this figure may be assumed for want of more accurate information concerning the body shape. The L/D curve for the whole machine may now be prepared, with all values of D increased by the body component, and from this the angle of incidence for L/D (max.) may be read off. It will be noticed that the incidence angle in a little higher than that as given for the wing alone.

CELLON DOPE

FOR

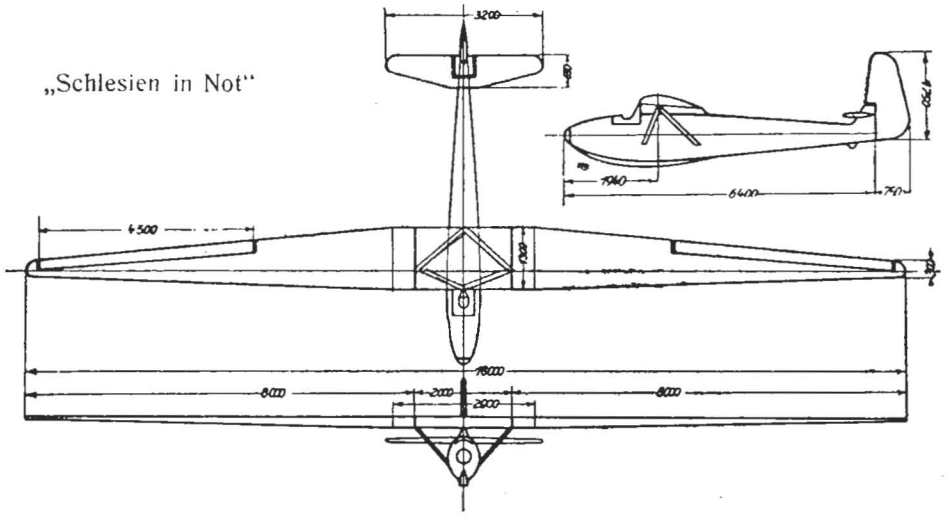
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A NEW GERMAN SAILPLANE

By DIPL.-ING. H. LINDNER



[*One of the very few machines which were of entirely new design at the* 1931 *Rhon Meeting was the* SCHLESIEN IN NOT *which had been built by the Marcho-Silesia Academic Flying Socity of Breslau. This machine has several features of intrest and therefore readers are likley to find this description of it which has been specially translated from* FLUGSPORT *for Oct.* 14 *by Dr. A. E. Slater, well worth reading.*]

During the "construction evenings" of the last winter term, we undertook the construction of a new high-performance sailplane which was to be entered for the first time in the 1931 Rhon contest. Our underlying idea was that our society should not spend all its endeavours upon the sporting side of aviation, but that its programme should at the same time include work of the nature of scientific research.

Thus the building of a well-tried type from bought drawings, though no doubt the best plan for many groups, did not suit our purpose. In the case of the OBERSCHLESIEN (Type E.E. 7.), the use of a high aspect-ratio had given good results; we resolved therefore to continue work upon the same lines.

So we decided to build a machine to my design E.E.11. In this I retained the chief features of the OBERSCHLESIEN as regards the design and its execution, though it is true I made substantial alterations.

The data of the new machine are: Wing-section, Gottingen 527; span, 18m.; chord, maximum, 1.3m., minimum, 0.3m.; wing area, 15.8 sq. m.; weight, empty, 133kg. (290 lbs.); wing loading, 13.6 kg. per sq. m. (2.8 lbs. per sq. ft.); aspect ratio, 20.5—(1m. = 3.28 feet).

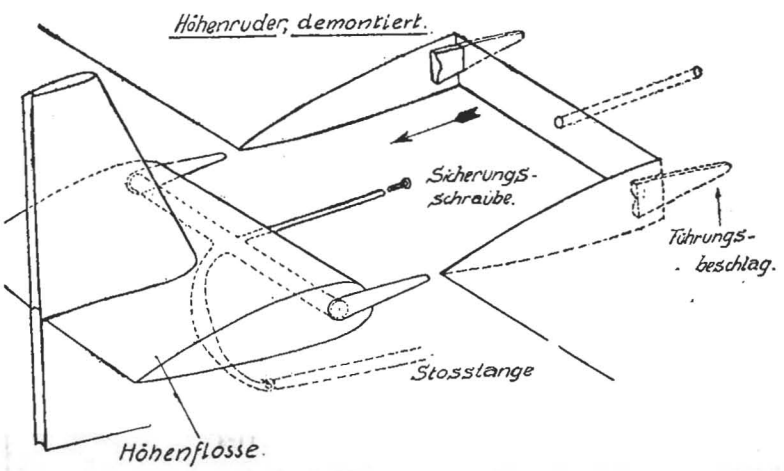
The single-spar wing is composed of a middle section of 2m. length and outer portions of 8m. each. The middle section is braced by A-struts and remains permanently mounted on the fuselage. The outer portions of the wing are secured to the middle section by 2 conical bolts at the main spar and 1 bolt at the leading-edge spar.

The aileron connecting levers in the middle section and those in the outer portions rotate about a common axis without sliding over each other, and clasp one another automatically when the outer wings are being attached. Assembly is thus very simple, because the bolts securing the middle section to the fuselage, those for the struts and those for the aileron connections to the fuselage need not be undone at all, except when making repairs.

The ribs are at intervals of 320 mm. In the tension-resisting leading edge, the outer grain of the plywood runs perpendicularly to the spar.

The fuselage is built up on a strong box spar, which protects against collapse of the cockpit, carries the forward and main frames, and transmits the landing shock of the struts to the skid through 2 rubber buffers. Towards the tail, this box-spar is continued into a specially strong keel-piece, which protects the tail from being either pushed in or torn out, and so takes the place of a cradle during construction.

The fuselage has an elliptical cross-section and is continued into a vertical stabilising fin, which in its turn carries a short horizontal fin. This elevator fin is situated about 0.7m. above ground level, so that it is endangered as little as possible by ground obstructions during taking-off and landing. The control mechanism is designed in such a way that the control surfaces can be mounted in quick time without bothering with bolts, and that no control lever shall lie outside the fuselage.



It has been my endeavour in this design to keep the weight as low as possible consistent with the regulations as to structural strength and with small resistance of the struts, in order that the low-sinking rate resulting from a good aspect ratio should not be compromised by too high a wing loading.

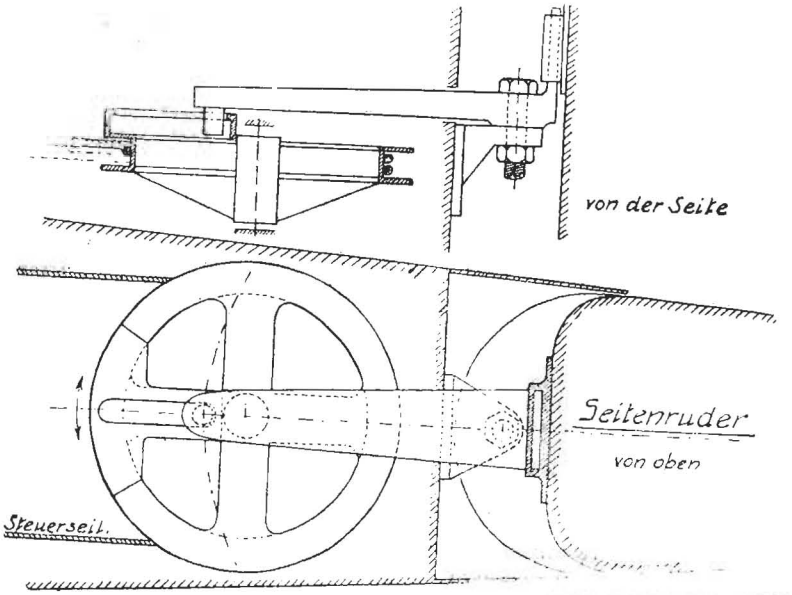
It is doubtless possible to achieve a still further saving of weight without loss of strength, even with the materials which are in general use to-day. The flights in weak thermic up-currents made during the last Rhon contest have shown the need for such aircraft, whose low sinking-rate depends, not upon unusually light wing-

(*Continued on following page*)

(*Continued from previous page*)

loading, but upon the beneficial reduction of drag.

This fact will come more into evidence in the future, as the art of soaring over flat country gains more adherents. One must of course be clear as to the limitations to the range of activity of any particular sailplane. At present the construction of machines which are equally suited to the lightest of winds and the heaviest of thunderstorms remains something of a problem.



SAILPLANE STARTING WITHOUT OUTSIDE ASSISTANCE.

After being towed by air from Munster to Borkum, a distance of over 200 km. at a height of 2,700 metres—probably the longest towed flight in Europe—the KASSELL 25, piloted by Herr Mertschat, and towed by Herr Weichelt on a Klemm-Argus, was baptised with the name "Borkum" on Aug. 2, when the new Northsea-Sailplane Club was opened.

During the first days of August, Herr Mereschat had the opportunity of trying out the excellent conditions for sailplaning in Borkum. He was able to confirm that even at 1,000 metres height, there was enough thermal up-current to sail without loss of height.

After various parts of the Island had been sailed over, and the best positions noted, Herr Mertschat made several starts without outside assistance. He fastened a 150 metres long steel cable to the KASSELL 25, and let himself be raised from the dunes. The aircraft rose at the cable like a kite, to over 100 metres, when he released, and then carried out flights over the dunes and villages. Herr Mertschat declared, that these starts were carried out without any previous artificial acceleration, that is without the assistance of any starting method. It was the simplest, and safest start of all.

He also said that Borkum was the best place he had seen for taking "B" Certificates.

Apart from the KASSELL 25, the Northsea-Sailplane Club (Nordsee-Segelfliegerlager) has several training gliders.



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SAILPLANE FLYING

By "KENTIGERN"

[We have arranged to publish a series of articles on the art of flying a sailplane. No pilot is better qualified to write such articles for us than "Kentigern" who is generally recognised as knowing much more than most of us about flying a sailplane.—ED.]

TAKING OFF

For the ordinary launch with rubber rope, the middle of the rope or rather the ring attached thereto is hooked on to the glider whose tail is held. The pulling crew runs forward with the ends until the rope is stretched; the tail of the glider is then released and the glider slides forward and takes off. Most people will be familiar with this method of launching but it may be useful to repeat the elementary points.

If there is a high wind, it is necessary to verify that everyone knows his job because it will be impossible for the man in control to be heard with certainty. To ensure that the rope comes off cleanly, the angle between the two teams on each end of the rope must not be too great. To avoid overstraining the rope, which destroys it, a total crew of 6 is enough for a single rope of the usual English thickness and 12 for a double rope.

The energy available to launch the machine is the product of the average pull and the distance travelled by the ring on the glider. Thus the best pull is one in which the glider is released while the pulling crew is running at full speed.

The tension in the rubber rope while contracting may be supposed to drop to two thirds of its tension—at the same length—while extending so that the advantages of a fast pull off are:—first a greater pull up to, say, 12 m.p.h. and second a longer pull above this speed.

When launching a heavy glider with too weak a rope, it is necessary to use the maximum pull to start it sliding. This always gives a bad launch and is a false economy as the rope will soon be spoiled. Even a PRUFLING needs a double rope to give a good launch in a calm.

Ground friction absorbs much energy, and a small decrease in the length of slide will make a launch disproportionately better; and to launch a glider in still air a very powerful pull is needed compared to that necessary in a slight breeze.

When choosing the position for a take off, the high efficiency of the glider makes it possible to choose a place of good shape even if it is away from the best soaring slope because the gain from a good take-off will not be lost for some distance.

A smoothly rounded top gives the best position (such as the ground at Tottenhoe or at Folkestone); the pulling crew is able to run well, the pull is not reduced by the rope touching the ground, a greater part of the wind-speed is felt by the glider and fewer "bumps" are felt just after the take-off.

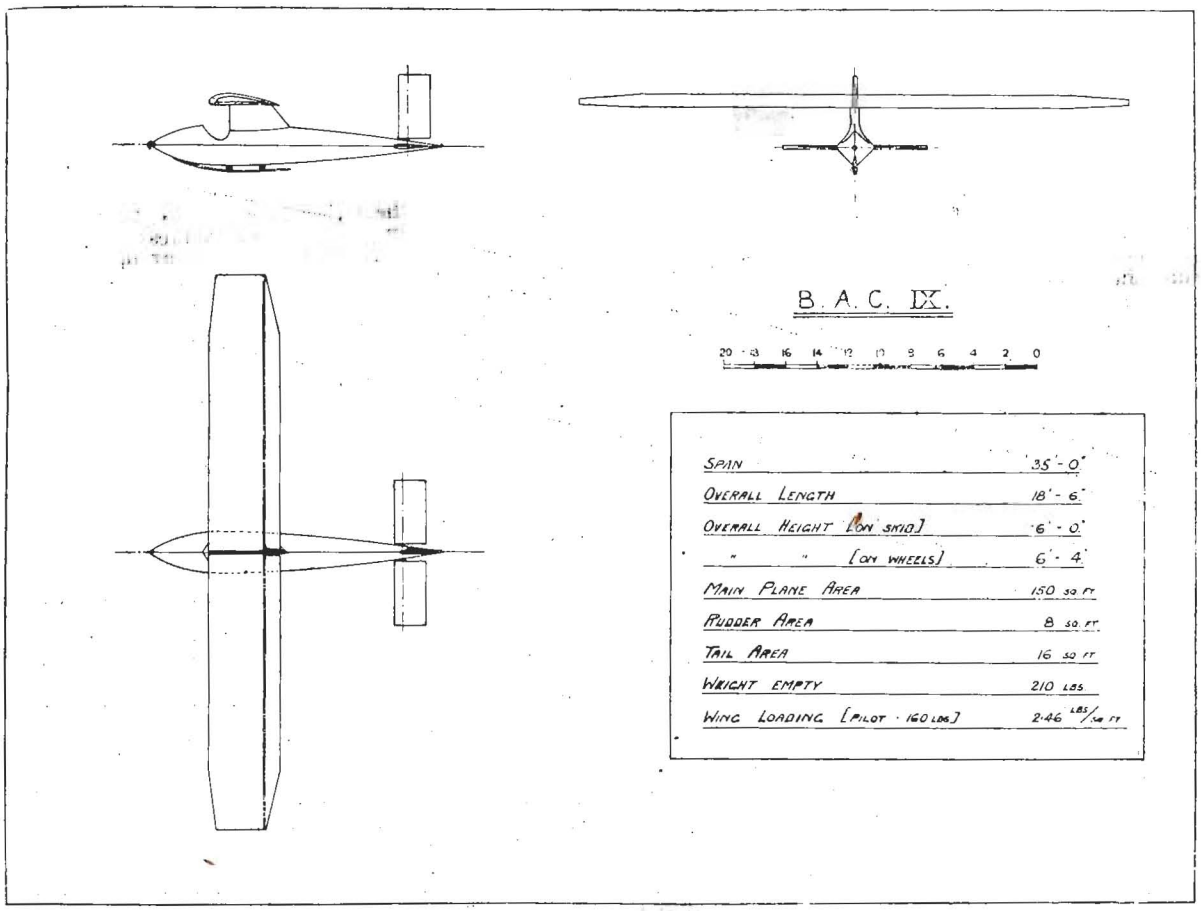
During the take-off, the glider should be kept fairly low till the ring drops off so that all the energy in the rope may be used.

The glider will nearly always be able to gain a little height by the energy of the launch. That is to say, it will be launched at an air speed greater than the best gliding speed and the glider can climb till the extra speed is lost. In addition there is a dynamic effect when there is a wind; the air near the ground is travelling more slowly than the air above it and the glider on the ground experiences a wind whose speed is perhaps a third of the speed at 40 feet above the ground. So that, when flying from A to B (Fig. 2) the air-speed of the glider is increased by two-thirds of the wind-speed and this energy also may be converted into height. The drop of wind-speed on the top is partly due to the shape of the hill causing a break-down of streamline flow.

The upwind caused by the hill is the best contributor to lift. The direction of flow near the hill is presumably roughly parallel to the surface so that, when flying forward, the angle of incidence of the glider will be increased. This is indicated by the two arrows showing the direction of the wind at A and B in Fig. 2 and may also be deduced from the bumps which are often felt just after the take off.

After the ring has dropped off, then, the glider will have some surplus air-speed and will be likely to gain more for a few seconds. This can be converted into height by a climb, combined with a turn if necessary, which I think is more economical if done gently.

After a good take-off, the pilot will find himself higher than his starting point, and this height is useful if conditions make it difficult to soar.



General arrangement of the B.A.C. IX, photographs of which appeared in "The Sailplane," October 14.

THE GLIDER PILOTS' CATECHISM

By SEBERT HUMPHRIES.

Q.—Why do you go Gliding ?

A.—Because anything aerial is good.

Q.—But why Gliding, and not real flying ?

A.—Because my finances could not stand the strain of infinite real flying, whereas they might allow me even to become a private owner of a sailplane in the very long run; because I prefer sailing craft to motor craft; because I hate noise and vibration; because ballooning, though delightful, is too expensive and laborious; because man-lifting kites are out-of-date; because parachuting is a shade strenuous as a hobby; because airships, which I have found to be the most amusing of all aircraft, are not available.

Q.—Why did you join your particular Club ?

A.—In order to spend the odd hours on the ground in the company of friendly people; because there is such a complete range of machines and of skill that I shall never be cursed with a prematurely swelled head; because the site is good and also private; because I have faith in the finances and administration of the Club.

Q.—In return for your subscription and for your long journey to and fro, what do you expect to receive ?

A.—Time in the air; or, failing that, a congenial picnic.

Q.—What is your ambition .

A.—Reliability in the air.

Q.—What is the best measure of such reliability ?

A.—Ultimately, invitation to carry a passenger and to test a new or repaired machine.

Q.—Are the "A," "B" and "C" Certificates an unmixed blessing ?

A.—No, very mixed.

Q.—Why so ?

A.—Because a man who has obtained all three can still be utterly unreliable, having received undue favour from the Almighty, and/or from the Official Observer, and /or from the weather conditions.

Q.—Does this matter much ?

A.—No. The ticket-hunter is automatically committed to his own private hell. He is in the plight of a man who has passed a swimming-test before he is a sound swimmer, or of a soldier who has by sheer accident won a V.C.; he lives in constant fear of his bluff being called and in the consequent loss of his "bubble reputation" and life. Being a ticket-hunter he does not possess the sense of humour that would permit him to put up his exalted badge of proficiency—and then start again from the beginning.

Q.—What course do you recommend as an antidote ?

A.—That every Member should realise that the only **real** test of his proficiency is his own internal state of reasonable confidence; that at all cost spectacular progress should be ignored; that an ounce of patience, hard thinking, and humility is worth a ton of dash; that he should sit at the feet of a sound instructor and take no notice whatever of other opinions.

Q.—When a man has earned a sound "A" Certificate, of what should he be capable ?

A.—He should be able to bring an elementary machine from a height to the ground without undue terror and without damaging it, so long as the weather conditions are good.

Q.—And a "B" ?

A.—He should be able to go through bumpy air without losing his head, turn at right-angles left and right over appointed spots, and land without breakage within a specified area of reasonable size.

Q.—And a "C" ?

A.—He should be a sound and reliable pilot, knowing how to avoid mistakes for which there is no remedy and how to correct mistakes which **can** be corrected. He should be able to fly a smooth course under any conditions within reason. He should understand the proper treatment of horizontal and vertical changes of wind-speed. His turns should be quick and decided. He should know how to plan his whole flight, from the world "release," until the machine is actually at rest. In brief, his brain, his hands and feet, and his machine, should now be working together correctly, dispassionately, smoothly and harmoniously.

Q.—Many beginners find great difficulty in surmounting the earliest stage. What would you do with them ?

A.—Find out whether they are genuinely keen, or merely want to show off. Those in the latter state can usually be cured; if not, they will break a machine and disappear. But if their heart is in the right place, then there are a thousand different ways of setting them right.

Q.—Please give examples.

A.—Explain bare principles. Beg them to think in terms of easy curves, such as those of railway lines. Make them visualise a cigar ash on the top of the joy-stick, and tell them to be careful not to break it. Make them visualise their course before they are launched. Tell them that in the absence of a gas-bag they are only supported by speed. Give them a distant mark, and tell them to concentrate their soul (if any), and mind upon it. Tell them to live outside the machine, to throw themselves ahead of it.

Find them an instructor in whom they have complete faith. Don't scare them; be firm but sympathetic; don't bully them; stand alongside them until the last moment and then go no further away than the wing-tip. Try to remember how vilely lost and wretched you felt when you started in your own beginner's days. Above all, get them to watch your best (i.e., least spectacular) pilot and explain to them that such graceful motion can only be obtained by a graceful movement of the controls.

Q.—What is the most ticklish point in a beginner's career, and how are you going to help him ?

A.—The first flight from a height. Tell him that at last he is going to have enough room to make heaps of mistakes and still have the chance to correct them. Tell him that, since the machine is properly designed, he only has to give it its head and it will fly him down.

Q.—During the period which comes after the "A" and before the "C," what should be the learner's general policy ?

A.—To fly under every possible condition of weather, light, launching ground, strength of launch, condition of machine, direction and strength of wind. To practice holding down the machine (by keeping the stick forward) at launching, and watching the ring fall away from the hook; to increase his turns; to plan out and follow a course; to land uphill, downhill, in narrow valleys, on ridges, and on the flat; to sit in and, if possible, fly several different machines; to think before, during and especially after, every flight; to discuss every difficulty with accredited instructors; to try the effect of variations in speed; to fly under such conditions of fog or darkness that he has no horizon; to rig, dismantle and repair; to help everywhere as requisite. Briefly, to broaden his experience by pocketing his pride.

Q.—What is your private opinion of flying-instruments for beginners ?

A.—Not much, please. A friend of mine learnt to sail a boat by watching the angle of his burgee. The first time he was caught out by darkness he was bowled overboard by a jibe, the burgee being invisible. He now takes off his collar and rolls up his sleeves, and sails by the feel of the wind on his face, neck, and arms. And owns his seven-tonner, and sniffs the air, and works his tides, and watches the sky. Thus, and thus only, becoming **Big Stuff.**

Q.—What is the biggest blessing in a Club ?

A.—The Willing Horse who makes and mends, who comes every week, who breaks his car up by towing and launching machines, who has no dignity to stand on, who makes secret gifts to the Club, in kind as well as money, who joins no cliques, who gives twice as much as he takes, who automatically gets all the dirty work and no thanks.

Q.—And the biggest curse ?

A.—The Awful Bloke who has violent views on everything and invariably expresses them, who knows it all, who rubs everybody up the wrong way, who is a very bad Aviator, and who, like the Willing Horse, never misses a week-end. Everybody in return prays that he will break his Blinking Neck, but he rarely risks it, and when he does, the Lord is too merciful. He overshadows the Slacker, the Grouser, the Mischief-Maker, and the Professional Crasher, not forgetting the Swanker.

Q.—But surely the Club has an innocuous main body ?

A.—Oh yes. They jog along unostentatiously, taking their turn and doing their share of the work, and they go through their tickets so steadily that nobody is at all worked up when they at last go steaming up and down the ridge for a modest twenty minutes, putting the machine down with a moderate side-slip at the foot of the launching hill.

Q.—When this main body get their "C," what happens next ?

A.—They potter off the top every now and then in a privately owned or advanced machine. Some of them grow into benevolent instructors. Some of them at this moment are getting towards cloud-work. All of them realise that they don't know a darn thing, really, and they won't know it all if they keep on until they are 90. They have lots of quiet fun, and try to go to Germany once a year.

Q.—Well, why do YOU go gliding, anyway ?

A.—Fathead! To muck about in the air.

Final Results and Prize List of the International Gliding Competitions, Balsdean, October 3rd and 4th, 1931

THE RESULTS

Event 2.—1, O. Warren, Soarers Club (R.F.D.), 11½ yards; 2, N. Cave, Soarers Club (R.F.D.), 13 yards

Event 3.—C. Palmer, Soarers Club (R.F.D.), 630 yards.

Event 4.—1, N. Cave, Soarers Club (R.F.D.), 1.8 mins.; 2, Lawford, Soarers Club (R.F.D.), 1.6 mins.

Event 5.—1, Soarers Club, 8.43 mins.; 2, North Kent Club, 2.10 mins.

Event 8.—1, L. G. Williams, London Club, 6.56 mins., 120 yds.; 2, G. Humby, London Club, 1.13 mins. 140 yards; 3, M. Manton, London Club, 1.2 mins., 145 yds.

Event 9.—1, L. G. Williams, London Club, 600 yds.; 2, D. Morland, London Club, 400 yds.; 3, A. Gibbons, London Club, 375 yds.

Event 10.—H. E. Bolton, London Club, 40 ft.

Event 11.—Major Petre, London Club, 3.37 mins to rig, 1.15 mins. to fly.

Event 13.—1, L. C. Williams, London Club, 500 yds.; 2, Major Petre, London Club, 335 yds.

Event 15.—1, H. E. Bolton, London Club, First machine Saturday.

Event 16.—1, K. E. Robbins, Soarers Club, First machine Sunday.

Event 17.—1, G. M. Buxton, London Club, 2¾ miles approx; 2, C. Magersuppe, Airspeed Ltd., 2 miles approx.; 3, G. Humby, London Club, 1¾ miles approx.

Event 19.—Major Petre, London Club, complete figure of "8."

PRIZE LIST.

Event 2.—1st prize £1; 2nd prize 10/-.
Event 3.—1st prize £1.
Event 4.—1st prize £1; 2nd prize 10/-.
Event 5.—1st prize £2; 2nd prize £1.
Event 8.—1st prize £2; 2nd prize £1; 3rd prize 10/-.
Event 9.—1st prize £2.
Event 10.—1st prize £1.
Event 11.—1st prize £3.
Event 13.—1st prize £3 and de Havilland Cup; 2nd prize £2.
Event 15.—1st prize £1.
Event 16.—1st prize £1.
Event 17.—1st prize—Wakefield Trophy.
Event 19.—1st prize—Volk Cup.

PRIZES IN KIND.

Aeroplane Lighter—to H. Bolton, presented by Messrs Titanine-Emaillite Ltd.

Stop Watch—to Major Petre, presented by the International Commission for the Study of Motorless Flight.

Aneroid—to G. Humby, presented by the International Commission for the Study of Motorless Flight.

Flying Suit—to L. C. Williams, presented by Messrs Austin Reed Limited.

Luxor Goggles—to Herr Magersuppe, presented by Messrs. E. B. Meyrowitz Limited.

Flying Helmet—to G. M. Buxton, presented by Messrs Austin Reed Limited.

Fountain Pen and Pencil Sets, presented by Messrs. L. G. Sloan Limited, to—T. H. Palmer; O. Warren; J. A. Lawford; C. M. C. Turner; —. Ellingham; C. Palmer.

A FILM TO SEE

There is being shown at present at the London Pavilion a new air film—"The Conquest of the Air"—which is the first pictorial attempt to show the tremendous strides made in aeronautics.

This production of the British International Pictures Ltd., shows the aerial progress which is traced from the mythological period to present-day achievements, including the exploits of Leonado da Vinci, the mediaeval Florentine, whom we are shown flying from the walls of his castle; Francis Lana who constructed a machine of four copper balls from which the air was exhausted; Otto Lilienthal's gliding experiments of 1890, up to the modern wonders of aircraft, including the thrilling presentation of the Schneider Trophy contest.

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1 rudder complete, less covering		1	2	6
1 elevator complete, covered		1	5	0
1 fuselage, less fittings		8	0	0
1 secondary type fuselage, not complete, tailplane, elevator, rudder for same		7	0	0
1 new covered trailer, professor type		15	0	0
1 S.H. Dagling complete with C. of A.		40	0	0

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CORRESPONDENCE

The Editor and Publisher accept no responsibility for the opinions of correspondents.

The Dragon-Fly Again.

Sir,— With reference to Mr. Stephenson's question in "The Sailplane" of Sept. 25.

I have often seen a dragon-fly hover, going forward, backwards, or to either side in still air, i.e., in a very sheltered position on a calm day. The movements of a dragon-fly's wing may be reproduced mechanically (or nearly so), but to build a machine on these principles, to carry only a single man, would be a very different matter and hardly a practical proposition, as the weight carried per unit of area has a great deal to do with the problem.

From the table (given by Sir Hiram Maxim) you will see that the loading of the weight carried per unit of area, varies very much as the weight increases. Unfortunately, Sir Hiram Maxim did not give the weight of the different insects or birds, but, in general, we find that the larger weight has less wing area per pound.

If we now look a little closer at what Nature can produce as regards hovering, we find that the largest bird capable of hovering even for a short time, does not weigh more than approximately one pound, so we may conclude that the difficulty increases with the weight, e.g., insects nearly always hover, a humming-bird can hover for a long time, the sparrow for a few minutes and a pigeon or crow for a few seconds only.

The difficulty to be overcome to get a machine, weighing several hundredweights, to hover, would be enormous, without the use of a medium lighter than air—or, in other words, without a balloon.—(Signed) T. G. NYBORG.

[*The question of "hovering" appears to have little to do with motorless flying. "Soaring" as at present practised is merely gliding downwards in a current of ascending air. Our energies are directed towards the improvement of that technique. The construction of a power-driven helicopter is a case for the research-engineer or inventor. Actually a number of machines have been built and though not economically feasible, they will hover and move forwards. People who are interested should get a copy of Captain Liptrot's paper before the Royal Aeronautical Society.*—ED.]

RATIOS OF WING AREAS AND WEIGHTS.

	Sq. feet per lb.	Lbs. per sq. foot		Sq. feet per lb.	Lbs. per sq. foot
Gnat ...	48.77	.0205	Stag beetle, male	3.75	.265
Dragonfly, small	29.59	.0340			
Ladybird ...	22.06	.0455	Rhinoceros beet.	3.11	.320
Dr'g'nfly, comn.	21.6	.0465	Swallow ...	4.87	.206
Daddy-long-legs	14.82	.0675	Sparrow ...	2.72	.368
Bee ...	5.22	.192	Turtle-dove ...	2.13	.470
Meat-fly ...	5.605	.178	Pigeon ...	1.27	.790
Drone ...	5.053	.198	Stork	.97	1.03
Cockchafer	5.16	.194	Vulture ...	.82	1.22
Stag beetle,female	4.65	.215	Aus. Crane ...	.41	2.44
			Wan. Albatross	.43	3.3

[*Of these the vulture and albatross are probably the only creatures that "soar" in the same way as a sailplane.*—ED.]

Kenya Asks for Co-operation.

Sir,—There is a crowd of enthusiasts for Gliding in this little section of the globe who are very keen on forming a club and trying their luck at the sport, and since none of us have any experience whatever (indeed I do not suppose any of us have ever seen a Glider in flight), either constructional or flying, we would much appreciate advice upon any and every branch of the subject.

There are probably a number of snags to overcome before we really get going: To enumerate some. (1) Suitable site for actual flying; (2) Altitude; (3) Material for construction; (4) Instruction. At the moment these points are all I can think of, but there are sure to be numerous others.

To take them in their turn; (1) Operating Site. This is a point we should like a good deal of advice on. Around Nairobi we have quite a number of places which appear to be suitable, with slopes varying in height above the surrounding country from a few feet to several hundred feet; the prevailing wind East, with velocities on an average of about 15 to 18 m.p.h.

(2) Nairobi's altitude is about 6,000 feet above sea level which is, roughly, a 20 per cent. decrease in atmospheric density; presumably this will affect sinking speed, gliding angle, etc. to the same percentage.

(3) Although there are about 15 aeroplanes in operation in this Colony at the present time, I believe materials for rigging, etc., are fairy scarce and consequently expensive. Mr. Nicholas, the Government Aircraft Inspector (late of Vickers Aviation Ltd.) has sent the Air Ministry a list of comparative tests on local timbers, and should the A.I.D. accept any the difficulty will be greatly reduced.

(4) As far as instruction goes we shall just have to instruct ourselves; I have obtained one or two books on Gliding and we shall have to read up these and then try out such information given therein. Since there is plenty of enthusiasm this will probably prove to be the least difficult of the snags.

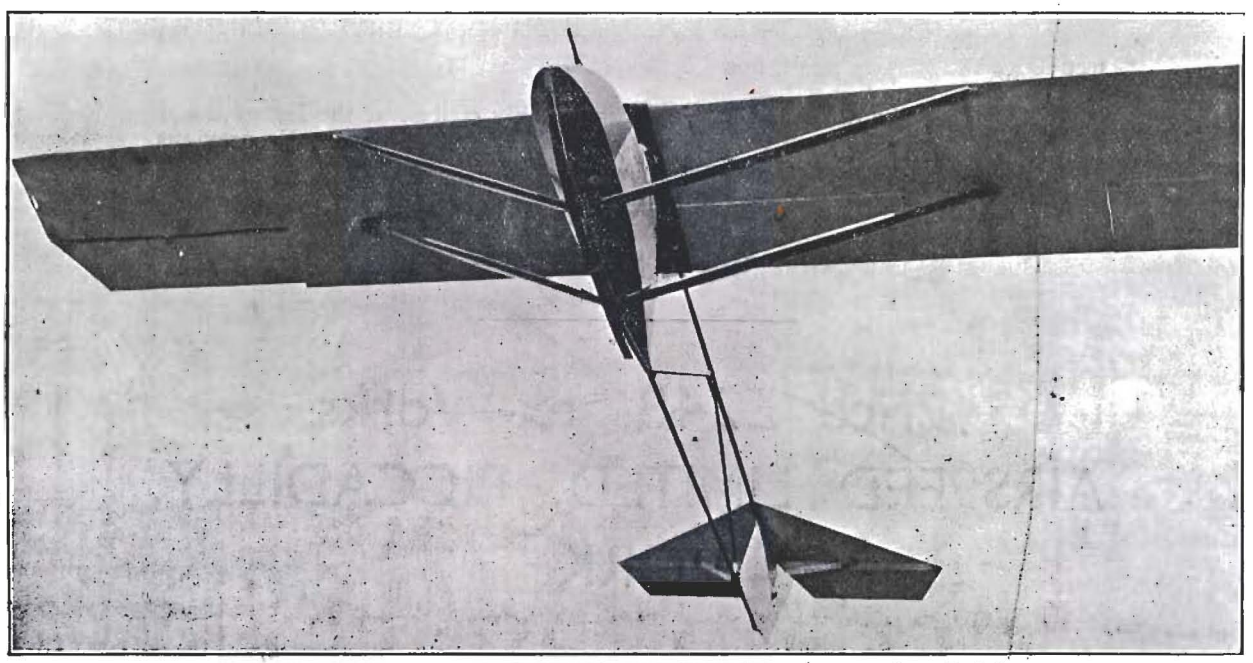
For expert advice on the constructional side, the aforementioned Mr. Nicholas has assured us of his willingness to assist, and of his keenness to see the sport on a decent footing in the Colony.

Should the Club be a success, and I see no real reason why it should not, it will help a great deal towards furthering the sport in this part of the world at least.

If any of your readers would care to exchange views, or help out with a spot of advice we should be only too grateful to them, for, as I mentioned before, we are amateurs pure and simple, though keen ones.—(Signed)

E V. STOBBS.

P.O. Box 532, Nairobi, Kenya Colony.



An unconventional view of Mr. Hiscox's "Hols der Teufel" at Balsdean.

NEWS FROM THE CLUBS



Members of the Edinburgh Gliding Club having a good old-fashioned snowball fight round their "Hanseat" machine

THE DORSET GLIDING CLUB

Several of our Members journeyed to Balsdean on Friday, Oct. 2, and did what we could to help the organisers by serving as Marshals and in our brief spells off duty we were glad to note the general excellence of the piloting in the various events.

Our last few week-ends have been devoted chiefly to Primary Training—one "A" and one "B" certificate having been acquired. Four new members have joined this month.

On Oct. 16 we tried out the new Club car—new only in the sense that it is a fresh arrival—acquired by the peaceful persuasion of our Chairman who convinced the garage proprietor that it was "eating its head off" whilst in their hands. It pulls well and so far has saved much time (and labour) in bringing the machine to the foot of the hill within range of our winch rope.

On Oct. 17 an attempted "A" test resulted in a crash (due to wrong rudder) and during the week ending Oct. 24, nine of our Members carried out the necessary repairs (2 spars and several ribs) so that training could be continued on the 24th.

The wind has held in the Northern quarter for several week-ends now and we are praying for a change to S.W. so that we can do a little more advanced flying.

During the Winter months we are proceeding with a constructional programme as there are sufficient Members who are keen enough to support this—it is these active Members who will remain in the movement.

SOLID ACHIEVEMENT

On August 24th, the 'Tern' set up an official British Distance Record of 8.3 miles, flown by Herr Magersuppe.

On September 27th the 'Tern' set up an official British altitude Record of 780 feet above the starting point, flown by Major H. Petre.

On October 4th the 'Tern' won the Rig and Fly contest at the International Gliding meeting in 3 minutes 36 seconds with a crew of five men. No previous practice had been made for this event.

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THE NORTH KENT GLIDING CLUB

Mr. L. O. Kekwick (chairman) presided in the absence of the president, Mr. W. A. Dickson, at a meeting of the North Kent Gliding Club at the Constitutional Club, Bexley Heath, on Monday, Oct 26, aud was supported by Mr. A. G. Elliott (hon. treasurer), Mr. J. P. Prangnell (captain). Mr. Harold Jiggens (ground engineer), and a good gatheriug of members.

The Chairman said the committee felt they should call a meeting to review the activities of the Club in the past year—their first complete year as a club. The year 1930 was a momentous one in gliding as far as England was concerned. The majority of the clubs were formed at the peak of enthusiasm for the movement, and later they were confronted with the problems of training, finance and organisation, Clubs which were fortunate to secure a good hillside site advanced rapidly along the usual lines of training adopted by the Germans. Unfortunately few of those sites existed in this country, or rather, few were found and permission to use them obtainable. The North Kent Club's committee had scoured this part of Kent, and were unable to find anything approaching a good site. Consequently they were faced with the problem of training glider pilots on unfavourable sites. Notwithstanding that drawback, however, two members had secured their "A" licences, and half a dozen others were in reach of that proficiency. Progress that far had meant much work and had cost money. The committee felt that if the North Kent Club was to exist it should be a club of some account in the gliding movement.

"The system of training we have found most successful on flat ground," Mr. Kekwick continued, "is that of auto-launching. There is only one rival to this system and that is auto-towing. Auto-towing can be used for primary machines up to a height of 15 ft. Above that height, for reasons of strength, a special glider is necessary." Mr. Kekwick pointed out that even with auto-towing the problem of suitable sites was not overcome, as a flat field of large dimensions and with a flat surface on which a motor-car could be driven at a speed of 30 m.p.h., was necessary. Such a field was hard to find outside a service aerodrome. A skilled instructor for dual machines was also necessary. Dealing with the future of the Club, Mr. Kekwick said that the committee proposed to continue preliminary training at Idleigh Court and Joyce Green, using either the auto-launching or auto-towing method. Visits would be made periodically to Balsdean, near Brighton, and Ditchling Beacon, to enable members to try for their "A" and "B" certificates. They proposed to construct a sailplane—the B.A.C. IX model—which would enable members to be towed to good heights. Through the kindness of their president, they had the use of a shed near Joyce Green, which would be suitable for constructing the machine. They proposed to start work on it in January, so as to have it completed by the Spring.

"I should again like to remind you," said Mr. Kekwick, concluding, "of the pioneer work which has been, and still is, necessary for building up this club as a successful gliding club, mainly on account of the absence of suitable training sites in the district. As a result of recent research, however, we have every reason to suppose that the surrounding area is excellent for soaring, which, after all, is our ultimate aim."

Following discussion, a gliding film and lantern slides of early machines were shown.

THE EDINBURGH GLIDING CLUB

The Edinburgh Gliding Club concluded October's practices on Sunday the 25th, with a meeting at a site on the Middleton—Innerleithen Road, E. Lothian.

This particular site is ideal for primary gliding and bears a remarkable resemblance to the Wasserkuppe in Germany, the launching spot being 300 ft. above the valley with a slope of about 2 miles into wind.

On arrival in the district on Sunday it was discovered that a heavy fall of snow had taken place during the night and was lying about 9 inches deep over the whole slope and in places was as much as 1 foot deep; brilliant sunshine and a clear sky with the wind blowing a steady 10 to 12 miles per hour made a good day's sport assured.

The Club's primary HAUSEAT Glider was rigged after which operation all the members present indulged in a good old-fashioned snowball fight, 20 minutes of which put everybody in first-class fettle for gliding activities.

The test-flights having been made the task of testing the members who had qualified to make attempts for their "A" gliding certificates was carried through and the labours rewarded by three pilots satisfactorily completing the test; one *ab initio* making a beautiful glide of 55 secs.

The heavy and tiresome job of pulling the machine back to the top was made much easier on this occasion by pulling her back tail first on the skid over the snow which made an ideal surface for the purpose.

This very successful and happy day was brought to a close with a little ceremony which brought back to those present memories of a very brilliant airman and friend of the Club, Mr. J. C. Howden Ferme, the captain taking advantage of the good turn-out of members, officially handed over to the Club a beautiful silver trophy which he has presented for yearly competition and dedicated to the memory of the late Mr. Geo. K. Murray who lost his life a few months ago while giving a display of aerobatics at the Cambridge Air Pageant. Mr. W. Cameron, the secretary, accepted the Trophy on the Club's behalf and in a short suitable speech expressed the hope that it would encourage the progress which its donor so sincerely desired to see in the sport.

The members of the Edinburgh Club are looking forward to the November meetings when they hope to get a fair amount of practise in preparation for the Club's forthcoming Winter competitions.
—W.C.

THE WILTSHIRE LIGHT AEROPLANE AND GLIDING CLUB.

The iuterest of visitors attending the meetings which are held on Saturdays is increasing. The Windsock marking the site on the brow of the Easton Hill can be seen from the London—Devizes Road between the 85th and the 86th milestone. Visitors are welcomed but are requested *not to bring dogs*.

The President of the Club, Capt. W. L. D. Gundry, arrived on Saturday, Oct. 10, with a party of interested guests and expressed great pleasure with the progress made during the year's training. The Wilts "Unquenchables" having cultivated a little "Bird Sense" as quite distinct from and superior to what is commonly termed "Air-mindedness" are preening themselves.

The Club Badge indicates history in Wiltshire from the period when the chalk hills were deposited from the submergence, to the White Horses, and later to the smuggling, with lastly Flight by man in engineless sailplanes. (The artist friend responsible for the design is Mr. Limpus). Those who are interested in the county legend, "The Moonrakers" may obtain a copy of an original version in rhyme headed with the Club Badge for their friends at home or abroad by enclosing 6d. in stamps and stamped addressed envelope to the Assistant Ground Engineer, Mr. P. Elwell, "The Quarry," Highworth, Wilts. The fund will be devoted to Club development, and the object is worthy of wide support.

The members met on Saturday last, Oct. 17, and although the wind, which on this occasion was of sufficient velocity, was in the worst direction for acquiring further certificates. A good day's work was however accomplished, one new member whilst making his first acquaintancew ith engineless fiight showed remarkable promise and the guests present were rewarded by an additional entertainment when they heard the more advanced members burst forth into song at altitudes of 150 to 200 feet which are now commonly reached.

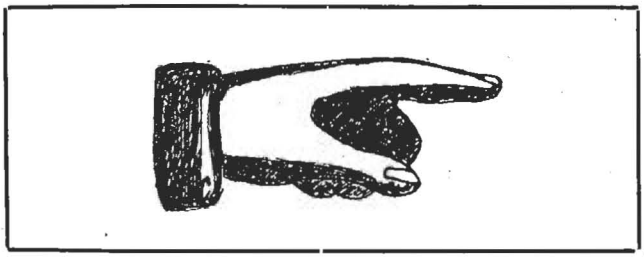
For the first time perhaps it was realised why the lark sings whilst ascending to altitudes and securing a wider vision of the glorious Wiltshire Downs with their remarkable soaring possibilities and are well illustrated in the Club badge marking the world's hstory up till 1931, when man soars over all the in the enginless sailplane.—C.T.C.

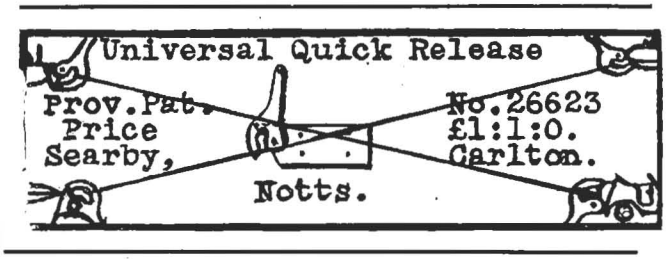
B.G.A. VICE-PRESIDENTS.

The B.G.A. have pleasure to announce that Kathleen, Countess of Drogheda, C.B.E., and Air-Commodore J. A. Chamier, C.B., C.M.G., D.S.O., O.B.E., have accepted Vice-Presidencies of the Association.

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FURNESS GLIDING CLUB

The great progress made by the Furness Gliding Club was commented on by the speakers at a dinner following the second annual general meeting which took place in the Imperial Hotel, Barrow, on Monday evening.

Captain John Fisher, who presided, apologised to the gathering on behalf of Commander Craven and Col. W. F. A. Wadham, who he regretted were unable to be present, and welcomed the Mayor of Barrow, Herr Maggersuppe, Herr Haack, Major Filber, the distinguished representative of the Navy and all guests. He congratulated and thanked all those who had done such splendid work for the club. He was pleased to say that the Club's "budget" was balanced and humorously reminded the company that their subscriptions were now due. There had been no casualties during the year and six members had qualified for "A" certificates. Emphasis was laid on the necessity for more machines for one can hardly run a club like that and expect to make such great progress when the machine was under repair.

Capt. Fisher went on to say that a better ground was needed—one which would be suitable for flying under all weather conditions. Continuing, the Chairman said that Major Filmer, of Kendal, had consented to come and tell the gathering what was being done there in the sphere of gliding. He wished the gliding club which was contemplated, every success, and expressed a desire that there should be every possible co-operation between the clubs. In conclusion Capt. Fisher paid a tribute to the untiring efforts of the hon. secretary, Mr. R. Cuthell, and the other officials of the club, who had done so much for its success.

Major Filmer, after giving thanks for his kind reception, said that the only progress made in Kendal had been to collect £50 or £60. He tendered his heartiest congratulations to the Furness Gliding Club on the wonderful progress they had made. He promised to make the suggestion to his committee that the Barrow and Kendal Clubs should combine in some way although no machines or flying site had been acquired. Major Filmer described in a graphic manner some of his experiences in one of the largest gliding schools in Germany which he had visited a few weeks ago. He repeated that he would do his best to bring about the amalgamation of the two clubs.

The Mayor (Ald. R. T. Dockeray) said he was there because he was interested in gliding. Although not a commercial proposition, it was giving great impetus to air traffic of the future. Recently when crossng the Atlantic he was struck by the grit the men who had flown the huge "pond" must possess. He hoped that the gliding club would continue to increase its membership, and said he felt inclined to give the club some help himself. He concluded by expressing the desire that the club would go from success to success and keep on the right road.

Ald. Dockeray then presented club badges to Messrs. Stevens, Butterfield, Foster, Britton, Burnett, and Redshaw.

In a brief speech Herr Maggersuppe, the well-known German sailplane expert, thanked those assembled for their kind reception. He regretted that the weather had rather handicapped them on occasions, but they had given some very good shows. His explanation of the soaring of a glider in the face of a wind and his experiences in Germany and this country were described in a very illuminatng manner. He ended by saying, "We have tried to help the gliding movement over here by giving lectures and demonstrations. I am very glad to be able to say that gliding as a sport is building a bridge between England and Germany. I feel very much at home here, and I hope we shall continue to be united not only on the basis of politics, but also of the sport we all love so much." A cinematograph show of the club's activities was much appreciated, and provided splendid and instructive entertainment.

As a forerunner to the club dinner, the club held its second annual general meeting under the chairmanship of J. H. Saunders. The following officials were elected for the year 1931-32: — President, Comdr. C. W. Craven, R.N.; chairman, Capt. John Fisher; vice-chairman, Mr. J. S. Redshaw; hon. treasurer, Mr. H B. MacLaren; hon. general secretary, Mr. R. Cuthell; ground captain and instructor, Mr. W. A. Stevens; ground engineer, Mr. W. Butterfield; committee, Messrs. C. A. Britton, V. Foster, R. W. Symons, J. H. Saunders, G. L. Lock, and J. C. Redshaw.

NOTICE.

We publishd in our issues of Sept. 11 and Oct. 23, respectively, contributions by "Dorset Glider" and "Wessex Soarer," which, although couched in strong terms we saw no reason to reject.

It has since been urged by parties interested in these contributions that they have created resentment and were not calculated to advance harmonious relations between the clubs concerned.

"The Sailplane" which exists solely for the benefit of the gliding movement as a whole desires to point out that the contributors express only the views of their authors, for which, incidently, no periodical can ever be responsible, and at the same time express its personal regret to the Wilts Club and Dorset Club for any ill-feeling which the letters may have caused.

THE HANDBOOK OF THE BRITISH GLIDING ASSOCIATION.

The Handbook of the B.G.A. has already won its place among reference books and is now recognised as being a book that every Club Secretary should own. It contains not only many useful articles but also a diary, that is well worth the modest half-crown alone.

Articles dealing with many subjects relating to motorless flying are contributed by acknowledged authorities and have proved of no mean help to those requiring special information.

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