April 15th, 1932 Vol. 3 No. 8

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By

C. H. LATIMER NEEDHAM

M.Sc. (Eng.) Lond. F.R.Ae.S.

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THE SAILPLANE & GLIDER

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REAWAKENING

IT has been affirmed more than once in THE SAILPLANE that gliding is an all-the-year-round pursuit. If support were needed for this statement it is to be found in the fact that throughout the winter months the Club News Section has never been entirely devoid of information. But with the advent of spring there are definite signs of renewed activity in different parts of the country. News is beginning to trickle in from clubs who, as far as THE SAILPLANE is concerned, have remained dormant during the winter.

This reawakening is only natural for, after all, quite apart from the better ground conditions, longer days and, on the whole, more favourable weather, spring, summer and early autumn provide the largest proportion of flying days. Spring is, in many ways, an ideal soaring season, for the ground is warming up rapidly owing to increased insolation while the upper air is still relatively cold. This combination provides " unstable " air conditions in which upward currents, cumulus clouds and other appurtenances of soaring flight flourish. The large area of " polar " air which sweeps over the country in the rear of an eastward-moving depression is, in particular, unstable at this season of the year and provides ideal soaring conditions.

Summer and early autumn form the " thermal " season when the instability which is essential for soaring is provided largely by intense surface heating by the sun's rays. Winter, on the other hand, is a season during which the atmosphere is often quiescent and inversions and fogs tend to hamper any large-scale attempts at soaring.

But, in spite of these seasonal variations, there is usually sufficient variety in the weather of these islands at any time of year to provide sufficient flying days to make an all-the-year-round effort worth while. Next winter we look forward to seeing many more clubs actively engaged than was the case during the season which has just closed.

It must not be supposed, however, that the gliding clubs have remained inactive during the winter, even if they have had but little flying activity to report. In many cases the constructional sections have been busy, new machines have been built, and equipment brought up to date all in readiness for the real gliding season which is just commencing. We have been glad to co-operate in these activities by publishing, from time to time, articles on construction and design, and details of new ideas in equipment. Nevertheless, in spite of certain criticisms which have been received, the flying side has not been neglected. We have endeavoured—how successfully we must leave our readers to judge—to strike a balance between information and news designed to stimulate actual flying and material which would be useful to the more seasonal activities of the Movement.

From now onwards the flying aspect will be more prominent and we hope to see the Club News Section filled every fortnight, as far as space is available, with information indicating ever-increasing activity and greater achievements. We hope, in particular, to be able to record the successful completion of more than one epoch-making long-distance soaring flight before the summer is over. Such flights, however, are not accomplished without much preliminary organisation and time spent in laying the foundations. The success achieved during the summer will measure the extent to which the winter months have been well or ill-spent.

THE NATIONAL AVIATION DAY DISPLAY.

By the time this issue of THE SAILPLANE appears, Sir Alan Cobham will have launched his National Aviation Day Campaign. Details of his programme were announced in our last number.

Mr. Lowe-Wylde is accompanying Sir Alan and will give daily demonstrations of auto-towed and aeroplane-towed flying. It is hoped that when the Display is in the neighbourhood of a gliding club, the members will co-operate to the fullest possible extent in order to stimulate public interest in the Gliding Movement and obtain further local support for their own activities.

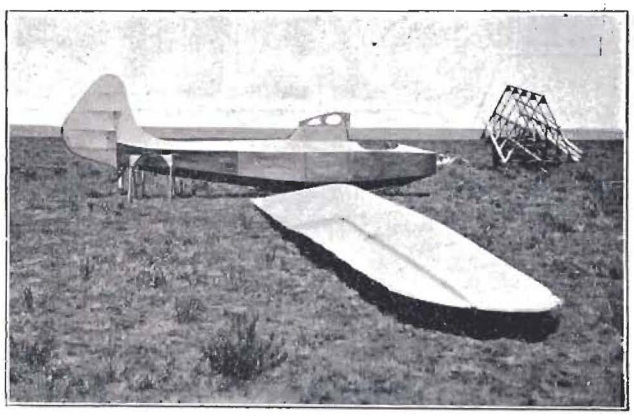
A representative of the British Gliding Association will be attached to the Display, and will work with Mr. Lowe-Wylde.

MORE LOOPING.

On Sunday, March 30th, Mr. C. J. Longmore, exhibition pilot to the British Air Displays, gave a demonstration of looping in a B.A.C. two-seat sailplane at Ashwell, near

Royston, Herts. The machine was auto-towed to a height of about 400 feet and was then put into a vertical dive. At about 150 feet from the ground, Mr. Longmore executed a graceful loop, finishing at about 150 feet, leaving enough height to circle above the onlookers and land in the centre of the aerodrome.

On more than one occasion we have expressed the view that the Gliding Movement has little to gain from acrobatics of this kind. We would modify this statement to the extent of conceding that, in the hands of an experienced pilot like Mr. Longmore, a carefully organised demonstration should convince the public that gliding is not merely air tobogganing, but is really flying. The danger would come if an inexperienced pilot attempted to perform the same feat on a machine not suited to the purpose. More harm than good would then be done.



The "Avis" Dismantled.

AN ATTEMPT TO GLIDE THE CHANNEL.

We understand that Mr. P. Michelson, of the London Gliding Club, is at Dover awaiting favourable weather conditions for an attempt to soar across the Channel.



The "Avis."

A HIGH-EFFICIENCY SAILPLANE BUILT IN SOUTH AFRICA

Dear Sir,—In The Sailplane dated December 18th a photograph appears of a secondary type of machine built by myself and described as being my latest machine. This was the machine referred to in The Sailplane of November 20th which was wrecked in January, 1931. I enclose particulars of my latest machine with photographs and outline drawing. We have had a few trial flights of this machine on the flat ground, and the results have been most satisfactory. We hesitate to give figures until the machine has accomplished a flight of some duration. This is the first high-efficiency sailplane to be built in South Africa and flown, and we hope it will make a name for itself.

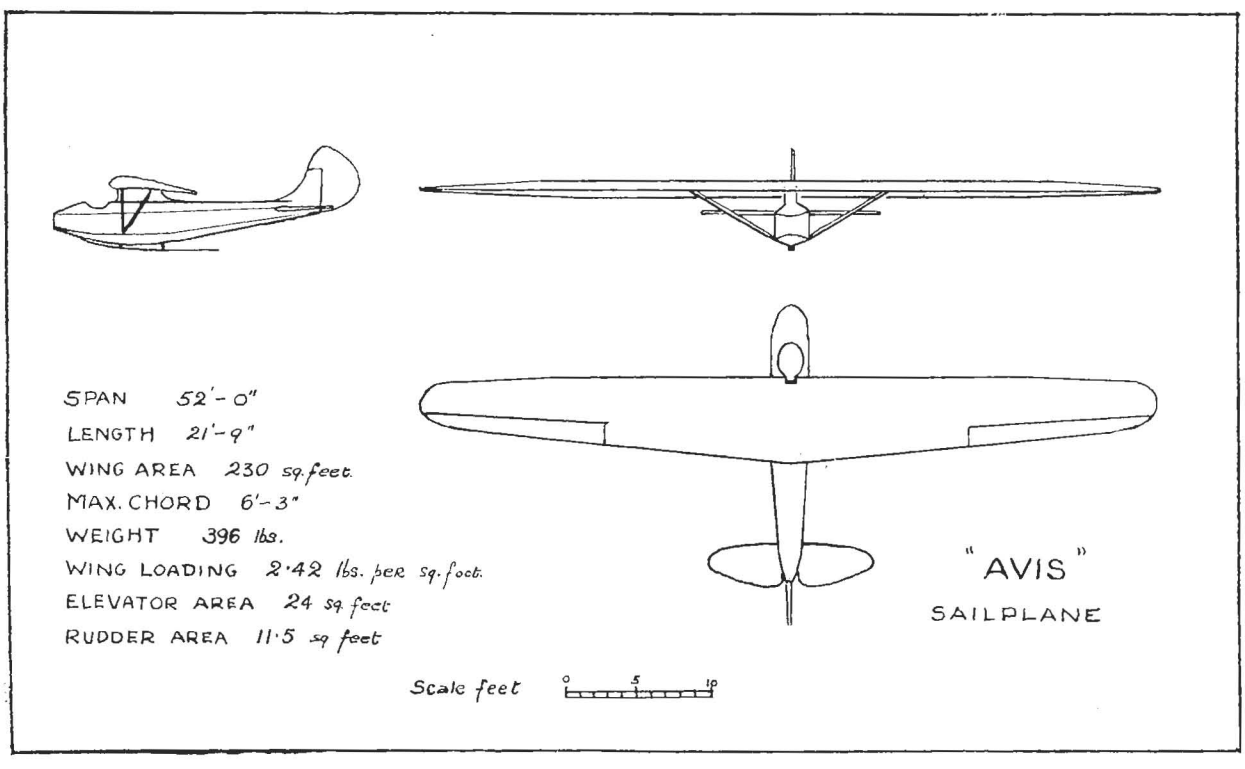
Your issues of The Sailplane are of immense help and a fine stimulant to one in a large country where gliding enthusiasts are few and far apart. With best wishes,

Yours sincerely,

S. W. Vine.

February 17th, 1932.

[*Later news of Mr. Vine's sailplane is given on page 87.*]



General Lay-out of Sailplane built by Mr. S. W. Vine.

NEWS FROM OVERSEAS

[*The preceding issue of* The Sailplane contained for the *first time a new feature, "News From Overseas," and the introductory note at its head explained that the Editor would welcome matter for inclusion therein. It has evidently got around that* The Sailplane, *like the Lifeboat Institution and hospitals, relies on voluntary contributions, for not one letter have we received. However, should anyone feel moved to help, the information should be sent in the form of a brief, simply worded letter, which is little trouble to write and less to read. Such should be addressed to Thurstan James, 24, Norland Square, London, W.11.*]

WORLD RECORD.

The flight of Lieut. W. A. Cocke (U.S. Air Reserve) has now been officially recognised, or homologated, by the Fédération Aéronautique Internationale. This flight is the world's record for duration in a motorless aircraft, and the figure is 21 hrs. 34 min.

GERMANY.

The School at the Wasserkuppe is once again in full swing and recently seventeen " C " certificates were qualified for in one day All of them were obtained on the Falke, which, as most people know, is the machine designed by Herr Lippisch to replace the Prüfling.

A flight of 4 hrs. 7 min. was made recently about thirty miles south of Magdeburg by a police officer, Herr Angerstein. This flight was made in a machine of the Luftikus type called Willi Faber II along the sides of the Seeberg in the Harz Mountains close to Bornecke. Herr Angerstein is the member of the group who recently towed three sailplanes behind the same aeroplane.

U.S.A.

The annual meeting organised by the National Glider Association will again take place at Elmira, N.Y. This year the meeting will begin on July 18th and last for five days.

FRANCE.

From the most recent information to hand it appears that an ever-increasing number of gliding clubs in France are adopting mechanical launching. Although a car is essential for such launches, the French system is not, generally speaking, auto-towing. The chassis is modified and very often one of the driving wheels is replaced with a drum, round which the cable is wound; alternatively, a winch may be placed behind the gearbox. Whatever the arrangement, the car is placed in some predetermined position, and the glider launched by winding in the cable. Although a vivid imagination might foresee all kinds of trouble with this arrangement, the fact that so many clubs are successfully using the method demonstrates its utility.

BELGIUM.

On March 30th the Belgian gliding record for endurance was twice broken. The first successful attempt was made by M. Ledure on a Professor, who flew for 1 hr. 27 min. The second was achieved by M. Demblon (also referred to as Capt. d'Emblon) on a Kassel 20. His time was 2 hrs. 11 min. M. Ledure also established the Belgian altitude record with a height of 328 feet above his starting-point during a flight of 1 hr. 30 min. The previous record for duration on this site had been established by Herr Wolf Hirth.

These flights took place at a place called Colanhan, which is close to Vielsalm, which is in the Belgian Ardennes and some forty-five miles to the south of Liège. Here Col. Massaux had organised a big gliding meeting for the Easter holiday, which was attended by eight Belgian clubs as well as by MM. Abrial and Landeverlin, and Capt. Rémy, who came from France.

As with so many English sites, the ground, though suitable, is spoilt by the presence of innumerable fences. But during the meeting, arrangements had been made to remove these.

It must be a constant source of pride to the Movement in this country that its achievements are in no wise due to any subsidy or financial inducement as happens elsewhere. At this Belgian meeting, for instance, the Aero Club of Belgium was offering various prizes to winners of certificates: 100 Belgian francs for an " A," 300 for a " B," and 800 for a " C."

The Professor and Kassel 20 as well as a Zögling were placed at the disposal of the meeting by Col. Massaux and M. Ledure. The clubs only had training machines, among which there were three Kassel 12's, three Zöglings and two Sabca Juniors (Belgian).

ITALY.

The Italian Gliding School at Pavullo was founded in 1927 with the intention of providing cheap preliminary flying training rather than with the object of teaching motorless flight. For this reason the obtaining of " A " and " B " certificates is sought after rather than " Cs."

During the summer of 1927, 1,730 launches were made and twenty-two " As " obtained. In the summer of 1928, 2,200 launches were made and thirty " As " gained. During the same period of 1929, 7,933 launches were made and eighty-seven " A " certificates obtained.

In the summer of 1930, 4,900 launches were made; the results were: 104 " As," forty-eight " Bs," and one " C." In the summer of 1931, 5,000 launches were made, and 138 " As " gained, together with thirty-eight " Bs." All these figures include the demonstration flights made by instructors. During the whole period there was only one fatal accident.

SOUTH AFRICA.

Mr. S. W. Vine has completed his sailplane, and at the time of writing was waiting for a suitable wind to try the machine out near Krugersdorp. A runway has been prepared at the top of a high kopje and another on top of Mulder's Drift Hill, where there is a drop of 720 feet.

The machine has already made four preliminary flights from which a gliding angle of 1.44 has been deduced, a figure that to European experiences seems somewhat inflated.

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J. P. Dewsbery taking his " C " at Dunstable in the two-year-old " Dagling " normally used for elementary training.

SOME MORE ABOUT SOARING

FOR BEGINNERS ONLY.

Sir Joshua Reynolds, the painter, once wrote: " Few have been taught to any purpose who have not been their own teachers."

In the opinion of one of the best sailplane pilots in the country, this remark applies with equal force to the art of motorless flight. These notes are therefore written with all the more diffidence; but at least they are based on the first-hand and current experiences, sometimes bitter, of a sufficiently ancient ab initio pilot who is himself struggling to act up to Reynolds's dictum.

Sooner or later the day comes when a wind is blowing straight up the hill with such force that your instructor wonders privately whether he dare launch you. The conditions are obviously good for a skilled pilot, but they may conceivably bump you, as a beginner, into a pardonable state of panic. He asks you how you feel about it; and you rashly, possibly with a trace of bravado, say that you think you can manage. The problem arises: How are you going to set about it?

Don't be bustled; think out a few points before you start; the time will be well spent and need not be long. Cold methodic reasoning is the only factor that is going to see you through, so that if the prospect seems too much for your present slender stock of confidence, do please have the fortitude to back out before it is too late. The shock of muddling your flight may set you back months in your education, unless you are one of those obstinate people to whom a reverse is merely stimulating.

Whatever else you do, *don't* listen to the hair-raising stories which the last pilot up is often anxious to tell you. Sometimes he is only showing off, being cock-a-hoop at his unexpected safe return to earth. Also, the worse your own effort, the more intense the limelight upon his own. So tell him to reserve his stories for his female relatives at home.

With the help of your instructor, and of none other, make up your mind *firmly* as to the general plan of your flight. Are you definitely going to try to soar? If so, where? And how and where will you eventually work off your height, and where will you land? Or are you going to avoid the heart of the soaring area, making a prolonged glide on safety-first principles?—often a sensible decision.

A definite ruling on this point automatically becomes the keynote of all your subsequent actions. You will unconsciously follow it out, even though the whole of your conscious mind is engaged with the controls. Conversely, a half-hearted decision will lead to a state of vacillation which will land you in a mess such as will give your self-esteem a nasty, but no doubt healthy, clout.

Take your time in settling down in the machine; see for yourself that the controls are in order, strap yourself in tight, comfortably and securely. Take care that you do not in your suppressed emotion foul the control wires with the straps or with a crumpling of your jacket pocket.

Arrange your vee just how you like it. Find a point on the skyline immediately in front of you and glue your eye on it from the moment the team begins to walk until you are clear of the elastic and well away. At all costs you must take off unemotionally or else you will muddle your immediate right-angle turn along the ridge; then defeat will follow.

Bear in mind that with to-day's strong wind your air-speed as you leave the elastic will be excessive. This will have several effects.

Your elevator will be hyper-sensitive. You may kite up as you meet the full force of the up-current; and then, in your effort to correct, you may buck like a mustang, thereby putting your heart in your mouth once and for all.

In the past you have learnt the sound of normal air-speed, but you have never heard anything so ferocious as the sound of your initial air-speed to-day. Under the stress you are likely to lose your power of judgment on this point, and your tendency will then be to maintain the *new* sound. The result is that you do not take full advantage of to-day's enormous potential lift and you roar away at 50 m.p.h. or more, unconsciously working to the new standard of speed.

The point may not appeal to the armchair critic. But in actual practice the ab initio argues in mid-air somehow thus: " It was windy on the ground; it is therefore that much extra windy up here." So he unintentionally holds the machine's nose well down, flies like a frightened rabbit,

and scares himself with the extra sensitiveness of the controls and with the magnified intensity of every bump.

At such a time an air-speed indicator is a mixed blessing, and it may well be ignored during the initial stages of the flight, or at any rate until the pilot has settled down. Do not forget that any honest pilot, however experienced, will admit that a catapult launch is not devoid of emotion. The beginner will have all his work cut out to make an accurate first turn and to pick up the course of his first beat without fatal loss of height. He will also have to weigh up promptly the amount of drift and to decide upon the angle to the line of the ridge at which the machine must be flown to counteract such drift. Further, he will be similarly summing up his chances of making height.

He is being subjected to any amount of bumps, though these will actually diminish with increasing height. He is grappling with lateral oscillations which, in a strong wind, often seem to be trying to roll him over down-wind. At his about-turn at the far end of his beat he will be bothered with queer new happenings, such as reversed aileron control, bumps when banked, the resumption of his course under trying conditions, and the continual minor adjustments of the machine's attitude.

In the midst of all this activity he peeps at the air-speed indicator and happens to see it recording an abnormal speed. His little remaining confidence and peace of mind immediately evaporate. He starts fidgeting with the elevator and watching the effect on the indicator, which now seems to have gone mad. Actually the poor thing is doing its best, faithfully pursuing the pilot's nervous adjustments, but always lagging a shade behind. *In extremis* it flops back to about 25 m.p.h., the machine slithers off one way or another, the controls go dead, and the Spirit of Blue Funk taps the pilot on the solar plexus. Down goes the nose, and some kind of a landing hurriedly follows, leaving the pilot to bite his nails until the next soaring day comes.

There is only one remedy for this emergency, and it calls for a trace of courage. The pilot must refuse to look at the indicator any more, and must fix a glassy eye on some point on the horizon immediately ahead. If he has the strength of mind to do this, he will be rewarded immediately with regained fore-and-aft stability.

In any case, the too intense study of the indicator leaves him insufficient time for obtaining the all-essential hang of his course and of the general conditions. He would have had a far better chance of success if he had temporarily left such a matter as air-speed solely to his ear, keeping his eyes ahead of the machine all the time, except for an occasional glance at the ridge. On his second or third beat he will have settled down to a state of mental equilibrium, and then, and only then, can he begin to give his attention advantageously to such a minor point as the precise measurement of his speed in terms of miles per hour.

Emphasis was lately given to this attitude of mind towards the air-speed indicator by a pre-" C " pilot's two delightful long soaring flights in a primary machine entirely devoid of instruments. In the absence of any distraction within the cockpit he flew with a smoothness usually associated with a high-performance machine, not caring about his speed so long as his ears told him that the machine was flying steadily and healthily. On the same day the writer wasted a beautiful soaring wind through a bad attack of " indicatoritis " while flying a better machine, thereby worrying himself sick and missing the obvious centre of the soaring area. His care-free contemporaries soared as they had never done before.



Another view of Dewsbery in the " Dagling " doing 11 minutes towards a 45-seconds flight for his " B."

All machines have to be *flown* . . . and there is more in this remark than appears at first sight. The art of flying does *not* consist initially in the watching of instruments. To fly by instruments is an advanced and ancillary art calling for a battery of dials on an ample instrument-board. Motorless flight consists of a smooth, even passive, progress at a healthy velocity within certain areas. So long as this velocity is maintained and so long as the pilot keeps his head and confidence, and the machine its form, soaring flight is possible in any area where the up-current is equal to or greater than the sinking speed of the machine. That is the naked proposition.

Having attained this *smooth* progress, the pilot uses the air-speed indicator as a refinement whereby the last foot of height is squeezed out. Otherwise, accuracy of the course is still all-important.

All that remains is for the pilot to take up a quietly defiant attitude towards such bogeys as turbulence and drift, and to follow out such plans as were originally approved by his instructor. Then, having tranquilly carried the job through with benefit to his own education, he has only to land, still according to plan, so that somebody else may go up and do likewise without delay.

Finally, the writer has been struck by two phenomena: first, the way in which a series of late nights is faithfully reflected in one's nervous flying style; second, the degree to which the subconscious mind entirely overrules the conscious mind under conditions of stress. The latter consideration emphasises the urgent necessity for *definitely* priming one's subconscious mind, before the launch, with a clear-cut plan of campaign. Otherwise, remember Lot's wife!

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LIEUT. WM. A. COCKE DESCRIBES HIS RECORD BREAKING FLIGHT

[*The following account of Lieut. Cocke's flight in December last, in which he broke the existing duration record by remaining in the air for 21 hours 36 minutes, has been written specially for* THE SAILPLANE *by the pilot himself.*—ED]

With regard to the official record flight, let me say first that it represented twenty-one hours of sustained flight, but, more than that, the successful culmination of two years' designing, building, testing and rebuilding, necessitated by the requirements due to the peculiarity of the wind and terrain over which the projected flight was to be made.

An initial survey of the terrain from the ground and from the air convinced me that a record flight was possible, but that it would be hazardous, due to the steepness of the cliffs and the irregularity of the terrain below, and uncertain, because of violent showers which drenched the windward side of the island about eight o'clock every evening, besides a general tendency to cloudiness at night about the peaks along which the flight had to be made. I became fully aware of the difficulties of visibility after my first test flight. This problem was later solved by the utilisation of a battery of four 8,000,000-candle-power anti-aircraft lights which played along the cliffs throughout the hours of darkness.

The December flight represented the fifth attempt to better the existing fourteen-hour seven-minute official record held for many years in Germany by Ferdinand Schultz. The first three flights were made from a ridge representing the top of the lower slopes of the main ridge. The first take-off resulted in a three-hour fifty-five-minute soaring flight, the termination of which was brought about by lack of warm flying clothing and impending showers at sea. The second attempt came two days later after the tail unit of the sailplane had been strengthened. It was a midnight take-off and was unsuccessful, as was also the third, both ending in a brush landing, but fortunately without harm to the glider.

As a result, the ridge take-off position and shock cord were abandoned in favour of a 2,000-foot roadway through an old pineapple field at the base of the famous Hawaiian Nuuanu Pali and 1,000 feet of flexible steel cable. A successful take-off was made from this field the next day about three o'clock in the afternoon, and resulted in a sixteen-hour thirty-eight-minute unofficial flight, unofficial because barographs had failed to arrive in time from the mainland. The early morning landing which ended this flight was not just according to " Hoyle," and as a result the nose of the ship from the wing forward had to be rebuilt. This incident turned out to be rather fortunate, as it enabled me to build in a form-fitting seat, a windshield, and other items of comfort which later made the twenty-one-hour flight a little less arduous. On November 22nd last, all reconstruction was finished, and I established camp at the base of the Pali along with the three other entrants in the glider meet sponsored by the Island Chapter of the National Aeronautical Association. Then followed nearly thirty days of rain and calm, broken just long enough for Lieut. Scott to make a six-hour flight in his light Bowlus Albatross.

The Luke Field entry, a two-place sailplane built at the Hawaiian air depot and piloted by Lieut. Thompson, made two unsuccessful attempts to reach the upper currents and finally crashed disastrously on the edge of a thirty-foot gulch as the result of a flat spin. The Honolulu Glider Club's Bowlus, piloted by Mr. Edward Peacock, in the meantime, made three flights under unfavourable wind conditions and was also unable to reach the upper wind currents. A wing low landing on the third flight " washed off " an aileron and loosened up the diagonal bracing in the fuselage of this ship and virtually eliminated it from the meet, leaving only Lieut. Scott's " Albatross " and my plane, the " Nighthawk," in the meet.

Finally, on December 19th, the weather seemed to have made a change for the better with a fairly clear sky and a twenty-mile N.E. wind. At twelve o'clock I had decided to take off, and everything was in readiness, glider and tow car in place, and the 1,000-foot cable laid out and connected. It was nearly three o'clock, however, before all the members of the Contest Committee and other officials could be assembled at the field and the barograph smoked, sealed, and installed. Exactly at three p.m. I waved the yellow flag, my signal to the tow car to start. The glider left the ground quickly and I pulled up steeply in order to gain as much altitude as possible in the extremely limited run of the tow car. I gained about 600 feet, cut loose from the tow car, banked sharply around, and headed straight back for the cliffs. The next two minutes were the most critical of the whole flight; my wing was almost dragging the cliff wall, but I could feel no lift. I was leaving the field far to the rear and was already out of gliding distance. If I did not find a rising current quickly, it was going to be too late, and the densely wooded canyons were looming up much too closely. And then finally it came—I mean the up-draught—and soon I was riding along easily at 3,000 feet and having no difficulty in flying over our predetermined course designated by two pylons located along the main wall two and a half miles apart.

I could see the take-off field clearly below. Lieut. Scott was making preparations to take off, and exactly forty-five minutes after I reached the upper currents I saw him wave the yellow flag and his glider moved quickly down the runway. He was gaining altitude rapidly; I expected him to join me shortly. But, no! Something was wrong. I looked closely; his rudder appeared to be gone and he was diving. A moment later the left wing came off and the whole ship seemed to go to pieces. The main body of the glider did a slow spiral and hit the ground with a sickening thud while other fragments of the ship were still in the air and fluttering one by one to the ground. I could hardly believe my eyes; the whole thing did not seem real—more like a toy model. Lieut. Scott was one of my very best friends, and I believed that he was fatally injured. They told me after I landed that his dying words had been, " I've won." He died competing to the end—a real sportsman.

My first reaction was to land, but I realised that those on the ground would do everything possible, so I determined to stay up. A little later in the afternoon I could see the searchlight batteries moving into position. Lieut. Scott's crash had made me feel pretty blue, and the splendid co-operation from the ground was heartening. The flight for the most part was uneventful. The anti-aircraft lights came on at dusk and continued to play on the cliffs throughout the night. Until the moon set at midnight there were occasional bursts of moonlight through the clouds. After midnight, however, the night became very dark. The rough air and occasional showers, along with the anxiety concerning the structural condition of the ship, kept my mind occupied and entirely off the matter of sleep.

Morning came before I expected it, and the morning sun was never a more glorious or welcome sight as it rose out of the sea. The morning went by very slowly, and by noon I decided to land at the first lull in the wind. This was necessary, as the landing had to be made down-wind. I landed safely about thirty minutes later, tired and happy, but convinced that a much longer flight was possible. With that idea still in mind, I am now working on the design of a two-place ship combining such features that will make possible what I hope to be a 100-hour motorless sustained flight.

WILLIAM A. COCKE, JUN.,
Second-Lieutenant, Air Corps, U.S.A.

Headquarters, Crissy Field,
San Francisco, California.
February 19th, 1932.

TUITION

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CORRESPONDENCE

Home-made Air-speed Indicator.

SIR,—I enclose a sketch of a simple air-speed indicator which may interest your readers.

The arms " A " are cut out of about 16-gauge aluminium. They are pivoted each side of a piece of half-inch O.D. steel tube, and carry on their upper end a two-inch square of aluminium. This square is fixed to them by means of a small block of wood screwed to the back of it and screwed also between the arms.

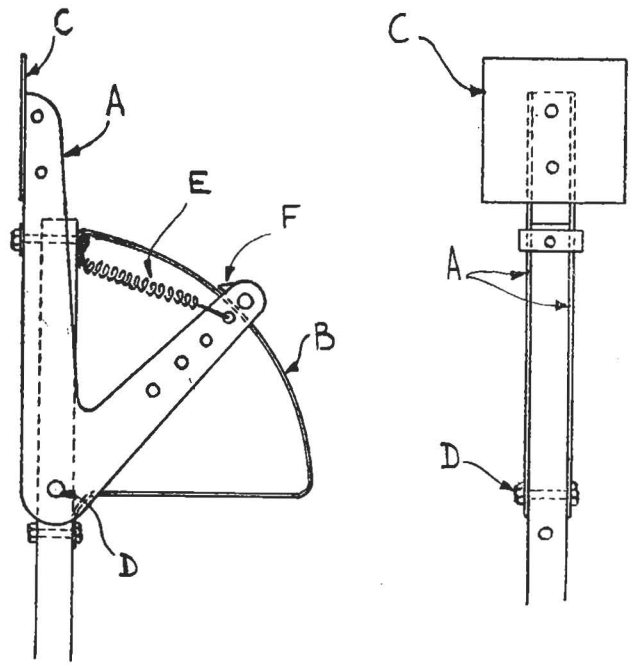
The wind forces this plate back against the tension of the spring " E," and the force is indicated by a pointer, fixed between the ends of the arms at " F," and a scale which is marked on a half-inch strip of steel (" B ") bent and secured as shown.

A series of holes is drilled in the arms, so that the bolt holding the spring can be moved up or down so as to give varying leverage on the spring according to the speed for which the instrument is to be calibrated.

Calibration: I took the instrument I made out in a car and adjusted the spring until the pointer moved about three-quarters of an inch at 30 m.p.h. I did not then calibrate it in m.p.h., although it is quite easy to do so with the aid of the car's speedometer. I simply painted the scale red below my glider's stalling speed, and a bit above it, and white above this speed. A mark may be made also for the glider's best gliding speed. I think this is better than having figures, at any rate for ordinary training purposes.

R. F. T. GRANGER.

[The method of calibration appears to be crude owing to the eddies set up around the car. The most accurate method would be to calibrate the instrument in a wind tunnel, but such a method is obviously not available to the amateur constructor. An alternative method would be to borrow a portable anemometer and to expose both instruments in an open situation free from obstructions, as high above the ground as possible. The calibration could be carried out over a period until the necessary range of wind speeds had been obtained.—ED.]



"SAILPLANE" PHOTOGRAPHIC COMPETITION.

The competition for March was won by Dr. A. E. Slater for the photograph reproduced on page 88. It is with very great pleasure that we make this announcement, for nobody has worked more assiduously for THE SAILPLANE than Dr. Slater. We are frequently indebted to him for translations from German papers, as well as for reports of lectures, photographs and other articles.

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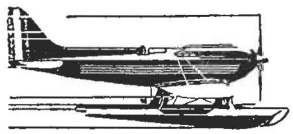
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AUTOBIOGRAPHY OF A SAILPLANE PILOT*

As the sun rose on the Wasserkuppe one summer morning in 1923, it shone upon a lad of fifteen, covered with dew, emerging from an old crate in which he had just spent the night. Thus did Groenhoff (for such it was) look for the first time on the scene of his future triumphs—the place where, only the previous year, the first prolonged soaring flights in motorless aircraft had astonished the world. He had arrived in the dark the night before, having walked like a true pilgrim the whole way from his home in Frankfurt, sleeping out each night in the open and doing his best to subsist on what he had been able to scrounge from the family larder before setting out.

After spending the morning buzzing around getting in everybody's way (for the annual competitions were on), he at last got the frightfully important post of tent-watcher for a party who had just finished a lengthy repair job and wanted a few hours' undisturbed sleep.

Late that night the " big guns " of gliding were discussing the past and future of their movement, all oblivious of a certain youth who had got in among them unnoticed and was having the thrill of his life listening to their conversation. Yet, before many years were out, the tables were reversed; it was their turn to be thrilled, for this same youth was destined to outfly them all and perform feats of motorless flight that they would scarcely then have believed possible.

Early " Air-Sense."

Groenhoff has many exciting experiences to relate in his brief autobiography, " Ich fliege mit und ohne Motor," recently published at Frankfurt; but he is unlikely ever to recapture the wonder of that first day on the Wasserkuppe. He starts by telling us that all his life he has preferred to be in the air rather than on the ground. The earliest manifestation of this " air-sense " was at the age of eight, when he set up house in a tree in the grounds of his father's parsonage. From here he would launch paper gliders and watch them float down. He had to confine himself to models, because, when he used a real hen for the experiment, although the bird made a perfectly good landing, some busybody reported him to the local society for the prevention of cruelty to animals.

One day the sight of his father's church turned his thoughts to higher things; in other words, the building was under repair and a scaffolding had been run up. Of course, no sooner had the workmen knocked off for the day than Groenhoff and a friend were off after a new altitude record. A high rate of climb soon brought them to the top of the steeple, where the weather-cock was also in need of repair and had been made accessible. Here Groenhoff proceeded to terrify his friend by going through his repertoire of acrobatic parlour tricks on the topmost point. Unfortunately, owing to the exposed position, his audience soon became larger than he either expected or desired, and when he descried from his eminence that the police were getting rather more interested than they need have been, he had to wind up his performance with the disappearing trick, and only just in time, too.

After his first visit to the Rhön, Groenhoff continued to turn up each summer at the gliding meetings to give what voluntary help he could. Then, in 1926, we find him going off for a course at Rossitten (where Kronfeld also received his early training a year later). His parents did not like it at all, and tried to tempt him away by the offer of a tour in Italy; Groenhoff's reply was that Italy could be reached more quickly when he could fly there.

Commercial Flying Training.

He then forsook gliding for commercial flying, and his description of the severe course of training he was put through makes instructive reading. Out of thousands of applicants eighty were chosen, and two-thirds of these were eliminated in the first three months, before actual flying instruction had even begun. Groenhoff, owing to his gliding experience, was allowed on his first solo after ten days of instruction, having had twenty-six instructional flights. After learning all they could about land aircraft, the pupils were next transferred to seaplanes, but before doing so they all had to spend six months at the Hanseatic Yachting School in Lübeck Bay, where they learned sailing in small boats, navigation and signalling. One wonders how much influence this sailing experience had on Groenhoff's future soaring skill. Should not the ideal gliding school be situated at the seaside, with facilities for sailing when the wind is otherwise unusable? Think what a gliding pupil could learn about air flow by trying to sail in the lee of a cliff with a hearty off-shore wind!

Groenhoff, however, was not happy on the sea; he was not born to it, he tells us, nor did he like the clumsy behaviour of the seaplanes in the air. It was a relief to get back to the land, and finish his training among the big commercial machines at Staaken aerodrome.

A Return to Motorless Flying.

In 1929 came an opportunity of returning to his first love, the Rhön. In a short time he had obtained his " C " certificate, done a duration and altitude flight, and as a result been appointed flying instructor at the gliding school, thus fulfilling what he tells us was his fondest dream.

From now on he devoted himself to soaring flight. He gives full credit to Prof. Georgii for putting him on the right track. Prof. Georgii, he says, " gave me to understand that without scientific bases soaring flight was merely coarse manual labour. . . . It was he who created the scientific methods which indicated entirely new openings for soaring flight, which in the years 1926 to 1928 seemed to have reached a dead point. Soaring flight, which up to then had been regarded by the technicians as a useful preparation for power flight and a means for the development of light aeroplanes, could now at last develop a wholly independent territory for itself in aviation. I took up this idea with enthusiasm. Now for the first time I realised what there was in soaring flight, and what all unknown had always attracted me to this pursuit. I could enter upon this branch of aviation with a full heart."

" He who has never crashed is no pilot," says Groenhoff, in a chapter devoted to his own efforts in that line. Perhaps his worst experience was when he forced-landed a heavy monoplane among corn-sheaves. The machine overturned, and Groenhoff, pinned underneath and unable to move, had to watch the escaping petrol flow down over the "glowing" exhaust, sizzling loudly as it did so. His only severe sailplane accident appears to have been in 1929, when the " Frankfurt," during a sharp turn over some woods, was blown by a gust into a vertical bank. His comrades, after scouring the tree-tops for any sign of the pilot or his remains, found him at last absent-mindedly picking berries a short way off, with all recollection of the accident obliterated from his memory. He was marched back and put to bed, but another three days saw him again in the air, this time as test pilot of a new two-seater, the " Rhönadler."

A week later he established the height and distance record for two-seaters with this machine. It was a thrilling flight. After a good climb over the Kuppe, he made off towards a large cumulus approaching from Fulda, reaching it after flying nine miles. He did not intend to risk the untried machine inside the cloud, but, before he could stop it, the cloud had swallowed him up, and before long violent gustiness set in. He was forced down 460 feet, pushed up 560 feet, then down and up again, all in a couple of minutes (he understates the actual figures). This was too much for the " Rhönadler." There was a loud crack and a rent appeared in the " neck," which, with the struts, supports the wing. In the front cockpit, where ignorance was bliss, the passenger prattled away gaily of his native Poppenhausen, somewhere down below, where he had helped to build the machine, while Groenhoff in the back seat was watching the " neck " move in and out a few millimetres with each gust, and making up his mind which part of the wing he had best catch hold of, should it part company from the fuselage.

(To be concluded.)

* " Ich fliege mit und ohne Motor " by Gunther Groenhoff. Published by the " Frankfurter Zeitung." Price Rm. 1.20.

NEWS FROM THE CLUBS



D. Dent flying the " Kassel 20."

[*In view of the large amount of Easter news we have departed from our usual custom and devoted more than three pages to Club News instead of the customary two. We must remind Secretaries, however, that it is absolutely imperative to keep the length of the Club News submitted down to the absolute minimum. Also, since* THE SAILPLANE *is published on a Friday, all notes for this section must be received not later than the first post on the previous Monday.*—ED.]

CENTRAL SCOTLAND AIR YACHTING CLUB.

On Saturday, March 28th, we tested out what we believe will prove a very useful site for auto-towing, and it has the advantage of being within a stone's-throw of our King o' Muir's practice site. The field in question is about 250 acres in extent, and a fine private road running alongside makes easy going for the tow car. There is also good hangar accommodation at our disposal.

The following day (Sunday) we made a further inspection of the soaring site visited a fortnight ago. Before deciding on this site, we intend to inspect ground in the Ochil Hills, which, although more distant and less accessible, should be very suitable for the establishment of a summer camp.

On Monday, we were pleased to have a visit from members of the Falkirk Gliding Club, who have promised to join with us in the inspection of the Ochils soaring site in a fortnight's time.

CHANNEL GLIDING CLUB.

After a long absence from this section of THE SAILPLANE, we have to report our activities of months in outline. From our previous experiences we decided, at the beginning of this year, to concentrate on auto-towing rather than on hill-top launches, owing to the smaller membership of the Club.

In January we purchased an Austin Twelve, this type of car being exceptionally suited to the job.

We have been operating mostly on Sundays, averaging twenty-five to thirty flights per week. Financially this is a sound proposition, as a charge of 6d. per flight is made, and the time spent in the air averages much more than in the case of hill-top launches.

As a result of Mr. Turner's generosity, we have the use of a B.A.C.IV sailplane, which, towed with a 600-ft. cable, enables members to do high flying and spot landings—an excellent preliminary to soaring.

We hope by Whitsun to try out the more advanced members from the Valiant Sailor soaring site, and to obtain some " C " licences.

At Easter Mr. Manuel decided to try for the British endurance record unofficially. The " Crested Wren " was taken to the Valiant Sailor on Sunday, March 27th, on the strength of a good weather report. Twelve o'clock arrived (the latest time for taking off), but with a 6-m.p.h. wind in the wrong direction, it was obviously no record-breaking day.

After lunch the wind came round to the right direction —S.W., 12 m.p.h.—so a start was made for a practice flight. After flying for forty minutes, Mr. Manuel found the wind dropping considerably, so he landed at the top whilst he had the height. As any soaring carried out here is in full view of Folkestone, an effort is always made to land voluntarily at the top rather than ignominiously at the bottom, as we feel that the prestige of the Movement is, to a certain extent, in the hands of those who soar in full public view.

The Easter holidays were rather disappointing, owing to the weather. Sunday was impossible, but, while Folkestone was clear, the site was in low cloud, which did not lift until the afternoon. A start was made in a very strong wind, and, after battling for ten minutes with it, Mr. Manuel landed.

Week-ended April 3rd.

Owing to a slight mishap to the B.A.C.IV, we have been working all the week to get it serviceable again for the 17th.

On Saturday conditions were vile, the ground being too boggy for auto-towing.

The workshop was again the rendezvous on Sunday, as it was raining hard. Later in the afternoon the weather seemed to be clearing, so a small party set off for the Valiant Sailor site and at tea-time Manuel was launched in his " Wren " in practically a calm; he was able to soar for fifty minutes before having to land on the hill-side.

FURNESS GLIDING CLUB.

Easter Meeting. Despite widely varying weather conditions, and mishaps to machines, a four-day programme was possible.

Our site at Moorside Askam provides, fortunately, for winds N.E. to S.E., and again S.W. to N.W.

Friday.

Wind S.E. 25-30 m.p.h.

On account of the good wind our B.A.C.II machine was used, and our more experienced pilots in turn had flights from the hill-breast of one and a half to one minutes' duration. Considerable uplift was forthcoming over a roadway, and at times sufficed to keep the machine buoyant.

A particularly creditable effort was made by our ground captain, but in all cases good landings were made.

Saturday.

As the wind continued in the same direction and was of increased velocity, it was decided to operate with the Club's intermediate machine, B.A.C.III, which to date had not been flown by the Club members.

Mr. Pilling led off with a series of flights in which he worked along the ridge for a half to three-quarters of a mile, but owing to the obstructive effect of an adjoining hill was unable to complete the return journey after turning.

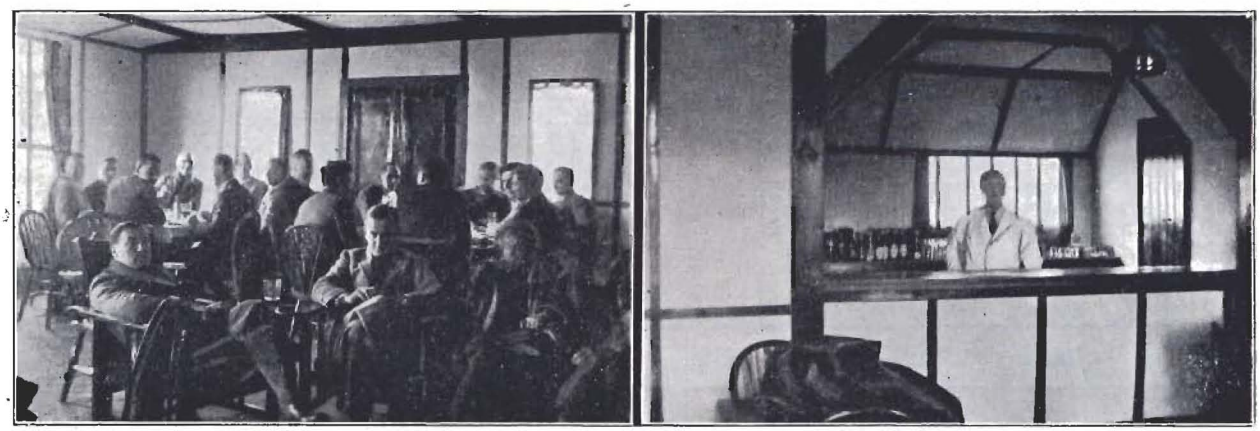
Mr. Stevens, another of our " B " members, also flew in this machine and made a remarkably good flight for his first experience of a closed-in machine.

Sunday.

Wind conditions still held and once more the B.A.C.III was in use. On account of heavy rain, a start was not made until the middle of the afternoon.

The first flight, by Mr. Pilling, was a superb effort, the machine attaining a height, over the roadway beneath, of about 250 feet and this was maintained for quite a long stretch, as the machine flew cross-wind along the road. A perfect landing into wind concluded what was judged one of the most graceful flights yet witnessed here.

Messrs. Foster and Stevens, inspired by this lead, made



The new Club-house at Dunstable. Left—the First Meal. Right—the Bar.

flights in a like direction. Unfortunately the latter experienced some difficulty over the roadway, and was forced into a down-wind landing on the hill-side, which he carried out with considerable skill, the machine escaping with a damaged skid.

Monday.

Commenced dull and with occasional rain; wind S.W., 15-20 m.p.h. Towards noon the weather cleared sufficiently for operations to commence.

On account of the lighter wind and altered direction, our R.F.D. machine was chosen for the day, and, as this is only a recent acquisition by the Club, Messrs. Redshaw, Brittain, Winder, Butterfield and Foster were each given a series of flights so as to acquire the necessary control of this type of craft.

In all cases the results were rather gratifying, and it was much regretted when a cross-wind landing broke a king-post. As the afternoon was now well advanced, flying was called off, although the B.A.C.II machine was in readiness as spare machine.

LONDON GLIDING CLUB.

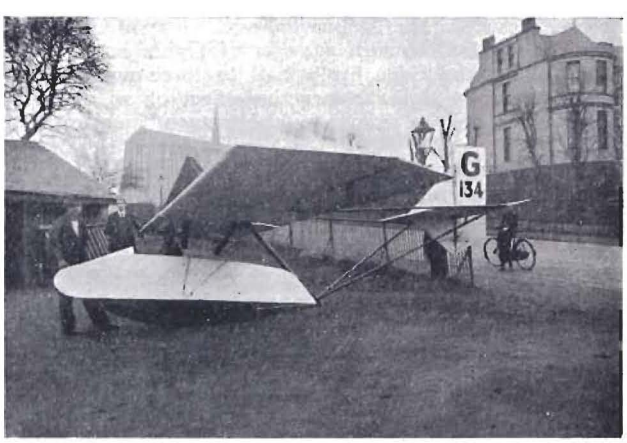
Easter Camp.

One need not waste many words on describing the weather. It was bad.

On Thursday a gentle easterly breeze blew straight down the hill. Mr. Longmore gave instruction in the auto-towed B.A.C.7 till long after dark; the DICKSON and DAGLING did elementary work with intervals for repairs.

On Friday a gusty easterly wind prevented flying, the gate-money at the Zoo profiting accordingly. On the way to Whipsnade the beech trees on the ridge lean to the east, just as if the wind always blew from the west; we told them that they were liars from way-back.

The same wind on Saturday caused Mr. Longmore and Mr. Nyborg to take their machines to a huge field on the Luton road. The B.A.C. carried on for hours. Williams endeavoured to get the NYBORG off the ground on an auto-tow, but was baulked by yawing. Towards evening the wind dropped and a bolt was made back to the club ground, whereupon rain fell in streams.



Secondary Glider built by the Glasgow Gliding Club Constructional Section.

On Sunday the same old wind, with intermittent torrents, made us work on fences, roofing and repairs, out of sheer cussedness. Major Petre won the Getting-Wet Championship. On Sunday night some tents are reputed to have blown over, no doubt owing to an unseamanlike tension in the wet guys, combined with a hooting gale.

On Monday a series of perfectly marked line-squalls, with bursts of rain and hail, stamped up from the south. The wind did everything except stand on its head. At times it would swing through eight points to west, then quieten, and then go back again to its old ferocity and direction.

Buxton hopped off the top in the PROFESSOR and made a wizardly flight of 18 minutes. On one turn two independent watchers half a mile away saw his inner wing visibly bend downward. Over the Bowl he reached his maximum height, but his advances up-wind along the ridge were a series of downward steps. In the end a lull brought him down. He reported conditions as very interesting and pleasant, but we put the machine away.

In other comparative lulls the PRÜFLING made two emotioning descents without damage and was then condemned to shorter flights from a foot-hill, together with the DAGLING and HOLS. But even then the machines bobbed about like corks, and a first-class pilot made a stalled cross-wind landing. More torrents of rain came before any damage was done.

Some " die-hards " weathered Monday night, to find Tuesday as bad. DAGLING was exercised, only to have her wing-tip broken through a violent gust at landing. The pilot, who is a Stout Fellow, instinctively revived an ancient tradition by immediately offering, as if votively, all the money that he had in his pocket.

Yet, believe me or not as you like, we had a grand time. Perhaps it was because the general atmosphere was so far removed from the wretched decorum of ordinary life. Anyway, it is no good grumbling at the luck of the game. The moral may be that no gliding gathering should last less than ten days; otherwise the risk of impossible conditions is too heavy. Perhaps it was the club-house that saved us. You could eat or drink or argue or design or sit over the fires or read or play pontoon, just as you liked; which, coming after great amounts of fresh air, are enchanting pursuits.

Distinguished visitors were uncounted. They came by road, all except Mr. Lowe-Wylde, who, in taking off in his Salmson-Klemm, with a passenger, put up as stout a battle with down-draughts as ever one could see.

Sunday, April 3rd.

Yesterday morning a good soaring wind blew up the hill. It was fading out when the first launch was made at 2.30, and continued to do so until in the evening it vanished and gave way to a draught in the opposite direction.

HOLS gave the owners two flights each, and Miss Nicol a ground-hop. Hiscox landed on the top after a return run. The only other hill-top landing was made by Grimston in the PRÜFLING; he charged the face of the hill and trickled over on to the crest. Dewsbery, Grice and Richardson made prolonged descents.

The PROFESSOR was run round by Morland and Capt. Needham. Lee flew her in a perfectly orderly manner,

thus becoming enrolled in the Ancient Order of Fetish Smashers, an arduous attainment. To be an accredited PROFESSOR flier is a far more real goal than the earning of one's "C." PROFESSOR fills one with a holy calm where PRĔFLING makes one feel like a cowboy operating at a gallop.

In the DAGLING McClement obtained his "B" with 68 seconds, and Bowen flew his second "45." Miss Churchill also descended, untimed, being now a "B" pilot.

To-day started grimly with a gentle easterly air and oceans of mud. PROFESSOR was hopped by four irreverent gentlemen, and PRĔFLING by some of the usual gang. Then, the air becoming gloomily stagnant, three machines were taken up the hill.

In the DAGLING Laurie obtained his "B" with 67 seconds, and Miss Churchill, McClement and Thomas descended intact, Thomas waving a camera.

In the KASSEL 20 Miss Nicol flew twice, and Bolton, Culver and Cornell once. Who was it that strapped the belt round a control wire? (No names, no pack drill.)

The gang, which weekly grows larger, queued up for the PRĔFLING. It is fortunate that the wrecked machine is to be rebuilt. Grimston, who had previously booked a 19-minute flight for his "A," missed a "45" by two seconds, thereby encouraging the less-skilled proletariat. Collins comfortably made his first flight in this machine, Brame reduced his usual high velocity to a steady progress, and Dewsbery followed a complicated prearranged course so that he might photograph the hill-top. On another flight the machine apparently found a trifle of lift; there is often a pleasant surprise tucked away somewhere round about the bastion.

Sunday, April 10th.

After blowing straight up the hill for days, the wind swung to the south and south-west for the week-end. On Saturday it was hopelessly rough until sunset, whereafter the DAGLING was brought out at the double and given six low flights, without incident, before dark.

This morning we were confined to the club-house by violent gusts, the general turmoil being emphasised by the wind swirling along the irregularities of the ridge-face. Feeling stronger after lunch, we pulled out the PRĔFLING and DAGLING and launched them all the afternoon from a low ridge. Conditions then became so bad that we closed down for tea, but the consequent burst of energy let us carry on again until the new moon and the planet Venus were shining.

Sixteen people received an average of four flights. The work was exceptionally interesting; either one could fly hard and steadily through the aerial muddle, the gusts being up to 20 m.p.h. on the ground, or else one could take it more slowly and heave about in all three dimensions. Both machines were returned intact to store.

The DAGLING was launched repeatedly by running the launching team without a preliminary walk; the machine lifted instantly, no energy being wasted in a drag over the ground.

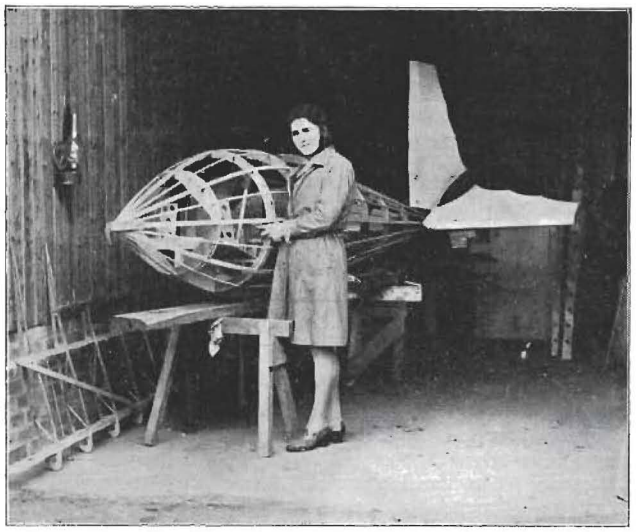
A Whitsun Camp is being organised on the same lines as the Easter Camp, but with *far better weather*. The number of entries will again be strictly limited, so that it is kept within the capacity of our equipment; therefore applications should be made without delay to the Secretary, 35, Milk Street, London, E.C.2, who will supply detailed information.

CENTRAL SCOTLAND AIR YACHTING CLUB.

THE Sailplane or Glider Scheme organised by the above Club was cancelled.—J. W. Gardner, Hon. Secretary.

Are you going to be the last to use it?





Miss L. M. Westlake, of the Thames Valley Gliding Club, spends her spare moments learning something about Construction and Glider Design.

KENT GLIDING CLUB.

Sunday, March 27th.

In spite of strenuous efforts by Messrs. Bolton and Weekes, supported by encouraging cries (and assistance) from a covey of Club members, it was found impossible to finish Mr. Bolton's machine in time to test it during the Easter holiday, and the first flight was reluctantly postponed to the next meeting.

Monday, March 28th.

With a favourable S.W. wind at last we were able to try the improved portion of our site with "101," our primary machine. The results were good. Mr. Weekes made two qualifying flights for his "B," of 57 seconds and 1 min. 3 sec.; in the latter flight he definitely soared twice and finished with a neat turn along the hedge.

Mr. Dugdale made two qualifying flights for his "B" of 47 seconds and 1 min. 4 sec., the last being a nice flight over two hedges and right across a neighbouring field. Staggering back over two hedges and the Pilgrim's Way, a voice was heard to murmur, "This ought to be good for at least three pints each"; but our budding birdman could not have heard, 'cos we're still thirsty!

These flights easily constitute records for height, distance and duration on a primary at this site, and these efforts by our "die-hard brigade" are most encouraging (old members, please note!).

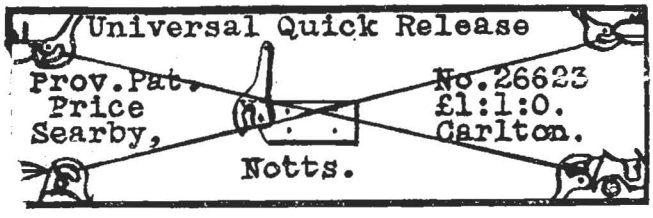
With our improved methods, speculation is rife as to how far we can train on our site—possibly, we hope, up to "C" standard.

Sunday, April 3rd.

Flying was mainly devoted to test flights of the uncertificated BOLTON secondary machine (pilot Mr. T. Weekes). After a comparative flight on our primary, these tests were abandoned until next week-end, to allow time for modification of the launching hook, which gave too early a release for extended tests. The clean lines and workmanship of the machine were much admired, and the steady if short flights give promise of some interesting week-ends.

PATENTS.

A. P. THURSTON & CO., Patents, Trade Marks and designs.—Bank Chambers, 329, High Holborn, W.C.1. Holborn 2542.



Mrs. Green and Mr. Lowe-Wylde paid us an unexpected but welcome visit, flying over in the former's KLEMM and landing alongside our hangar. Mr. Lowe-Wylde was an interested spectator of the trials of our new machine, and his presence was doubly welcome, as his innumerable activities necessarily make him a rare visitor these days.

OXFORD AND COUNTY GLIDING CLUB.

April 3rd.

Due to the state of the ground at Bishopstone, slight difficulty was experienced in using the mechanical launching apparatus. Despite this and a short day's flying, every available member took his turn at the controls. The weather was moderately warm, with no rain. Wind 10-12 m.p.h.

The Club's site at Bishopstone provides flying facilities in any wind from S.W. to N., and as the breeze came from the latter direction during Sunday's flying, members were able to take advantage of the most popular slope.

At present considerable inconvenience is caused owing to the distance members are obliged to travel from their homes, and, as the only possible remedy that would serve to bring the sport nearer Oxford is "towed gliding," an endeavour is being made to procure a suitable machine for the purpose.

The Club has under preparation a magazine containing a brief but informative history of the Gliding Movement, outlining the achievements of the past and indicating some future possibilities, for distribution amongst spectators at gliding meetings. It is hoped that this publication will assist in furthering the Movement, by spreading a sound knowledge of the essentials of gliding. This publication is available for distribution by other clubs under an attractive scheme, and clubs interested should write to the Secretary for further particulars.

THE ULSTER GLIDING AND AVIATION CLUB.

This Club has now turned to auto-towing as a means of training for manœuvres such as turns, side-slipped landings, etc., which are essential for soaring flight. The most suitable ground that we can find is the sands at Tyrella, Co. Down, some nine miles south of Downpatrick. This strand is one and a half miles long and nearly half a mile wide at low tide, and runs nearly due east and west. The car used for all flights so far has been Mackie's 14-45 Talbot. A light trailer on an ex-sidecar chassis is used for towing the machine back to start-point. The tow rope is of 3/16th-in. diameter, high-tensile stranded wire rope, and the total available length is 1,000 feet.

Saturday, March 20th.

Preliminary experiments were carried out with a short rope (250 feet), using the Club's REYNARD with fairing behind pilot and streamlined struts. A number of short flights up to 25 seconds were made, after towing to a height of 80 feet.

Easter Monday, March 28th.

The Easter weather was very unfavourable to everybody except the ducks. Flying was only possible on Monday, and even on that day we were unable to do very much, as high-water was at 3 p.m., so, unwilling to undergo the humiliating experience of the late King Canute, we had to pack up early. A soft place in the sand, which we can avoid at low tide, gave us a little trouble, and the proximity of various members of the public on the sand to the wire rope during towing also gave us some embarrassment.

Saturday, April 2nd.

The REYNARD machine was taken out on the sands and among some good flights Metcalfe did a good "A" of 32½ seconds. Some interesting views are obtainable from the air of certain members of the public, who occupy themselves "à deux" among the sand-hills.

Sunday, April 3rd.

The Club's R.F.D. machine was towed down and rigged by about 1.30 p.m. A dozen flights were made, among them an excellent flight by Baster ending in the sea, and a 45-second flight by Wynne in which the pilot landed back at the start-point. A soft spot in the sand again caused a little trouble, losing us over half an hour owing to the towing car becoming bogged in it.

OFFICIAL NOTICES

DIARY OF FORTHCOMING EVENTS.

Monday, April 18th, at 6.30 p.m., in the Library of the Royal Aeronautical Society, Albemarle Street, W.1.—Council Meeting, British Gliding Association.

Extracts from Proceedings of 35th Council Meeting of the British Gliding Association, held at 6.30 p.m. on March 22nd, 1932:—

Present: E. C. Gordon England (in the chair), P. Adorjan, J. R. Ashwell-Cooke, D. E. Culver, F. Entwistle, A. F. Houlberg, S. Humphries, L. O. Kekwick, C. H. Lowe-Wylde, C. H. Latimer Needham, T. H. Palmer, F. Pilling, R. F. Rosoman, E. G. Sanquinetti, A. N. Stratton, J. M. Symmons, Sir Gilbert Walker and S. Whidborne (Hon. Treasurer), Mr. A. I. Logette (Hon. Solicitor), and the Secretary were in attendance.

Glider Pilots' Certificates.—It was reported that at the meeting of the F.A.I. held in Paris in January last, an international rule was made to the effect that no "C" certificate could be granted to any pilot under 16 years of age, although pilots could qualify for a "C" certificate before reaching that age. "A" and "B" certificates could be granted to pilots of a suitable age by a representative body of the F.A.I.

The Council passed a resolution expressing regret that the F.A.I. had made the minimum age limit 16. (At present the minimum age for British "A" and "B" pilots is 14 years.)

Instruction in Power Flying.—Mr. Ashwell-Cooke reported that the London Club had made arrangements with the Brooklands School of Flying, the Cinque Ports Flying Club, and the London Aeroplane Club for special facilities being granted for the teaching of power flying to "C" glider pilots at reduced rates. The facilities offered by the Brooklands Flying School and the Cinque Ports Flying Club were confined to the members of the London Gliding Club, but the London Aeroplane Club offered them to approved members of any club. The Chairman reported that satisfactory arrangements had been made with the N.F.S. for special tests to be made at Hanworth of those ab-initio "C" glider pilots who wished to become power pilots. The object of these tests was to ascertain whether it is possible for a "C" pilot who has not had any previous power-flying experience to reduce by a substantial amount the normal time taken for dual instruction and solo flying, with a view to qualifying for his "A" pilot's licence.

Carrying Passengers for Hire or Reward.—A resolution was passed to the effect that the fee for a commercial pilot's licence for carrying passengers for hire or reward be £3 3s. per annum, and that the fee for an affiliated club instructor's licence be £1 1s. per annum. The expenditure incurred in respect of test flights would be borne by the applicant.

Sir Alan Cobham's National Aviation Day Display.—Approval was given to proposals for the activities of the B.G.A. to be represented at each of the meetings arranged by Sir Alan Cobham. Briefly, the proposals were to appoint a representative to obtain new members, obtain signatures to the Mandate, sell subscriptions to THE SAILPLANE, and generally represent the whole of the British Gliding Movement.

R.A.F. Display.—The Chairman reported that an invitation had been received from the Air Ministry to lend three sailplanes for an event in the R.A.F. Display for 1932, showing the arrival of a formation of three towed gliders from aeroplanes, and that arrangements were being made for the invitation to be accepted.

Finance Committee.—Mr. A. I. Logette (the Hon. Solicitor) was appointed a member of the Finance Committee for the current year.

Membership of the B.G.A.—Mr. G. M. Buxton, Mr. C. Grahame-White and Mr. A. I. Logette were appointed.

Appointment of Observers.—The appointment of Messrs. C. D. Gibb, W. D. Horsley and D. MacFarlane, of the Newcastle Gliding Club, was approved.

Printed and Published in Great Britain for the BRITISH GLIDING ASSOCIATION by GALE & POLDEN, LTD., 2, Amen Corner, London, E.C.4.

BOOKS TO READ

Gliding and Sailplaning By F. Stamer and A. Lippisch.	An excellent handbook for the beginner. It represents the collective results of the writers' experiences since 1921, related in a clear and simple manner, and is admirably illustrated. 5/6 post free.
Gliding and Motorless Flight By L. Howard-Flanders and C. F. Carr.	A practical, up-to-date handbook giving expert information regarding training of pilots, organization of gliding clubs, construction and repairs, meteorology, etc.; with interesting facts regarding past achievements and pilots, and official information regarding Certificates. Second edition now ready. 8/- post free.
Henley's A.B.C. of Gliding and Sailflying By Major Victor W. Page.	A simple and practical treatise on modern Gliding. It describes the construction, launching and control of the leading types of gliders and sailplanes and gives instructions for building a strong, yet simple, primary glider, including working drawings. 11/- post free.
Gliding and Soaring By Percival White and Mat White.	Especially adapted for those with no previous knowledge of the subject, this book gives a complete review of Gliding and Soaring flight and is distinctly above the average. 13/- post free.
"Gliding" (The Year Book published by The Dorset Gliding Club.)	A valuable handbook full of useful information, and one that must make a wide appeal, both to those merely interested in Gliding and to the advanced pilot who requires more technical information. 1/9 post free.
Handbook of the British Gliding Association	A useful reference book for all persons and organizations interested in Gliding. It includes a diary, Rules and Regulations issued by the Association, a Glossary, and authoritative articles on a number of interesting subjects. 1/6 post free.

Obtainable from the British Gliding Association, 44a, Dover Street, London, W.1.

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