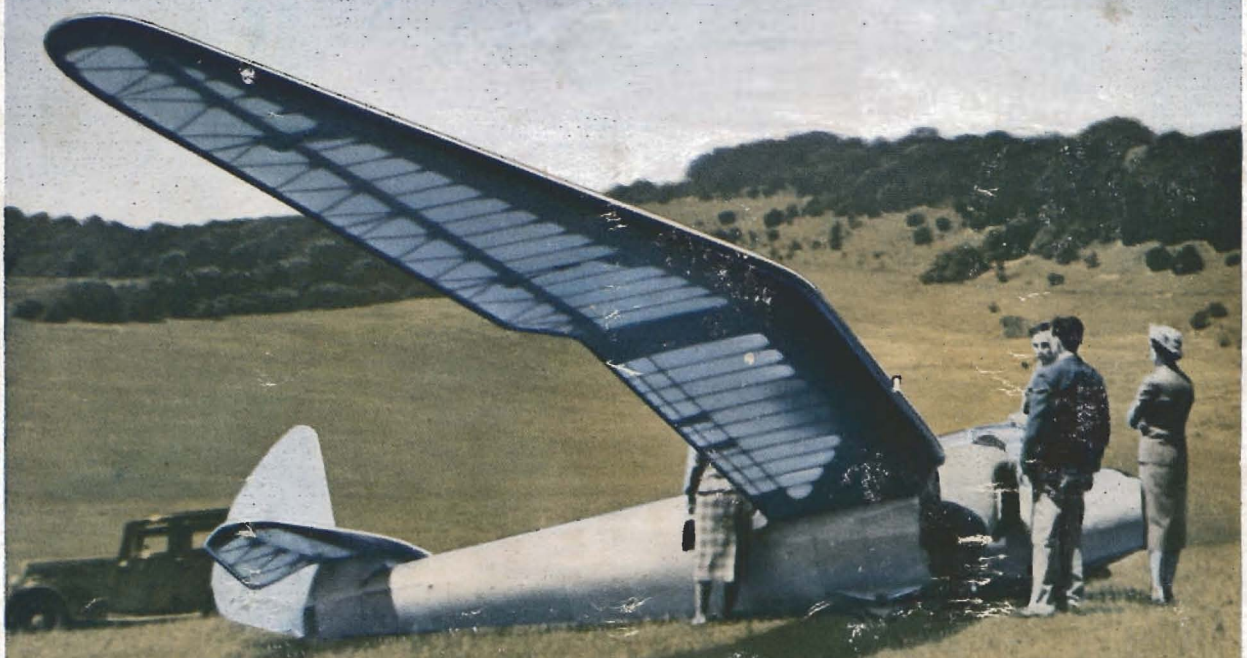
FEBRUARY, 1946

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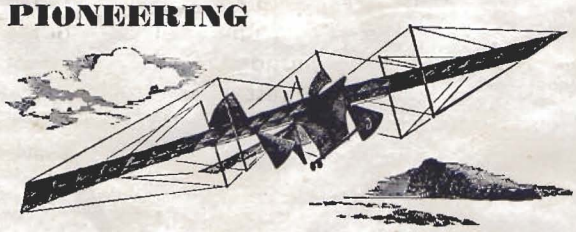
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Sailplane and Glider

THE FIRST JOURNAL DEVOTED TO SOARING AND GLIDING

FEBRUARY 1946 ★ Vol XIV No 2

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WELL, at last the British Gliding Movement is off to a fresh start.

This issue contains the first news of what transpired when the Clubs were able to resume operations. Nothing startling, in fact somewhat of an anti-climax. Thrilling no doubt to the lucky owners of private machines or members of the few Clubs who had one or more machines in which to disport themselves in the cold air. But just as defeating and frustrating to the hundreds of enthusiasts and would-be enthusiasts who were either members of clubs whose machines were requisitioned, or who were not members of clubs, and even if they had been would have been in no position to fly, for lack of machines.

Which brings us to the point. Now is the time for a concentrated drive by all who are interested in the sport to put it on its feet in no uncertain manner, so that in a year's time it will be the most thriving of all adventurous sports in Great Britain.

In the past few months we have published in *Sailplane* a series of well written exhaustive articles on forming a Club, so that when we arrived at this stage there would be to the hands of all who wished to begin, a handbook telling them all they need know about how to form a Club. The British Gliding Association has taken what steps it can to ease the Legal side of the problem by providing sets of Articles of Association at a moderate fee. It has also asked the Government for aid in material and money, although so far there is no official indication of what, if anything, is to happen in this respect. Elsewhere in this issue we print a list of British Clubs and some indication of their actual or probable activities. There are not enough of them.

It is the sincere conviction of *Sailplane* that the best years of Gliding and Soaring in the Empire are yet to come, but that they will not arrive unless the sport becomes as ubiquitous as football and cricket, and the Air Age will be a misnomer until and unless there is a landing strip near every village, just as there is a village green, and unless every village has its gliding club where boys and girls shall learn about flying from the age at which they usually learn about field sports.

When this occurs we shall be becoming air minded.

If it happens there will be a great increase in thermal soaring, and in knowledge of practical meteorology, for the number of accessible slope soaring sites in the country is limited.

But it will not happen unless the Government grant a cash subsidy whose main aim will be to attract and pay the expenses of beginners so that it is within the reach of all, however poor. Hence the importance of having local winch hauling sites near every centre of population. The advanced performers will look after themselves, in more ways than one.

Finally, out of such a big democratic movement will come that reduction in prices all round which will make for a bigger and stronger B G A and hence for the advanced Soaring pilots the provision of those facilities which are at present beyond the reach of anyone, a central club on the best site in England, radio flying control, air sea rescue, air-retrieving, and the real Freedom of the Air.

We begin again . . .

DERBYSHIRE & LANCASHIRE GLIDING CLUB

JANUARY 1st was one of the coldest days on record at the Club, but fortunately the weather was clear and cloud base well over 1,000 feet. The first launch was made at 11.30, when G. O. Smith was launched in the " Kirby Kite." The wind was south-east about 30 miles per hour enabling launches up to 800 feet to be obtained. Activities were confined to extended circuits in the " Kite " and the " G.B." Wing-Commander Swale had the second flight and 5 or 6 other members also did circuits. Altogether there were 10 launches. The famous " Golden Wren " completely reconditioned, arrived on Sunday night, but owing to the fact that only one winch was in operation, the machine was not rigged. However, it looks very attractive in its new gold and cream finish, and members are looking forward to trying it out.

CULMINATION

About two dozen members of the Club were able to be present at the opening ceremony and also the B.B.C., the Pathe Gazette and a large number of Press Representatives. Although the proceedings went off without any hitch whatsoever, the first day's flying was the culmination of a great deal of hard work on the part of the members and Mr. A. J. E. Benton spent the whole of the preceding day, assisted by his wife and son, in putting the finishing touches to the machines, retrieving cars and the rest of the equipment.

PRE-WAR COMMITTEE

For the past six years the Club has been managed by an Emergency Committee, and thanks to their efforts and to the various members of the Club who have been able to attend from time to time, the Club is in a fortunate position for re-starting normal Club flying. A new Committee was elected last summer and meetings have been held once a fortnight ever since. The Committee of 15 now acting is the identical Committee which was in office in 1939, so that there is a large nucleus of experienced members to support the Club. Amongst the various aspects which have received the attention of the Committee, the more important ones are the preparation of a complete list of flying regulations, a report on the financial position of the Club and the proper cost of gliding in the near future. The appointment of a Chief Instructor, Mr. G. O. Smith, and three other Instructors, Messrs. B. A. G. Meads, Chairman, E. Swale and A. L. Slater and 12 additional Instructors.

AB INITIO INSTRUCTION

The Committee has come to the conclusion that elementary training, although it is uneconomic, is a necessary part of the Club programme, and that a short-sighted policy with regard to ab initio members will benefit neither the Club nor the Gliding Movement in general in the long run. The bar will be re-opened within the next few weeks and something like the spirit will return to the Club (in limited quantities). Accommodation at the moment is strictly limited and with the present catering allocations it is not possible to provide sleeping accommodation and meals for more than a dozen members at the most. Steps are being taken to improve the position at the earliest possible moment, but in the meantime, members will have to put up with a certain amount of inconvenience until the food and supply situation eases

NEW MACHINES

With regard to equipment, a new winch with automatic pay-on has recently been completed and two retrieving cars are available. Three machines are in use at the moment, a " Kite," " Grunau " and " Golden Wren," and two " Kadets " are expected in January and a new " Kite " in February. A recent B.B.C. broadcast stated that we have no Club machines, a statement we wish to correct.

The Annual General Meeting of the Club was held at The George Hotel Hathersage, on the 2nd February at 6.30, followed by supper. A large number of Club members were expected. Interested parties are cordially invited to the Club at week ends and anyone wishing to attend should inform the Secretary, 87, Fargate, Sheffield, of their intention to be present.



LONDON GLIDING CLUB, DUNSTABLE, JANUARY, 1946

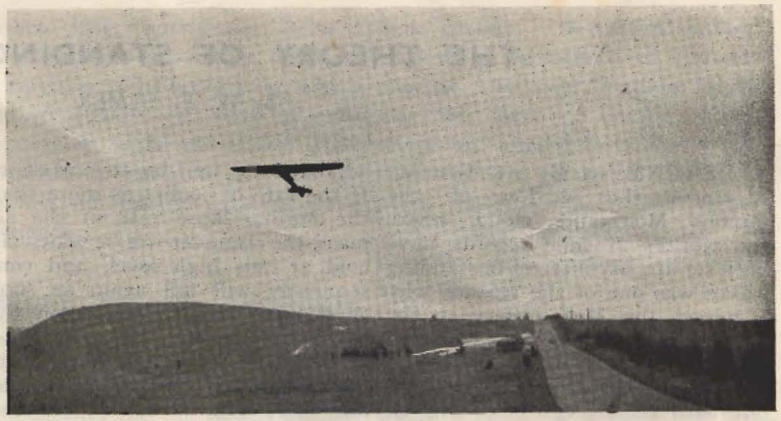
ON Saturday, Jan. 5th, a light wind blew from the south-west under an overcast sky, and Dudley Hiscox broke the official ice by soaring his " Gull " for twenty minutes. After tea, Lawrance Wright gave a film show which featured his cartoon, "Cloud Cuckoo," and several other inspiring gliding shorts.

Sunday produced similar weather to Saturday, except that the wind was rather variable in direction and strength, so that some lucky people soared, and others just didn't. Everything was towed from the club house to Totternhoe to the hilltop, and we rigged and operated from there. Greig was first off in the " Blue Gull," which he flew for an hour and then landed at the bottom. That, however, caused no bother, because he and Stevenson had brought along a most enthusiastic squad of A.T.C. cadets, who whistled the " Gull " up to the hill-top like a winch launch ! Stephenson also flew the " Blue Gull " for an hour, and Hiscox flew his " Gull." The club " Tutor " was flown by Wright, Cole, Wheatcroft, Rutherford, Dr. Edmunds, Riley, Huxley, Lauderdale, and Manning. When the wind died in the evening it was ground-hopped on the aerodrome. Several club members who have not flown since 1939 flew it successfully.

The success of the week-end was largely due to the efforts of Dudley Hiscox, who conjured the club a " Tutor," and to Copeland, who produced a winch and petrol.

Details of flying, Dunstable, Jan. 1946. Saturday, 5th Jan. :—

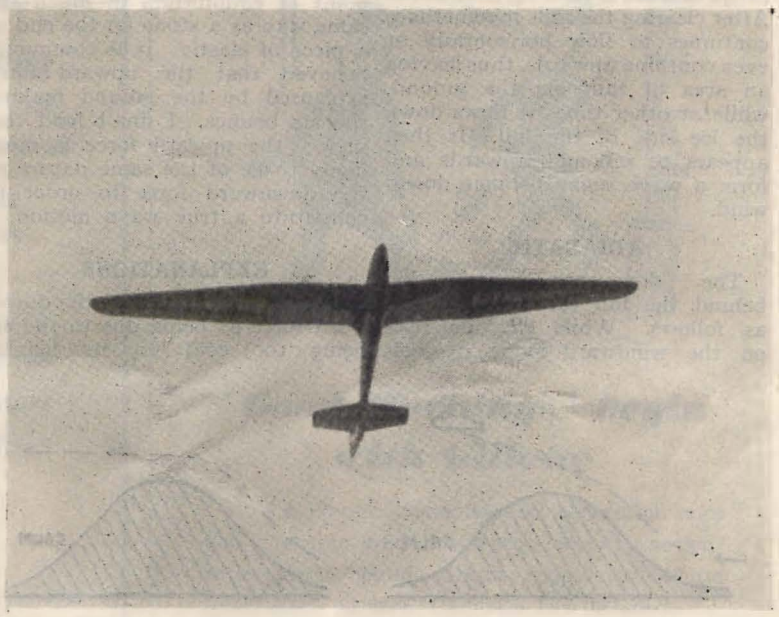
Saturday, 5th January.		
Hiscox.	" Gull "	3.55— 4.15
Sunday, 6th January.		
Greig.	" Gull "	11.20—12.20
Hiscox.	,,	11.55—12.30
Stephenson.	,,	1.05— 2.05
Manning	" Tutor "	1.36— 1.52
Wright.	,,	2.14— 2.18
Cole.	,,	3,05— 3.09
Wheatcroft.	,,	hop
Rutherford.	,,	3.17— 3.21
Dr. Edmunds	,,	3.27— 3.29
Riley.	,,	hops
Huxley	,,	hops
Lauderdale	,,	hops
Hiscox ..	" Gull "	3.40— 3.45



The meeting of the London Gliding Club at Dunstable Downs on Sunday, January 6th, 1946.



Dudley Hiscox about to be " bunjied " over the slope in his Gull.



Hiscox soaring in the Gull.

THE THEORY OF STANDING WAVES

By W. E. FILMER

I LEARNT to fly at Grunau, under the shadow of the famous Moazagotl cloud where the world's altitude records have been set up. My interest in standing waves was one of the reasons why I joined the Met. Office at the beginning of the war. I hoped that the experts would be able to throw some light on the subject, but with the exception of Mr. G. Manley, who made a study of the Helm wind, I came across no-one who could help me.

I was fortunate in being stationed at Inverness for three and a half years, where I specialised in forecasting for Scotland. The mountainous country has a profound effect on the weather, and lenticular cloud formations are common when conditions are at all suitable. What these conditions are, and how they can be forecast is of particular importance to glider pilots. Other points of interest are, what kind of country will produce waves, and how high will these waves extend.

WIND BEHAVIOUR

When air blows up against a range of hills, it rises up over them. After clearing the hills it sometimes continues to flow horizontally or even continue upwards, thus leaving an area of calm on the ground, while at other times it flows down the lee side of the hill. It then appears to rebound upwards and form a wave some distance downwind.

ADIABATIC

The downward acceleration behind the hill can be explained as follows. While the air rises on the windward slope it cools adiabatically, i.e., due to expansion. If the rate of cooling is more than the normal lapse rate in the air mass, the rising air will be relatively cold at this high level, and consequently will fall again as soon as it has the opportunity on the lee side of the hill. If the air mass in general has a high lapse rate, as in the case of unstable polar air, there will be no tendency to fall, and there may even be a tendency to rise.

SUITABLE CONDITIONS

As a rough rule we can therefore say that standing waves will not form in an unstable polar air mass. The greater the cumulus development, the less likelihood there is of suitable conditions for wave development. The most suitable conditions for waves are to be found in stable air, such as in the warm sector of a depression, or on the outskirts of an anticyclone where there is sufficient wind.

The upward rebound to form the first lee wave is not so easy to explain. It is evident that the air in a series of waves oscillates upwards and downwards about a point of equilibrium in much the same way as a stone on the end of a piece of elastic. It is commonly believed that the upward force is caused by the ground making the air bounce. I don't hold this view; the upward force is more likely to be of the same nature as the downward force in order to constitute a true wave motion.

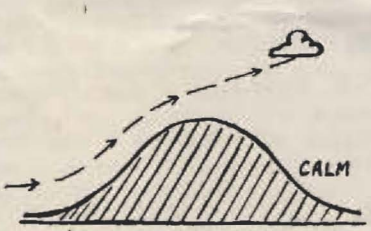
EXPLANATIONS

Now I have explained the downward force as being due to the air being too cold for its height. Consequently the upward motion must be due to air being too warm for its height. There are two ways of explaining how this can occur, one applying to the lower layers of air, and the other to the upper layers.

When the surface layer of air rises up over a hill, and falls again to its original height, it will arrive at the same temperature as when it started (surface heating being neglected). This is true so long as the air remains dry throughout. If, however, the cooling on the windward side causes condensation to set in and the hill becomes capped with cloud, the well known fohn effect may occur. The precipitation of moisture on the hill top will result in the air arriving at the bottom of the hill warmer than when it started. This may be the cause of its tendency to rise again to form another wave. However, lee waves are often observed without the fohn effect, so that this cannot be the only factor operating, though it may on occasions have some influence.

UPPER LAYERS

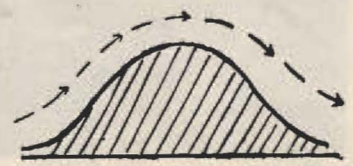
The other explanation applies to the upper layers of air which are stable. If these layers are caused to fall below their normal height, they will warm up adiabatically to a temperature too high for their new altitude, and will consequently tend to rise again. This appears to be the true explanation of wave formation, and it follows that the greater the stability of the air, the more vigorous the wave motion. It is also clear that a good kick off on the hill is necessary to set it going, and it is worthy of note that the best



VERY UNSTABLE AIR



UNSTABLE AIR



STABLE

waves are formed where the lee side of the hill is very steep.

IMPORTANT

Coming to the question ot what height of hill is required to cause waves, it is necessary to point out that during the day there is very often a considerable lapse rate in the lowest 2,000-4,000 feet due to surface heating, and in any case whenever there is sufficient wind blowing, a lapse rate is always set up near the ground due to turbulence: this may affect only 1,000 feet in the absence of surface heating.

It seems from this that there is not much hope for an optimist looking for any waves behind a hill of less than 1,000 feet, and 1,500 feet is probably a minimum. Terence Horsley reports wave formation over the 1,000 feet high Sidlaw Hills, but I am inclined to think that the higher range of Grampians to the north-west, which rise to 4,000 feet, were initially responsible, while the Sidlaw Hills provided a suitable obstacle to amplify an already existing wave tendency.

HEIGHT RECORD ASPIRANTS

Some remarks about the vertical extent of waves may be of interest to aspirants for the height record. Very little first hand information is available on this point, but from the theoretical aspect it seems likely that the up-currents would decrease in intensity as soon as more unstable air is reached. For instance in anti-cyclonic air the most stable layer usually extends from 4,000 to 10,000 feet, above which the temperature begins to fall off more rapidly. The vertical motion is likely to be transferred upwards another 5,000 feet, making 15,000 feet the limit of climb. Warm sector air coming from the south-west varies a good deal, but it is often more stable in the higher layers than anticyclonic air. It has the disadvantage of being very cloudy.

ALPINE WALL

Conditions above the Moazagotl, where altitudes of over 25,000 feet have been reached, probably differ considerably from those obtainable in the British Isles. There, very warm air from the Mediterranean flows northward over the giant Mountains and is often stable to a great height. I do not wish to be too pessimistic, so will add that in meteorology "anything might happen." So there is hope for us yet.

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The Gentle Art of Instructing

BY VERONICA PLATT

ANY old-established Gliding Club knows full well the difficulties inherent in finding the perfect instructor. His needs must be a completely unselfish enthusiast who would willingly devote all his week-ends throughout the year to the task of teaching people to fly a Club aeroplane, and the sailplane instructor has to possess even rarer qualities. For he is dealing with groups of people in all stages instead of with just one pupil at a time.

PSYCHOLOGICAL APPROACH

This calls for a certain amount of psychology. The man who can be popular and yet respected, approachable and yet obeyed, never ruffled, never hurried, never angry, always wideawake to every movement of pupil, glider, winchdriver, ground crew, and all other aircraft —that man is someone to be admired and envied, and the Club he rules over is a happy family. His pupils will advance steadily, they will have the minimum crashery and the maximum results. His hangars will be models of cleanliness and tidiness, with everything kept in its own place. His towing-cars, aeroplanes, and winches will be clean and as serviceable as possible (remembering the age and infirmities of most Club cars !). And his field will be trim and neat—grass cut, hedges in order, nothing lying about where it ought not to be.

HARD WORK

How will he achieve this miracle —for miracle it seems to those who have not the gift ? By never relaxing his interest and by always working as hard as or harder than his most energetic pupil, by always being at hand to guide and help, both mentally and by sheer physical hard labour. There is a lot of lifting and directing to be done in the morning when the gliders are being taken out of the hangar, and again in the evening when they are being stored. An instructor who arrives late and leaves early will find his pupils slacking off.

Besides this, he has to have an all-embracing knowledge of glider construction. There is not only the routine check-up to be observed before each week-end's flying, but also inspection of lightly damaged machines. Whether the damage comes from careless handling on the ground or from a bad landing, some essential part may be strained and need more repair than is apparent to the casual eye.

EXPERT LOCAL KNOWLEDGE

There must be nothing casual in the instruction, either. A pupil's confidence comes from the man who is God to him at first—though he may descend to very mere man later. He must feel that the instructor is someone to be implicitly obeyed, at once and without question. It follows that he should be respected for his flying capabilities as well as for his character. An instructor who cannot fly, and fly well, is as useful as a hen teaching ducklings to swim. She can watch and admire and criticise, but she is of no practical help ! Every soaring pilot knows how much he can learn from the others, and an instructor should make a point of familiarising himself with the local soaring conditions so that he can give the maximum assistance to his beginners from his own practical experience. He must have a sound theoretical knowledge of flying and a sound practical training which will enable him to demonstrate his theories. In Clubs where aero-towing is practised he must also be a power pilot, experienced in towing and being towed.

For the new instructor, here are a few do's and don'ts which may help :

DO'S AND DON'TS

Never be jumpy or bad tempered.

Never speak or act excitedly. A nervous pupil will fear the worst at once. Be calm, quiet, and convincing.

Make as few signals as possible and keep them associated with certain definite movements of the controls.

Never guess. Decide exactly what you want and what the pupil is capable of performing before you give your commands.

Never " tick off " a pupil in front of others unless it is a matter affecting the safety of all. Then let your criticism be brief and complete.

Do not expect more of your pupil than you could do yourself at that same stage. He should merit the same consideration as you had, and is equally susceptible to kind encouragement or quiet reprimand.

Be patient, be firm, and be obeyed—and more than all, be self-denying. A good soaring day is for your pupils to enjoy and profit by, even though one after the other they fail to make good use of it. If you have trained them well, the day will come when they do all the things you have expected of them, and that will be your reward.



Be gentle and firm !

Swiss Soaring Flight

IN a relatively short space of time soaring flight in Switzerland has developed considerably, easily explained first by the love of the Swiss people for open air sports, and secondly by the nature of the country, which lends itself to the practice of gliding.

Many of us who have climbed to the summits of mountains by the sweat of our brows have experienced the desire to launch ourselves from those high promontories, to free ourselves from that hard and grim contact between body and rock, and to imitate those Alpine birds which spread their great wings and soar with such nonchalant elegance, playing in the multiple and invisible currents of the atmosphere. To come down from these arid snow-clad peaks to the forests and villages, to climb back tirelessly in great silent circles to the heights from which one has just descended, this is no longer an empty dream but an actual possibility offered to those initiated in the art of gliding and soaring.

There have been five distinct periods in the history of Swiss soaring.

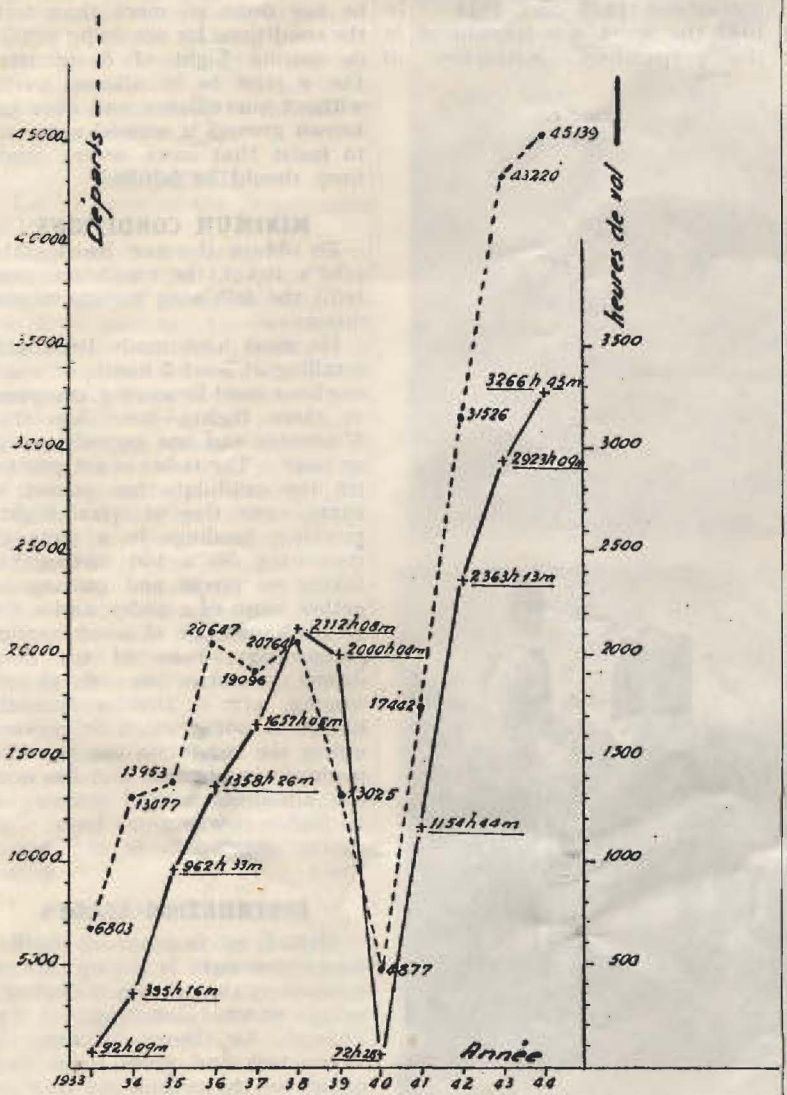


Fig. 1

THE BEGINNERS

1. From 1925 to 1930 isolated men or little groups felt their way along, constructing and experimenting with most varied and primitive types of gliders. In 1926 the best performance was a flight by J. Spalinger of 1,780 metres, lasting 1 minute 42 seconds. In 1930 F. Müller flew for 1 hour 4 minutes, gaining 470 metres in altitude.

2. From 1930 to 1934 gliding became officially recognised and was organised by the National Swiss Aero Club, to whom the Federal Air Bureau confided authority in 1931 on the Jungfraujoch. There the Swiss pilot, W. Farner, accomplished a flight of 52 kms. In 1931 winch launching was introduced, the previous method having been by "sandow" or rubber rope. In 1932 aerotowing began.

3. In 1934 the Swiss Aero Club was formed into a technical entity enjoying a certain independence, with the task of controlling methods of work and instruction throughout Swiss gliding. This entity was directed most completely by M. H. Schreiber until 1938, and gliding developed as remarkably in quality as in quantity. In 1935 Schreiber crossed the Alps from Petite Scheidegg to Bellinzona (132 km.), which won him the Olympic Medal. In 1936 a Swiss team participated in the Olympic Games in Berlin. National records were raised to 25 hours 50 minutes' duration, and 143 kms. distance. In 1937 Schreiber crossed the Alps for the second time, from Rochers de Naye to Palagnedra (Tessin).

4. After 1938 the considerable development of Swiss gliding called for a new organisation. The Federal Air Bureau took over technical controls while the Swiss Aero Club occupied itself with the organisation and general welfare of the sport.

ALPINE FLIGHT

The authorities began to realise the specific goal of Swiss gliding: Alpine flight. For this reason in 1938 and 1939 the Federal Air Bureau organised two aerial research camps at Rochers de Naye sur Montreu, in the course of which various methods of investigation

were studied or set in motion with the idea of intensive study of the Alpine atmospheric currents. (See "Camp d'aérologie alpine des Rochers de Naye, 1939, rapport de la Commission d'aérologie alpine," by W. Eichenberger, Memoirs of the Swiss Society of Natural Sciences, Vol. LXXLV, Mem. 5, edition Fritz A. G., Zurich, 1943.)

WAR SUSPENSION

5. In 1939 the outbreak of the European war stopped the development of soaring in Switzerland. All activities had to be suspended for many long months on account of security measures taken by the army command. During the year 1940 gliding practice was again allowed in certain places and in small zones whose limits were strictly marked out. Civil aeroplanes were forbidden to fly by reason of the shortage of petrol, so amateurs interested in the air took more and more to gliding. Military authorities accorded them more and more concessions, so much so that soaring activities in Switzerland in 1942 were far ahead of previous years. This was the more meritorious if one remembers the restrictions of all kinds brought about by the state of war. To appreciate it still more it should be remembered, too, that soaring in Switzerland is practised only by amateurs and then only during their leisure hours at week-ends or holidays.

This rising development continued throughout 1943 and 1944. In 1943 the sport was introduced in the preparatory instruction of young people and also on the gymnastic side as a regular subject.

Soaring developed to such an extent that the Federal Air Bureau took command as from the beginning of 1943.

NEW CATEGORY

Swiss Gliding "Tickets."—Here various reforms have been carried out. In particular a new glider pilot's ticket has been introduced with a licence similar to that called for by the CINA for pilots of other flying machines. Up till 1943 the official glider pilot's ticket was the "C" of the F.A.I., but gliding has made such progress during these last ten years that it is not possible to consider a pilot fully trained if he has done no more than fulfil the conditions for obtaining a "C" (a soaring flight of 5 minutes). For a pilot to be allowed to fly without surveillance and over unknown ground it seemed necessary to insist that more severe conditions should be fulfilled.

MINIMUM CONDITIONS

To obtain the new Swiss glider pilot's ticket the candidate must fulfil the following minimum conditions:—

He must have made 100 flights totalling at least 3 hours, of which one hour must be soaring, composed of three flights—none less than 5 minutes and one exceeding half-an-hour. The ticket is not granted till the candidate has passed an exam. consisting of spiral flights, precision landings in a rectangle measuring 50 x 100 metres, the taking to pieces and putting together again of a glider, and a test on his knowledge of aerodynamics, meteorology, rules of the aerodrome, construction of gliders, soaring, etc. Besides this the licence is not granted or renewed unless the candidate has passed a medical examination and has done the minimum annual training of 10 flights totalling one hour. (cf. similar regulations in the Argentine.)

INSTRUCTION STAGES

Methods of Instruction.—Gliding instruction most in use up till now is based on the primary "Zogling," using winch launching. The Federal Air Bureau trains the Instructors and gives them their orders for the programme they are to carry out with their pupils.



Swiss Electric Winch (*Fig.* 2)

" S.15k " soaring over La Haute Engadine. (*Fig.* 3.)

This instruction is divided into four stages.

Stage 1. Elementary training up to straight flight of a duration of 30 seconds.

Stage 2. Training in the use of rudder and ailerons.

Stage 3. Training in secondary and high-performance sailplanes.

Stage 4. Preparation for the pilot's ticket.

The course corresponding to these various stages lasts from 7 to 10 days. It takes place either in the permanent gliding schools or else in the gliding groups of the Swiss Aero Club. At present there are 4 permanent schools and 50 groups. In these last the training generally takes place at week-ends, and not over a course of 7 to 10 consecutive days as is more usual in the case of the permanent schools.

IN DETAIL

Let us examine the programmes of these courses.

Stage 1 covers roughly thirty launches. At first the pupil does simple ground slides, learning the use of the ailerons ; then low hops ; then across the field at a height of from 1 to 3 metres—one of the best exercises. Towards the end he is encouraged to fly higher and higher till he gains an altitude of 60 to 80 metres. After the test at the end of the course the pupil must make a glide of at least 30 seconds followed by a good landing.

Stage 2 covers another thirty launches. At first the pupil practices slight changes of direction at heights of 20 metres. Then he goes to 50—60 metres and makes the deviations more and more pronounced till he can change direction through 180° from left to right. The last flights are in the form of an S. The test flights at the end of the course include a glide of 60 seconds in an S made inside a rectangle of 200 x 600 metres.

PRECISION LANDINGS

Stage 3 covers about 20 flights in secondary or advanced types. The first 10 flights are simple glides at a maximum height of 10 metres to allow the pupil to accustom

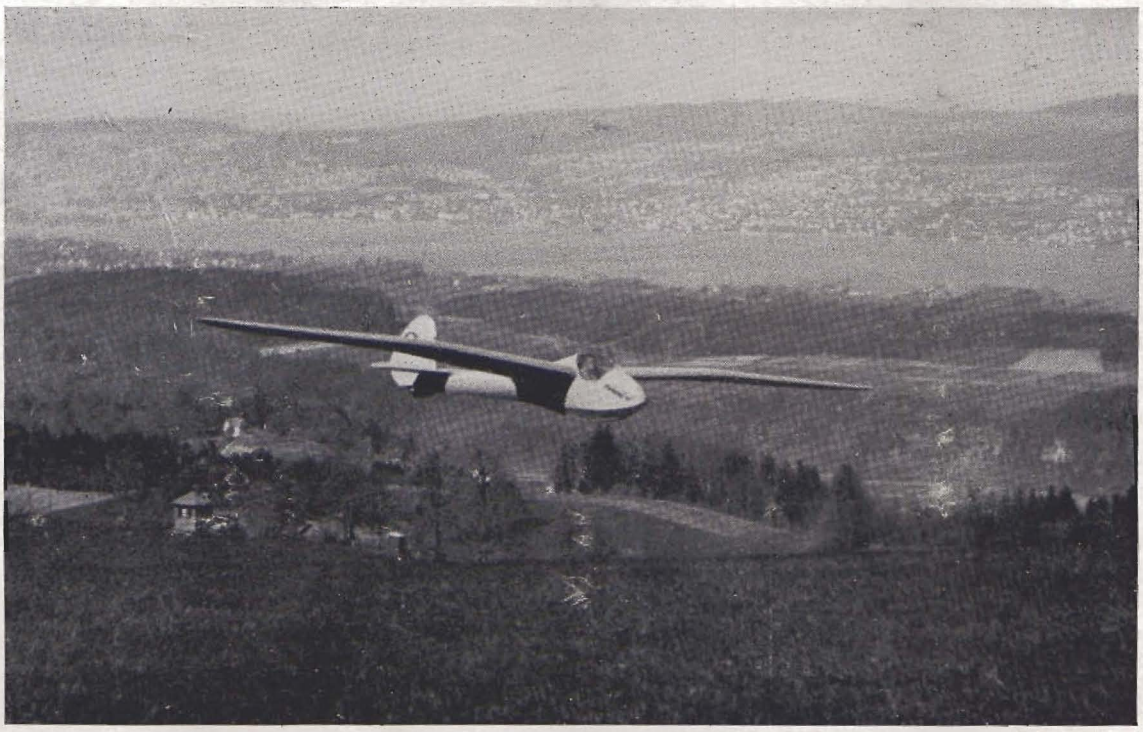




" S.18 11 " high-performance sailplane. (*Fig.* 4.)



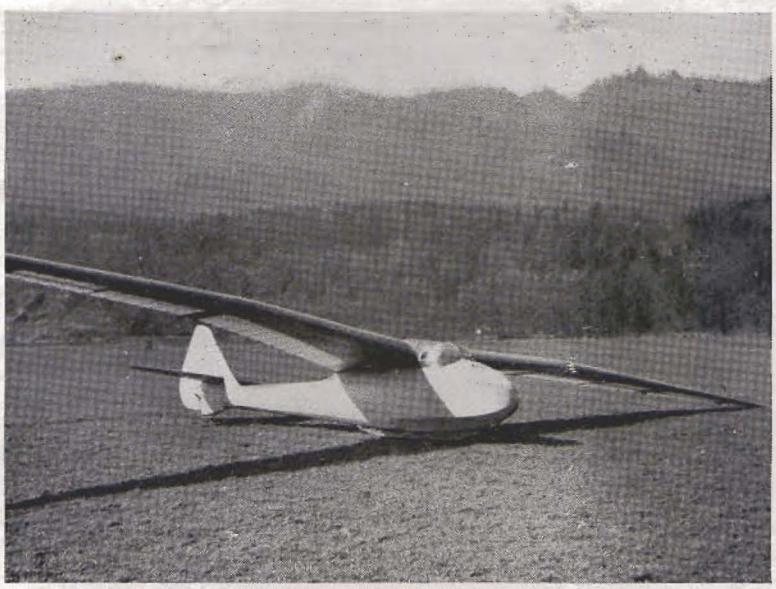
The Zweisiker "S.21" performance Sailplane. (*Fig.* 5.)



Swiss high-performance Sailplane "Moswey III." (*Fig.* 7.)

himself to a new type of machine. In the following flights he does left and right turns, precision landings, and sideslips. This stage ends with two test flights with a precision landing in a rectangle measuring 50 x 200 metres.

Stage 4 comprises at least 20 flights on secondaries or high-performance machines with training in precision landings in a rectangle 50 x 100 metres. These courses are generally organised on aerodromes favourable to soaring so that pupils may have a chance of making their five soaring flights necessary to get their ticket. If all goes well they should achieve this at the end of their course. Training in aero-towing, suppressed during the war, should also take place during this course.



High-performance Sailplane " Spyr I V " (*Fig.* 6.)

Dual Control Training.—Thanks to the construction of such excellent two-seaters as the " S21," dual command training has been introduced in certain schools. This method has given excellent results and appears preferable to instruction in single-seaters. The pupil does from 35 to 40 dual flights from the winch before going solo. He learns immediately take-offs, turns and good landings. At the end of a course of 9 or 10 days pupils instructed in a two-seater are able to fly the " Grunau Baby." This method, therefore, represents an enormous saving of time and gives extra safety.

For training in the future there is a tendency to teach the first stages dual in aeroplanes, thus saving time and the toil of winch launching. Then the pupil, after going solo, will be passed on to two-seater sailplanes and later to single-seaters.

ELECTRIC WINCHES

Launching Methods.—We have let it be understood above that the majority of the launches are made by winch. These are usually petrol-driven. The scarcity of petrol caused by the war caused a number of experiments in other fuels, the most satisfactory of which was acetylene. Wherever it was possible electric winches were installed; these were as satisfactory as they were economical, though their initial price was relatively high.

Using a cable of from 800—1,000 metres in length, the altitude attained by these winch launches in calm weather was around 100—150 metres. With a strong wind this could be raised to 200—250 metres. Launches from the mountain slopes are generally done by catapult of various types or by rubber rope.

In peace-time aerotow was much used with a steel cable (diameter 3—3.5 mm.) or a rope (diameter 10 mm.). The aeroplane most used was the de Havilland " Moth."

SWISS AIRCRAFT

Machines.—The primaries used in the elementary stages are of the " Zogling " type, of which there are several varieties. These gliders are very stable, roughly made, slow, and easy to pilot. Their slow response to the controls renders them relatively insensible to the rough movements of beginners.

Training is continued on the " Grunau Baby II " and the " Spalinger " (Swiss) types S 15, S 15K and S 16.

The great majority of the machines used in Switzerland are by Swiss manufacture. The most famous are those of " Spalinger," " Hug," and " Muller." The table below gives the characteristics of the most widely used Swiss machines. Up till now 465 gliders have been officially registered. A great number of them are school machines, and many are no longer in service. The growing number of pilots is hampered by a shortage of sailplanes, still more grave because of the difficulties in the way of obtaining raw materials, which has caused the price almost to triple since 1939.

ALPINE FLIGHTS

To-day one might say that Alpine flight has become a Swiss speciality. Little by little the pilots have gone from the slopes to the foothills, from the foothills to the high Alps, till now they venture to the highest of them all. For some years they did not have the experience to risk it; the development of technical knowledge of soaring was still insufficient.

WINTER SPORT SOARING

Alpine soaring is practised not in the permanent centres but in camps of from 7 to 10 days' duration. The first of these Alpine camps was organised in 1931 on the Jungfraujoch (altitude 3,457 metres); many pioneers of Swiss gliding and some foreigners participated. Later many camps were organised at Rochers de Naye sur Montreux

(*Continued on page* 19)

THE BIRTH OF A GLIDING CLUB

The Midland Club.



C. Espin Hardwick

MORE than 2,000 miles were driven in and around the Midlands between 1931 and 1934 before Long Mynd was discovered. Nearly all hope had been lost of ever finding a suitable site for safe and easy slope soaring within 50 or 60 miles of Birmingham, and one which also had the necessary physical attributes required for the "ab initio" pilot to pass straight through from "scratch" to high efficiency soaring without undue crashery, which might possibly prejudice a club's prosperity.

THE BEGINNING

The site was actually discovered in April 1934, but the club was not formed until the following November, and its first flying meeting took place at the Handsworth Primary ground on Boxing Day of that year. On this day some 20 odd of its first and most enthusiastic members assembled in a half finished tin hangar to unpack and erect their first machine —a Slingsby "Dagling", glistening white and smelling strongly of new varnish—a rare and refreshing sight to its earthbound members. By two o'clock the rigging and passing out were completed and during the afternoon every member had three good airborne "hops" from bunjy launches without a hitch; it was a great day in the life of everyone present, and particularly the two instructors—Theo Tester and myself, and I don't think either of us will ever forget it. Dr. Slater, then editor of THE SAILPLANE was present on this occasion.

Club soaring at Long Mynd did not commence until April 1936, for reasons which will only evoke a grouse if gone into; but the intervening fifteen months were not wasted for the original members piled up primary and secondary launches at a prodigious rate until most of them had it "in their pockets" when they finally arrived at the Mynd in April 1936.

THE PIONEERS

Before that, however, the site was tried out in 1934 and again in 1935 by several parties with "Falcon II", including Eric Collins, Fred Slingsby, Jack Dewsbury, Theo Testor and myself; Testor took his "C" there in 1935 with a flight of over one hour and a height of over 2,000 feet to his credit. This actually was the first Mynd "C" and was a foretaste of things to come, for when the Club finally arrived there on the 19th April, 1936, no less than eighteen "C's" were taken on the first two week-ends, and twenty-nine in the first month, all without crashery and practically all of them with heights of over 1,000 feet.

The first man to fly over the Mynd was Fred Slingsby, in May 1934, and it soon became obvious that the site was all that it appeared to be both in strength of hill lift and breadth of soaring beat.

THE RIDGE

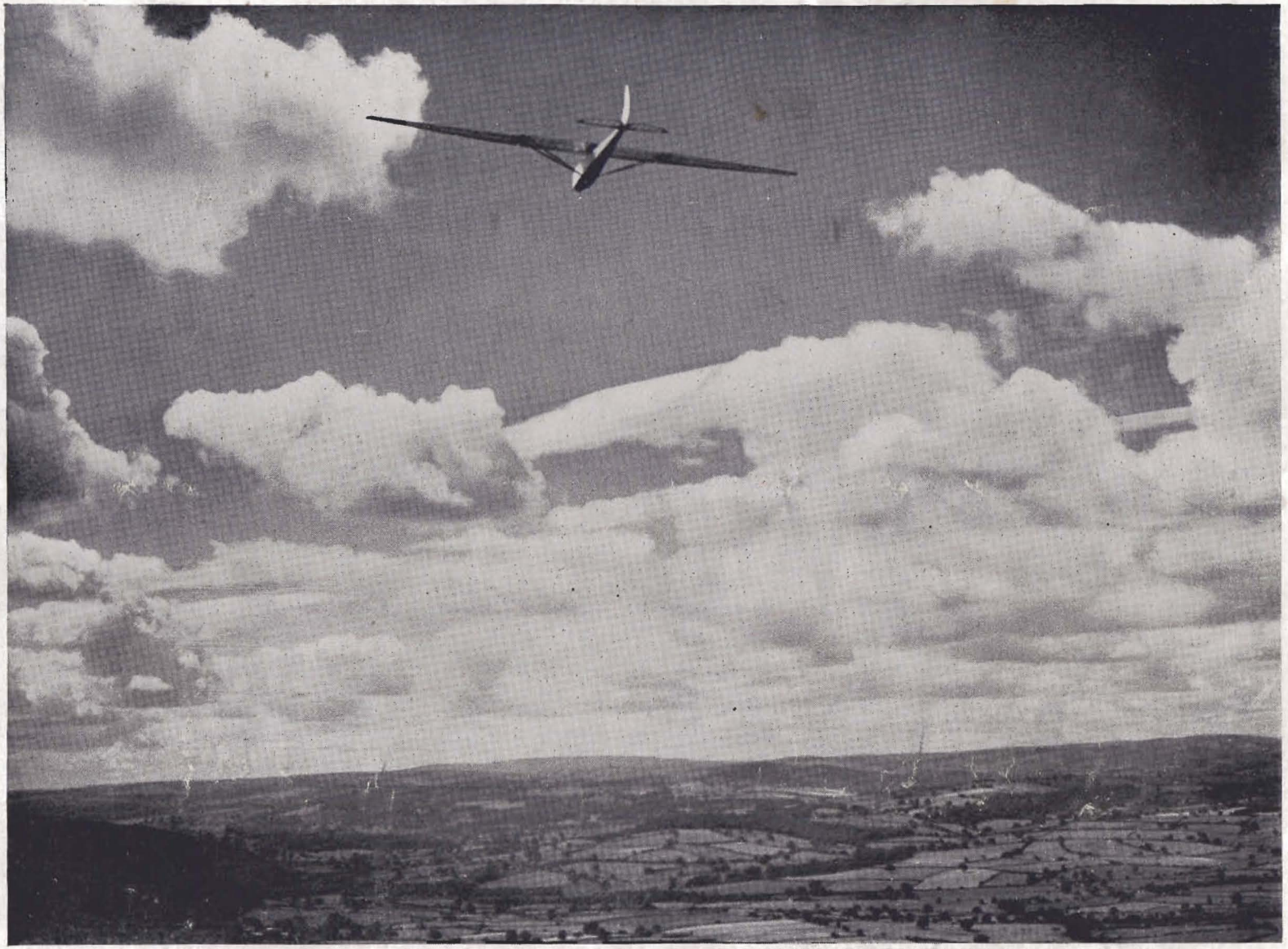
The usable ridge itself is 5½ miles long with an average height of 700 to 900 feet above the Valley. It generally faces due west, but the last two miles to the south have a point or two of north in them. The Club's freehold site is approximately in the middle of the soaring beat just above Asterton, and is a flat area of some twenty-five acres, with a height above sea level of 1,510 feet. It is covered with heather and bilberry and interspersed with patches of short fine grass. There is one such large patch right on the edge just north of the hangar which is used as a natural bunjy launching site. There are no rocks, walls, or trees anywhere on the Mynd top behind the soaring ridge, and all the contours, including the ridge itself, are gentle.

CLUBHOUSE AND HANGARS

The main hangar is of steel concrete and asbestos, of a curved section and designed to stand up to wind speeds of over 100 m.p. It has a useful floor space of 4,250 square feet, and a temporary clubhouse is fixed up at the western end, overlooking the Onney valley and the launching point, but about 200 yards behind the edge. Exposure has whitened its exterior and its curved sides fit well into the Mynd's smooth contours. There is also a smaller wooden hangar, used for primaries, winches, launching cars, etc., and into the north end of this a double dormy house has been fixed up with sleeping accommodation for sixteen men and four ladies. In each bunkhouse there is a normal wash basin with water laid on and drainage, and the bunks are of the double-decker variety with spring mattresses, palliasses, pillows and blankets. Sheets are not provided at present, for obvious reasons.

The lighting of the dormy house is effected by pressure petrol lamps of 200 candle power, and heating by "Rippingille" oil stoves. The Clubhouse and hangar are lighted by a calor gas unit, but electricity is on its way. Drinking water comes from a perpetual spring just over the hill, whence it is pumped up (at present by hand) into two storage tanks, one in each hangar.

Catering is presided over by Mrs. Jarrett, who lives 1,000 feet below in Asterton village, and nothing comes amiss to her capable and great-hearted self—just how she feeds sixty or seventy folk when only advised of twenty or thirty, no one will ever know, but she does it and does it handsomely. The mess room seats twenty to twenty-five at a time



A "Professor" Sailplane soaring over Long Mynd, the Midland Gliding Club's site, in Shropshire. This machine was the first Sailplane to fly the Channel—before Kronfeld, and was used in the early days of the Club.

in school fashion, and the cooking is done by a battery of oil cookers augmented by a coal range. It all sounds very crude these days when compared with modern ideas, and of course it is, but it works well and leaves something to look forward to.

Mr. Jarrett comes up each week-end and gives a hand with any job that wants doing; he is in charge of the keys.

THE MACHINES

The hangar will comfortably hold nine rigged machines, but with careful packing eleven can be got in. How long it will be before we see that number in it again rests with the Government. The only actual club machine at the time of writing is the Wolfe "Aerobatic" sailplane, with wheel and parachute, previously flown by Joan Price. The whole of the old Club fleet of fourteen machines was handed over on request to the Government for the A.T.C., and the hangars, properties and contents leased to the Government for a nominal rent. Orders have been placed for new Kites, Two-seaters, etc.

SLOPE AND THERMALS

The chief attraction of the site from a flying point of view is its size, smoothness, and safety, coupled with the strength and breadth of its hill lift; this is handsomely augmented with a liberal number of thermal points both on the actual beat and off it, both up and down wind, which can be easily reached even by beginners. The airflow over the top is relatively smooth except for a belt about 200 yards, broad, 300 yards back; in other words the top is not "stalled" like some sites and one has to be careful in a wind when towing to the edge to launch, that a premature "take off" or bump does not wreck a skid or strain a fitting.

STANDING WAVES

There is also a definite lenticular tendency at certain periods of the year, clearly demonstrated by those streamlined stationary clouds in their correct places, but this lift is difficult to contact and the greatest height above the top so far has been just over 7,500 feet, made by visitors in September 1938. Our old friend, the evening thermal, puts in an appearance during the summer months with delightful results, more akin to one's dreams than reality, but is has to be caught at the right moment in the evening or it won't play. On the other side of the picture, this is a one wind site, and slope soaring is only possible with winds from S.W. by west to N.W. by north. The best direction is N.W. when it is easy with anything from 5 to 40 m.p.h. In the latter case the lift extends well over a mile out in front and the north end, it is generally terrific but rough; this is where A. M. Young in 1938 lifted the British duration record in "Falcon II" with just over 16¼ hours Unhappily he was killed at Hong Kong in 1940.

THERMAL MAP

For non-slope winds, there is a good winching run of 700 yards for both north and south winds, with the former naturally the better for thermal work. There is also a good east-west run of 600 yards, but thermal flights have been few from this direction up to the present. The thermal map should, however, gradually put this right.

In pre-war years, about 1,000 hours per year were flown by the Club fleet of eight sailplanes, which included the three original "Kadets," the first, with a special section, was designed by Slingsby for the site. It should be added here that much of the success which the Club has had is due to the most helpful co-operation and service which Slingsby Sailplanes put at the disposal of the Club in those days.

HOW TO GET THERE

The best approach to the Mynd is *via* either Shrewsbury or Craven Arms. There are actually five ways up to the top, the easiest and main one being through Church Stretton, turning off at the Strettondale Hotel in the centre of the town, proceeding through the Gate and up the Burway *via* Boiling Well and Pole Cottage, a distance of about five miles. On the road a visitor should *bear left* when in doubt. The first mile is steep. From the west, the shortest way up is through Asterton and then directly up the Club road beneath the ground directs to the site—this is short but steep. If you have a trailer and you are in doubt about your car making it, come through Pulverbatch and turn off to Bridges and Ratlingholme, bearing right just before you enter the latter village. On this road both the hill and the surface are quite reasonable, and it is to be noted that all roads are now actually under repair after Army traffic and [illegible] time [illegible] appear in print. If you do not want to stop on the top, there are several good hotels in Church Stretton, particularly the Strettondale, where Miss Bulley can be relied upon to look after all gliding folk. (Telephone No. Church Stretton 10.) Also in Craven Arms there are two good small hotels, and for evening amusement there are picture houses in both places. The main G.W.R. line from Shrewsbury to Hereford passes thro[illegible]s and the train service is quite good, and taxis are available.

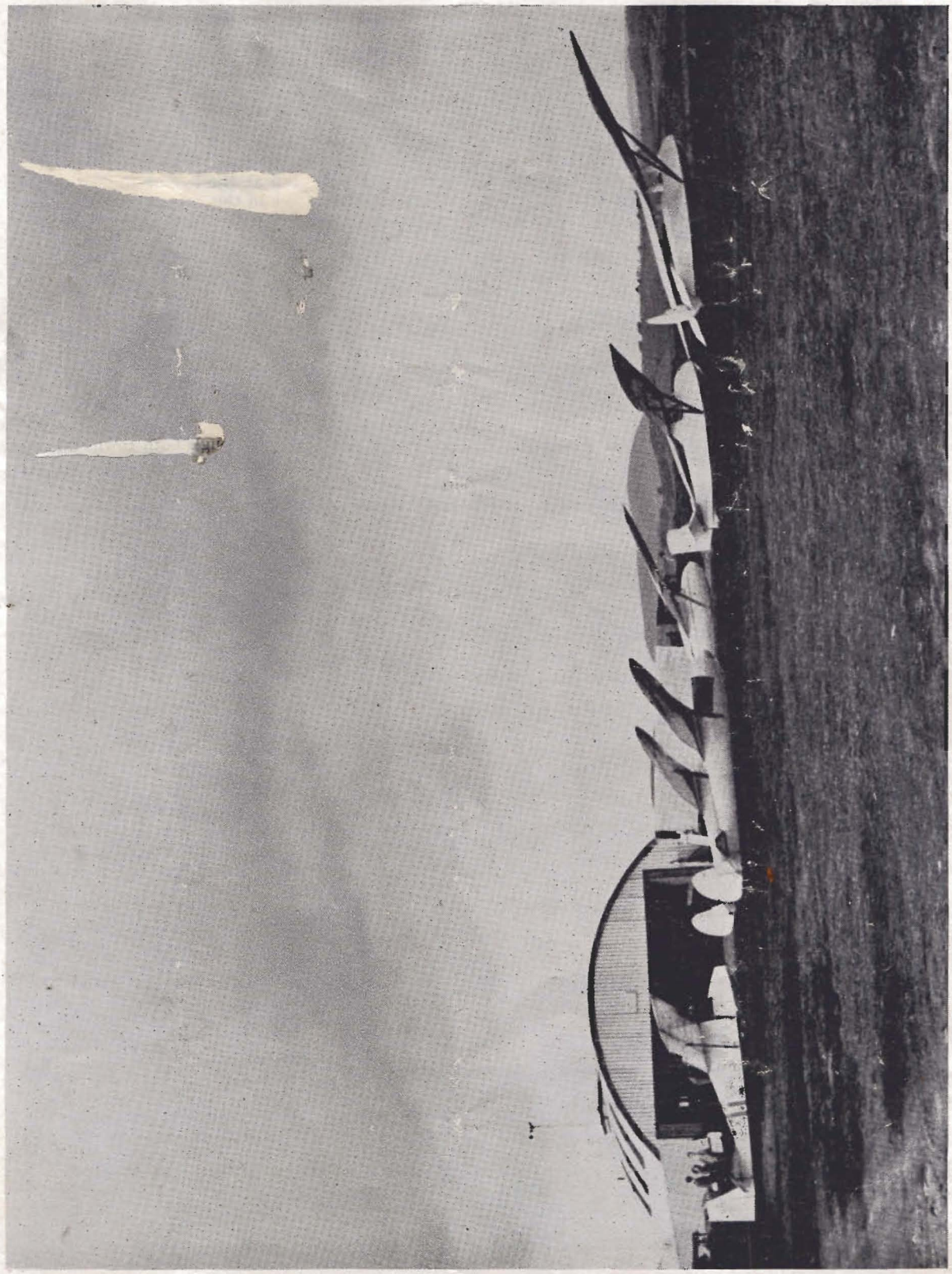
Incidentally, there are several good riding schools and stables in the district and horses can be obtained reasonably for a canter on the top for those who like this sort of thing. Also, the river Onney is only a mile away—and trout fishermen know what that means. Photographic experts should be sure to bring their cameras or cines for shapes and colours are to be seen on the Mynd which cannot be seen anywhere else.

FEES

The first post-war general meeting of the Club is scheduled to take place on the 14th December, but subscription rates have already been provisionally fixed for the year as follows:—

Yearly subscription .. £4 4 0
Entrance fee £2 2 0
Optional-damage insurance £3 3s. per annum. (If this is not utilised a member is liable for the first £10 damage in a crash.)
Flying fees, 3/- for 20 minutes or any part thereof, and then 1d. per minute.
Private members are charged 2/6 per mechanical launch, and £1 per month storage.
Accommodation. 15/- inclusive for a full week-end, commencing with lunch on Saturday at 1.15 p.m., finishing with high tea on Sunday at 5.30 p.m.

The Club House is now on the 'phone again, the number is Linley 206.



Fleet of six machines outside hangar at Midland Gliding Club grounds, Long Mynd, Shropshire.

CLUB PERSONALITIES

The establishing of this Club on the mountain top has proved a tough business from many angles, and but for the untiring efforts of a considerable number of members it would not be in existence to-day. In this connection the work of Lt.-Comm. Reg. Williams from 1935 to 1937 will always be remembered and appreciated, and his " built-up " scale contour map of the Mynd still hangs in the Club House to remind us of him.

In the initial stages Charles Fisher and Guy Beeton played an important role in securing the site and drawing up the rules, and the original Secretary, later to be chief instructor, Theo. Testor, perhaps put in the greatest and most sustained effort and interest both on the ground, in the air, and in the office. The work of subsequent secretaries and treasurers in the persons of Leslie Felton, Roger Thwaite, and Marshall Barnes must be recorded.

AMY JOHNSON

Then, of course, every member knows of the sterling efforts of Cecil Reiley, Oscar Meake, and Basil Oliver, and at Hereford, Jim Brook; while from the Austin group Douglas Hannay and Phil Everall maintained the Austin primary ground with marked success. The war has taken a heavy toll of members and over sixteen have fallen in the fray; among them was our senior member and deputy Chairman, Frank Davies, of Prestatyn; he will be sadly missed in every phase of the Club's life. Also the first Mynd Silver " C " in the person of Anthony Rooper was lost in 1943, following a collision over Southampton water during battle practice. He was one of the most promising and active younger members. Then, there was that gallant little lady, Amy Johnson, who was lost in 1940—she never missed a week-end from May 1938 until the war started.

SERVICE MEMBERS

The pre-war Chairman, Major Carbill, is still away on active service, but we hope he will soon be home again, but we are happy to record that the Club's youngest original member, now Squadron-Leader A. J. Sanders, D.S.O., D.F.C. and Bar, who joined the Club at the age of sixteen, is now back in this country and had taken up residence within ten miles of the Mynd. It was he who finally won the beer tray for the Club during the spot landing competition, with Camp Hill in 1938.

RECIPROCITY IS DUE

All that now remains to be done is to start up again ! And as before mentioned this rests with the Government and Air Ministry. If only these two institutions would show a fraction of the sense of service to the common people and their reasonable aspirations, that our own Club members and committees have shown to the Govern-

(*Continued on page* 18)



In group around " Kadet " at Long Mynd are F. N. Slingsby and C. Espin Hardwick.

THE ONE AND ONLY AERIAL PICK-UP?

ONE has read much about the picking up of gliders from the ground by power machines already airborne, and I shudder at the thought of being hoicked off from a standing start to 60 m.p.h. in say a " Grunau ! " Even with all the marvellous devices such as drum brakes, etc., it occurs to me that it might be pretty grim.

On the other hand, has anyone even heard of an aerial pick-up with both machines already airborne ? Well, I have ! In fact, I was the guinea pig !

The whole idea originated in the Club Bar, and although, as usual, a permanent thermal was to be found over our Club premises, *this* idea worked !

Many will say, " So what " or " Do you visualise sailplanes carrying R.T. and sending an S.O.S. for a tow-plane when at the end of a cross-country, and all lift has obviously disappeard ? "

Actually no, because one never gives up hope above 500 feet, and even a Super Squirt would have rather a job to rescue one in time, anyway—some snatch !

POWER TYPES

Being a mixed " Power and Powerless " Club, the latter element had a hard job at times to keep their tails up, and on this occasion the writer having just done a cross-country in 1½ hours and been towed back by " Moth " in about 1½ minutes, the Power types were rather elated.

" Supposing *we* hadn't been on tap, old man, you'd have had to knock the pesky thing to bits and carry it home "—and so on *ad nausem* ! " Of course," says the Power Instructor, " if you had dropped a line overboard and whistled, I'd have nipped out to pick you up before you landed—particularly as on this occasion you say you abandoned all hope at 1,000 feet ! "

And so the horrible idea entered his head—and I was dared, to uphold the honour of the Powerless types, by co-operating in his nefarious scheme. Unfortunately we possessed an " H17 " with two release hooks, otherwise I might have persuaded the Power blokes that it just couldn't be done.

To digress slightly and explain the two hooks, for the uninitiated.

The " H17," particularly when as beautifully constructed as ours was (good old Scotty !) is a delightful " Secondary " with a good performance, but it is very light, has a short fuselage and a powerful elevator, so that it was difficult to achieve the best results from a winch launch, particularly if it was a bit on the fast side, due to the tendency to buck like hades if yanked up at what on other machines would not be an abnormal angle. So another release hook was fitted almost under the pilot's seat, very near the point of balance, and how she climbed on that hook—and how ! !

THEY KNEW

That climb was one of the things which precluded the Power folk from thinking that we were entirely Gutless as well as Powerless !

Visiting " Spitfire " and " Hurricane " pilots rushed shrieking for cover when suddenly confronted with the " H17 " take off !

My log book shows several launches of 1,500 feet on a car tow with 10 cwt. cable, and for the first 700 feet approximately you could put the stick just where you liked, fore and aft, without the slightest effect !

I truly believe that an upward roll would have been simple, but for the fact that you would have been wrapping the cable around the fuselage and might not have had time to unwrap it before the speed dropped ! The nose hook was OK for new pilots and she aero-towed beautifully on it.

It was obvious that the snatch and subsequent aero-tow must take place from the nose hook and obvious that contact couldn't be made really close to the " H17 " for fear of the " grab " fouling some part of the glider. Also the " H17 " had to be launched as high as possible to give the towing machine time to make contact at a safe height and with room to manoeuvre, and as the front hook was going to be in use it meant securing maximum height with a car tow on the back hook.

Next it was decided that the only practical point of pick-up was from a cable hanging from the nose, and after much haggling this was fixed at about 30 feet. The Power type wanted it 6 feet and *I* wanted 60 !

SNAKING THE CABLE

The question of stowage of this cable during the launch was nicely solved by the fact that the " H17 " is strut braced, and the struts are within easy reach of the pilot's hand, so the cable was " Snaked " up and down the under side of the starboard strut and fastened by string top and bottom with slip knots led to the base of the strut.

Next we designed two 4-pronged grapnels with semi-circular prongs which were closed by strips of weak spring steel which allowed the light cables to slide down into the prongs, but not to disengage again.

On the day of the test, 300 feet of cable complete with grapnel was attached to our towing " Moth " and laid out in front of the machine, slightly to one side.

As far as I can remember, this was to allow an assistant to hold the grapnel off the ground until the " Moth " had taken off and snatched it out of his hand, having lifted the cable from the ground, and so avoiding a possible drag on the cable and the breaking of the weak link which was always used on aero tows.

The " Moth " took off and took up a position well to the side and to windward of the point of release from the car tow and the " H17 " was then launched, and released at 1,500 feet.

SO FAR SO GOOD

Immediately the car cable had dropped clear, the slip knots were pulled and grapnel and cable dropped, to hang fairly straight down from the nose hook, the " H17 " continuing as arranged, in a straight and steady flight.

I would say here that in spite of any qualms I may have had as to the outcome of this crazy idea I had absolute confidence in the ability of De Sarigny, the Club's Power Instructor, to do his stuff, and sure enough along came the " Moth " at once, slid across my bows at a perfectly safe distance

and also in such a perfect line of flight that the two cables touched lightly, and looking over the side I watched the long cable slide down into the grapnel of the short one where I knew it was safe.

SAFETY FIRST

And now comes the blow, and my confession of awful ineptitude !

It was arranged that as soon as the cables had touched I was to turn through 90 degrees and follow the course of the " Moth," increasing my speed, if the " Moth " was below me, to lessen the snatch, but I was so engrossed in watching things happen that I left that movement about 5 seconds too late and had only just commenced my turn when I saw that the cable would tighten long before I could get round, and the " Moth " was at the same height as I was.

To avoid what looked like being a nasty sideways snatch on the nose hook and having noted that the grapnels were well and truly locked together, I pulled the plug, saying to myself " Ah well, there'll be another time."

Up to now that time has not arrived, and I have never lived down the shame of *not* being towed for a triumphant circuit of the aerodrome after a successful and, we still think, first and only aerial pick-up !

A. E. Firmin.

THE BIRTH OF A GLIDING CLUB

—(*continued from page* 16)

ment and nation, then three-quarters of our club troubles would be over. It is sincerely to be hoped that it will be speedily realised that the Gliding Clubs have, in fact, something vital to contribute to the advancement of flying, the spirit of adventure, and air knowledge in general; and that in particular they are *the only channel whereby that passionate love of the air by the ordinary individual* can be realised. It should never be forgotten that it was individual people with a burning love of the sea and adventure in their hearts, who put Britain in the forefront as a maritime power; and it will be equally true that it is from their air equivalent to-day that advancement and discoveries will surely flow in this other mighty element.

C. E. H.

GLIDING IN BRAZIL

FOR some years we in the Argentine have been curious abot the progress of gliding in Brazil. There have been rumours of grand flights but never anything concrete. Herewith a translation from Mundo Aeronautico of Buenos Aires.

VARIG AERO ESPORT OF PORTO ALEGRO

The Directors of the Sports Section of the Brazilian Varig Company have sent us for publication a report on their activities during the first six months of 1945.

Power Flight. 4,507 flights with a total of 1,233 hours 46 minutes flying time were divided as follows :

Dual, 341 hours 53 minutes and 1,856 landings.

Solo, 599 hours 38 minutes and 2,374 landings.

Cross-country, 292 hours 15 minutes and 277 landings.

Sailplane and Glider Flight. There were 103 aero-tows in sailplanes.

Total launching time—26 hours 8 minutes.

Total in free flight—42 hours 59 minutes.

There were also 1,222 car launches in primaries, flying time not given.

Parachutists. Two jumps were made by the Instructor of this section.

Aero-modelling. A total of 43 models were constructed, of which 36 were sailplanes, 6 were elastic-driven aeroplanes, and one was a petrol motor. Total—107 flights.

Instruction. 234 hours of theoretical instruction were given, subjects being aero-dynamics theory of flight, mechanics, aerial law, navigation, meteorology, soaring flight, parachuting, and first-aid.

Parties. There were three big parties with films, dancing, etc., and a number of smaller reunions. 879 people feature in the Visitors' Book. There are 103 pilots using the Club, of whom 6 are new this year. There are 9 instructors. Among glider pilots, we have 191 A's, 130 B's, 80 C's, and 3 Silver C's, of whom 15 A's, 7 B's, and 3 C's are this year's crop. There are also 12 parachutists and 31 aero-modellers.

Power Pilots. Of the 103 power pilots of this Club to date, 8 are now officers in the Brazilian Air Force, 10 are commercial pilots, 5 commercial co-pilots, 24 flying instructors, and of the rest 71% continue flying.

Glider Pilots. A great number of these are now scattered over the world—in the U.S.A., Argentina, Switzerland, France, Uruguay, etc., so that we are not certain how many continue flying. But enthusiasm in the Club at Porto Alegre is great.

Parachutists. These, although also enthusiastic, are held up by lack of a suitable aeroplane for jumping.

Aero-modellers. Candidates are admitted from the age of 10. At sixteen they usually go on to glider training, and at 17 to power flying. It has been definitely proved that knowledge gained in aero-modelling helps the pilot.

Training. There are 48 power and 51 glider pilots now in training, together with 30 pupil pilots, 38 pupils in various stages of gliding and soaring, and 35 preparing for the aero-modellers' certificate.

Material. The Club has nine gliders, of which eight are in use and one under repair.

Veronica Platt.

Our Dutch Correspondent, H. Schwing, reports . . . .

THE Netherlands Royal Aero Club have ordered 72 sailplanes and gliders to be built by the Fokker Works in Amsterdam, most of which, when completed, will be hired to gliding clubs, while some are to be used by new gliding schools which are to be established in the near future. It is hoped that the first consignment of machines will be ready by the Spring. Those ordered are : " Grunau IX " (36), " Grunau Baby II " (24), " Olympia " (Meise) (6), and " Goevier " two-seater (6).

At the moment, however, gliding activities have practically ceased owing to the bleak outlook with regard to fuel, airfields and housing. It is anxiouly hoped that conditions will have improved by February or March.

SWISS SOARING FLIGHT—

(*continued from page* 11).

(altitude 2,045 metres). However, it was not till 1940 that such camps became general, due in part to the suppression of aerotowing as a result of the shortage of petrol. The pilots therefore had to find the means of launching from the heights, which they achieved up there in the Alps. Camps had to be organised where means of transport (funiculars, railways, cable cars) were available to convey the gliders to the launching place. These were at Flims, Davos-Parsenn, Samedan (near St. Moritz), Pleiades sur Vevey, Rochers de Naye sur Montreux, Villars Bretaye, and at Crans sur Sierre.

These camps had a great success, as much for the remarkable performances they permitted as for the aerological experience gathered. Some hundreds of hours of soaring flight were achieved above some of the most beautiful and grandiose scenery of our continent.

The region which seems up to now to have been most successful for soaring practice is that of Samedan (St. Moritz). The aerodrome is situated at 1,700 metres, so that on leaving the winch one can easily attain favourable zones for practice, or gaining more height proceed to utilise all the gamut of thermal and dynamic aircurrents whilst admiring at leisure the sylvan countryside of the Haute Engadine or the sparkling towers and ice of Pitz Palu and the Bernine.

COMPETITIONS AND NATIONAL CHAMPIONSHIPS

Swiss soaring pilots can take part in two national competitions.

1. **The National Soaring Contest,** which is an annual award extending over eight months, during which the participants, unlimited in number, may put in for classification their best six flights to be controlled by the sports committee. The participants are classified by the number of points gained for each of these flights (which are annotated according to a uniform system).

2. **The National Championship** is organised in a predetermined place and only twelve pilots may enter, chosen largely from among the best of those in the national contests. The winner of the competition takes the title of Swiss Soaring Champion. So far these have been "Spalinger," "Walthard," "Spahni," and "Schachenmann."

The most distinguished pilots in these contests have been incorporated into a national team which will defend the Swiss colours in the future international soaring competitions.

SWISS RECORDS

Switzerland possesses no International records for soaring. The national records or the best official performances, according to the Swiss Aero Calendar, are :—

ALTITUDE gained from the point of release. Marcel Godinat, "Spyr IV"	3,000 metres.
DURATION. Fritz Glur, "S 19"	28 hours 06 minutes.
DISTANCE. Max Schachenmann, "S 18" ..	216 kilometres.
GOAL FLIGHT. Jakob Spalinger, "S 18"	120 kilometres.
DISTANCE AND RETURN. Marcel Godinat, "Spyr III" .. .. (total distance covered 130 km.).	65 kilometres.
DURATION IN TWO-SEATER WITH PASSENGER. Rudolf Luthy and Alwin Kuhn ..	11 hours 02 minutes.

We have sketched out in these rough lines the development in Swiss soaring flight. There will certainly be much more to tbe said on various questions. But we hope to have been able to present some aspects of our national progress which may interest the readers of SAILPLANE AND GLIDER.

EICHENBERGER.

Constructor	Type de planeur.	Design.	Span.	Surface.	Gliding angle.	Weight empty.	Fully loaded.	Speed at best gliding angle.	Minimum sinking speed.	Number of this type registered.	Runcular.
			m	m²		kg.	kg.	km./h.		m./sec.	
Spalinger	"S 15 k" ..	Training	14.6	14.2	1/21	125	200	54	0.7	19	(Fig. 3)
	"S 18 II" ..	Performance	14.3	14.6	1/21	135	215	56	0.7	12	Flaps (Fig. 4)
	"S 18 III" ..	Performance	14.3	14.2	1/21	155	240	60	0.75	26	Flaps and Spoilers
	"S 21" ..	Twoplace Instruction Performance	17.3	20.2	1/21	219	379	60—65	0.8	12	Flaps (Fig. 5)
	"S 22" ..	Performance	17	16.5	1/27	175	255	57	0.65	4	Flaps and Spoilers
Nüg	"Spyr III" ..	Performance	16	13.5	1/27	110	185	53	0.6	7	Flaps and Spoilers
	"Spyr IV" ..	Performance	16.4	13.6	1/30	180	260	63	0.7	2	(Fig. 6)
Muller-Mo	"Mo II" ..	Performance	13.8	12.2	1/25	125	200	58	0.7	5	Flaps and Spoilers
	"Mo III" ..	Performance Aerobatic	14.0	12.4	1/25	135	230	68	0.7	9	Flaps and Spoilers (Fig. 7)

(d'après "Schw. Aero-Kalender") (Mo — Moswey)

Gliding Badges

The British Gliding Association has been forced, in view of the increased cost of manufacture and overhead expenses, to increase the price of B.G.A. button-hold Gliding Badges. Supplies are not yet available of the pre-war type blue enamel Badges, though these are on order.

The prices have been provisionally fixed at :—

"A" Badges .. 2/- each
"B" ,, .. 3/6 ,,
"C" ,, .. 5/- ,,
All post free.

The only Badges at present available are the war-time "A" metal Badges, now to be sold at 2/- each.

A further announcement will be made as soon as the blue enamel Badges are available.

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TWO IMPORTANT APPOINTMENTS



Col. Rupert L. Preston, new Secretary of the Royal Aero Club.

The Royal Areo Club's New Secretary

ON January 1st Col. Rupert L. Preston, Coldstream Guards, took over from Cdr. Harold Perrin, the Secretaryship of the Royal Aero Club. Since 1925 Col. Preston has been an active figure in flying, and is a leading personality amongst light aircraft pilots. He has many times been Secretary of various clubs and organisations, and in all posts his efficiency and tact were well in evidence.

With the outbreak of war, he worked for a while under Air-Marshal Sir Trafford Leigh Mallory at H.Q. 11th Group R.A.F., transferring later to the R.A.F. Regiment. With the occupation of Germany he took command of the net of airfields in Schleswig Holstein and Denmark, and in December of 1945 he obtained his release from the Forces to prepare for his new post. From what he has seen in his own command, and in other parts of Europe, Col. Preston predicts a great future for the gliding movement, and advocates most heartily, its policy of drawing together all nations in a world-wide fraternisation scheme. Time permitting, he is most anxious to begin himself.

We wish all good luck to the new Secretary and are sure our readers re-echo this, and will look forward to his actively interesting himself in the gliding movement, if and when his duties allow.

New A.T.C Gliding Officer

The appointment of Squadron-Leader J. C. Ward as Chief Gliding Officer for the Air Training Corps has just been announced from A.T.C. Headquarters.

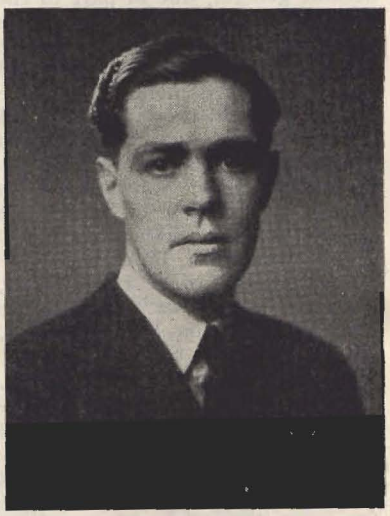
S./L. Ward was born at Cooma, New South Wales, in 1917, and during his early years he closely followed the development of aviation in his country, gaining his "A" pilots' licence in the meantime.

At the onset of the threat of war in 1938, he saw a chance to turn his enthusiasm to more useful ends. He took up a short service commission in the Royal Air Force, serving in No. 613 (City of Manchester) Squadron, flying "Hectors" and "Lysanders" on Army co-operation.

In November 1940, he became flying instructor to F.A.A., and later R.A.F. pilot-trainees in South Africa, where he gathered much experience in training young people to fly.

At the end of the training programme in 1944, he was transferred to active duty with No. 274 Squadron in Holland, and remained there until the cessation of hostilities.

Finding life rather empty after the concentration of war, he decided



Squadron-Leader J. C. Ward, recently appointed Officer responsible for A.T.C. Gliding.

that a few sailplanes he had discovered whilst wandering over Germany might serve a more useful purpose than filling the hangars in which they were stored. It was thus he began the operation of 84th Group, Slazgitter, Gliding and Soaring Club.

An accident to his ankle put an end to his career at Salzgitter, and he spent several months in hospital. On returning to duty, he was posted to his present position, where it is to be hoped that his enthusiasm for soaring may reflect itself in a more enlightened R.A.F. view of its possibilities. As a soaring enthusiast he will be welcomed by the soaring fraternity who will, without doubt, give him their wholehearted co-operation in his new task.

Royal Aero Club Gliding Certificates

24th January, 1946

The Committee of The Royal Aero Club, in order to assist the Air Training Corps during the war, has issued Gliding Certificates at well below cost price.

These reduced wartime fees for Gliding Certificates are now cancelled and all future issues will be on a peace-time basis.

Gliding Certificates will therefore be issued at a fee of 5/- for each Certificate, A, B and C, with a reduction of 50% in the case of A.T.C. Cadets, *i.e.* 2/6.

R. L. PRESTON,
Secretary-General.

The Rhonsperber Flight Tested

By
Philip Wills, C.B.E.



"Rhonsperber" Landing.

Span : 15.30 metres.
Empty weight : 162 kgs.
Gliding angle : 1 : 20 at 58 kms./hour.
Minimum sinking speed 0.72 m./ : sec. at 58 kms./hour.
Wing loading : 18.80 kgs. per sq. metre.
Aspect ratio : 17.61.

I did a winch launch to 1,000 feet and an aero-tow to 1,500 feet on an absolutely stable day on this machine, which is an older design of Hans Jacobs than either the "Olympia" or the "Weihe." The length of the fuselage is noticeably less, and the fore-and-aft stability comparatively poor. No elevator trimmer is provided, and no anchorage for ballast, so that with a pilot weighing 12 stone a constant back pressure on the stick was necessary to prevent the machine going into a dive.

In other respects, however, the machine is very nice to fly, there being plenty of feel in the controls. Lift spoilers are fitted and these are small and consequently comparativelt inefficient.

Aero-towing was done with a "Storch," but the machine appeared too heavy for the job, and I have reason to believe the "Auster" would be a better aircraft for the purpose.

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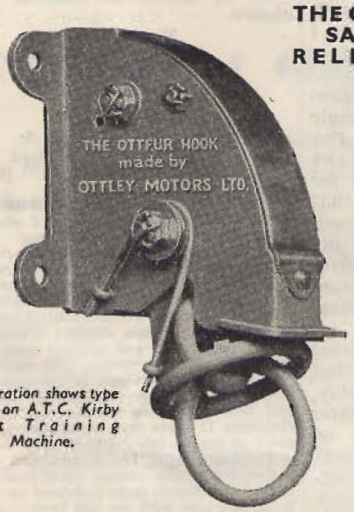


Illustration shows type used on A.T.C. Kirby Cadet Training Machine.

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CVS-348

LETTERS TO THE EDITOR

172 Whitchurch Lane,
Edgware,
Middlesex.
2nd Dec., 1945.

DEAR SIR,

While a prisoner in Germany, I had the good fortune to be sent to work on a farm fringing a large aerodrome near Breslau, one portion of which was used exclusively for the training of pilots in sailplanes.

During my 8 months stay at the farm, I was able to watch, quite closely, the methods adopted by the Luftwaffe, and I have since thought that a brief description would, perhaps, be of interest to readers of the SAILPLANE.

I imagine that few British pilots had the chance of watching the enemy's gliding activities, while the war was actually in progress.

The machines used were " Grunaus," " Weihes," and a very high efficiency two-seater, type unknown to me; I saw no " Primary " machines at all.

The method of instruction was for the pupil to fly circuits with an instructor in the two-seaters until he could circuit solo in the " Grunau "; slides, hops, and releases were never used.

The winches were Ford V8's mounted transversely on a very neat chassis, and were complete with the usual engine instruments, plus an engine rev. indicator, an instrument showing length of cable out, and an airspeed indicator driven by a small windmill mounted about ten feet above the driver's head.

Cable retrieving was by B.M.W. motor-cycle and was carried out at a terrific speed.

Machine retrieving was effected entirely with two-wheeled hand trolleys; the machines being upended with the front of the skid pushed into a small fitting on the trolley and the whole balanced by the trolleymen.

I think that lack of petrol was the reason for this method being used, but by effecting landings as near as possible to the launching point, the Germans were continually keeping three machines in the air at the same time, with one winch; all performing normal circuits unassisted by thermals.

Signalling was by flags ,and one man was always posted some two hundred yards to one side of the winch, and on his raising his flag (a red one) the pilot would release.

Every opportunity was taken to fly, from early morning until dark, sometimes in very severe weather; accidents were frequent, but never serious, (to the annoyance of the prisoners) and a large staff was kept to effect rapid repairs, both mechancial and surgical.

The average height of the launches as far as I could judge was 800-1000 feet.

Only on very rare occasions had the two-seaters to be retrieved, and when this was necessary three men pushed them, incidentally they were fitted with a wheel which dropped off during the take-off.

I managed to engage one instructor in conversation on several occasions and gathered from him, aided on both sides by much hand flapping and arm waggling, that he had been engaged in experiments with rocket launched gliders, the results of which were, according to him, " Prima ! "

In spite of difficulties of speech and the fact that we were enemies, we found our mutual interest in sailplaning overcoming all differences of race, creed and politics, and eventually we grew careless enough to talk in sight and hearing of other members of the Luftwaffe and the instructor was spirited away to some other aerodrome, while I was regarded for some time with grave suspicion by the camp guards.

Yours faithfully,

W. REEVES,
Bdr. No. 12 Commando.

---

10 Courtfield Gardens,
Earls Court, S.W.6.

DEAR SIR,

I am glad that Captain Pears answered Charles Wingfield's letter, because I agree in principle with much of what he says, although I am in fact a staunch protagonist of solo training.

The whole affair, however, requires looking into from a new angle economically mainly because the figures quoted in the SAILPLANE in November have been proved far out, being based on (I guess) 1937 experience. At this time I myself took my " A " on the 12th and my " B " on the 24th launch, the latter being a 90 second figure of 8 from 600 foot launch on an open dagling. I have never been so thrilled (or precocious) since ! It was this great speed in training, however, that caused the high crashery rate. To-day, with improved methods and greater caution, the life of a secondary on training duties is nearer 30,000 launches, which figure can be substantiated. This will reduce the cost per launch of the primary or secondary very considerably.

The majority of gliding clubs are situated at soaring sites miles from the member's home towns, and therefore operate mainly at week ends only. The members travelling time and expense per launch are consequently considerable. To reduce this, and to provide the facilities of training for a larger number of members, training will have to be undertaken from a large flat field near the home city. Here operations can also take place on week-day evenings, thereby increasing machine utilisation, reducing travelling time, and relieving the soaring site of congestion. The economics of two-seater operation from such a site are considered to be so different from the figures quoted, that the ideal combination would appear to be solo training on utilities at the flat site, together with dual soaring at the hill site (where possible).

The two-seater on winch circuits offers less real useful flying experience to the pupil than Captain Pears suggests, and the main value of two-seater training in my opinion is to eliminate the two-way flights (i.e., slides). Half an hour's dual soaring, when available, will be much more useful than 30 slides, and much more economical. Thereafter the finest training is undoubtedly solo.

Two more points are of interest. During the sliding period, the pupil is learning much more than the use of aeleron, and checking of rudder. By constant practice he is becoming adept at lifting, rigging, towing and even maintaining and inspecting. In this way he is learning to be of real use to the club when he finds himself at the soaring site.

Finally, Germany went in for glider training on a huge scale. She chose solo-primary training after an unparalleled experience of gliding, and must have had sound economic as well as practical reasons for this choice.

Yours faithfully,

GEORGE W. PIRIE.

46, Reevy Road,
Wibsey,
Bradford, Yorks.
January 6th.

DEAR SIR,

I read with interest Mr. P. Wills' plea for a cheap cantilever single-seater of about 50 feet span with reasonable performance. Perhaps in the near future one of our enterprising manufacturers can be persuaded to turn out a simplified version of the " Olympia." Just how much performance would be lost by substituting a strutted tailplane, wooden control horns in place of former metal ones, simpler fittings generally and a redesigned and simpler main bulkhead, should be very interesting. No doubt a certain increase in weight would be inevitable but that should not affect the performance unduly. And just how much are the controls improved by elaborate D spars working against ply fillets in place of simple fabric blinds ?

The fuselage from main bulkhead to tailplane is simplicity itself, anyone could build it, but, by heck ! the double main bulkhead and full cantilever tailplane with its one thumb-screw fixing make up for it. No doubt they are highly efficient but one could make a whole Kadett fuselage in the time.

The nose with its 5 in. wide keel and skid tied to heel, and bulkheads with one substantial fitting, strike me as the best thing for club use yet designed. It should stand rough use in the most heroic manner and would be well left alone

Perhaps some expert would care to express an opinion what the result would be likely to be. It would certainly be cheaper.

Yours faithfully,

H. HOLDSWORTH.

BRITISH GLIDING ASSOCIATION

Glider Certificates of Air Worthiness

ARRANGEMENTS have been made for the Air Registration Board, Brettenham House, Lancaster Place, Strand, London W.C.2, to act as technical advisers to the British Gliding Association for the issue and renewal of B.G.A. Certificates of Airworthiness.

This step is partly due to the dispersal of the B.G.A. inspection organisation which existed before the war, and partly in anticipation that under the post-war Air Navigation Regulations, now being prepared, gliders will be officially recognised as aircraft. The A.R.B. will then act as advisers on glider design and construction to the Ministry of Civil Aviation, as well as for other types of civil aircraft.

The Air Registration Board is a statutory body set up to advise on the design and construction of civil aircraft, and its members comprise representatives of aircraft constructors, aircraft operators, aircraft insurers, and other representatives of the Government and the public.

The Board has offices and Surveyors all over the country.

Before the war there was no provision under the Air Navigation Acts for the registration and certification of gliders. However, in view of the importance of ensuring a minimum standard of airworthiness, the B.G.A., through its Technical Committee, did in fact issue Certificates of Airworthiness after the design of gliders had been approved, check-stressing carried out, and the glider had been inspected during construction. The B.G.A. Certificate of Airworthiness, though unofficial, was in practice recognised as a proof of sound design and construction.

By arrangement, the Air Registration Board will now take over the issue of the still unofficial B.G.A. Certificates of Airworthiness, pending the time that the A.R.B. is empowered legally to advise the Ministry of Civil Aviation regarding the issue of official Certificates of Airworthiness.

The Technical Committee of the B.G.A. will continue to work closely with the Air Registration Board, and one of its members, Mr. H. E. Bolton, has joined the staff of the A.R.B. on a part-time basis. The fees for the issue and renewal of B.G.A. Certificates of Airworthiness will remain the same, and the B.G.A. is transferring all its individual aircraft files and related documents to the A.R.B.

E. H. Spence,
Assist. Sec.

Meeting of Gliding Clubs

A meeting of *all* gliding clubs is being called on Friday, 1st March, 1946, at 5.30 p.m., at the Royal Aero Club, 119, Piccadilly, W.1.

Further particulars and agenda is being circulated to clubs by the B.G.A.

Holders of Silver "C's"

All holders of Silver "C's" are requested to forward their Royal Aero Club gliding certificate to the Royal Aero Club, 119, Piccadilly, W.1, for a special endorsement. Please enclose stamped addressed envelope.

Glider Training Questionaire

OVER half of the replies received were from pilots with pre-war experience, and almost without exception they plumped for two-seater instruction for ex-power pilots.

Of those of *pre-war experience*, over 50% were in favour of the open or nacelle primary for beginners, and two-thirds of these were in favour of two-seater instruction, the remaining third being in favour of instruction in "Kadets" as in A.T.C.

One well-known R.A.F. pilot of 1,800 hours' flying and 300 hours' glider flying stated that ex-power pilots should not undertake training in the open primary, and their experience should be confined to two-seater instruction.

There was a Silver "C" pilot who recommended everything for everyone, excepting the open primary for power pilots, and another Silver "C" recommended only two-seater instruction for ex-power pilots. In this view he had several supporters, including experienced pilots and Army Glider pilots.

Of those with *no pre-war experience* and holding Royal Aero Club licences, 45% were in favour of open or nacelle primary training for beginners, but only 15% were in favour of the "Kadets." One instructor would have his beginners on primaries followed by the "Kadet" and the ex-power pilots starting with the "Kadet" and continuing with the two-seater.

On balance, it appears that the present method of A.T.C. instruction as in the "Kadet," is not in favour, as less than 50% of all the papers received advocate using the "Kadet." If any conclusions were to be drawn from the results of the questionnaire, they appear to the Editor to be as follows:—

1. Pilots who have had their experience during the war only prefer the open primary.

2. Three-quarters of all the correspondents favour two-seater instruction at some period during the training, but only 16% proposed that beginners should have two-seater instruction alone.

3. 10% thought that beginners should have open primary, "Kadet" and two-seater instruction, and 6% thought that beginners should have no primary experience at all.

ANNOUNCEMENTS

LEICESTERSHIRE GLIDING CLUB

Coming Events

Feb. 2nd, Lecture: Phillip Wills; "Gliding in Germany."

Feb. 3rd, Field Day: aero-towing practice, light tractor retrieving tests.

Feb. 14th, Lecture: Group Capt. Jeffs; "North Atlantics Air Routes."

Feb. 15th, Social Evening: Victory Hotel.

March 14th, Lecture: S/Ldr. Robert Kronfeld; "Gliding and Soaring."

March 15th, Social Evening: Victory Hotel.

Easter Holidays

Grand Inter-Club Aero-tow Rally with social functions at night. Book the date and bring your machines. Easter Monday, special Ball.

THE MIDLAND GLIDING CLUB LIMITED

The Secretary invites enquiries *re* post-war programme at Long Mynd. Subscription rates, etc., forwarded to those interested on application to:—F. G. Batty, F.C.A., 2, Lombard Street West, West Bromwich, Staffs.

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The Club is now able to undertake *ab-initio* training conversion for service pilots. Full soaring facilities in club sailplanes on the famous Derbyshire Ridge.

Entrance fee, £2. 2s. 0d.; subscription, £4. 4s. 0d.; Associate Members, £1. 1s. 0d.

Full particulars from The Secretary, 87, Fargate, Sheffield 1.

NEWCASTLE GLIDING CLUB, Ltd.

(founded Feb. 1930)

Applications for Membership now invited in Reorganised Post War Club.

Special Registration Fee 5/-

Ensures Membership when activities restart.

Further Particulars apply

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ROYAL AERO CLUB GLIDING CERTIFICATES.

We regret that owing to the large number of these now coming forward each month—usually several hundreds—we shall be unable to publish the list of those who gain "A" certificates for some time to come. It is hoped later to include them in a special supplement. For the time being only "B" and "C" certificates will be gazetted in SAILPLANE.

ROYAL AERO CLUB GLIDING CERTIFICATES

"A" Certificates: Nos. 3809—3909 (101).

		School.	Date taken.
"B" Certificates (15).			
3815	David Arnold Burnett	S.9 E.G.S., Errol	11.11.45
3824	William Innes Cosmo Inness	Eastern Command A.T.C.	11.11.45
3827	William John Hadden Prior	No. 2 Group Gliding Club, R.A.F., Oerlinghausen	2.10.45
3842	Russell Gordon Metcalfe	84 Group Gliding Club, R.A.F., Salzgitter	30.10.45
3855	Herbert George How	L.148 E.G.S., Southend	18.11.45
3696	Harold Robert Styles	Eastern Command A.T.C.	11.11.45
2753	Eric John Ducker	L.148 E.G.S., Southend	11.11.45
2754	James Robert Joseph Rutherford	Ditto	4.11.45
1440	Denis Malcolm Roberts	84 Group Gliding Club, R.A.F., Salzgitter	12.10.45
3863	Ronald George Porter	N.W. 188 E.G.S., Cark	4. 6.45
3869	Walter Edwin Wilson	N.E.23 E.G.S., Yeadon	25. 9.45
3870	Czeslav Kobylanski	84 Group Gliding Club, R.A.F., Salzgitter	28. 9.45
3871	Gunter Sachs	Ditto	7.11.45
3872	Edwin Allen Thompson	B.A.F.O. Gliding and Sailplane (Minderheide) Club	16.10.45
3878	John Bostock	N.W.183 E.G.S., Woodford	2. 9.44
"C" Certificates (3).			
1440	Denis Malcolm Roberts	R.A.F. 84 Group Gliding Club, Salzgitter	23.10.45
3827	William John Hadden Prior	No. 2 Group Gliding Club, R.A.F., Germany	5.10.45
3872	Edwin Allen Thompson	B.A.F.O. Gliding and Sailplane Club, Minderheide	21.10.45

KENT GLIDING CLUB

Will all ex-members and others interested and living in the Maidstone or Chatham area, contact the Secretary:

MRS. R. H. HADDOCK,
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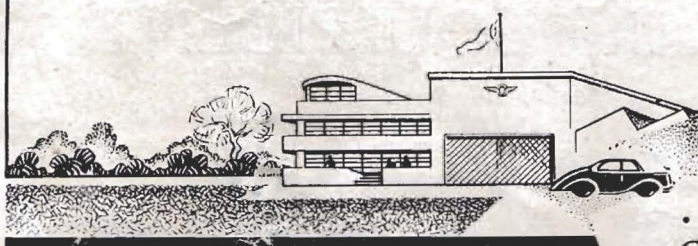
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