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THE SAILPLANE & GLIDER

Official Organ of the
British Gliding Association

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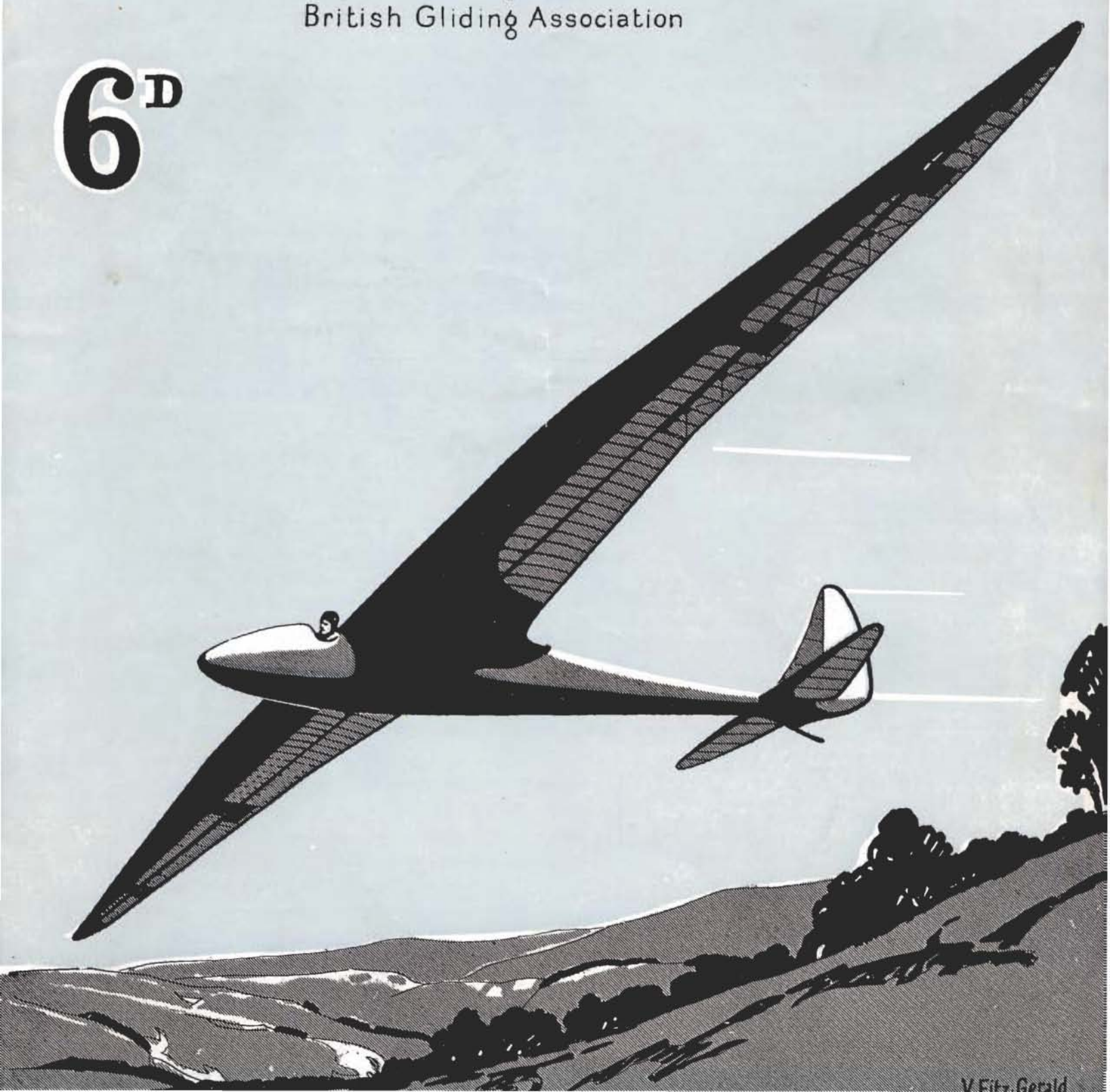

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THE SAILPLANE & GLIDER

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CONTENTS.

TEN YEARS AGO.

THOSE who were fortunate enough to be associated with the Itford Hill Gliding Contest in October, 1922, will never forget the wave of enthusiasm which swept over the country in that year and affected not only those designers and pilots who were intimately concerned, but the whole aeronautical community. The German successes at the Rhön meetings the previous year had captured the imagination of all air-minded folk, particularly in this country and in France. The subject became the main topic of conversation in aviation circles.

The enthusiasm in France may be gauged by the fact that when, in August, a Gliding Competition was organised at Puy de Combegrasse, near Clermont-Ferrand, no less than 50 entries were received. The meeting was voted a great success, although the longest individual flight was one of 5 mins. 18 secs., accomplished by M. Bossoutrot in a Farman biplane glider, the total duration of this machine throughout the meeting being 48 mins. 5 secs. It is interesting to note that this glider was simply a Farman SPORT biplane with the engine removed and the pilot's seat moved forward to trim the machine correctly.

At the Rhön Competitions, which were held during the same month, greater achievements were accomplished. Herr Martens, flying a Hanover VAMPYR, established a record by remaining aloft for 1 hour 16 mins. The next day Herr Hentzen on the same machine beat Marten's record by remaining in the air just over two hours. A few days later Hentzen beat his own record, increasing the duration to 3 hours 10 mins. At the same meeting, Mijnheer Fokker, the well-known designer, established a world's record by flying for 13 mins. accompanied by a passenger. These accomplishments seem very tame to-day, but at the time they aroused world-wide admiration and many astounding prophesies regarding the future of motorless flying were made.

Such was the position when, towards the end of August, the *Daily Mail*, ever to the fore where the advancement of aviation is concerned, announced the offer of a prize of £1,000, open to persons of any nationality, for the longest flight made by a motorless glider in England, provided such flight occupied not less than 30 mins. The organisation of the Competition was wisely handed over to the Royal Aero Club, and a committee was appointed to draw up the regulations and proceed with the necessary arrangements.

In spite of the short time available for constructing machines after the *Daily Mail* announcement, no less than 35 entries were received by the Royal Aero Club. The first to come in was from Mr. E. C. Gordon England, the present Chairman of Council, British Gliding Association. Mr. England's reminiscences of the meeting appear on another page.

Itford Hill was selected for the Competition on account of its suitability and accessibility to London. It was chosen for gliding in the prevalent south-west winds, other parts of the ridge being suitable for north and north-east winds which are by no means infrequent in October, the month selected for the meeting. Actually, north-easterly winds prevailed during the greater part of the week and Firle Beacon, at the eastern end of the ridge, became the main theatre of operations.

In view of the long experience of gliding in Germany and the meagre results obtained at the French Competition at Clermont-Ferrand, doubts were expressed as to the ability of British pilots to obtain any results of importance. These doubts were soon set at rest, for on the first day of the Competition the minimum duration of 30 minutes was exceeded by Raynham, Gordon England and others, while on the second day Raynham remained up for 1 hour 53 minutes, an excellent performance in every way. The climax came on the last day of the meeting when M. Maneyrol on a Peyret monoplane soared above Firle Beacon for 3 hours 21 minutes 7 seconds, thus breaking Hentzen's record and winning the *Daily Mail* Prize. The amusing part of this fine performance was that none of the experts expected the machine to fly and most, if not all, were waiting with their hearts in their mouths wondering what would happen when the mono-

plane took to the air. During M. Maneyrol's flight, Squadron Leader Alec Gray, R.A.F., arrived with a machine which was christened the "Brokker." It was constructed from a Fokker VII. wing and an old Bristol fuselage and was stated to have cost 18s. 6d. to build. Squadron Leader Gray was soon in the air, and soared backwards and forwards along the ridge to the east of the Peyret Monoplane. The spectators were thus treated to the sight of two machines soaring perfectly at the same time. Gray's time in the air was about 1¼ hours; had he not been unavoidably delayed on his arrival at Itford he might easily have beaten M. Maneyrol's record.

The Itford Meeting made a wonderful impression on the minds of those present, and it was felt that, at all costs, gliding must go on. The case was very ably stated by Mr. C. G. Grey in a leader in *The Aeroplane*, which we have reproduced verbatim below. For a time this interest continued, but less and less space was devoted to gliding in the aeronautical journals. People began to talk of fitting low-power engines to gliders. This idea was developed more and more, and, the following year, instead of a second Gliding Competition being held at Itford, as many had hoped, a light aeroplane contest was organised at Lympne. Gliding, for the time being, was dead as far as this country was concerned.

In Germany, however, under the scientific and technical supervision of the Rhön Rossiten Gesellschaft, gliding and soaring went steadily ahead, and when, in 1930, Professor Georgii visited England he was able to describe to an astonished audience the wonderful progress made and results achieved during ten years of steady application to the problem.

When a belated resussitation in the Gliding Movement took place in this country three years ago conditions were very different from those which prevailed at the time of the Itford Meeting. Enthusiasm was aroused, but it was largely an informed enthusiasm; one did not hear the extravagant statements which were made in 1922. Nevertheless, there was much to learn. It was not till the present year that signs of real progress began to manifest themselves. Within the last fortnight we have seen two machines of original British design and construction putting up most promising performances at Dunstable, and there are others to come. The Movement in this country now has a circumscribed but sound foundation on which the superstructure will be slowly but surely built. We have not yet the advantages of State financial assistance which the German Movement possesses, but it is not too much to hope that, with improvement in economic conditions this will come. In the meantime, the great thing is to go on with such resources as we possess. If we proceed on sane lines and do not allow ourselves to be diverted from the main problem of soaring flight there *must* be progress which, though it may be slow initially, will increase as time goes on.

ON CONTINUING THE GOOD WORK

(Reprinted from *The Aeroplane* of October 25th, 1922.)

One thing is certain about the *Daily Mail* gliding competition and that is that everybody who has theories about aeroplane design has had about half their pet theories thoroughly upset and has had the other half of their pet theories confirmed, but as there is always some other person with precisely opposite theories which are equally 50 per cent. confirmed and 50 per cent. upset apparently all the theories in the world have been both confirmed and upset by one machine or another among the competitors. Fast gliders and slow gliders have done equally well, light machines and heavy machines have done equally well, balanced and unbalanced controls have done equally well or equally badly as the case may be. Apparently what is wanted now is a whole series of experiments with a whole series of different machines of different types specifically built to prove and disprove certain theories, and it is necessary to try them all in different strengths of wind on different slopes of different types.

A thoroughly comprehensive series of tests of this kind would be of genuine assistance to the development of aviation, and such tests can be carried out adequately for very much less than the money which is now wasted on tests of purely academic value and frequently with very misleading results at places like the N.P.L. and Farnborough. The great thing is to keep these gliding and soaring tests going and to keep up an interest now that the enthusiasm raised by the *Daily Mail* Competition is over.

What is obviously desirable is that some well-to-do person should at once put up another prize for a competition early next year, for preference in March when strong winds are supposed to occur. It is not certain whether the *Daily Mail* will in fact put up that £5,000 which was mentioned when this £1,000 prize was put up, and in any case one imagines that the conditions for a £5,000 prize would be such as can only possibly be fulfilled two or three years hence. What is wanted is a smaller prize of, say, another £1,000, which a man with original ideas of aeroplane design has a reasonable chance of winning within the next few months.

Under normal trade circumstances such a prize would naturally be put up by the Society of British Aircraft Constructors in the hopes of discovering thereby a few inspired aeroplane designers to help or perhaps even supersede those whose ideas are now becoming stereotyped. But one does not imagine that the S.B.A.C. in these days can afford such luxuries as thousand pound prizes. It therefore remains either for somebody to find a rich man interested in aviation who will put up such a prize, the conditions to be arranged by the S.B.A.C., or else for the technical side of the Air Ministry to induce the Treasury to sanction the putting up of such a prize, the rules to be arranged by the S.B.A.C. and Air Ministry in co-operation.

A mere £1,000 put up as a prize in this way would result in the expenditure of many times as much money in the aggregate by the various enthusiastic people who would hope to win the thousand pounds. Thus the actual results achieved would be very much greater than those achievable by expending a similar sum of money on pure research, especially when research is in the hands of the unpractical academic people who as a rule control it.

One knows that the thoroughly practical people at the Air Ministry are all in favour of encouraging gliding and soaring experiments in the hope of improving the breed of aeroplanes, and one can assure them that there is no cheaper, better or more amusing way of carrying on research. One can only hope that they may be able to carry their point against the purely academic people and so induce the Air Council to give practical encouragement to gliding and soaring not as a sport but as a serious means of helping the development and progress of British aviation.

C. G. G.

ITFORD, 1922.

By E. C. GORDON ENGLAND, A.F.R.Ae.S.
(Chairman of Council, British Gliding Association.)

It is remarkable how far off something that happened ten years ago seems to be, much more in fact than only ten years space. The atmosphere is almost entirely lost and the recollection is a matter of impersonal facts set out in exact historical sequence. How inadequate is such a record to convey to the enquirer a true picture of the time!

Unfortunately, so few of us have the priceless gift of writing with real descriptive power, the re-creation of atmosphere, local colour, and endowing words with vivid and pulsating life. I would that that gift had been bestowed by a kindly fairy godmother upon me, then could I have given you a real pen picture of Itford.

On Saturday, Sept. 28, *Daily Mail* published the first entries of their Glider competition, and from these it was obvious that the Contest had stimulated a truly representative gathering of competitors in the aviation world. There were the inventor, the sportsman, opportunist, commercial man and the enthusiast all represented. The old hands in aviation sensed in the competition the possibility that here was the long-hoped-for opening to the real beginning of civil aviation of the popular type, which had entirely failed to materialise like so many other post war dreams. They hoped that here was a means of deliverance from the dominance of the military mind in aviation, which was thwarting any possibility of real commercial progress.

The younger generation saw the gateway to a new adventure. Some, no doubt, saw the mirage of an industry and opportunities for creating wealth. All were intrigued by the novelty. This atmosphere opened the 1922 *Daily Mail* Contest at Itford.

What a brave show the Royal Aero Club made with their host of large tents for hangars, pitched on the lap of Itford Hill by kind permission of the charming, typical British farmer.

Wonderful and weird were some of the people and machines in these tents—the dear old man and his bicycle device which he built laboriously bit by bit in the space allotted to him in one of the hangars—the strange machine in the tent which unkindly collapsed on it one night. Maneyrol's little tandem machine which caused so much mirth and speculation until the last day. A more dis-similar collection of vehicles it would be hard to conceive, illustrative of the elementary stage of technique.

As usual, all was excitement and bustle, as hardly a soul arrived complete or ready. Perhaps of the whole bunch, at the most two machines had flown in tests before arrival. It was a polyglot entry, machines from Germany, Holland, France, England, bringing together an even more polyglot crowd. A delightful crowd, particularly to those of us who had been through the old days of aviation. It brought back some of the fragments of those early days, with memories of the wonderful

[*By courtesy of "Flight."*
Mr. Gordon England's monoplane at Itford.

spirit. We caught once again something of the intangible atmosphere of early aviation, quite indescribable.

A constant flow of friends, journalists, photographers and casual visitors through the camp and tents while the contestants and their staff struggled to finish or alter their machines, added colour to the scene. Embarrassing perhaps, but stimulating in many diverse ways, to have one's every action subjected to such close scrutiny; everybody trying to assess everybody else's chances and judging the efficiency or otherwise of their machines by their own standards.

There was no privacy under such conditions; even initial test flights had to be made under general inspection. Everything was carried out in the glaring light of publicity, and most disconcerting if, as was so often the case, your machine had its controls reversed accidentally through too hasty assembling, or your wings became dynamic and developed an uncontrollable desire to flap with increasing amplitude until the wings broke in flight, or the controls were inadequate although the machine had the ability to soar well away into the blue or again, your inexperience landed you into some absurd

predicament. All these, and more. In fact, what should have been secret and painstaking trials over a long period of time, compressed into hours and subjected to the glare of this intense publicity.

What a cradle for a new movement! Day after day following disappointment after disappointment! No substantial flights comparable to the work that was being done even at that time in Germany. Flights of minutes only, too frequently followed by crashes, were the order of the day.

What splendid exercise in the long treks to Firle Beacon and the subsequent scramble down to machines which had landed way out below! Almost a repetition of the ten little nigger boys, as one by one, for various causes, machines disappeared from the contest.

When the weather was unsuitable or machines were not prepared, amusing rags of one kind and another would take place in the camp. One still sees the picture of certain well-known figures in aviation careering down the hillside on a truck completely out of control!

Anthony Fokker and his passenger-carrying glider amused us, and at odd moments one still sees him dashing round everywhere with his amazing energy, filming all the activities, later to be shown at a cinema in Seaford.

The only consistent job of work was the admirable weather, both forecasted and provided by our respected Editor! A real wizard in his way, and the wise counsellor of all the competitors. One reads of Jove controlling thunderbolts, but our Editor appeared to have the control of speed, direction and quality of the wind to the minute.

Then the final day, everybody keyed up to try and win the coveted £1,000—determined to do or crash Raynham's splendid beginning, my unfortunate crash, the effects of which were so promptly minimised by Mrs. Handy, whom we remember affectionately as mothering all the old hands of aviation. What a lot so many of us owe to her!

Then Maneyrol's astonishing effort and the winning of the £1,000!

The whole Competition was a great occasion, thoroughly enjoyed!

Raynham starting off on his 11½ mims. flight. [*By Courtesy of "Flight"*

Reflecting in hospital subsequently, it was clearly borne in my mind that the one need was the immediate establishment of a school on Firle Beacon if the Movement was to be protected, stabilised and put on a firm foundation.

One pleaded this cause with all the kind visitors who came to wish one well. How different would have been the history of gliding in this country if only at that enthusiastic moment the step had been taken.

However, this was the beginning of the first stage in the development of Civil Aviation. Prophesy is dangerous, but already I think the signs prove that again gliding is forming the basis of the second stage.

This is not the 1932 Furness Competition but M. Maneyrol's wonderful flight at Firle Beacon, 1922. [*By Courtesy of "Flight."*

GLIDER DESIGN TEN YEARS AGO.

By CAPT. C. H. LATIMER NEEDHAM, M.Sc., F.R.Ae.S.

Ten years ago the design of soaring machines was in the embryonic stage. Gliders, it is true, had been built and flown for many years, but until 1922 no real soaring flights, that is to say, of more than a few minutes' duration and of any appreciable distance, had been accomplished.

Gliding had remained smouldering for centuries, but the years 1920-22 provided two events of great importance that kindled the flames and thus fired the movement to the rapid developments of the past ten years.

The first was provided by the appearance of two German machines, both thick-wing cantilever monoplanes, these being the Hanover VAMPYR, of remarkably similar construction to the present-day sailplanes, and the ESPLENLAUB, which was the first to demonstrate the possibility of very high aspect ratios, by employing a ratio in this case of 17.1. And it is quite safe to say that these gliders were the forerunners of the high-efficiency sailplane of to-day.

The other event was the setting up of performance flights by Martens and Hentzen of one, two and three hours' duration and of about five miles in length. These flights demonstrated to the world that engineless planes were capable of far greater achievements than had ever before been visualised. Obviously there was room for vast development but, with soaring flight at last accomplished, a basis for design had been established.

The world-wide interest and general excitement caused by the German successes were responsible for the Itford meeting being organised. Impatience decreed that an early date should be fixed, and consequently, as has so often been the case in aviation contests of the past, very little time was available for preparations.

Despite this, several British machines were designed, built and flown in the competition, besides which German, Dutch and French gliders were entered. The design of heavier-than-air motorless craft was little understood in the country, little or no data was available, and consequently there was much speculation concerning the requirements for soaring machines.

It is safe to say that endurance was the paramount feature to be sought after and few, if any, believed that flights or more than a few minutes' duration would be seen. The chief aim then was to produce machines with good gliding angles (to extend the flights as long as possible) and with slow sinking speed.

The results produced were literally of all shapes and sizes, including monoplane, biplane, and tandem; wings of high and low aspect ratio; strut-braced, wire-braced and cantilever, and many other varieties, but all were similar in one respect: that of structural lightness.

Sinking speed is governed to a large extent by light wing loading, and so the soaring machine of ten years ago was characterised by its extreme lightness and consequent frailty; the loading figure for the Itford machines being 2 lbs. per square foot, or even less. The results were their inability to ride into winds of high velocity and the large percentage of broken gliders, including several failures in the air. It is true that the value of large spans, or at least of high aspect ratio was realised to some extent, and attempts were made in some cases to put this into effect, but, perhaps on account of extreme lightness, these machines were not altogether successful.

[*By courtesy of "Flight."*

The "Esplenlaub" Monoplane.

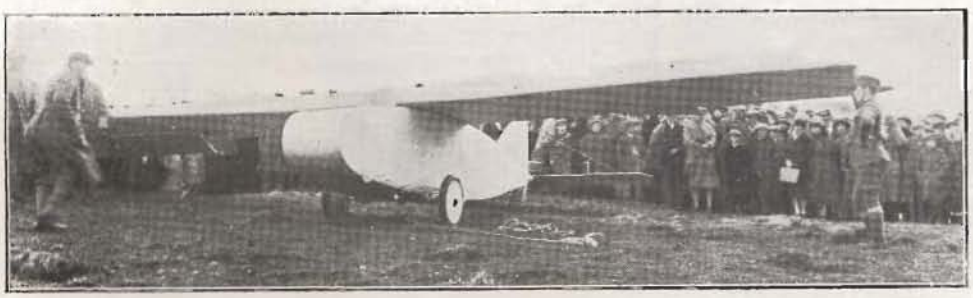
The table below gives the leading particulars of the most successful types at Itford.

PARTICULARS OF 1922 GLIDERS.

Machine Type.	Span	Wing Area (Sq-ft)	Weight Empty (lbs.)	Wing Loading lbs/sq.ft.	Aspect Ratio	Remarks
Aachen	31'-4"	125·5	—	—	6·42	Crashed
Airdisco	45'	150	—	—	13·5	Crashed
De Havilland	50'	220	250	1·82	11·35	Warping Wings Crashed
Gordon England	28'-2"	130	100	2	6	Crashed
Fokker 2-Str.	40'	400	—	—	8 each	Biplane
Handasyde	36'	157	160	2·06	8·3	
Merriam-Newman	38'-4"	225	—	—	6·54	Crashed
Peyret	21 -8'	153	150	2	6·14 each	Winning M'ch'n Tandem-Plane
Sayers	42 -6'	235	—	—	7·7	Based on Hanover "Vampyr"

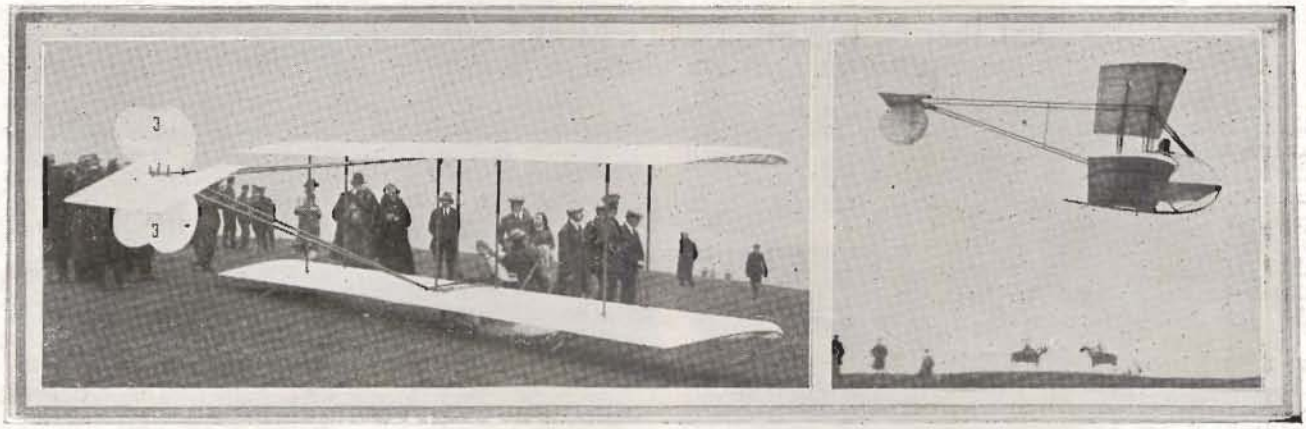
The winning glider was, of course, the Peyret tandem monoplane. This was a very interesting machine and appeared, at that time, to show that the tandem arrangement of main planes had possibilities, although curiously enough there are no records of any repetition of this design. It must not, however, be assumed that the PEYRET was the most efficient glider, as it is quite certain that some of the others, and more orthodox types, could have put up quite as good a performance but for ill-luck. Nevertheless, the design was deserving of full credit for its amazing controllability which was brought about by the unique control system. Ailerons ran the entire length of all four planes and were so connected that all could be used either as ailerons or elevators, or as both. Pulling back the control column depressed the forward flaps and raised those at the rear, and thus the double effect was obtainable. Both front and rear wings were of identical shape and size and were supported by pairs of "N" struts from the bottom of the fuselage.

A machine regarded, more or less, as a joke was the BROKKER. This was built with the fuselage (suitably faired off at the nose) and tail unit of a Bristol Fighter on which was mounted the top wing of a Fokker D VII.



Squadron Leader Gray's "Brokker", built from a Fokker VII wing and a Bristol fuselage at a total cost of 18s. 6d.

[*By courtesy of "Flight"*



Fokker's two machines at Itford, Left: small single-seater with pilot's seat on lower wing. Right: two seater being flown by G. P. Olley. *[By Courtesy of "Flight."*

SCOUT, both war-time machines. And to show that a glider is not necessarily efficient because it soars, this combination machine put up a remarkably good performance.

Two of the best British designs were the HANDASYDE, in which Raynham did so well, and the Gordon England. Both were cantilever monoplanes of somewhat similar appearance, were well built and performed well in the air. The empty weight of the latter, incidentally the smallest glider in the competition, was only 100 lbs.

High aspect ratio was attained with the De Havilland glider and the AIRDISCO. With a span of 50 ft. and a chord of just over 4 ft. the D.H. had to be wire-braced with four pairs of wires attached to a cabane above, and a similar number below. Instead of using a thick wing section, the depth of wing was actually decreased from a normally thin aerofoil section. The original aileron arrangement was changed to a warp control, and it was probably this that accounted for the wings folding up just after the launch.

The AIRDISCO plan shape of wing was in the form of a crescent, and this was the only machine with any appreciable taper. This feature and the high aspect ratio may be taken as the contribution of this design to later-day sailplanes.

The Fokker types were of rather unusual design. Both the single-seater and the two-seater were biplanes, with the tail unit supported on four booms, two running horizontally from the top plane and the other pair rising from the lower plane to meet the former at the tail plane. In the single seater the pilot sat on the lower wing in an exposed position, but in the passenger machine a nacelle was provided.

These machines soared well on account of the large wing surface, but the controls were not apparently all that could have been desired.

The landing gears of the various machines were fairly evenly divided between the wheel and skid type, but the best performances were made by those gliders employing skids. The single track skid was used in one or two cases only, there being in most instances a pair of skids resembling somewhat a toboggan.

One further feature reported on as common to nearly all the Itford gliders was the lack of both lateral and directional control, but it is possible that inexperience of pilotage of such aircraft was partially responsible for this.

[By Courtesy of "Flight."
The start of M. Maneyrol's flight.

TEN YEARS AGO.

A FORECAST OF THE POSSIBILITY OF CLOUD SOARING.

Extract from an Article in the "Meteorological Magazine," November, 1922.

"Another point which has been overlooked is that the strength of the ascending current, which is largely dynamical, depends to some extent on the prevailing atmospheric conditions, particularly the vertical temperature gradient. If the lapse rate is large and convection is going on freely, the vertical current will be reinforced. This was observed during the flight of M. Maneyrol, the winning pilot, on the afternoon of the 21st. Heavy banks of cumulus and cumulo-nimbus cloud, which followed one another in quick succession from the north-east, were evidence of strong convectional circulation. The glider was observed to rise appreciably as these passed overhead."

IMPORTANT NOTICE

CHANGE OF ADDRESS.

Please note that the address of the Editorial Offices of the *"Sailplane and Glider"* is now:

43, CHANCERY LANE, LONDON, W.C.2.

All communications for the Editor should be sent, in future, to this address. Attention to this will save time, trouble and delay.

The address of the BRITISH GLIDING ASSOCIATION is still 19, BERKELEY STREET, LONDON, W.1. Renewals of subscriptions should be sent to the Secretary at this address, and *not* to the Editor.

THE INFLUENCE OF GLIDING ON THE DEVELOPMENT OF THE LIGHT AEROPLANE.

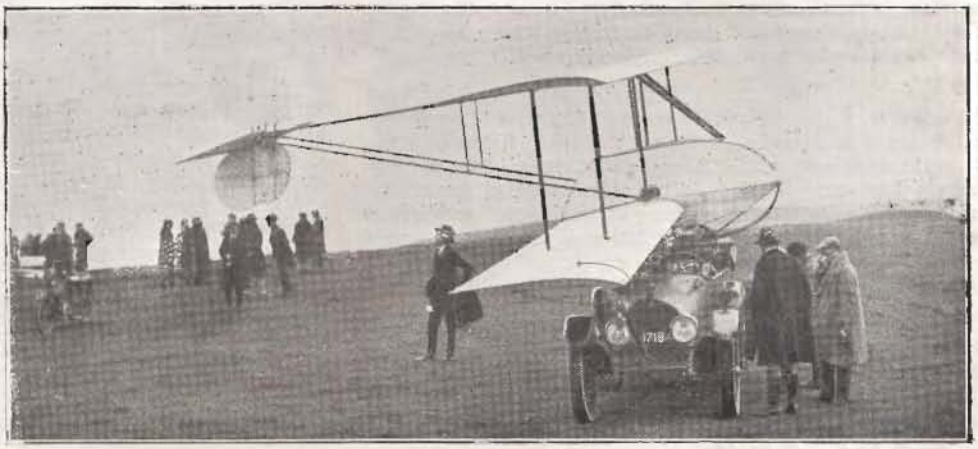
By COLONEL THE MASTER OF SEMPILL, A.F.C., F.R.Ae.S.

It is now 10 years since the *Daily Mail* sailplane competitions were held at Itford Hill. All that time gliding, which for many years had been practically discontinued in this country, was experiencing a rivival, due, undoubtedly, to the reports that were coming from Germany as to the advances that were being made in that country. The Germans—faced with the various restrictions imposed by the Treaty of Versailles—determined that if they were not free to fly with aircraft fitted with motors they would fly in aircraft without motors, and thus started the great motorless flying movement in Germany, which has now reached such large proportions and has aroused the admiration and emulation of most countries. Of course, this was not by any means the start of motorless flying, as man's early attempt at flight led to the development of gliders. Perhaps the greatest figure in comparatively recent times was that of Lilienthal who was closely emulated in this country by Pilcher and, in America, by Chanute; and later, of course, by the Wright Brothers, to whom goes the credit for achieving the first free and controlled mechanical flight in a heavier-than-air machine. The Wright Brothers realised that the fulfilment of their desire could only come by stages and that the first stage was to produce a controllable glider; the second, to produce a reliable petrol engine of light weight; and the third, to marry the two, which culminated in their historic flight at Kittyhawk on December 17th, 1903.

The outcome of the contest encouraged by the *Daily Mail* at Itford was that everyone set to work to build light aeroplanes—I mean, *really* light aeroplanes; not what to-day are called light aeroplanes. Those machines were, in fact, little more than the gliders and sailplanes of the competition strengthened up and fitted with small engines of the motor-cycle variety. In 1923 there was a competition at Lympne with these light machines—also encouraged by the *Daily Mail*. The results were, in a measure, satisfactory, and a good deal of interest was aroused—sufficient, anyway, to move the Air Ministry to unloosen its purse strings and to provide certain prizes for a similar competition, which was staged at Lympne in 1924. The machines competing in this event were thus specially designed and constructed by the various manufacturers. The bulk of them were fitted with the Bristol "Cherub" engine—a twin-cylinder air-cooled motor of 1100 c.c. delivering some 30 h.p. During the competition bad weather was experienced, and there were occasions when aircraft were found to be going the wrong way or, when passing along certain sections of the Downs were forced to alight hurriedly as they were unable to climb out of the down currents which they met. Every aircraft manufacturer and designer of note may be said to have been represented at the Lympne Competitions of 1924 with one exception, and that was the De Havilland Company. Capt. De Havilland felt that no very useful purpose could be served by designing and constructing a machine to the Air Ministry requirements, as, in his view, such a machine would not serve any practical purpose for the development of air transport. He visualised that the two-seat machines could not be flown with any satisfaction in adverse weather conditions and would not have enough surplus power to combat headwinds. He, therefore, stood aside from these competitions and turned his attention to what he considered to be a useful light aeroplane of practical utility. This led him to the production of the now world-famous De Havilland *Moth* which has gone into many forms, both closed and open. His first machine was fitted with a Mark I. Cirrus engine which was developed by Major Halford, largely from parts supplied by the 8-cylinder air-cooled Renault engines of the war period, of which a large stock was available. Major Halford turned out a very successful little engine delivering some 60 h.p. and the combination of this with the *Moth* was certainly exceedingly effective and aroused considerable interest and enthusiasm.

Whatever the views of various parties may have been during the light aeroplane competitions these were considerably modified when the success of the De Havilland *Moth* became known, and it was generally agreed that this was the useful type of machine that was required for private use and for the work of the flying clubs—the formation of which was then under consideration.

Since that date the tendency has been for these light aeroplanes to get heavier and heavier and for the power to be increased and, consequently, for the costs to mount up. Undoubtedly they are exceedingly useful and successful and, no doubt, they will maintain their position, but it may be argued that the idea of the light aeroplane as such remains unrealised. The present type of machine has done a great deal to encourage and develop flying in the most practical way, but there is now a large and growing body of persons whose appetites have been whetted by having a flight in one of these so-called "light" aeroplanes, or by seeing them in the air, and who are keen to take up flying themselves, but are debarred from so doing by the question of first cost and expenses of operation. Therefore there is, as many feel, a definite demand for a really cheap light aeroplane—not necessarily one that will fulfil all the requirements of the private owner who wishes to go to A or B irrespective of weather conditions, but one that will be useful



Fokker's method of transporting his machine. The biplane was placed on a plank resting on the sides of the car, and the machine lightly braced fore and aft by two ropes.

[*By courtesy of "Flight"*

for local flying and will enable people to get experience; one, too, which will be free from some of the disadvantages and difficulties experienced in the operation of sailplanes. Such a machine might cost, on a moderate production programme, about £200, and would be fitted—assuming it to be a two-seater—with a small air-cooled engine of some 30 h.p. If it were to be a single-seater an engine of less power than this would probably be adequate. Such an aircraft would have a top speed of about 50 m.p.h. and a landing speed of about 18, or certainly not much over 20.

The continued success of the gliding movement in Germany had natural repercussions in other countries and in 1930 arrangements were made for that well-known exponent of the art of motorless flying—Herr Kronfeld—to come over here and give a series of demonstrations. These were brilliantly carried out and showed to the public at large what could be done with a sailplane of the right design in the hands of a competent person. As a result of this many gliding clubs were formed all over the country. Difficulties were, of course, experienced as we were not so skilled in this new art as was the case in Germany, nor had we that same amount of public and Governmental support. The clubs were started with great enthusiasm but seldom managed to get beyond the stage of possessing more than one Zogling or primary training machine. This was all too often under repair and the interest of members began to flag. The result has been that many of the clubs have become dormant or extinct; a number, however, still carry on and have achieved conspicuous success.

In my opinion, there is a very definite place for the gliding club, and as we get more skilled pilots, and as the clubs as a whole achieve a greater measure of stability, so will the movement grow.

From the sporting point of view there could hardly be a better pastime than that offered to those who have their "C" licences and are able to indulge in soaring and cross-country or other flights. From the scientific standpoint the movement offers greater possibilities. The knowledge as to the varying conditions of the air is little understood and further information is desired on many aspects. Motorless flying can, undoubtedly, add greatly to the meagre knowledge at present in existence. From the point of view, too, of aircraft design, experience has proved in Germany that the development of sailplanes is a very useful step in the design and construction of new types of motor-driven machines. This has been shown in several instances as, for example, in the case of the Klemm. Then, again, the tailless type of machine, of which a number of versions are being tried out as power-driven aircraft in Germany, appeared in the first instance in the form of gliders and sailplanes.

It would seem to be that the production of a new type can be more economically and safely carried out through the sailplane stage to the motor-driven stage. The remarkable efficiency, too, from the aerodynamic standpoint of the majority of the sailplanes in use has been essential because unless these machines were really highly efficient the distance and duration flights which have been made could never have been accomplished.

The flying of sailplanes across country and to high altitudes is a development only of the last few years, and when it is considered that a duration flight of some 24 hours has been undertaken, and that a sailplane has ascended to some 7,000 ft. above the point of departure, and covered a distance in a straight line of not very much less than 200 miles, the possibilities of the future would seem indeed to be great if one can but utilise in fuller measure the power that is inherent in the atmosphere.

From another point of view, a knowledge of gliding is extremely valuable to air-line pilots, particularly those who have to traverse difficult and mountainous country; in fact, at least one of the great air lines of the world insists on its pilots on particular sections having been trained as sailplane pilots.

CORRESPONDENCE

THE FURNESS MEETING.

Sir,—I read your reflections on the 1932 Competitions and the organisation of the meeting with a sense of disappointment. You will remember that in an earlier number you encouraged the B.G.A. to hold the meeting and appeared to recognise the difficulties which the short time available would entail. From your leader it would appear that the organisation was open to serious criticism and that the public had not been given a fair deal. While there is, I agree, an element of truth in your observations I maintain that they tend to give a false impression of the real position.

Whatever the result, there was no economy of effort or time on the part of those who undertook the organisation of the meeting. As soon as the decision to hold the competitions was taken, the secretaries of the B.G.A. and the Furness Club worked unceasingly to make it a success, and the Chairman of the Contest Committee spent a week of his holiday at Barrow making arrangements and carrying out negotiations. Owing to the short time available and the stringent financial position, it was found impossible to arrange some of those accessory conveniences which would, no doubt, have added somewhat to the smooth running of the meeting, but in spite of that I consider that the organising officials mentioned above are to be congratulated on what they achieved in the short time at their disposal. We should also congratulate the competitors, who in many cases had to bring their machines long distances. The courage and initiative displayed should be a matter of pride for all those who believe in the British Gliding Movement.

The meeting was unfortunate in the weather and in the number of minor accidents which put machines temporarily out of action, but even on the Sunday referred to in your leader all those of the public who paid the modest admission fee were able to see at least some really interesting flights, including a spectacular crash, and although those of us who were on the gate were anxious, there was little evidence of dissatisfaction among the public.

I would like to take this opportunity to thank members of clubs and of the Association who have at this and previous Competitions worked on the gate. Not only has this service been valuable in saving expenses, but the voluntary stewards have been invaluable in answering enquiries with intelligence and tact.

SEYMOUR WHIDBORNE.
Hon. Treasurer, B.G.A.

[We made it abundantly clear both in the leader referred to, and also in an earlier note, that we regarded the meeting, from the *competitors'* point of view, as an unqualified success. Nobody who was there can have any regrets as to the meeting itself having been held. We repeat that the Furness Club is to be congratulated on having taken the initiative in arranging the meeting and in giving pilots from other parts of the country an opportunity of flying on their excellent site; the results achieved more than justified their action. Nor did we criticise the efforts of individual officials, all of whom carried out their, in some cases onerous, tasks with zeal and thoroughness. The main point was that the expense involved by the B.G.A., as such, coming into the meeting was not justified by events. The cups and trophy added to the interest of the Competitions, but there was nothing in evidence, apart from these, that the Furness Club could not have carried out equally well, if not better, had matters been left to their own initiative. The flying on the first Sunday was negligible, and if the spectators were not disappointed we can only say that the Furness public is more easily pleased than the British public in general.—ED.]

BOOK REVIEWS

KRONFELD ON GLIDING AND SOARING.

(By ROBERT KRONFELD; 21s.; John Hamilton; 379 + xiv. p.p. 93 illustrations and 32 diagrams.)

The subject of this book is the knowledge and experience of Herr Kronfeld in the art of soaring. The treatment is popular and the book can be used as a first introduction as well as for the purposes of advanced instruction, though some would prefer it to be more technical.

After an introductory chapter, the historical section begins with the legends of antiquity and concludes with an account of the first pioneers. After this begins the history of the Rhön, which is of particular interest when this country is making the same painful steps. Few will not goggle at the story of Espenlaub on page 70, and an appreciation of Nehring's pioneer feats is long overdue in this country.

At the same date as the Lympne meeting in England (1924) there was an attempt to develop "power gliders," which was practically stillborn. In 1925, after a year when there were no notable performances, the Rhön Rossitten Gesellschaft was formed. One has to notice the contrast between the B.G.A. and the success of the R.R.G. which was formed as a practical organisation on the best ground available where all enthusiasts automatically meet and pool information.

It was not until 1928 that Kronfeld himself first used a cumulus cloud, to enable him to complete the Himmeldankberg flight on the RHONGEIST, which was the prototype of the PROFESSOR

The situation in England to-day seems roughly comparable to the situation in Germany then. By 1930, with the help of R.R.G. information, some of their greatest flights had been made

Then follow accounts of flights written by Nehring, Dinort, Laubenthal the designer, and Dr. Detig (a most descriptive account of a passenger flight with A. Sleicher) and a series of accounts by the author of some of his famous flights

The chapters that follow on elementary schooling, high performance flights and distance, cloud and thunderstorm soaring are full of tips and excellently illustrated with practical diagrams so that they are likely to become a compulsory textbook for beginners and experienced alike in any well-run club. Time will show whether we will find his instructions sufficient to enable us to emulate his feats.

Chapters on motor and aeroplane towing give full practical instruction for these methods, but opinion in England seems to be that there are enough hills in this country for the slope method to be used so that pilots can, from the first, begin to develop their soaring sense.

Some well-known high efficiency machines are described with scale drawings of their leading dimensions and a popular description of their construction. This chapter is interesting now that the OZITE, RHONADLER and ALEXANDER DER KLEINER, which appeared at the competitions this year, seem to have taken a step forward by digesting the lessons of the AUSTRIA, FAFNIR and AACHEN.

There are some useful facts in the chapter on weather, although it is somewhat elementary. Here I would like to ask the Editor of THE SAILPLANE whether there is not some method of judging the most active part of a front more convenient than that of timing its forward velocity in several places with a stop watch as described on page 223.

The book concludes with suggestions for the future of soaring, a review of the achievements that have been done, and an account of the author's visits to England.

This book is not a full and impartial history of soaring flight, but it is the most interesting and informative book that has appeared on the subject in English.

K.

[It is hoped to reply to the question raised by our reviewer in a subsequent issue.—ED.]

MOTORLESS FLIGHT.

Edited by J. R. ASHWELL-COOKE. (John Hamilton, Ltd. 7s. 6d.)

The fact that *Motorless Flight* has been contributed to by specialists, each in the particular phase of gliding with which his chapter deals, is in itself ample testimony to the authority of the text. Some interest and instruction has, however, been lost by the sparsity of illustrations and diagrams.

In the opening two chapters Mr. J. R. Ashwell-Cooke summarises very concisely the history of the development of the Gliding Movement in this country, its aims and ambitions.

The efforts of Mr. M. D. Manton in *The A B C of Gliding*, and of Major H. A. Petre in *Gliding and Soaring Flight Tuition* might have been combined to better effect, thereby also saving a good deal of duplication. The most uninitiated would-be sailplane pilot could not fail to understand from Mr. C. N. Colson's *Elementary Aerodynamics* "why and how a sailplane flies."

Mr. V. S. Gaunt, in the very limited space allotted to him, covers the main principles of construction, repair and maintenance of gliders and sailplanes very worthily. Here, particularly, a few diagrams and possibly a table of characteristics of materials would greatly have enhanced the author's chapter.

No one is more fitted to deal with *Automobile and Aeroplane Towing* than its British champion, Mr. C. H. Lowe-Wilde, although here he does not treat his subject completely.

Capt. F. Entwistle's contribution of meteorology from the aspect of soaring flight is well furnished with information and good illustrations.

In conclusion, the editor gives us a vision of a future large soaring centre fed by its many subsidiary training schools.

The recruit to the Gliding Movement will find in *Motorless Flight* very interesting and helpful reading.

L. G. M.

QUESTIONS AND ANSWERS IN METEOROLOGY.

(Commonweal Press: 2s. net.)

Undoubtedly one of the most useful and informative publications which has come to hand. Written with an eye on the requirements of the Air Ministry's examinations for navigators' licences, the contents are of direct importance to sailplane pilots.

In spite of the small compass of the book, which, at first sight, compares unfavourably with the price, every page is noteworthy for the clarity of statement and the surprising amount of information conveyed. The book is an excellent introduction to the full study of its subject, and will certainly stimulate the uninitiated to real enthusiasm for Meteorology.

"FURNESS."

NEWS FROM THE CLUBS

The result of a stalled turn at the Bradford and County Gliding Club.

DORSET GLIDING CLUB.

Sunday, September 4th.

Wind W., 8-10 m.p.h. Operating at Maiden Newton, ten launches were effected with the DAGLING, mostly glides of 40 to 50 secs. Best duration, 62 secs.

Sunday, September 11th.

A strong S.W. wind was blowing in the morning, and the hilltop at White Horse was obscured by low clouds and rain. After a while, the wind moderating and visibility improving, DORSLING was assembled ready for flight. The wind, however, went West and later N.W. and no flying was possible.

After tea, having an hour or two to spare, we ran over to Shaftesbury and paid a visit to the Imperial College Gliding Club in camp at Gore Farm. Darkness having fallen by the time we got there, we were shown their stock-in-trade by lantern light. We were much interested in an extremely neat nacelle in course of construction for one of their two primary trainers, with the object of using it for secondary work. It looked a very efficient job in streamlining, and we are looking forward with interest to hearing of this machine's performance in due course.

Saturday, September 24th.

Wind W., 12 m.p.h. Five flights in DAGLING, of which two were 1 min. and upward.

Sunday, September 25th.

Wind W.S.W., 12-15 m.p.h. with squalls of 20 m.p.h. or so. DAGLING made ten flights of which five were upwards of 1 min., the best durations being Laver 3 min. 20 secs., and Haslam 2 min. 20 secs. Buck got in valuable practice towards his "B" stage with some very steady flights under bumpy conditions.

FURNESS GLIDING CLUB.

Prior to the Competition we "mad enthusiasts" of Furness had in our fondest dreams only seen several sailplanes in the air at a time together. Small wonder, then, that on August 27th we rubbed our eyes before rushing off to find some fellow-member and remark, "Didn't I tell you that soaring was possible here? It's a gift! There's nothing in it! All we need now is a sailplane!"

We seemed to forget for the moment that aboard those machines were men who had diligently trained on sites where, although the lift may have been less in evidence, there were spacious and level landing grounds.

These pilots took the air with a confidence born of considerable experience and happy landings, and, despite the difficulty of approach, perseverance was in the end rewarded.

The Club's interest, latterly, was concentrated on the achievement by the Preston Club R.F.D. nacelled primary training machine, and as this machine was left at the ground until some later date the local members made a special effort, and had the Furness machine put in airworthy condition, in hopes of comparing their respective capabilities.

On Sunday, September 18th, ideal conditions prevailed, but, unfortunately, during the previous week, one or other of the cows grazing in proximity to the storage shed evidently had doubts as to the constructional details or airworthy condition of the machine, and carried out some investigations aided by horn and hind quarters, with the result that the Furness Club machine alone was fit for service.

The first flight of the day was made by Mr. Stevens, who took off in magnificent style from the west site, the venue of the Competition two weeks before, and sailed into the "lift" over the hill breast, making a first soaring flight of 8 minutes duration. Landing was made across the roadway at the foot of the hill, for the somewhat gusty wind brought to mind the landing troubles experienced by competitors.

That Mr. Stevens was attempting to stick too close to his air-speed indicator was evidenced in the uneven nature of the flight, but it was nevertheless very encouraging to the club members to see that the machine behaved so well.

Any doubts in this latter respect were soon dispelled when Mr. Falla, of the Preston Club, soared the Furness Club machine for 55 minutes. A height of 300-400 ft. above the site was readily obtained, whilst a spectacular side-slip landing (a special feature with this gentleman) was made on the top of the site.

Despite the elementary nature of the machine and its rough finish, the flight compared very favourably with the flights made during the Competition week; in fact, we venture to say that under the pilotage of such a capable hand as Mr. Falla, the HOLS at least might have met a very stout rival.

The date of the Club General Meeting and Dinner has been fixed for Saturday, October 29th, when we hope to renew some at least, of the acquaintanceships formed during the recent Competitions at Askam.

In anticipation of flying on the Saturday afternoon and on Sunday, arrangements will be made for the provision of launching and recovery teams, and a hearty welcome will be extended to all visitors.

Intimations of proposed attendances at the Dinner will be welcomed by the HON. SECRETARY, at 31 CHURCH STREET, BARROW, who will be pleased to reply to all queries.

ILKLEY AND DISTRICT GLIDING CLUB.

Sunday, September 4th.

The HOLS DER TEUFEL was trailed up to Askam in a very high wind, which caused several anxious moments, before our arrival.

Until conditions improved it was decided not to rig the machine, but later, whilst having tea at Ulverston, we regretted this decision for the wind suddenly began to settle down. Rushing back, we rigged with speed, but were too late, for when B. Hartley was launched, 5 m.p.h. was the best the wind could do. For three minutes he played a losing hand above the ridge, then slowly descended the odd 800 ft. into a field in the bottom, landing almost on top of a hare which got the shock of its life and lost no time in moving station.

Wednesday, September 14th.

The HOLS was towed up to Beamsley Beacon by 60 schoolchildren, and B. Hartley was launched into a wind of nearly 10 miles an hour. He flew for 21½ minutes, thus qualifying for his "C" certificate; he turned away

from the hill just as a mist obscured it and landed safely by the road in the bottom.

The Saturday following, with the aid of the same schoolchildren, we took the HOLS to the beacon again. This time the wind was stronger, and J. K. Watson was given first flight. Never having soared the machine before, he allowed a good margin against stalling and flew like a scalded cat for 34½ minutes. At times his speed was 50 m.p.h., but the machine uttered no protest and was landed downwind at the foot of the hill without mishap. Another "C."

H. S. Crabtree was launched next. He flew magnificently for more than half an hour, gaining height all the time, and then was told to take the machine back to Ilkley. He disappeared across the valley in the twilight, following the trail of the German Aces. Landing in the Rugby field at Ilkley after a flight of at least five miles, he was unlucky to damage his wingtip on a fence.

LONDON GLIDING CLUB.

Sunday, September 25th.

Camp Results:—

The following obtained their "A": Vetch, F. A. Cooper, Horsefield, Jarman, Noble, Bassett-Collins, Stevenson, Briscoe, Moore and A. N. Other. Vetch obtained his "B." Watson and Slater (of Derby) were lent the HOLS DER TEUFEL by Capt. Hiscox and obtained their "C"; Vetch did the same in the Club's PROFESSOR. There were also miscellaneous "45's" toward "B" certificates. In all 14 tickets among 11 campers.

The weather was mainly awful, bad enough to make people all the more determined to get something done. The beginning of the week was spent in a furious search for an R.F.D. for hill-top flying, to replace the Club's disaster. Slater went to the West of England unavailingly, Buxton and Robertson went to Bedford, and Watson and Cooper to York. The Bedford Club's sporting offer to lend their machine free of charge was enormously appreciated, but Watson came back with his own R.F.D. and thus stopped the gap. After he had subsequently obtained his "C," Watson told the London Club that they might as well keep his machine. Of such is the kingdom of heaven. He seems to have been on the road continuously while travelling three times between York and Dunstable.

The whole camp was run just like that.

We ordinary club members began to arrive on Saturday and had a charming week-end with no discomforts. Hiscox soared lengthily in HOLS, Otto Frischknecht passed his "B" a second time, the CRESTED WREN was soared in a gentle westerly wind for 1¾ hours, non-stop, by the senior pilot.

To-day a squally 20-25 m.p.h. wind blew along the ridge into the Bowl until a heavy rain came up after tea. Conditions then became simpler.

Till tea-time KASSEL 20 soared for short spells, or did not soar. The Watson-R.F.D. descended peacefully all day. The original R.F.D. ground-hopped. The CRESTED WREN hopped and skipped about the Bowl for ¾-hour, bearing the junior pilot. Buxton soared the PROFESSOR for about 20 minutes, finding the conditions "very rough."

While being retrieved behind a car, the Watson-R.F.D. blew over on its back, breaking its rudder, which was easily replaced. The KASSEL did the same, but escaped less lightly. It is better to take no chances in such winds, and keep the pilot in the seat. "Better be sure than sorry," the sailors say.

From many points of view an educational kind of a day. It is extraordinary the way in which the "texture" of the wind varies, as steady as quickly-flowing treacle one day and then, another day, all bangs and rattles. And on both occasions the weather report talks coldly of "associated secondaries."

But when *will* people learn that it only needs about a 15 m.p.h. gust to throw an *empty* machine up in the air?

Sunday, October 2nd.

At last a British line of sailplane design is being struck which has no relationship whatever to big spans, light loading and weak controls. To-day two forty-footers, British designed and built, loaded 3 to 4 lb. to the square foot, have soared indefinitely in a rough (25 to 30 m.p.h.) S.W. wind full of turbulence, at a height of anything up to 700 or 800 ft. above our 250-foot hill. Both machines were flicked about enormously in the worst gusts, the sunshine glinting on the mirror-like finish of the SCUD II., but both were obviously under perfect control. The behaviour of the big KASSEL two-seater, an excellent machine in its way, only emphasised the extraordinary controllability of the small machines as well as their general efficiency.

The SCUD II. is amazing. A low launch yesterday showed up her gliding angle and nearly landed her in a distant road. To-day she took off like a lift going up the Woolworth Building, cruised delightfully at 35 m.p.h., showed no sign of weakening control at 30 m.p.h., went through her enforced aerial dances without a falter, and in every way behaved like a Perfect Lady. Even the position of the cockpit under the wing has its point, inasmuch as the pilot's eyes are protected from rain by the leading-edge of the centre section; and this, mark you, can make all the difference between a decent landing and a complete write-off.

The CRESTED WREN also made a good job of it, a blue Dewsbery descending at the launching point after a flight of 3 hours 8 minutes. This man is frankly becoming a wizard. His junior pilot then took a wild ride to Whipsnade, circumnavigated the tip of the tail of the chalk lion at the Zoo, bashed the top of his head on the centre section while coming home through the Whipsnade Bump at speed (the lack of air-speed indicator is strong, if good, medicine for an *ab initio* in heavy weather; ask the *ab initio* pilot of the KASSEL two-seater also), was again caught in the commencement of a rain-storm, and descended half-blinded without regard to aerodynamics, geography or speed-limits. Soon afterwards a poor MOTH roared over downwind through the rain with its tail well up.

After the deluge the wind dropped to a zephyr varying from 10 m.p.h. to zero. The Watson R.F.D. continued its ground-hopping of yesterday and was also launched from the top. The CRESTED WREN took a run down just to see what calm air felt like. The HOLS came right into her own. Her first soaring flight finished precisely at the hill-top launching point; her second, when it was so dark that the pilot could not read his air-speed indicator, lasted about a quarter of an hour and finished without incident. HOLS in a light breeze combines all the joys of ballooning with the controllability of airships.

ULSTER GLIDING AND AVIATION CLUB.

Saturday, September 24th.

The KASSEL 20 machine was taken down to the sands at Tyrella, Co. Down; wind S.S.W., force 4-5. This site is only of use for auto-towing and is the only place available at present for southerly winds. Tidal conditions made ground work difficult and we were only able to get in some half-dozen flights. These were, however, sufficient to show that the repairs to the machine have been satisfactorily carried out.

During the earlier part of the week the wind had been mostly from the N. and N.W., and we had hoped that these conditions would continue, as they were particularly suitable for soaring at Macgilligan, Co. Londonderry. We believe that this is as safe a soaring ground as may be found in the British Isles. There is a stretch of sand here, nearly six miles long, running east and west, and backed by a line of cliffs 200-300 ft. high for about half-a-mile at the eastern end. These cliffs merge into a ridge of hills running slightly south of west round to due S.W., becoming steeper and rising to nearly 1,000 ft. Further south there is a slight valley on the south side of the valley. Binevenagh Mountain rises to a height of over 1,200 ft. The sands are hard and form an excellent auto-towing ground for the start of soaring flights, in winds from north to N.W.

A road runs from the strand up to the southern slopes, enabling machines to be taken up by trailer for launching in westerly winds.

NEWS FROM OVERSEAS

PALESTINE.

The Carmel Gliding Club has been formed here at Haifa. It has received good support from the Press (chiefly the Jewish).

Gliding is carried out weekly over a dried-up mud flat a mile east of Acre. The B.A.C. VII. used is auto-towed to about 350 ft. and passenger flights of about five minutes are the record to date.

On Sunday, September 25th, 25 flights were given to members between 2 p.m. and 5 p.m. Several members took control for the first time and shaped well. Others were on their second turn, and it was obvious that the weekly theoretical lecture had sunk in as well as the instructor's harsh words on the previous flight; three out of six flying straight and at an even speed for one or two minutes entirely unaided. The club members can now assemble and dismantle the machine and pack it on the trailer entirely on their own.

This country is unsuited to elastic launch as the hills are nearly all rugged and steep, and retrieving would be an expensive job.

A site at the foot of some well-placed hills is in the course of preparation. When this is done soaring flight *should* be possible on 200 days in the year owing to the steady prevalent day-time wind and the monotonous good weather during the summer months.

INDIA.

A message from Germany confirms an announcement made in THE SAILPLANE in August to the effect that Herr Kronfeld is going to India to investigate the conditions for soaring flight in that country. Several newspapers state that this visit is being carried out at the instance of the British Government and British gliding clubs, but this is not the case. The scheme has been prepared and submitted to the Director of Civil Aviation, India, by Herr Kronfeld himself and the arrangements have probably been made in consultation with that Department and/or the Indian Gliding Association.

FRANCE.

At a camp organised by *l'Avia* at la Banne d'Ordanche 181 flights were made in the course of 12 days. Four "C's" were obtained.

M. Georges Bouvier, on an AVIA 32E, established a new French record by flying a distance of 32 km. (20 miles). Taking advantage of a thunderstorm, Bouvier started at 5.20 p.m. The latter part of the flight was carried out in rain and hail. Owing to a change of direction of the thunderstorm the pilot was forced to land near the village of Tallende at 6.22 p.m. During the flight he reached a height of 675 metres (2,215 ft.) above his starting point.

AUSTRIA.

It is reported from Vienna that, at a meeting at Freudena racecourse, Kronfeld looped the loop 14 times. One loop was executed less than 500 ft. from the ground.

OFFICIAL NOTICE

DIARY OF FORTHCOMING EVENTS.

Monday, October 24th, at 6.30 p.m. in the Library of the Royal Aeronautical Society, Albemarle Street, W.1. — Council Meeting, British Gliding Association.

"SAILPLANE" PHOTOGRAPHIC COMPETITION.

The competition for July was won by Mr. B. C. Heath, Hon. Secretary of the North Shore Flying Club, Sydney, N.S.W., for the photograph of THE BAT, the first tailless sailplane built in Australia, published on page 147, No. 13, vol. 3.

August was a difficult month. Many excellent photographs of the Rhön Competitions were received from Dr. Slater, Capt. Needham and Mr. Gibbons, and these were supplemented later by photographs taken during the B.G.A. Meeting at Furness. After careful consideration, the result was decided in favour of Mr. Vernon Foster of Barrow-in-Furness for the photograph of F. Slingsby in the BRITISH FALCON, flying towards Kirkby, which is reproduced on page 185, No. 16, vol. 3.

The award for September goes to Mr. F. B. Thomas of the London Gliding Club for the two photographs of the KASSELL two-seater taken from a DAGNALL II., reproduced on page 197, No. 17, vol. 3.

THE SAILPLANE Photographic Competition is still open. Have *you* submitted *your* effort yet?

ITALIAN SAILPLANE DESIGNS.

From time to time we have given particulars and illustrations of various foreign machines in order to show the trend of progress in other countries. We are now able to give particulars of certain new types of Italian gliders as manufactured by the Milan firm of Bonomi.

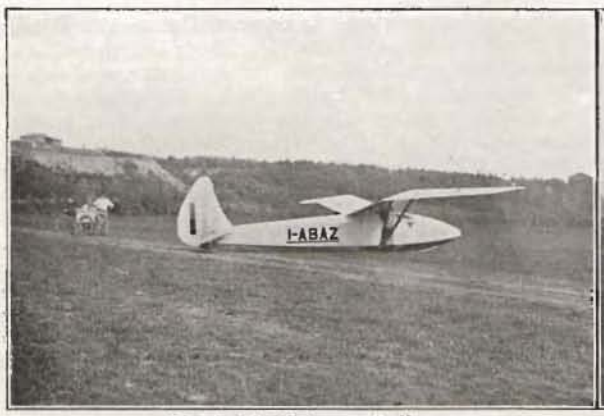
The range includes an elementary type somewhat similar to the B.A.C. 2, a secondary machine which is converted from the former by the substitution of tapered wings with the addition of a nacelle, and a sailplane.

The secondary B.S. 8, or BIANCONE, is shown here. It has a span of 44 ft. with a wing area of 156 sq. ft., and weighs empty 220 lbs. The wing loading is 2.48 lbs./sq. ft.

The B.S. 2, BALLESTRUCCIO, has a marked dihedral over the central portion of the wing and is supported on "V" struts so that it resembles closely the CONDOR. The wing is of the single-spar type, with an auxiliary spar for aileron support, while the fuselage is strut-braced and is covered with fabric for the greater part. Small fixed surfaces are provided for supporting the tail surfaces.

Gottingen 549 is used for the wing section, the span being 59.1 ft. and the area 188 sq. ft. The all-up weight of 470 lbs. gives a loading figure of 2.5 lbs./sq. ft.

No performance figures are available at present, and it is not known whether any notable flights have been achieved on any of these machines.



The B.S.2 "Balestruccio."

The B.S.8 "Biancone."

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IMPORTANT NOTICE TO ADVERTISERS.

Many advertisers have supported the "Sailplane & Glider" as a gesture of friendliness to a publication unique in the worlds of pioneering effort and sport, without calculating with too great a nicety the immediate and tangible benefits that might accrue from their investment.

The following letter from the President of the Central Scotland Air Yachting Club indicates that readers appreciate this fact, and that they are acting in that spirit which places business dealings on the right plane—a level free from depressions and adverse conditions, economic and otherwise.

Glasgow,

September 12, 1932.

The Editor, "The Sailplane."

Dear Sir,

It has been on my mind for a couple of months to let you know that I was able to put some business of a friend of mine in Glasgow in the way of your Advertisers, Messrs. Austin, Reed & Co., purely because they support the "Sailplane."

I naturally propose to follow suit myself as soon as occasion arises.

Messrs. Reed might like to know that their advertisements have been worth at least £11 to them which otherwise would have gone elsewhere.

Yours faithfully,

(Signed) E. T. H. GODFREY.

The "Sailplane & Glider" circulates in every country in Europe (except Russia and Scandinavia), Canada, Australia, New Zealand, South Africa, British East Africa, Egypt, Palestine, the United States of America and South America.

The nature of its circulation is such that each issue has at least 5000 readers, all of whom are equipped with Purchasing Power and the desire to apply it in any direction that will help the Gliding Movement.

Copy and instructions for advertisements should be sent to the Advertisement Manager, *The Sailplane & Glider*, 43 Chancery Lane. London, W.C.2., at least ten days prior to the date of publication of the issue in which the advertisements are to appear. Rates on application.

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