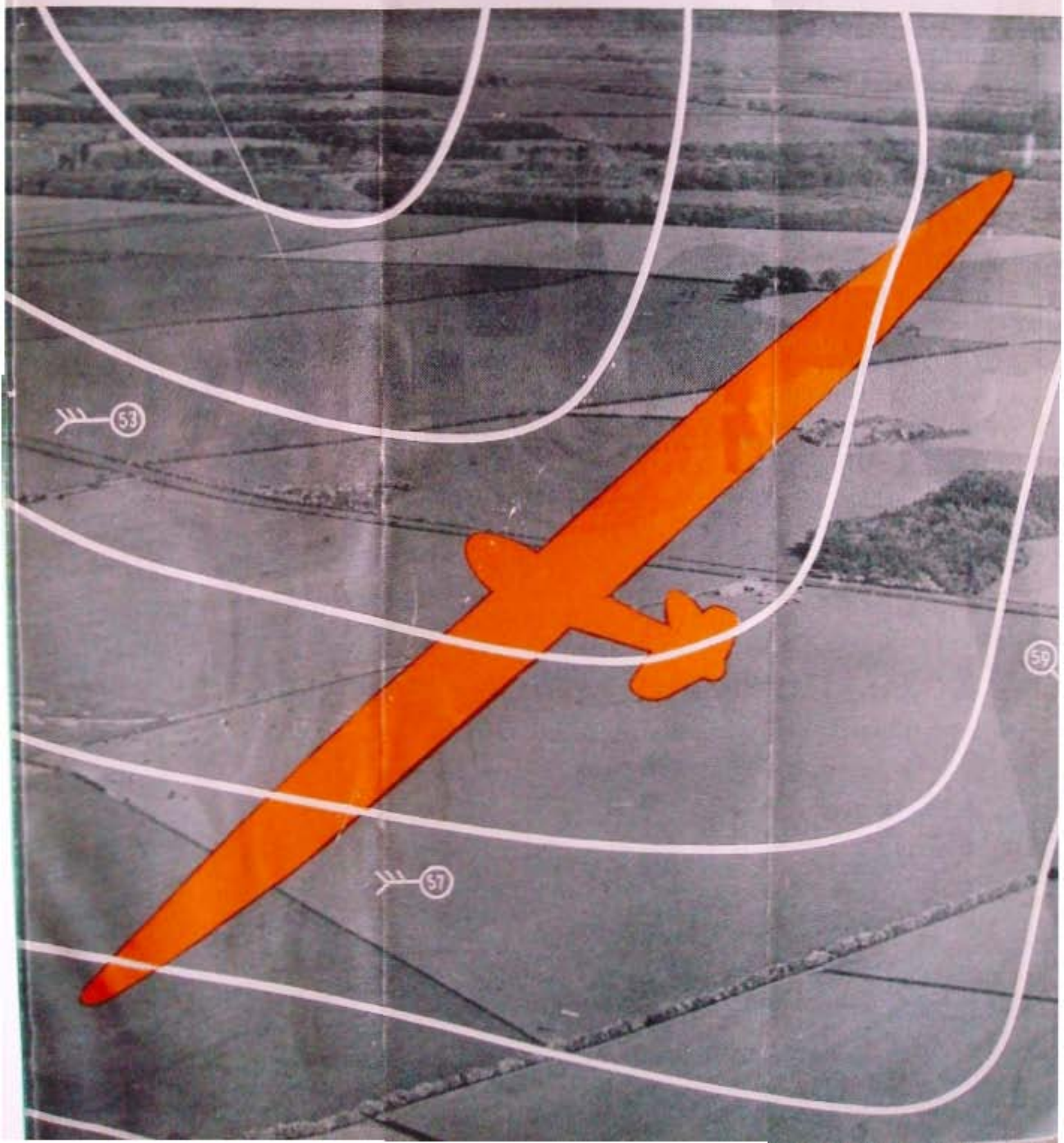
SAILPLANE AND GLIDER

JANUARY
1936
Vol. 7 No. 1

PUBLISHED
MONTHLY
Editorial Offi
13, Victoria St., S.

Official Organ of the British Gliding Association

EDITED BY ALAN E. SLATER



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THE SAILPLANE *and* GLIDER

Official Organ of The British Gliding Association

Editorial Offices: 13, VICTORIA STREET, LONDON, S.W.1 Telephone: ABBey 2615-6-7

Vol. 7 No. 1 JANUARY, 1936 Published Monthly

1934 and 1935

THOUGH both these past years have seen remarkable progress in the development of soaring flight in this country, there has been a sharp contrast between the two periods. In 1934 a great advance in the technique of advanced thermal soaring startled the public into a belated recognition of the possibilities of motorless flight. In most other directions, however, progress was sterilised by an internal conflict of opinion and aim which was certainly not assisted by the announcement, in June, 1934, of a Government subsidy. Fortunately all this is now settled, with the result that progress in 1935 has been on a much wider front. The contrast is shown by comparing the articles by Mr. Wills on advanced soaring, published by us early last year, with his present series, which, in describing the past year's progress, will deal not only with pilotage, but also with sailplane design and club development.

Everyone Should Attend This

A COLLOQUIUM on "The Technical and Scientific Aspects of the Design and Construction of Sailplanes," arranged by the Students' Section of the Royal Aeronautical Society, will be held in the Society's Library at 7, Albemarle Street, London, W.1 (just off Piccadilly), on **Tuesday, January 28th,** beginning at 7 p.m.

Mr. S. Scott-Hall will be in the chair, and the proceedings will be of the nature of a few short addresses, each to be followed by a discussion. The following addresses will be given:—

1. "Notes on the Design of the HJORDIS," by Flt.-Lt. G. M. Buxton.
2. "Aerodynamics of Sailplanes," by C. H. Jackson (Chairman, Students' Section).
3. "Detail Design and Construction," by D. D. Fenton Smith (read by Mr. M. Rigby).
4. "Sailplane Spar Design," by H. Leaderman (Hon. Secretary, Students' Section).

In addition, Mr. R. Kronfeld hopes to be able to come and make some remarks on "Soaring Flight."

The Hon. Secretary writes that all gentlemen interested in one or another aspect of motorless flight are invited to the Colloquium, and to contribute an address or join in the discussion.

Coming Events

January 28th.—Colloquium on Sailplane Design and Construction; Royal Aeronautical Society, London. (See separate announcement.)

* * *

Easter.—Derbyshire and Lancashire Gliding Club "At Home" to private owners and clubs during the week-end and Bank Holiday. During the meeting the *Daily Dispatch* prize of £25 will be competed for. (Easter Sunday is April 12th.)

* * *

Whitsun.—A seven days' instruction camp at the London Gliding Club, covering the holiday period. Also an Open Meeting, with informal competitions, at the Yorkshire Gliding Club from Saturday to Tuesday. (Whit Sunday is May 31st.)

* * *

August Bank Holiday.—Yorkshire Gliding Club Open Meeting throughout the week-end. Also an instruction course at the London Gliding Club for a period including the holiday. (Bank Holiday is Monday, August 3rd.)

* * *

August 15th to 30th.—Yorkshire Gliding Club Open Meeting and Competitions.

* * *

Olympic Games.—The prospectus of these Games, which will be held at Berlin during the first half of August, announces a big gliding demonstration on Tuesday, August 4th, in connection with them. The International Commission for the Study of Motorless Flight, however, mentions the possibility of international participation in these displays, though not as an integral part of the Games, as had at one time been hoped. The Commission is also considering holding an international soaring contest, either before or after the Olympic Games period, but a further announcement will be made later.

* * *

Soaring Competitions Abroad.—The German Competitions (national) usually last a fortnight and are held some time between the middle of July and middle of August. The Polish and Russian meetings are usually held in September. The dates of the Austrian (international, not national, this year) and Swiss (international) meetings, at Salzburg and on the Jungfraujoch respectively, are very uncertain. The American Competitions are usually held in June or early in July, at Elmira, N.Y.

From Here and There

Test Hop.—The London Gliding Club is holding an informal house-warming dance in the new club house on Saturday, January 25th.

* * *

Comparative Statistics.—It so happens that an announcement of the Yorkshire Gliding Club's plans for the coming year in the *Yorkshire Post* is immediately followed by this piece of news: "Football killed 46 men and boys this season in the United States." It may be recalled that, in the year covered by the Yorkshire Club's last annual report, there was not a single accident to a club member involving personal injury.

* * *

World's Distance Record.—The Federation Aeronautique Internationale has now recognised the flight of Rudolf Oeltschner from the Wasserkuppe (Germany) to Brno (Brünn) aerodrome in Czechoslovakia, on July 29th, 1935, as a World's Distance Record for motorless aircraft. The official distance is given as 504.2 km., or 313.3 miles. Actually, four pilots covered the same course on that day: Steinhoff, starting at 10.10 a.m. in a CONDOR; Bräutigam, at 10.33 in the D.B. 10; Oeltschner, at 10.38, in a CONDOR; Heinemann, at 11.22, in a RHÖNSPERBER. It will be remembered that Oeltschner lost his life on the way back, and that the other three asked that he alone should be considered as holding the record; this request has evidently been granted. A memorial stone has been set up at the site of the accident, and a near-by housing estate named after him.

* * *

Do Gliders Disturb Birds?—In a recent law case the plaintiff claimed that grouse would be frightened away for good by the sight of gliders flying overhead, and was granted an injunction which has since prevented the Midland Gliding Club from using the Long Mynd as a soaring ground. A recent letter to "The Times," concerning the proposal of the R.A.F. to establish a bombing practice centre at the Abbotsbury swannery in Dorset, has a bearing on the question; it was written by Sir Kenneth Crossley, of Whitchurch, Salop, and reads as follows:—

> Judging from my own experience the Trustees of the British Museum and the Council of the Linnean Society need have no apprehension as regards the swans being disturbed by aeroplanes. There are frequently between 50 and 100 swans on my mere, and I can fly at 100 ft. above them without their taking the slightest notice. It is the same with Canada geese, which are much wilder birds. Mallard occasionally swim into the reeds, but never rise. There is a heronry, too, of 46 nests of which I keep an accurate count each year for the British Trust for Ornithology—first from the ground and then from the air, circling round and round to make sure that all the nests are inhabited. I know nothing of bombing, but there is a large rookery next to the heronry where, each year, I have shot hundreds of young rooks with a rifle, while the herons are feeding their young in adjoining trees. Some of the rooks' nests are actually in the same oak trees as the herons'. However much one may dislike the idea of mechanical interference with nature, it is an extraordinary thing how animals and birds, difficult to approach on foot, treat motor cars and aeroplanes with complete indifference or disdain, whether they are lions in Kenya or partridges on aerodromes.

Over the Alps by Night.—The Press reported on December 20th that M. Suter, "a glider pilot," remained aloft high above the Alps for 10 hours, 24 minutes. The flight was performed at night, and was only cut short by ice forming on the wings.

* * *

Hirth in Japan.—At the invitation of the Japanese Soaring Flight Co., Wolf Hirth arrived in Tokyo on October 2nd and subsequently made a tour for the purpose of introducing modern training methods in gliding and soaring. He brought two companions, also sailplanes of type GÖPPINGEN 1, GÖPPINGEN 3, and GRUNAU 9 (primary), with a Klemm L 25 aeroplane for towed flights, and the party gave instruction on the aerodromes at Ueda, Osaka, Tokyo, and Tokorozawa. One of the pupils thus trained was soon able to make a soaring flight of four hours and loop the loop several times. To round off the visit, the Emperor of Japan bestowed on Herr Hirth the Order of the Holy Treasure.

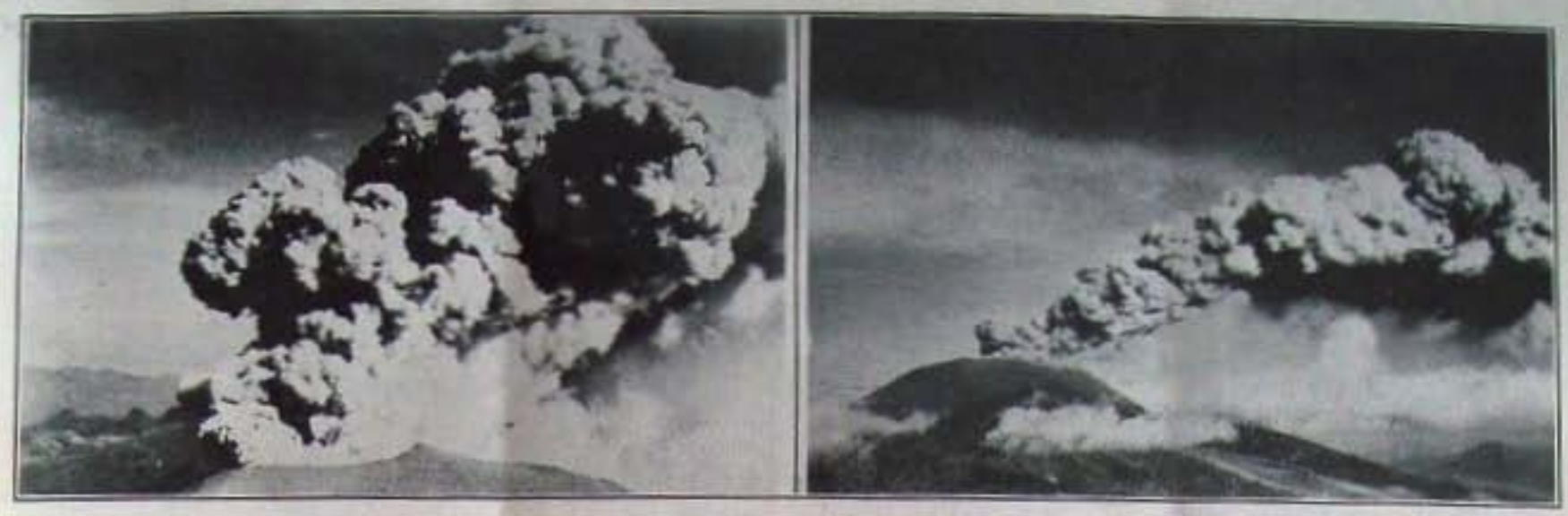
Review

Elements of Practical Flying. A detailed survey for students and air pilots. By P. W. F. MILLS. (London, The Technical Press, Ltd., 4s. 6d.).

The German gliding instructors divide their pupils into "Kopfflieger," who learn to fly by reasoning everything out, and "Gefühlsflieger," who leave their neuro-muscular system to educate itself with the minimum of interference from the higher centres in the brain. Assuming the same subdivision among aeroplane pupils, it may be said that this book is essentially one for the *Kopfflieger*, who will find to his delight the underlying theory explained of every single thing he is likely to want to do in the course of learning to fly. As an example; where the *Gefühlsflieger*, learning to take off a seaplane, would simply be told: "You are soon going fast enough to get into the air by gently pulling back the stick," our author puts it thus: "In a short time it is possible, as in the case of a landplane, to presume the existence of sufficient reserve speed to justify a change to climbing attitude, and a gentle backward pressure on the stick assists the transition from the water-borne to the air-borne state, after which a safe climb may be made away from the water."

Solution of the Crossword Puzzle by "Corunus" published in our last issue.

S	O	A	R	I	N	G	D	U	D
A	R	M	E	D	S	O	U	P	D
I	M	P	O	R	T	A	N	C	E
L	O	R	I	M	A	P	S	U	B
P	H	O	T	O	T	P	T	R	U
L	O	U	I	T	I	R	A	R	N
A	N	D	N	I	O	O	B	E	K
N	A	T	I	O	N	A	L	N	E
E	N	G	I	N	E	C	E	T	D
G	L	I	D	E	R	H	A	S	H



UP-CURRENTS IN JAPAN.—Two photographs of Asama Mountain, taken from the air on November 7th last by Wolf Hirth, the well-known German soaring pilot, during his recent visit to Japan for the purpose of advising gliding organisations there. Japanese pilots have glided down from the tops of their volcanic mountains, but so far have not tried to soar in the fumes, in spite of the resemblance they bear to cumulus clouds. Three years ago, however, Robert Kronfeld flew a sailplane through the smoke rising from Vesuvius, but found insufficient lift for soaring. Query: Are invisible thermal currents also shaped like this?

A Review of 1935

By P. A. WILLS

IN these articles I hope to show what have, in my opinion, been the most important lines of progress in the gliding movement in this country during the past year.

There must always be three main factors: that which for want of a better word I will call political (which is a very badly used one in these days); secondly, financial, which includes things like the equipment and membership of clubs; and, lastly, technical, including advances in design and pilotage, etc.

Since the first-mentioned is perhaps the factor fundamental to any *organised* movement, although quite the dullest, I have started with that.

1—Political Development

The first part of this year was marked by the settling of certain internal differences in the movement which, being of that tiresome sort in which many enthusiasts could not be bothered to involve themselves, had consequently held up progress for a long time.

At the urgent behest of the authorities, the British Gliding Association was completely reorganised on lines giving control to clubs which have demonstrated their soundness by having attained a certain size. This has resulted in a great improvement in mutual relations and the clearing up of many misunderstandings. Also the officials of the Association were able to settle down to putting its affairs into much overdue working order, relieved of the constant fear of their actions being hindered by warring factions.

A most important outcome was the production by a strong sub-committee of a very complete and ingenious scheme for the distribution of the Government subsidy, and the first clubs to qualify for payments out of the fund received these early in November, some seventeen months after the Government's announcement.

The scheme is being used as a means for bringing up clubs in the way they should go. Before it can qualify for a subsidy, a club has to take certain steps which have, from experience, been shown essential to the development of an efficient gliding organisation. For example, they have to hold security of tenure of an approved soaring site; to protect their members by becoming a limited company; and to arrange for the services of a qualified ground engineer.

In this way the lessons learnt at great expense in time and money by the more successful clubs are being used for the benefit of all, and the foundations of the whole future movement are being laid on solid ground. The great aim is that, whether the subsidy is continued after the first five-year period or no, it will have been applied in such a manner as to leave the movement in an impregnable position.

Already one valuable result of official support has been the improved public appreciation of motorless flying. No longer are we regarded as semi-lunatic stunt-merchants, and the negotiation of such vital matters as the acquisition of sites is thereby correspondingly easier.

It is a curious fact that in a year when the militarist spirit of nearly every nation has grown in an alarming manner, less stress than ever before has been laid on the alleged military value of motorless flight. No longer misled by constant exhortations in the popular Press to take up gliding because it is of "National Importance," people have come more and more to realise that here at last is a great flying sport, and the result has been a tremendous increase in club membership.

In October and November there was quite a flurry of correspondence in the hitherto frigid pages of *The Aeroplane* as to the "use" of gliding. Unfortunately no two persons, even on the same side, could be induced to mean the same thing by the word "use," so that the argument rather lacked decision. However, it is probably commonly admitted now that, whatever the "use" of gliding as an ancillary to commercial or military aviation, its future success and importance will be primarily based on its own peculiar merits as

a sport; that is, gliding is an entirely new dimension in the potentialities of aviation. It is only when people are brought to realise this fact that a sound foundation is laid for a great expansion in the art of motorless flying.

On the political side, therefore, it is fairly clear that the near future is to bring increased efficiency in the B.G.A. and the clubs, and also some inevitable increase of official control in such matters as airworthiness, compulsory insurance, and possibly the annual renewal of pilots' certificates.

The (many will say much-needed) increased efficiency will arise from the ability to pay our way in some degree, instead of having eternally to cadge honorary work. The increased control, whilst everyone will regret this, is an unavoidable outcome of the rapid growth of the movement.

For we must resign ourselves to one conclusion: gliding is now out of the pioneer stage, where success or annihilation often hung practically on a stroke of luck or of individual genius. Success and a great enlargement are upon us, and the important thing now is that that expansion should proceed on the right lines.

2—Sites

During the past year I have had the good fortune to fly at five clubs with soaring sites, and hope I have thereby learnt a great deal. For the fascinating thing is that every site has its unique character, its own special peculiarities.

So varied are these that an exact comparison between any two sites, an answer to the eager question: "And how do you think our site compares with X?" is impossible. Nevertheless, an attempted analysis may be useful, if only to show the diversity of factors that affect a gliding site.

In such an attempt I first spent hours in drawing up an elaborate table giving marks to each club for each of eight characteristics, such as accessibility, range of soaring winds, etc. Having done which I saw that no useful conclusions, and much heart-burning, could be derived from this, and scrapped it.

Amongst the five are the new and promising sites of the Midland and Derby Clubs at the Long Mynd and Bradwell Edge respectively. The very fact that there are so many as five clubs already with security of tenure of first-class soaring sites (with more to come) would have been unimaginable three years ago, and this can partly be set down as one of the benefits of the subsidy scheme. I put this advance in the movement as the most important of the year.

There are two main angles from which a gliding site may be considered: first, its suitability as a training site; second, its suitability for competitions; and the requirements are somewhat different.

The five sites are those of the London Club at Dunstable, the Yorkshire Club at Sutton Bank, the Derby and Lancashire Club at Bradwell Edge, the Midland Club on the Long Mynd, and the Ulster Club at Magilligan Strand.

In the first sphere, Dunstable is still naturally well ahead of other clubs. The three important factors in this direction are the ease of landing at top and/or bottom of the slope; the accessibility of the site to club members, which practically means its proximity to large centres of population; and the extent of its equipment. In each of these Dunstable is fortunate.

After long travail I really am unable to distinguish between the other four sites; and this isn't due to natural cowardice, but because the conditions are too utterly different to make possible a fine distinction. I think the future relative progress of these four clubs will provide an accurate scale of the relative keenness of their members. So I put them all equal second.

To demonstrate my difficulty. For "C" licences, the Long Mynd offers a well-nigh perfect slope, not too abrupt and of generous height, so that in a fair wind the area of lift must be of great depth and surpassing smoothness—flawless. On the other hand, landings at the bottom are not dead easy, and transport from bottom to top a long business. Yet it is the best of all sites for landings on top. This site is so far only used for soaring flights.

Magilligan, where launches are usually by car from the beach, provides dead easy landings on the beach, and pretty easy ones on top. But so far comparatively little training has been done there, so the possibilities are largely unexplored; and it is difficult to find a good spot for the erection of a hangar which will eliminate the necessity of erecting and dismantling machines every flying day. This is very important to preserve "morale."

For dual training in two-seaters Magilligan comes first, with the Long Mynd, Bradwell Edge and Sutton Bank together close seconds, and Dunstable in the rear. In the development of this kind of training lies a chance for the country clubs to catch up with Dunstable eventually in this category.

When we come to competition sites, there is one factor which, in my opinion, renders comparatively easy the decision. This is the range of soarable winds, it being taken that this range will include the prevailing westerly.

Taking each site in turn, the range of soarable winds is approximately: Dunstable 110°, Sutton Bank 200°, Bradwell Edge 200°, and Magilligan 140°. Actually Magilligan comes out rather better than this indicates, as being on the coast the prevailing winds there actually do prevail to an unusual extent.

Nevertheless, it is clear that, of the five, Sutton Bank and Bradwell Edge are by nature well ahead of the others. I put them equal first, and can see unending arguments at club bars by protagonists of each. It is a complicated question. Thus, Bradwell Edge is admittedly further from the sea, and so better for distance flights. Against it is the fact that the neighbouring fields are bounded by stone walls of unyielding aspect for muffed approaches. But again, it taps a larger population, which means a better financial outcome. And so on.

Of the others, Magilligan would promise more soaring winds, but the tiny fields of Northern Ireland make cross-country flights rather chancy. The Long Mynd is of all of them best situated for long-distance flights, but the least accessible to pilots and public alike, even when the proposed road improvements are completed. And Dunstable has the finest equipment of them all, but whole fortnights have been known to pass without a soaring wind.

In desperation I put these three equal seconds.

So which is it to be for 1936?

(To be continued)

Sailplane Construction for the Amateur

11—Making Ribs and Assembling

By W. BUTTERFIELD

THE prospect of making 40 or 50 ribs need not deter the amateur, for if tackled in the right way the work becomes quite congenial. It is at once apparent that some form of jig will be required to ensure uniformity of contour and position of scantlings. It is equally important that all pieces be accurately cut to size, length and angle of inclination, and this is quite a simple problem in the factory, which is equipped with the modern saw bench fitted with adjustable fence and guide plate. On the other hand, amateur groups are not as a rule so fortunate and it becomes necessary to make a number of hardwood gauges or cutting blocks, which ensure that each piece is cut accurately to length. Sheet metal templates cut to the profile of the gussets are also an asset. Time spent on such gadgets is not lost, for these things are always in demand when repairs are to be done quickly.

The detail design of the ribs should be such that a minimum number of standard parts can be used to assemble a maximum number of ribs; this is achieved by making the wing parallel in plan and then all ribs can be made to one pattern, even in way of the aileron spars. The planes are then built in one piece and the ailerons are cut through after preliminary assembly.

It is generally agreed that brads should be dispensed with whenever possible, and to do this requires a rather more elaborate kind of jig than otherwise would be necessary; such a jig and clamping press is shown in Fig. 8. This consists of a base-board, well battened down to prevent warping, on top of which is screwed a piece of 3/16in. thick plywood; on this the outline of the rib is drawn. The sheet of plywood is then removed from the baseboard and cut out in the manner of a jig-saw, and the material in way of the scantlings is removed. The pieces are reassembled on the baseboard and glued and screwed down in place. The cheek-blocks, also the blocks for the spar slots, are next prepared and securely screwed or dowelled to the base; it is preferable to arrange the cheek-blocks at intervals between the joints, as this facilitates the removal of the ribs from the jig.

If the work of assembly is to be done expeditiously good planning is essential, and, having decided upon a plan of attack, stick to it. The working party should be divided into groups, one group cutting gussets, another making scantlings, another assembling. The extent to which the jig can be used will depend upon the number of persons to do the job and the time available. A good method is as follows: Lay the scantlings and bracings in their respective slots on the baseboard, glue the gussets and lay them over the joints; then lay another layer of gussets in place directly on top of the lower ones and glue them on the upper side; next lay the scantlings immediately over and so let the assembly proceed sandwich fashion until the jig is full, the whole batch being clamped together by means of wing nuts and clamping pads. This is an admirable method, providing care is taken when locating the gussets, but when the jig is full assembly must cease for 12 hours or so until the glue is set.

Another method, which enables the work to proceed continuously, is not so satisfactory because it calls for

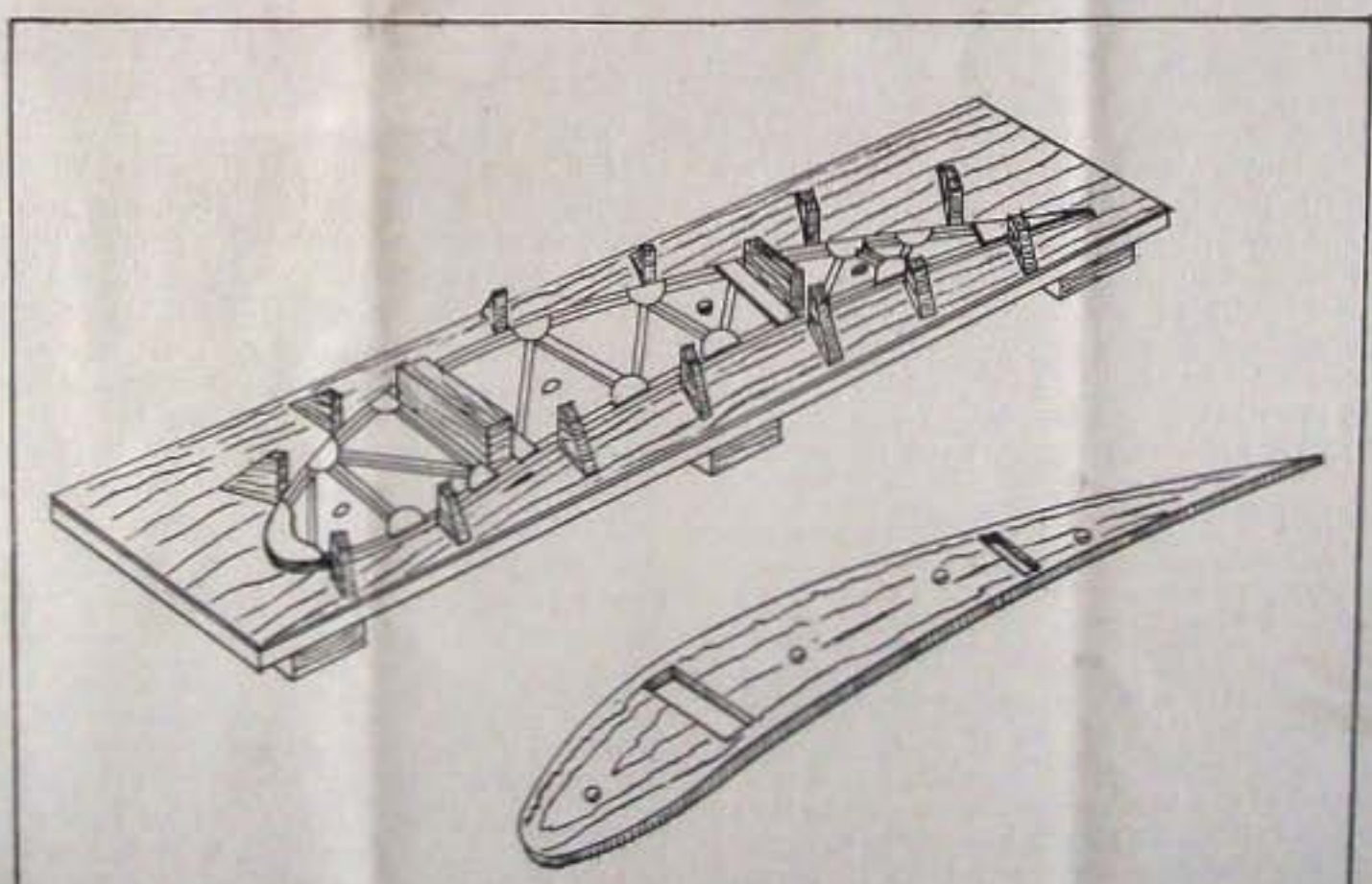


Fig. 8. JIG FOR ASSEMBLING & CLAMPING RIBS

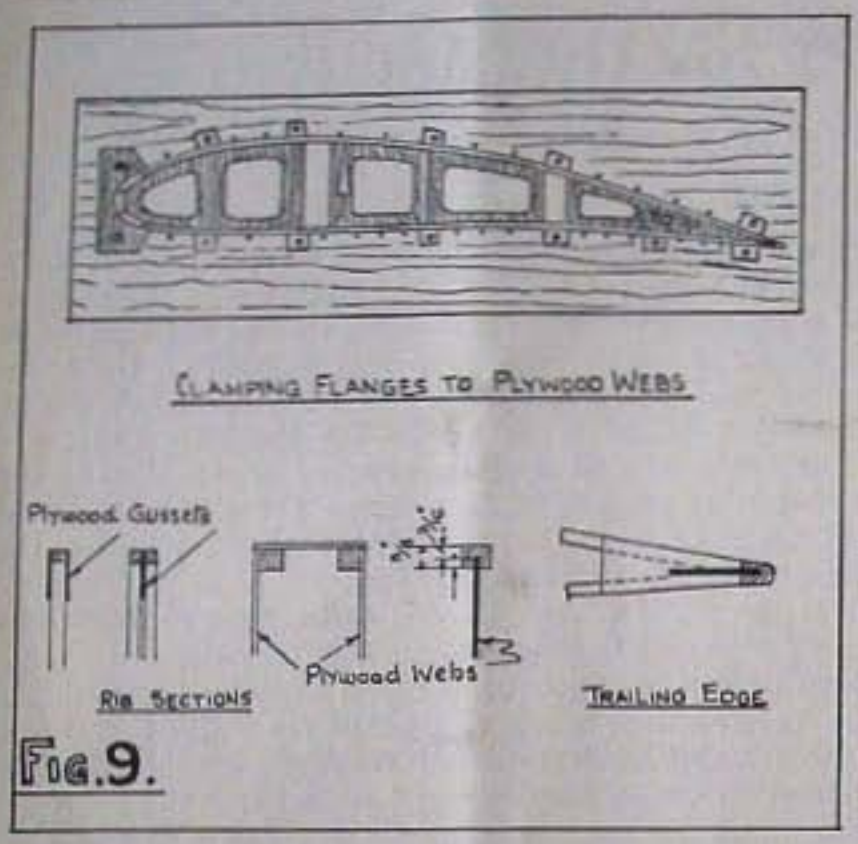


Fig. 9.

the use of brads and these tend to split the delicate scantlings. Lay the scantlings in the slots as before, glue the gussets and fix them in place over the joints with one brad in each member; then remove the skeleton rib from the jig and pass it on to another group, who will glue and fix the gussets on the opposite side. The ribs are then hung up to dry, after which they are trimmed off ready for threading on to the spars.

A design embodying tapering wings may call for as many as twenty different types of rib, and the cost of making a jig for each type becomes prohibitive. To overcome this the ribs are often of the plate-girder pattern, consisting of a plywood web with spruce flanges and web-stiffeners. Each type of rib is set out in a sheet of plywood, and the webs are cut out in pairs. The flanges are often grooved to a depth equal to half their thickness, and the profile of the web is then reduced by that amount all round. (See Fig. 9.)

Glue is then run into the groove of the flange, which is slipped over the web-profile and held tightly in place by a series of wooden blocks, screwed to a flat board or table top. A circuit of wire nails might serve this purpose. The flanges around the sharp curvature of the leading edge may be made up of a series of small segments, and the lightening holes in the webs can be cut out by fretsaw after the flanges have been glued in position.

Another method is to glue the flanges to one side of the web only, holding them in position by means of temporary brads. Two such ribs, placed 1½" to 2" apart, and covered with a strip of plywood, form a remarkably strong strut or compression rib, though the latter is only necessary when drag bracing is incorporated. The drag bracing can be of wire, providing each panel is braced across both diagonals, but if strut-bracing is employed the bracing members should be of equal strength in two planes: such bracing is best built in place with the skeleton wing trued up in correct alignment.

The variation in width of chord results in a variation in the depth of the aerofoil, and the spar will taper accordingly. The aerofoil section may change to one of double camber or symmetrical section towards the wing-tips, therefore accurate workmanship is essential for correct washout of incidence, remembering always that it is the contour of the ribs which gives the twisted appearance to the finished plane. There should be no initial twisting stress in the spars.

Packing strips are fitted between the ribs, and these are glued to the top and bottom edges of the spars. These strips locate the ribs on the spars and form a gluing surface for the plywood leading edge. All internal woodwork should be protected by a coat of shellac varnish prior to being covered with fabric. The varnish should be removed from surfaces which contact with fabric, otherwise it will run during the doping process and smear the fabric.

All metal fittings should be well protected against corrosion before attachment to the spar, and all bolts should be locked, preferably with slotted nuts and split pins. Detachable pins can be made of "Staybrite" or rustless steel: Cadmium plated bolts and nuts can be obtained from stock, and are well worth the extra cost.

Errata, 1935

A few errors have crept on to the 1935 volume of THE SAILPLANE AND GLIDER; some have already been pointed out, while others have been overlooked. Here is the complete list, for the benefit of readers who keep their back numbers for reference:—

MARCH, page 37.—The wing loading of the RHÖNBUSSARD is 3.1 lbs. per square foot, not 2.1.

JUNE, page 93, caption to picture.—For "fine soaring site" read "soaring site." (This on information from Australia.)

JULY, page 101.—We understand from the designer of the sailplane "H 17" that he would like anyone desirous of acquiring the plans to write direct to him, Ulrich Hütter, Rainerstrasse 2, Salsburg, Austria.

AUGUST, page 118.—The span of the KIRBY KITE is 47 feet, not 57. Page 121.—The World's Distance Record was set up on July 29th, not July 19th. Page 123, end of first article.—The general direction of Mr. Wills's flight to Heston was S.S.E., not S.S.W. Page 125, second paragraph.—The machine which, in Germany, broke while doing an outside loop was a RHÖNSPERBER, not a GRUNAU BABY. (The design has now been strengthened.) Page 128, caption to cloud photograph.—For "rugged" read "ragged." (This is important, as it describes the appearance of melting cloud in a down-current.)

SEPTEMBER, page 148.—The FALCON, flown by Mr. Laver at Sutton Bank, was not the property of the Dorset Gliding Club.

DECEMBER, page 195.—To the list of non-German holders of "Silver C" certificates should be added the following Hungarian pilots: Rotter, No. 19; Molnar, No. 48; Stef, No. 69. Page 199, twelfth line from bottom of second column.—The load factor for C.P. forward stipulated by the B.G.A. is 6, not 5. Page 205, end of Kent Gliding Club news.—The club's "motto" should be followed by an exclamation mark, not a question mark. That is, there *is* "virtue in making things for other men to destroy." Unfortunately, our wrong punctuation completely reversed the motto's meaning.

News from the Clubs



The "Dunstable Devil" at its native Dunstable Downs shortly before leaving for its new home in the Midlands. Left: A. Ivanoff in the pilot's seat and D. G. Hiscox (designer) standing by. Right: its appearance from directly below.

Midland Gliding Club

November 16th and 17th.—The club again foregathered at the Long Mynd, but conditions were unkind. Mr. Hardwick's two-seater FALCON had arrived and was very much admired by everyone. The club's new FALCON I. was also delivered, and looked very smart in its glossy coat of cream.

Perhaps the most cheering part of the week-end was the sight of a builder's hut on the site for the hangar/clubhouse. It is hoped that the hangar portion will be completed by Christmas.

November 23rd and 24th.—The wind was blowing from the south-west at Handsworth, which gave an opportunity of trying out the winch over the longest stretch of the site. Several flights exceeded one minute duration, and Horrell was able to make both the qualifying flights towards his "B." Sheffield found the view of the near-by golf course irresistible and landed thereon after negotiating several hazards very successfully. This is the second time that this has been accomplished.

November 30th and December 1st.—Saturday afternoon at Handsworth was given over to primary training, and several *ab initios* made long strides towards their certificates.

On Sunday morning the wind was rather too strong for winch work and so the bungy was resorted to and a remarkably good "turn up" had one or two flights each. Allen was promoted to the nacelled DAGLING and made a very good job of his first flight in this machine. During the break for lunch the DUNSTABLE DEVIL, in spite of being securely pegged down, was lifted by a sudden gust of wind and plastered against the trees close to the hangar. Fortunately only superficial damage was done.

Later, one or two of those possessed of more than their share of hair on the chest took nacelled DAGLING up on the winch cable and had a very busy time.

December 7th.—Saturday brought excellent flying conditions, there being light S.W. wind, and intermediate training continued with the nacelled DAGLING. The success of the club dance held the night before was much discussed, and should be repeated.

December 8th.—Conditions continued to be good, but the wind strength had increased to about 25 m.p.h.

Holland was given a winch launch, but in attempting a circuit he was blown downwind over the trees at the hill-top, with no height to spare, and went a-roosting in the spinney. The machine broke its way through to the ground without encountering any tree trunks, and we are glad to record that both the pilot and machine sustained remarkably little damage. This mishap should give instructors food for thought, as the increased height obtainable with the winch brings new problems. A pilot's first winch launch to 300 or 400 ft. at Handsworth is apt to be a startling experience if the clearest instructions are not given prior to the attempt.

December 14th.—Rain—no play.

December 15th.—The nacelled DAGLING still being out of commission, and the PROFESSOR and FALCON stored near the Long Mynd, training was confined to the primary squad—all members making good progress. Our youngest and lightest member has made himself a cushion filled with sand as ballast and is showing himself to be one of the most promising of the *ab initios*. This is doubtless due to the fact that he spent the greater part of last year as a non-flying member and did all his flying in the spirit, which is most excellent practice.

Jersey Gliding Club

Thursday, November 14th—The SCUD was brought out in the afternoon as a light S.E. breeze made the prospect of soaring possible, but as it was parallel with the ridge it proved to be difficult, and after 15 minutes the wind died down, making a landing necessary in a potato field.

Sunday, November 17th.—A westerly gale of 40-50 m.p.h. made flying impossible, but in the afternoon it had moderated a little, so Carter had a launch from the top, finding conditions very turbulent, and only gained height at the far end, then, after turning back, lost the lift entirely, having to land at the bottom. Instead of being satisfied, Carter had to try again and repeated the same performance, except that on landing he caught the wing tip on a barbed wire fence, with some damage to the tip, one elevator and the tail skid being torn off. All this damage has been repaired in two evenings.

Sunday, December 15th.—We brought out the ZÖGLING after rigging; we have rebuilt and re-covered this machine during the autumn. Four new members had their first "slides."

Sunday, December 22nd.—The club has purchased from the Guernsey Club a SCUD I., and to-day we took it out to our hangar and made an inspection; it will not be ready for soaring for a few weeks as we want to get the wings varnished and the whole machine cleaned up.

The ZÖGLING was brought out and 20 launches made, the *ab initios* doing very well.

December 26th.—In answer to our prayers came a lovely S.W. wind of 20 m.p.h., so Carter was launched from the top in the SCUD, making a flight of 1 hr. 10 mins.

In the afternoon the wind strength increased to 30 m.p.h. Carter had another launch from the top, making a flight of 50 mins. During this flight the greatest height obtained was 750 ft., the best lift coming from over the trees in front of the main ridge.

Sunday, December 29th.—Again we were lucky with a 20 m.p.h. S.W. wind and bright sunshine. As soon as enough members and friends turned up Carter was launched in his SCUD and found soaring conditions ideal, so stayed up for 1 hr. 55 mins. Several times he was able to hover for several minutes while at a height of 400 ft., holding the glider at 22 m.p.h. Twice he made a beat along the hills for a mile, coming back with plenty of height to spare.

The ZÖGLING was brought out as well and 10 launches were made, the progress of V. Baudains and Le Sueur being maintained steadily. In the afternoon the wind had changed to S.E., so soaring was not possible, and six launches were made from the gully with the ZÖGLING.

London Gliding Club

Before commencing the year's work, perhaps it would be as well to make out a list of all the existing machines which are likely to, or may possibly, figure in the year's news, and the names by which we propose to call them. We do so as much to clarify the subject in our own mind as in that of the reader.

Club Machines.—There are five DAGLINGS, three with open seats and two with nacelles. Of the former, one is the "Ground-hopping DAGLING," for beginners only, and two are "Hill-top DAGLINGS," used for taking "A" and "B" tests and also, at times, for ground-hopping. (One of them has a broken wing at the moment.) Of the nacelled DAGLINGS, one is used for such work as trying for "B" tests, and the other (labelled: "Pre-B pilots may not fly this machine") for attempts at soaring by *ab initios*, and as second string to the PRÜFLING, which has had several nasty knocks during the past year and has often been out of commission.

The PRÜFLING, when in working order, is used for soaring by those who are not yet allowed on the FALCON, and for "C" tests by pilots with aeroplane experience.

The FALCON I. is the machine used by J. Laver for his attempts on the duration record, and since bought by the club. The club's former FALCON I. was badly smashed in an attempt at a one-man launch with a side wind, and though officially "written off," we believe some effort is being made to build another FALCON out of the bits. Pilots used to be allowed on the FALCON after two hours' flying experience, but now they must secure the approval of the Flying Committee as well before graduating, and new candidates must be able to side-slip.



The "Louis Desoutter Cup," presented to the London Club in memory of the late L. A. Desoutter, by members of his family. It is to be put up for annual competition.

At one time the club was thinking of confining new purchases to DAGLINGS (open and closed) and GRUNAU BABIES, but the present policy is to keep at least one FALCON in stock to bridge the gap.

GRUNAU BABY: This type has been adopted by the club as the standard high-performance machine, and there are now three in stock; others may be added during the coming year.

The "Desoutter GRUNAU" is, in type, an improved GRUNAU BABY I. It was largely built by the late Louis Desoutter, and is beautifully finished, with ball bearings to the controls. Only persons officially catalogued as "aces" are allowed to fly it.

The "Slingsby GRUNAU" was obtained from Slingsby's works last summer, and the "Brooklands GRUNAU" arrived only recently. The latter was built by pupils at the training centre at Brooklands, and is distinguished by its white colour and a long narrow nose with a brown tip (comparing it with an ordinary GRUNAU, one is reminded of Kipling's story of the Elephant's Child). Both these machines are of type GRUNAU BABY II.; qualifications for flying them used to be: Six hours in the air and two spot landings within 50 feet of a mark; but this again is now subject to the discretion of the Flying Committee.

As for two-seaters, the club has sold the KASSEL and now has only the ancient POPPENHAUSEN, which was broken up when the hangars collapsed in the September gales, and may never be repaired. Rumour has it that the club contemplates getting a FALCON III., but no decision has been come to yet.

Private Machines.—The difficulties of compiling a list of privately-owned sailplanes are: (1) in the case of finished machines it is almost impossible to keep pace with the continual changes of ownership, and (2) in the case of machines under construction there is often such secretiveness that one can hardly separate rumour from fact. Subject to these qualifications, the following is the best we can do:—

HJORDIS: Owned by Buxton and Wills, is at present stowed away for the winter.

Three SCUDS: These are all of SCUD II. type. The first SCUD II. ever built is owned by Buxton, Wills and Briscoe. The "Green SCUD," owned by Barker, is now being advertised by him for sale. The third SCUD is shared by Dent, Fox and Armstrong: its staining is a much lighter colour than the first, so perhaps we could call these two the "Brown" and "Yellow" SCUDS respectively.

Five WRENS: CRESTED WREN, flown by Thomas (owner) and Rattray; WHITE WREN, built, owned and flown by Morland and Richardson; GREEN WREN, owned by Grafton and Slazenger, and at present kept near Cambridge; GOLDEN WREN, built and owned by G. O. Smith, A. L. Slater and R. G. Robertson, and kept in Derbyshire; and BLUE WREN, owned by A. E. Slater, which was damaged when the hangars blew down and is still waiting to be repaired.

Three German-built Hans Jacobs designs: RHÖNADLER, formerly flown by the late Eric Collins and recently advertised for sale by Mrs. Collins; RHÖNBUSSARD, used in Sir Alan Cobham's Display in 1934 and then sold to Nicholson, Cooper and Dewsbery; RHÖNSPERBER, just arrived, shared by Mrs. Price (Joan Meakin), Nicholson, Cooper and Dewsbery. (Whether the last three will now sell the BUSSARD we have not heard.) Wills is not a shareholder, as stated in error last month.

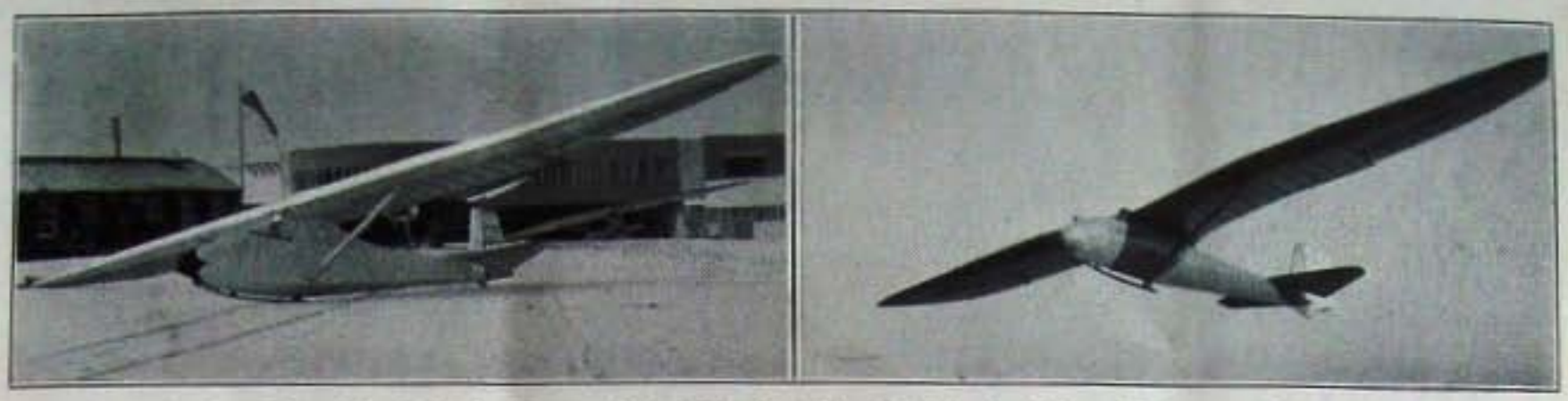
Two old German types: KASSEL 20, shared by a large group of somewhat vague composition, but known to include Ivanoff, Dent, Cornell, Dr. Slater, Dr. Hall (?), and now Noble, who is taking a share in return for re-conditioning it, which he has not yet had time to do. Also WESTPREUSSEN, at present under repair by F. G. Enser, and believed still to belong to Hiscox.

Two British designs more or less based on the GRUNAU BABY type (though it is considered exceedingly tactless to say so, as many changes and refinements have been incorporated, and each machine is largely an original design): these are the KIRBY KITE and the CAMBRIDGE. The KIRBY KITE, designed and built by Slingsby, is Hiscox's latest acquisition, while the CAMBRIDGE, a Zander & Weyl design and construction, is, like the GREEN WREN, owned by Slazenger and the Duke of Grafton, though so far it has been kept at Dunstable.

Then there are the HOLS DER TEUFEL, formerly Hiscox's and now owned by a group of uncertain identity, and the KEEBLING, which is a ZÖGLING hotted-up by Keeble, who shares its ownership with Rae and Pringle.

There are a few machines which can also be included in the list because, although usually kept and operated at other clubs, their owners are also members of the London Club, and have occasionally brought the machines over to fly at Dunstable. The GOLDEN WREN comes into this category; also the TERN, owned by Little (Southdown), and Mr. Hardwick's FALCON II. (Midland).

Of machines under construction, Baker's GRUNAU BABY II., which was badly damaged by the falling hangar just after having



Two recent arrivals at Dunstable: Left, the "Grunau Baby II" built at Brooklands by the College of Aeronautical Engineering, showing also the old and the new clubhouse in the background: Right, D. G. Hiscox flying the "Kirby Kite."

its first flights, is now being repaired at Brooklands. Captain Heath is building a GRUNAU BABY at Chatham. Noble has got hold of the skeleton of a TERN and is finishing and covering it with a view, we believe, to subsequent sale. Sproule, before he left for Yorkshire, was building a small-size sailplane specially designed by him for his own use; he has now sold the unfinished machine to someone whose name we took down but now find to be illegible.

Now, have we forgotten anything? Yes; Fräulein Emmy von Roretz has ordered a RHÖNSPERBER from abroad. But the report in a northern newspaper, that she was buying a FALCON III. in which to glide across the Irish Sea, has so far been unconfirmed.

Aero-towing Instruction.—For the first time in the club's history—in fact, for the first time in this country at all—an instruction class has been held in the gentle art of being towed through the air behind an aeroplane. The machine used was the club's new GRUNAU BABY II., built at Brooklands, and on Thursday, November 28th, Mrs. Price was aero-towed in it from Brooklands to Heston.

On the following Sunday she gave instruction to Frl. von Roretz, Baker, Ivanoff, Bergel, Hiscox, Fox, Nicholson, and Wills, the "class" getting two tows each. The towing aeroplane was an Avro 504 K, and Joan Price instructed by signals from its rear cockpit. One of the party managed to snatch and break the tow cable; otherwise all showed reasonable skill, and that being aero-towed is not so very difficult after all. The first flight of the day was from Heston to Heath Row, and the last one back to Heston; the other flights all took place from Heath Row Aerodrome.

Now for the Dunstable news:—

Wednesday, November 27th.—The WHITE WREN had its first soaring flights, Morland and Richardson being somehow able to raise a launching team for the purpose.

Saturday, November 30th.—Some members flew the FALCON in a W.S.W. wind. At 5.15 the wind suddenly increased, backing to south. (The weather map shows this to have been due to a small depression whose warm front had just reached England and cold front just left Ireland; it passed over in the night and left a fine west wind behind for Sunday.)

Sunday, December 1st.—In a hearty soaring wind all sorts of machines disported themselves.

The FALCON was able to hover stationary at 600 ft. Barker, in the Desoutter GRUNAU, found a thermal over Dagnall (the village beyond the Zoo) and circled up to 850 ft. (these figures are reckoned from the top of the hill). Richardson achieved 600 ft. in the WHITE WREN. The GRUNAU BABY II. was soaring, and several flights, soaring or otherwise, were made by nacelled and open DAGLINGS. When we left at 3 p.m., the KEEBLING, CRESTED WREN, and Armstrong's SCUD, were being prepared for flight.

But the event of the day was the arrival of the CAMBRIDGE, the latest production of Zander and Weyl, which we hope will shortly be described in THE SAILPLANE. It is only when mentioning its general wing characteristics and its dimensions that one is allowed to compare it with a GRUNAU BABY—otherwise not. It has many refinements, but to external appearance its chief distinguishing feature is its streamlined fuselage of oval section. It was taken up the hill and did some soaring, the Duke of Grafton getting his "C" on it.

Another "C" was obtained by Turner, flying a DAGLING.

The Brooklands GRUNAU was expected to arrive by aero-tow at its new home, but failed to turn up.

Sunday, December 8th.—Another excellent soaring day—as usual, in the rear of a depression. At 4 p.m. a big storm passed over—presumably a "secondary cold front."

The KIRBY KITE, WHITE WREN, and other machines soared, and Smith got his "C."

The Brooklands GRUNAU also arrived, at last.

Sunday, December 15th.—The wind at first varied between S.W. and W.S.W., and varied also in strength. The better machines were often able to soar, but the FALCON, PRÜFLING, and closed DAGLING mostly didn't, though in the latter Miss Evans held her height for one beat and now knows what soaring feels like. Sailplanes in action on this day included the KIRBY KITE, CAMBRIDGE, WHITE WREN, Brooklands GRUNAU (and perhaps other GRUNAUS), FALCON, and PRÜFLING, while sundry primaries also descended from the top.

At 3.45 a fierce-looking storm, of the "front" variety, put out the light of day, which never returned, as it was already sunset time. What with the thick haze, and bucketfuls of rain coming down, and the added darkness, it was almost impossible for the three sailplanes still in the air to see where they were going. Fortunately, two of them were painted white—the Brooklands GRUNAU and WHITE WREN, and Hiscox in the KIRBY KITE was at a higher level, so there were no collisions. But Hiscox said he would never have seen the other two if it hadn't been for the white paint.

Hiscox got up to 700 ft. *before* the rain started, in what was apparently the rising air before a cold front, and then got the impression that the wind had changed to N.W. On the hill-top the wind veered when the rain came, but only to W. or W.N.W.; it then backed again, but only to W.S.W. One observer down at the hangar said he saw the wind sock go right round the compass during the passage of the storm, and that it blew strongly from N.E. for a short period.

Fräulein von Roretz insisted on pushing off into the rain in the FALCON, so as to catch the lift before it went; this reduced by 50 per cent. the number of wings on the hill-top available for use as umbrellas.

Sunday, December 22nd.—The wind started at S.S.W. and then veered to W.S.W. The Brooklands and Slingsby GRUNAUS, FALCON, PRÜFLING, and a nacelled DAGLING were used by numerous pilots in attempts to soar in a wind which was just on the borderline between soarable and unsoarable. None succeeded, with the single exception of Grant, who amazed a growing audience by just holding his height in the FALCON for ten minutes or so, and then gradually creeping up till he was 100 or 150 ft. above the hill. After 24 minutes he made a voluntary landing. In spite of this demonstration, further attempts at soaring, likewise by more experienced pilots, were even more unsuccessful than before.

Primary training went on at the bottom as usual.

Smith and Robertson came from Derbyshire to fetch the KASSEL two-seater, which once again changes ownership after more than three years' residence at the London Club.

On this day the place seemed to be swarming with professional photographers. Two of them carried their expensive and bulky apparatus to the top of the hill, from which Wills obligingly made a special descent for their benefit. Evidently they were unable to sell the result, or we should have had it by now from our Press cutting agency. Another professional man, complete with professional assistant and equally expensive and bulky apparatus, spent an hour dancing round the CAMBRIDGE, completely baffled by the problem of photographing its white wings and tail against a background of snow. Meanwhile we secured the accompanying photo of the Brooklands GRUNAU with a Box Brownie.

The snow on the ground took many pilots unawares when they tried to land at a pre-determined spot. Those who came in from

the north in the usual way found themselves sliding up over the hangar ridge and stopping on the brink of the rabbit warren. And one attempt to land 200 yards short of the hangar finished unpleasantly close to the railings after a vain attempt to stop the machine by rubbing its nose on the ground.

Yorkshire Gliding Club

December 1st.—Wind W. A soaring wind in the early morning increased almost to a gale during the day. Just before dusk Holdsworth was launched in FALCON and in one beat to the road and back lasting seven minutes reached 700 feet. He obviously met some terrific bumps. In a well-judged landing he finished just outside the hangar enclosure.

December 8th.—Wind W., 5—15 m.p.h. Sharpe was first away in a light wind and FALCON. He never exceeded 200 feet, and after 20 minutes came in to let someone else fly before the wind dropped further. Hastwell in the same machine gradually lost height as the wind dropped, and after 16 minutes, having only about 30 feet in hand, turned in and landed. Blakeston and Watson took HOLS II. up for circuits, including one soaring beat. Alderson had a hop in FALCON. Just before dark the wind appeared to have risen slightly, so Wordsworth was launched in FALCON, but after one beat he had to make a down-wind landing.

December 15th.—Wind W., 0—10 m.p.h. The HOLS was brought out for a new member, Lingford, who had obtained his "A" with the Cambridge University Club. After valuable time had been wasted digging out the winch car, which had been cheerfully driven into a snow-covered bog, he put in four hops to accustom himself to the controls. Alderson then completed the day's flying by doing a circuit in the same machine. During Alderson's flight mist began to blow across the moor, and it was decided to cease flying operations.

December 22nd.—Wind N.W., 5—15 m.p.h. Conditions being doubtful, Holdsworth was launched in FALCON with a view to testing them. In a flight lasting 25 minutes he managed to reach 200 feet, and when he landed he reported that the lift, never plentiful, was already going. Stedman had, however, by this time taken his CITY OF LEEDS out of the hangar and was determined to fly her before she should return. His flight of five minutes was only a very prolonged glide off the winch. Lingford then had some hops in HOLS II., and Alderson took that machine up for a circuit. Meanwhile Sproule had arrived with the latest Slingsby product, the KIRBY CADET, an "intermediate" which rumour avers has a better performance than the FALCONS. However, rumour could not be verified on this occasion as the wind had now dropped completely, and Sproule had to be content with a hop or two. Stedman also had a hop in this machine. The wind rising temporarily persuaded Hastwell to try to soar the FALCON. He lost height gradually until he was compelled, after seven minutes, to turn in and land. The day finished, so far as flying was concerned, with a minor mishap to HOLS II., due to a misunderstanding between the signaller and the winch car, of which Miss Horsley was the hapless victim. Moral: Don't invent new signals, which may be misunderstood, merely to avoid the bother of driving across the moor.

Machines having been put away, everybody retired to the club house where fifty sat down to the annual Christmas dinner. This, together with the subsequent party, filled everyone with Goodwill (amongst other things)—so much so that even that mercenary undertaking, the bar, passed round free beer. A riotous time was had by all.

Programme for 1936.

The following is a summary of the club's programme of flying facilities for the new year; fuller details will be issued later.

Easter.—At Easter there will be a club meeting for *members only*. The committee has decided to suspend our Annual Open Meeting at Easter on this occasion, owing to the fact that the new Derbyshire and Lancashire Club is holding its first open meeting at this time, and our club does not wish to offer any counter attraction to private owners throughout the country.

Whitsuntide.—An Open Meeting with informal competitions will be held from Whit Saturday to Whit Tuesday inclusive.

August Bank Holiday.—An Open Meeting throughout the Bank Holiday week-end.

August 15th to 30th.—An Open Meeting and competitions throughout the last two weeks of the month. It is possible, but not certain, that this meeting may include the 1936 National Contest Meeting, but in any case an open competition meeting will be held throughout these two weeks at Sutton Bank, and members intending to spend their summer holidays with the club are invited to select this period. In addition to the above, there will, of course, be week-end flying and training throughout the year, and extra machines for soaring and training are to be acquired.

Mid-Week Flying and Holidays.—Arrangements are to be made for an instructor to be in residence at Sutton Bank *continuously throughout the summer* from June to September. Training courses will be available, and special facilities for rapid training of power pilots will be arranged. For "C" pilots there will be continuous facilities for mid-week soaring throughout the summer. Also, provided sufficient support from members is forthcoming, a special course of theoretical and practical instruction in thermal and cloud flying, involving dual instruction, may be arranged for a week during August.

During January and February it may be possible to arrange for a short series of lectures on the theory of design and pilotage; these would take place in the clubhouse on Sundays when the weather was unsuitable for flying.

Norfolk Gliding Club

Sunday, December 8th.—To-day we had 22 flights in our primary at Skeyton in a moderate S.W. breeze. Launches were by car. Ten members were there and had the machine rigged by 12.30. Flights of 300 yards and over were made by Hick (our secretary and moving spirit), Sommerfeld and Miller. "S" turns were made by these members to avoid overshooting the hedge at the bottom of the slope. Sommerfeld is our pioneer in this respect. He made the club's first "S" turn last week.

The remaining fifteen flights, including ground hops by our less experienced members, were more or less uneventful except when Watt and Page enlivened the proceedings. The former took careful last-minute instructions for making an "S" turn, but when in the air put on left bank, took it off, put on right bank, and took it off, without moving his rudder at all. He finished his flight by drifting gently across the field, crabwise, and landing (a three-point) just short of the right-hand hedge. Page stalled the machine from five feet or so. The resultant bang caused considerable anguish to members whose turns were still to come, but did not damage the machine.

Sunday, December 15th.—Twelve members turned up to-day at Skeyton and had the primary rigged by 11.45 a.m. We made 24 flights in a light south-westerly wind, with car-launching.



The Norfolk Club's training machine, which consists of a pair of Avro wings and a fuselage made by club members.



The "Cambridge" sailplane, the latest product of Messrs. Zander & Weyl, is given its first test flights by Mr. Keeble at Dunstable.
[Photos by E. J. Furlong.

Flights of 20 secs. and over were made by Miss Doughty and Messrs. Hick, senr., R. Hick, Miller, Reeve, Sommerfeld and Watt.

Two incidents of note occurred: C. Hunt charged the left hedge after landing, but did not damage the machine; Miller flew the machine into a hillock after turning the wrong way and broke a landing wire. This was quickly replaced.

Our first hop over the hedge at the bottom of the field was made to-day after a very fierce launch.

December 22nd.—We did not do much flying to-day, as a gentleman came down from Norwich to inspect the machine for C. of A. He saw three good flights by Hick and Sommerfeld. Both members had to "touch down" a wing tip to avoid charging the hedge, which is 300 or 400 yards from the bottom of our hill. This was at Skeyton in a moderate S.W. wind. We are anxious to get a C. of A., as we have nine or ten members who can take their "A," and three who ought to get their "B" as well. Needless to say, we cannot attempt this at Skeyton, where the drop is only about 50 feet. We hope to get the use of a hill which is really good, at Massingham Heath, for taking our certificates.

December 28th.—The machine was rigged at Skeyton by 12.10. Nine members made 12 hops in a S.W. breeze. It was not a good day. The ground at the bottom has been broken up by recent frosts, and rain has soaked well in. As a result the car used for retrieving could not get started several times and proceeded to dig itself in with its back wheels. Best flights of the day were by Hick senr., Sommerfeld and Watt. Given a better hill these members ought to take their "A's" easily.

Cambridge University Gliding Club

The conspicuous feature of the last month of last term has been the bad weather, which made flying impossible on about half of the days for which it was arranged. In spite of this, however, there was instruction on ten days, and five "A" certificates were obtained—the four mentioned below, and that of Lingford, the exact date of which we are not certain. Also one "C" certificate was obtained at Dunstable. During the latter part of the month the Morris Cowley was out of action, and retrieving had to be by whatever means happened to be available—either members' cars, a horse, a motor-cycle, or even, on occasions, mere man-power.

Saturday, November 2nd.—16 flights in the Zögling.

Sunday, November 3rd.—13 flights in the Zögling. Griffin obtained his "A" with a flight of 46 seconds after releasing. Slazenger made three circuits in the Wren.

Tuesday, November 5th.—10 flights in the Zögling.

Friday, November 8th.—5 flights in the Zögling. Boden obtained his "A."

Sunday, November 10th.—13 flights in the Zögling.

Tuesday, November 12th.—12 flights in the Zögling. J. A. Allan, of the Newcastle Club, made his first flights here to-day; he has also been doing much valuable work in the workshop.

November 14th, 16th and 24th.—10, 4 and 8 flights respectively in the Zögling.

Sunday, December 1st.—To-day there was a general exodus to Dunstable to see the first flights of the new sailplane built by Zander and Weyl, and christened by them the "Cambridge." It is approximately a Gruner Baby with a monocoque fuselage and slightly modified wings. It was flown very successfully, first by Keeble, and then by its new owners, Slazenger and the Duke of Grafton. The latter obtained his "C" on it.

Tuesday, December 3rd.—5 flights in the Zögling. Simpson and Reid both obtained their "A's," and Capt. Rattray, a welcome visitor from the London Club, had his first experience of winch launching.

The workshop, under Pringle's efficient organisation, did a lot of good work this term. A pair of slightly modified Zögling wings were almost completed, and these and a new nacelle are going to be fitted at the beginning of next term to the fuselage of the present Zögling. The wings which calculations show should be left over are going to have a fuselage made for them during the term. There is a scheme by which hours in the workshop can be accepted in place of flying money. The workshop is situated in the town next door to a convenient hostelry.

Newcastle Gliding Club

Friday, November 22nd.—Bell, Bennett, Feeny, Taylor, and Wood went to Moat Law to collect the wings of the original Cramcraft (P1) and the fuselage and one wing of the Dickson (P2) for delivery at the workshop in Newcastle. We understand they arrived in Newcastle at 4.30 a.m. on Saturday. Shortage of petrol and a ditched trailer were given as the reasons for the "night shift."

Sunday, November 24th.—Fair, very cold and frosty. As conditions were not very suitable for flying all the members present, excepting two, set to work on those things which had been left undone; in particular, re-covering the roof of the clubroom.

In the Cramcraft (P4) Hick decided to be launched from the most difficult part of the site from which he had to negotiate a barbed wire fence, a field of ditches and a stone wall. There was little wind, and the quick release did not function properly, with the result that he received a light launch. He cleared all the obstacles with the exception of one monumental stone of the wall which reached out for the fabric on the wing tip and held on. So after hundreds of launches without mishap, poor old Hick has opened his crash account with two damaged end ribs (wing ribs). We then indulged in bottled "hops," where learners are just as proficient as expert pilots.

Sunday, December 1st.—Raining, snowing, hailing, blowing—gliding definitely off. Bell, Bennett and Feeny braved the elements to collect material and gear for the workshop.

Sunday, December 8th.—Everyone thought that no one would be at Moat Law as it was bitter cold and damp. That is, everyone except that Spartan, Coates. He arrived and waited like the shipwrecked fisherman's wife—in vain.

Monday, December 9th.—Large attendance at the workshop, which it was unanimously decided was too small for so ambitious a band of workers. Generating set arrived at workshop for final lining off and testing.

Sunday, December 15th.—Under certain climatic conditions it is an achievement to reach the site, apart from being active on arrival. To-day these conditions prevailed. Wives, mothers and sweethearts begged and pleaded of their husbands, sons, etc., to remain at home on so heartless a day. However, two members and one visitor set out for Moat Law and, after numerous technical hitches in the "Maggie," the trio arrived four hours after the start. They found work to do (it was too cold to do nothing) and also food and drink. What has happened to the hardy "Northerners" of last winter?

Elgin and District Gliding Club

Since the date of the last report the club has made satisfactory progress, and at the end of the active season in September the machine was still complete and a fairly healthy credit balance remained in the bank account.

Unfortunately no "A" certificates were awarded, but this was due wholly to the unsuitability of the available fields. Next year, however, it is intended to go further afield in search of a really good site and establish week-end camps there.

The fact that the fields were unsuitable for long flights is probably the only reason why the machine is still whole, or practically whole (as there is a hurriedly repaired tear from the leading to the trailing edge of one wing, the result of a bad landing appropriately enough by the president and founder of the club; he states that the wind ballooned out his shorts and so formed an air brake which, with the resultant loss of flying speed, was the reason for his faulty landing, but the general trend of opinion is that he slipped on a banana skin left lying about the ship by Wee Wattie Thomson during one of his spectacular stratosphere flights).

All the really keen members are now thoroughly conversant with the chief "Do's and Don't's" of primary gliding, and when the nacelle, which the members are making from a Slingsby design, is fitted they should get away to a good start in secondary work as soon as the evenings are long enough to make it worth while taking out the machine.

The club has been exceedingly fortunate in that all the fields required were granted free of charge. The owners, all farmers, were very enthusiastic and gave us every assistance possible. The club's success in this matter was due greatly to the advice of Mr. Gardner, Secretary of the Scottish Gliding Union, to keep the location of the field from the public and so avoid crowds and the resultant damage to property.

A modelling section was established partly as a publicity scheme and partly in the hope of making a few pounds. This section was well advertised, but the juveniles did not show the enthusiasm expected and the membership is now composed of five juveniles and three adults. The members are keen and their work is good.

Leicestershire Air Sports Club

Sunday, December 1st.—Wind W., 15 m.p.h.

Clack Hill: The PRÜFLING was again performing in the hands of W. and H. Adcock in spite of "dirty" weather.

Six Hills: Training abandoned owing to unsettled conditions.

Sunday, December 8th.—It has now been decided to take advantage of the spell of adverse weather to give the B.A.C. II. its annual overhaul. Primary training is therefore to be suspended for a short time.

Clack Hill: Wind W., 15 m.p.h. The PRÜFLING, after being stuck in the mud on its trailer and standing through three-quarters of an hour of blizzard, was flown once each by W. and H. Adcock. The latter, after an auto-launch, flew for 200 yards along the top of the hill in the approved manner, and left everyone convinced that, with more practice, soaring on this site will become an accomplished fact.

December 15th.—Clack Hill, wind W., 10 m.p.h. (?). The PRÜFLING was out again, but flying was curtailed by a terrific snowstorm which gave our members their first taste of "ice on the wings." During this storm the wind changed abruptly from S.W. to N., necessitating several members remaining in the snow to re-tether the machine.

After defiantly putting in two flights we were compelled to de-rig in the moonlight in the face of an icy wind, much to the satisfaction (?) of everyone concerned.

The **Annual General Meeting**, held on December 12th, was well attended, and several would-be members were present.

The Chairman of the Flying Committee revealed, in his report, that the club has definitely acquired Clack Hill as the site for its future operations, and also that negotiations for the purchase of a hangar are well advanced. Mr. L. E. Headley, the chairman of the club, remarked, during his address, that with the new site, hangar and increased membership, the club could look forward with confidence to a bright future. Several new members were elected to the committees.

The annual subscription was raised to two guineas.

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Published by H. O. Davies, 13, Victoria Street, London, S.W.1, and Printed by Hicks, Wilkinson & Sears, 4, Dorset Buildings, Salisbury Square, E.C.4.