MARCH, 1946

ONE SHILLING

Sailplane and Glider

The First Journal devoted to Soaring and Gliding



Chilton Aircraft,
Hungerford, Berks.



Freedom !
in a **WINDAK**

The very thing for golfing, fishing, walking, cycling (or just pottering). The Windak 'golfer' is a civilian version of the official Airborne Smock and is made of the same gaberdine. Rain-repellent, windproof, lightweight and, of course, tough-wearing. In brilliant peacetime colours . . . green, scarlet, brown, maroon, royal blue and fawn. Price 107/3d. Also a lady's model at 75/-. Please write for name of nearest Stockist to the address below.

Wear a Windak

FOR SPORT AND ALL OUTDOOR WEAR

E *Windak Ltd. Poynton, Cheshire*

THE COBB-SLATER VARIOMETER

Recognised by all the leading pre-war soaring pilots as "The one indispensable instrument"

WILL SHORTLY BE AVAILABLE TO ALL SOARING ENTHUSIASTS

●

Our New Wide Range Model, with its sensitive response to lift as small as three inches per second, will be a delight to use.

●

ENQUIRIES TO

THE COBB-SLATER INSTRUMENT Co. Ltd.
RUTLAND ST., MATLOCK, DERBYSHIRE



'Good Mornings' begin with Gillette

You find Charles uplifted each day of his life. He uses the blades that stop all shaving strife ! Blue Gillette 3d each, ' Standard ' Gillette (plain steel) 2d each, including Purchase Tax.

We still can't give you as much film as you want, the reason being labour shortage. But we're trying hard, and the best film ever made should soon be yours for the asking

Meanwhile please grant us your kind forbearance

ILFORD **SELO** FILMS

The basis of good pictures

Sailplane and Glider

THE FIRST JOURNAL DEVOTED TO SOARING AND GLIDING

MARCH 1946 ★ Vol XIV No 3

EDITOR:
F/L VERNON BLUNT

ASSOCIATE EDITORS:
ALAN. E. SLATER
ANN C. DOUGLAS

ADVERTISING
and
EDITORIAL OFFICES:
139 STRAND, W.C. 2
PHONE: TEMPLE BAR 6451/2

The *Sailplane and Glider* is published on the fifth day of every month. Price One Shilling per copy; 13/- per year posted. Advertising Rates on application.

Published for the proprietors, Glider Press Ltd., by the Rolls House Publishing Co., Ltd., Breams Buildings, Fetter Lane, E.C.4, and Printed by the Mendip Press Ltd., London and Bath.

HAVE YOU READ?

"Gliding and Soaring"

By MAJOR ALOIS SITEK
AND
F/LT. VERNON BLUNT

6/-

ALLIANCE PRESS LTD.
OR SAILPLANE OFFICE

ANNUAL SUBSCRIPTION
13/- *post free*
Send to Rolls House Publishing Company, Ltd., at Bream's Buildings, Fetter Lane, E.C.4

Where do we stand?

WHAT of the present position and prospects? Amongst many uncertainties two things are clear. Firstly, that there never were more keen and enthusiastic folk up and down the country waiting to soar or soar again, than at the present moment. Secondly, there never were less soaring craft in the clubs to fly than at present, following the great passover to the A.T.C. in 1941/42—the cupboard is indeed bare!

There can be little argument over the facts of British gliding history. The movement was built up between 1930 and the outbreak of War chiefly by the dogged determination of the four main clubs, and their private members, to survive; they found the sites, they learned to fly, and from among themselves came the man who designed and made over 80 per cent. of the aircraft they flew. This fact should be pondered and due honour given to him who did so much to put British gliding on its feet, and the clubs who gave him the wherewithal to do it.

What does all this indicate? Surely that our movement is a thing sprung from the people and is the spontaneous manifestation by the ordinary man of the urge to fly for its own sake, as he rightly considers the air his just and natural heritage equally with the sea. And that brings us to the crux of the matter. Amongst the caucus of big business, Government monopolies, vested interest, and sure defence, the rights and just aspirations of the ordinary man to fly have been forgotten or ignored. This must be considered by all truly democratic and air-minded folk, as a national calamity of the first magnitude, for it is from the ordinary man that the whole of the present air position has sprung. A. V. Roe, Handley Page, Mitchell, Wright Brothers, De Havilland, etc., etc., all came from this class, and it is their basic work that has put us where we are to-day. And is it not essential and fundamental that *access to the air* should be made as easy and as free as possible for the people who will surely carry on the good work and tradition for to-morrow?

With this objective in mind, the gliding movement has a great responsibility and opportunity, for no one who has any knowledge of the subject will deny that soaring flight is flying in its most fascinating and intriguing form. While breath-taking progress has been made in power work, there has not been the time or thought given to the study of air and airflow; in fact it would probably be true to say that only those soaring pilots who have done over 50 hours' soaring have a true and reasonable picture of the mass of dynamic energy which is waiting there to be either co-operated with, or ignored to our peril. The sailplane is the only craft in which this valuable data can be accurately detected and scheduled. This point need not be laboured, but it is in fact reality. Every soaring man knows it is impossible to soar for long periods without accumulating a smattering of this vital air knowledge, which must in due course be charted and passed on for the benefit of humanity. Mrs. Ann Douglas in her book, "Cloud Reading for Pilots," has pointed the finger. We must have the machines and reasonable freedom to fly them, to learn the road to which she points. Is it too much to hope that some relaxation of the ban and restriction on the manufacture of soaring craft for home needs can be made in the immediate future, so that the clubs can replace, at a reasonable cost, a portion at least of the machines made over voluntarily to the Air Ministry. If there is such a thing as justice and reason, then this is it, and it should be quickly done; we look forward with confidence to an official recognition of this fact, by purposeful action for the immediate provision of an adequate supply of machines at the right price for the ordinary man and his Clubs.

C. ESPIN HARDWICK.

Captured Sport

By " Wingco "

WITH the end of the war in Germany, and the redeployment of the Air Force of Occupation for its peace-time role, one of the most immediate needs of the men living in the shattered German towns was for recreation. The sudden change from the strain of war to peace-time routine produced an immediate reaction. New interests had to be found to fill the unfamiliar leisure hours.

Disarmament units. In our Group, however, efforts to get things going were backed by the dynamic personality of Air-Commodore David Atcherley, himself a gliding enthusiast before the war, and it was not long before flying started at Oerlinghausen.

THE IDEAL CLUB

Like every other gliding site in Germany, Oerlinghausen was declared by the local experts to be " the finest site in all Germany after Röhn." At all events it was ideal for our needs. About ten kilometres south of Bielefeld, the small airfield lies at the foot of a sharp ridge of hills known as the Teutoberger Wald, rising to nearly 1,000 feet. The country round is covered with young pine forests growing in sandy soil, the airfield itself being mostly heather, with a very useful strip of smooth turf just nicely placed for flying into the prevailing wind. On the airfield is a fair-sized hangar capable of housing all our aircraft and winches. Nearby is another larger hangar and a workshop which had escaped damage, but unfortunately all the other technical buildings were burnt out, and most of the equipment and materials had been looted by the locals.



Flight-Officer Pam Berrie about to ride in the " Kranich." Kardinal is showing her the " taps."

The great value of gliding as a sport, and the opportunity of putting to good use the remains of the immense State-aided gliding movement in Germany was soon recognised, and official clubs rapidly sprang up in all the main areas of concentration of the R.A.F.

" DAVE "

The N.S.F.K. had shared the complete disintegration of the Luftwaffe, and aircraft and equipment were spread all over the country, anywhere but at the established gliding sites. Hundreds of aircraft had been destroyed, not only in the fighting, but subsequently by " D.P.'s," gallant Allies, and our own over-enthusiastic

BECOMES AN OFFICERS' CLUB

There is, however, a comfortable little hotel which was run as a guesthouse for the N.S.F.K., a swimming bath, a football field, and promising ski-slopes all on the spot. Altogether an excellent setup for a combined Officers' Club and Gliding Club.

PRECAUTIONS

The Staff, apart from the old folk who run the Guesthouse, comprise two Instructors and a number of other bodies, including carpenters, fitters, and winch drivers, all of them German and several of them ex-Nazis. The only way of getting things going at all was to rely on the Germans to start with, and the point was made that if we employed the Nazis, who happened to include the best carpenter and winch-driver, we would at least know where they were and what they were up to. Every aircraft had to be test-flown by one of the German Instructors before each day's flying as security against sabotage, and after every repair aircraft were put through aerobatics and dives to maximum permissible speed before being flown by a British pilot.

" KRANICH " v. " LIGHTNINGS "

In the course of time we became convinced that all our Germans were real gliding enthusiasts, and found that they would even work without pay if only they could work on their beloved gliders.

The chief Instructor, one Heinz Funk, lived up to his Christian name and proved himself to be not only a first-class glider pilot and Instructor, but a fluent English speaker, a qualified Aeronautical Engineer, and an expert on the Piano Accordion. The other Instructor, who rejoiced in the name of Kardinal, had been a demonstration Parachutist; a simple soul in whom was no trace of guile, only a burning desire to jump out of something from a great

height. Both were quite capable of doing three loops, a dive to ground level, and a landing off a stall-turn in a " Grunau Baby," winch launched to a mere 250 metres. If you could speak German, Kardinal would show himself to be a champion " line-shooter." His best effort being a graphic description of how he was attacked by six American "Lightnings " while flying with a pupil in a " Kranich," and how he foiled them for twenty minutes with stall-turns until one of them shot his tail off and caused him to bale out. When asked what happened to the pupil, Kardinal would shake his head sadly and reply " Nix lookee-lookee ! "

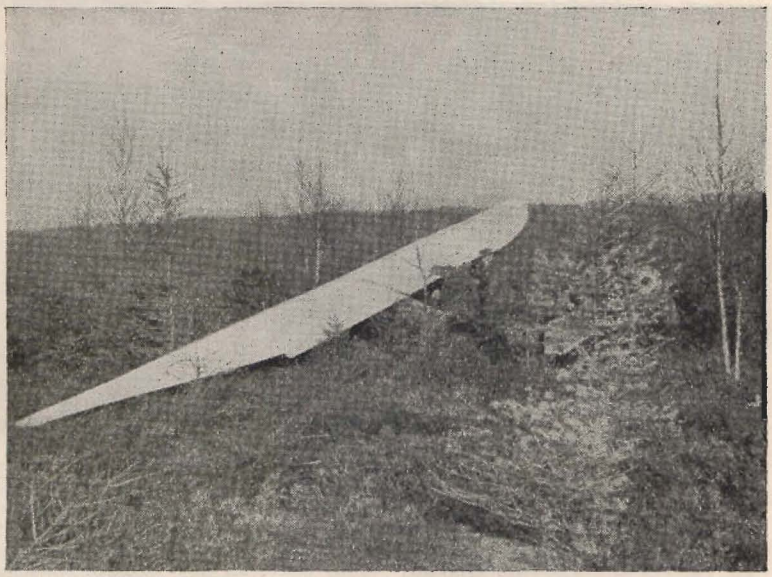
WHAT A FLEET

By dint of much hard work and ingenuity we soon had a "Kranich " 2-seater, four " S.G.38's," and half-a-dozen " Grunau Baby II's " flying. Two winches in use and one on inspection enabled us to get in up to sixty launches a day. Later we combined one winch with aero-towing with complete success. The " Auster V " was just about up to the job, though the tug pilot lived on his nerves all the time.

SYLLABUS

The intention was to be independent of the Germans as soon as we could. Three Clubs were planned in the Group, and it was decided to use the " Parent " Club at Oerlinghausen as a School for training our own Instructors. Three Courses were put through up to the end of November, each consisting of a number of " Mosquito " crews. A Syllabus was drawn up, based on the N.S.F.K. standard training scheme suitably pruned of unnecessary and complicated " efficiency." This consisted of a number of lectures on theoretical subjects such as Theory of Flight, Meteorology with special emphasis on the nature of thermals, construction of gliders, etc., and a flying programme designed to get everyone up to " C " Certificate standard *via* the usual Slides, Low Hops, High Hops, High Hops with S-turns, Circuits, Hill Soaring, Aero-towing, and as much winch operating as could be got in.

The same Syllabus was used for trained pilots and those without flying experience alike, certain items being " Starred " to indicate that power pilots could either leave them out or do a reduced number of exercises at the discretion of the Instructor.



One of the few blunders. This " Baby I I " actually spun in—half a turn—but the pilot was unhurt, and the aircrfat was flying in a day.

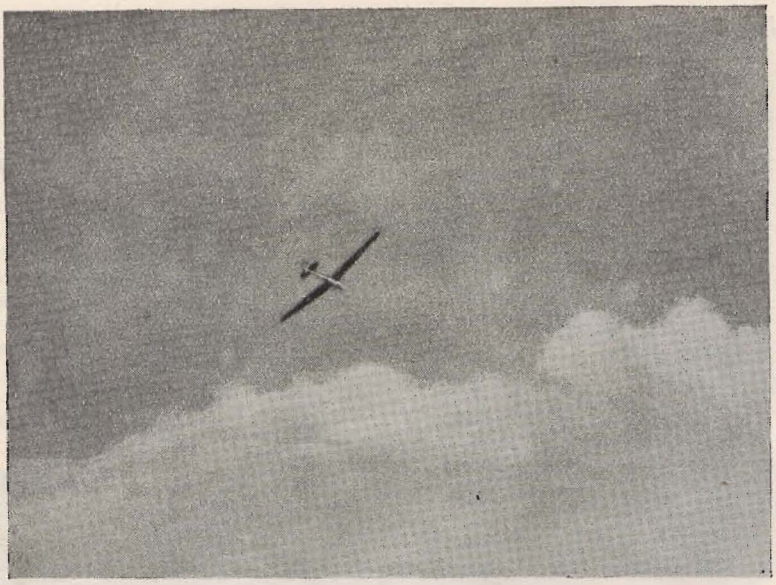
At week-ends visitors were welcomed, and all and sundry arrived from Group H.Q. with the A.O.C. generally well to the fore. Our budding Instructors were thus given an opportunity of putting beginners through the same syllabus they had done themselves, being carefully supervised while doing so.

POWER PILOTS

It will be noticed that we rejected the opinion of some enthusiasts that the power pilot is the worst material from which to make a Glider pilot, and assumed that, provided that the power pilot was made to realise that



Air Vice-Marshal Maitland in a " boot."



" Sat over the hills for over five hours."

gliding is a different kind of flight altogether, his experience would give him the necessary co-ordination of hand and foot movements, judgment of height, and ability to fly a circuit so as to touch down on a given spot. It was proved beyond doubt in practise, that if the power pilot could be put into a frame of mind in which he was willing to learn from scratch like anybody else, he could go right ahead and be flying circuits within five launches. Pilots, Navigators, and non-aircrew men were started together from scratch, and only allowed to progress a step when the previous step was thoroughly mastered. The Pilots, and those of the Navigators who had done " Grading Courses," and incidentally, an interesting point, been turned down as power pilots, were soon well ahead of the others. The mere possession of passenger flying experience did not seem to make as much difference as one would expect, men who had never been in the air before were not far behind others with many hours' passenger flying to their credit. Even an elementary power-training on the other hand, seems to give a certain sense of balance which is all-important.

KEENNESS

The biggest factor of all was undoubtedly keenness to learn. Our first Course were all volunteers, and as keen as mustard. They were ready to fly in any weather, and on the one day when the wind was right for hill soaring the difficulty was to get them back to land before dark. Two of them sat over the hills for well over the five hours in bitter cold, in order to have one qualification for their Silver " C.' That Course completed more than their syllabus flying time without a single mishap. The second course, by comparison, had been " detailed," and many of them had missed leave in consequence. Their general standard of flying was lower, and they damaged two " S.G.38's " and five " Babies " before they returned to their units.

Just before I left for England we received a " Weihe " in excellent condition, and I was able to have one flight in this lovely aircraft. It is very heavy, and feels much more like an aeroplane to handle; towing behind the " Auster " it was beautifully smooth in comparison with the " Babies." The speed is fairly high, about 75 kilos per hour and the gliding angle somewhere around 1:32. I landed convinced that there are greater thrills to be had gliding than in any power flying. Many of those learning to fly in these R.A.F. Gliding Clubs in Germany are getting " bitten " just as deeply, and I am certain that the Clubs in this country can expect an influx of new members keen to keep up the sport they learnt from their late enemies in Germany.

Argentine Notes

By Leo Follman

THE 11th November was quite a nice day. Noizeux got to Campana (40 miles) and Chourrout landed in Rosario after 6 hours (172 miles). On two other Sundays everybody sat around waiting for cold fronts due to arrive according to the meteorological experts, but nothing happened. . . .

" OLYMPIA " & " TWO-SEATER "

Our two-seater from the U.S.A. is due to arrive—it is loaded already and should be here in 7 weeks. The " Olympia " is going ahead slowly but surely, but we are having difficulty in obtaining chromo molybdenum for the main wing fittings.

150 MILES, 6¼ HOURS

25th November was a glorious day with postcard cumulus and strong lift. Results: Laplace announced a goal flight to Venado Tuerto, but had to land near Pergamino (110 miles) early in the afternoon because of down-currents over a large area of green corn. Madsen with our still formidable " Viking " passed Pergamino and landed at Colon (150 miles). Chourrout intended a goal flight and return to La Plata, but was unable to cross the Matanza river and had to return after 6¼ hours. Arguelles did his Silver " C " five hours on the " Bussard," Conde two flights of 2 hours each, Casadella 20 miles, and Giselle Hillger 4 hours 52 minutes (hard luck !)

PLYWOOD FROM FINLAND

Plywood is arriving here now from Finland, so we hope to have a number of new machines in the air before the end of the season. The local factories have been turning out some good work lately.

MINISTRY OF CIVIL AVIATION

GLIDER PILOTS

Provision is contemplated for the grant of two classes of Glider Pilots, licences, as follows—

(i) Glider Pilot's licence Class A—(for private gliding).

(ii) Glider Pilot's licence Class B—(for commercial work).

The requirements for these licences are still a subject of official study.

DERBYSHIRE AND LANCASHIRE GLIDING CLUB

J. S. Armstrong has been appointed House Secretary, which is perhaps the most difficult job at the moment in view of food and other shortages. He is tackling the difficulties with all the pent-up enthusiasm of five years' absence in the R.A.F. Since the 1st of January there has been a sense of urgency at Camphill, which is encouraging, and if our members continue to " buckle to " for a few months we shall succeed in making up some leeway. We are still very short of labour and will continue to be until more members are able to turn up.

WEATHER DISMAL

Jan. 1st. The report of our activities has already appeared in the SAILPLANE. We have been fortunate in being able to purchase a " Kite," a " Grunau " and the " Golden Wren." These machines are all in good condition, We hope to take delivery of three more machines before Easter.

Jan. 6th. The wind, although westerly, was too light for soaring and six members had a circuit each in the " Kite."

Jan. 17th. North wind, ten to fifteen miles an hour. Seven members flew the " Kite " again. Launches up to a thousand feet were obtained. Eric Taylor managed to contact a small cumulus cloud and remained up for six minutes, apparently having some difficulty in keeping within the area of lift. A. G. Shepard, who has recently been " demobbed " from E.F.T.S., gave a polished exhibition of how they do it in the R.A.F.

Although soaring or training has been possible on several other days, we have been very busy getting our club-house in good order. The bar has been completely re-painted and the club-house is about half done. Roof repairs have been carried out and beds and bedding sorted out and to some extent renewed.

ANNUAL GENERAL MEETING

The eleventh Annual General Meeting was held at the George Hotel, Hathersage, on Saturday, February 2nd. Sixty members attended.

The Chairman, Basil Meads, was welcomed back after his long absence, and in his report he dealt with the events of 1939, a summary of the war years, and an exposition of the current situation.

Fortunately, and owing to the magnificent effort of a few enthusiastic members, the club premises and site had been well looked after and there was not much more than some paint and labour would not put in order. A sum of money had already been voted to the House Sub-Committee for repairs, decoration and re-equipment of the club premises and results were already to be seen. With three aircraft already purchased and all necessary equipment in readiness in anticipation of the removal of the ban on civil flying, the Club can now offer soaring facilities to its more practised members, and it is hoped very shortly and as soon as training aircraft can be acquired, to offer limited training.

FINANCE AND TRAINING PROGRAMME

The Balance Sheet, having regard to all the circumstances and even after payment of £500 for repairs to extensive damage to the hangar caused by storm or Camphill thermal (an unforeseen expense and a heavy blow), may be regarded as satisfactory and evidence of the painstaking efforts of the treasurer, who has systematically analysed the costs of flying and training with some startling results. It is interesting to note the large number of members who continued to pay their subscriptions throughout the war years. Reference was made to the matter of subsidy, and although the subject was being actively dealt with by the B.G.A. and the Movement's complete case had been placed before the authorities, no decision had yet been made and indeed little had happened which would lead us to feel optimisttic. While the difficulties were many and obvious the committee had decided to re-organise the Club on the assumption that no subsidy would be forthcoming and to limit the number of *ab initio* pupils under training at any one time to 15. It was hoped that this will not discourage new members from joining which they may do at any time on payment of the entrance fee plus one guinea, their name being placed in order of joining on the list for training and when accepted, the balance of subscription was then payable.

NEW BLOOD ESSENTIAL TO CLUBS

The Chairman explained that if this course appeared in danger of imperilling the finances of the Club, it was the duty of the committee to review periodically the situation, but there was unanimous belief in a broad-minded long-term policy and the future of the Club depended so much upon the introduction of new members, upon whose shoulders must ultimately fall the management of the Club, so that those who have worked so long and so well may sit back. Apart from this consideration, new talent must be discovered and fostered in the interests of the sport. It has also been necessary to increase subscription rates and flying fees, but not to such an extent that the enthusiastic will be deterred. Every member will realize that with the high cost of everything and in the absence of assistance either in cash or kind, the club activities will have to be curtailed and there may be something of a reversion to the old pioneer days, in which event, even then, they may be assured of value for money. In the event of subsidy, then no effort will be spared to return the Club to its erstwhile activity. Generally speaking, the Club is in good heart to face the uncertainties of the future with optimism, and with the experience gained and the very obvious enthusiasm of so many of our old members there is no reason why we shoud not succeed again.

RECOLLECTIONS OF TRIALS

Thirty-six members of the Club served in H.M. Forces, and with deep regret it is reported that 7 became casualties.

A word of thanks is due to our lady members and gliding wives who for so many years either sat at home and waited or by whose energetic services in so many ways the club funds were augmented.

The meeting was followed by an excellent supper, and informal talks by the members, many of whom had not met for six years. Tentative suggestions for a dance at the same venue were well received, and it may be possible to arrange it during March or April.

AN ANNOUNCEMENT

IT has been decided that SAILPLANE shall properly interest itself in scale models of sailplanes and any flying models of sailplanes. Accordingly, Mr. R. H. Warring, for some time Editor of the " Aeromodeller," has been invited to take charge of the aeromodelling side. Hir first article appears this month.

It is felt that a good deal can be learnt, both by aeromodellers and pilots of sailplanes, from each other's experience in flying and construction. Of course aeromodellers feel that they know all answers, but it is peculiar how a good many theories in sail flying do not appear to work in practice. Nevertheless it is felt that it is in the tradition of SAILPLANE to encourage aeromodelling of its own " genre." No doubt many enthusiastic boys and girls will move from aeromodelling to sailflying, and that is what we want.

Before the war Mr. Warring belonged to the Southdown Gliding Club and was in the R.A.F., being invalided out.

He hopes to renew his acquaintance with sailflying in the coming season. He has high hopes of research work in model sailplanes and sailplane practice.

THE "OTTFUR" HOOK

THE ONLY SAFE RELEASE

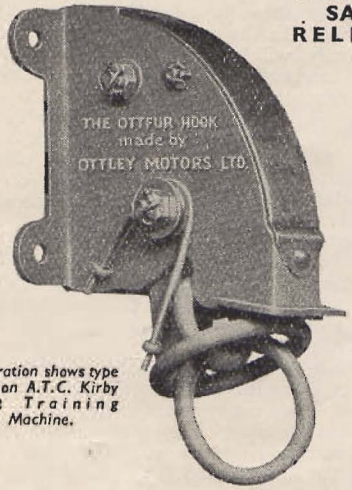


Illustration shows type used on A.T.C. Kirby Cadet Training Machine.

Designers and Manufacturers of Release Gear for all types of Sailplanes.

Also Release Gear for Glider and Tug for Aero Towing.

OTTLEY MOTORS LTD.

11 CRESCENT ROAD, LONDON, N.22

Tel.: BOWES PARK 4568



PERFORMANCE!
DEPENDABILITY!
SAFETY! . . .



SAILPLANES AND GLIDERS

SCHWEIZER AIRCRAFT CORPORATION
1 AIRPORT ROAD
ELMIRA, N. Y. - U.S.A.

TECHNICAIR LTD.

Sailplane Bureau.

Technical and Plans Service.

Chilton Olympia Agents.

— Trailers —

TECHNICAIR LTD.

—Aeronautical Engineers—

46 NORTH HYDE LANE,
HESTON, MIDDLESEX.

SOUTHALL **1870** ELGAR **5197**

MIDLAND GLIDING CLUB

Flying Notes

WILL-POWER

SUNDAY, 6th January. The first week-end since the liberation was not very propitious as regards the weather; nevertheless two members of the resistance movement climbed the Long Mynd to declare the Club open once again.

The clouds lifted from the top by three o'clock, leaving a light west wind and a view extending to Cader Idris, 40 miles to the west. Espin Hardwick was persuaded to make a test flight, and was given a somewhat weak bunjy-launch by the few present. He sank steadily as he flew down to the south end of the Mynd, and was only just level with the top there, although it is 150 feet below the launching point. Somehow he found a "thermal" and made a wide turn over the valley with Mr. Slater showing a steady 3 feet per second rise; but on the return beat of two miles he lost all he had gained. He disappeared between the launching point and the gulley; and the anxious launching crew motored over at high speed to watch the "fly on the wall" landing. However, Mrs. Jarrett attracted our attention and pointed to "Gracias" sitting quite safely about 200 yards north of the launching point. It is all done by will-power. Flying time for the day 5 minutes.

UP AS WELL AS DOWN

This masterly exhibition was watched by an officer late of the Airborne Forces; having been "dunked" in the sea in a glider off Sicily by somewhat premature releasing by the U.S. tug, and later taken prisoner at Arnhem after another ride in a glider, he was suitably impressed on seeing that it was possible to go up in a glider as well as down.

On the next four week-ends the Long Mynd was either windless or cloud-bound. However, a party went up on Sunday, 3rd February, and spent the day wondering whether a Fido installation might not be a sound investment.

PERFECT SOARING DAY

Sunday, 10th February. Wind west by north, 15 m.p.h. at first rising to 20 m.p.h. later. Str-Cu overcast at first, breaking somewhat, and ragged cumuliform clouds at 1,100 feet. A perfect soaring day; eleven pilots turned up with their wives, families and a sprinkling of A.T.C. cadets, and put in a total of eleven and a half hours' soaring.

James started the ball rolling with a 10 minute test flight in "Gracias"; Wingfield was launched next, and was very soon joined by James in the "Wolf." From then until dusk both machines were hard at it with the following results:—

Wingfield	2 hrs. 15 mins.
Jolly	1 hr. 55 ,,
James	1 ,, 20 ,,
Thwaite	1 ,, 35 ,,
Sheffield	1 ,, 15 ,,
Burnes	1 ,, 10 ,,
Ivan	35 mins.
Horrell	30 ,,
Hodgson	20 ,,
Neil	20 ,,
Hardwick	15 ,,
Total	11 hours 30 mins.

At first lift was surprisingly poor and patchy; maximum height was in the region of 4—500 feet only above the top. By about one o'clock, however, small cumulus streets began forming under the high overcast above the south end of the Mynd, which provided abundant lift to cloud base at 1,100 feet. A number of pilots reached cloud-base, and the day's greatest heights (1,200 feet) were attained by flying up into holes in the cloud. (At any rate, everyone denied doing any blind-flying.) Wingfield in "Gracias" reached Wentnor, just over a mile up wind.

WORTH WAITING FOR

This was a perfect day for the resumption of club flying—a wind of moderate strength, and smooth and reliable lift. Some pilots who had nor flown at all for the last six years—even in an aeroplane—were perfectly at home; the only examples of lack of practice being under- or overshooting on landing; and the power pilots were as bad as the rest. Which all goes to show that like tying a bow tie, once learnt you never forget. To those who have not yet flown again, the joy of a bunjy launch, or of feeling a sailplane respond to 10 feet per second lift are still as thrilling as ever, and have been well worth waiting for all these years.

THE "WOLF"

Another good result of the day was the enthusiasm with which all who had flown her spoke of our newly - acquired sailplane, the "Wolf." She had not previously been flown by us, and the impression from man-handling and rigging her had been that she was very heavy. There was no evidence of this in the air, either from her handling or performance; on one occasion the writer in "Gracias" observed the "Wolf" two or three hundred feet above him, and had quite a job to climb level. On hill lift she seemed to have a ceiling about a hundred feet below the "Kite," which would give her a sinking speed of about the same as a "Grunau" or a little better. Her controls were light and positive, and the ailerons were especially good. We look forward to getting some new Silver "C's" with her when there are more machines *and* more petrol.

SOME GEN

This sailplane was originally used for aerobatics in Cobhams' circus circa 1935—36, and we believe that she made her first soaring flights to-day. Can anyone fill in the details of her past history?

("Gracias," to the uninitiated, is a cream "Kirby Kite" which used to fly at a number of clubs before the war—Cambridge, Dunstable, Reigate, Camphill and Oxford, in addition to her home on the Long Mynd. Stored throughout the war in peculiar circumstances, she has emerged from hibernation in perfect order, like her owner.)

Note to intending visitors. In view of the petrol difficulty, parties only go to the Long Mynd when there is a fair chance of a soaring wind. We should like to welcome visitors, but to save wasting petrol we advise them to contact Shrewsbury 2536—Charles Wingfield—beforehand—and listen to the Airmet weather forecast.

GRACIAS.

Best Air Speeds

IT has often occurred to me that motor pilots as well as glider pilots tend far too soon to retire from the field of argument on best air speeds. With the acquisition of a certain handling proficiency in the air on some types of aircraft, many pilots begin to assume that they know all they need to know about air speeds and thus condemn themselves to remain complacently on the fringe of a most interesting study which is bound up with many aspects of their performance as pilots.

FOR WHAT OBJECT

Every thoughtful glider pilot must on many occasions have asked himself the question in the air whether the speed at which he had planned to fly was the best for the object he had in view. To quote just a few cases about which the pilot may wonder: he may wish to attain the greatest range for the height at which he finds himself or he may wish to remain airborne for as long as possible; on the other hand he may, as part of his flight-plan, hover in an up-current above a ridge in order to attain the greatest possible height. The number of practical problems we may set ourselves in relation to the caprices of the atmosphere, with some clearly defined object in view, such as height, range or endurance, is very large. But only some can be solved approximately by simple methods, while the solution of others in the absence of accurately computed data would soon lead even knowledgable pilots to an overwhelmingly measure of mental juggling. At this stage let me just hint at a possible difficulty: Consider the relationship between true air-speed, indicated air-speed, rate of descent and ground speed at some considerable height when, say, you head into wind and you experience slight climbing conditions—while your object is to find the indicated speed for maximum range. Quite evidently the problem is not a simple one.

GRAPHICALLY

Let us therefore start our considerations of air-speeds with a simple case, graphically illustrated in the accompanying figure. We shall for the time being eliminate a number of inconvenient variables by making the following assumptions:—

(1) Still air.

(2) Standard all up weight.

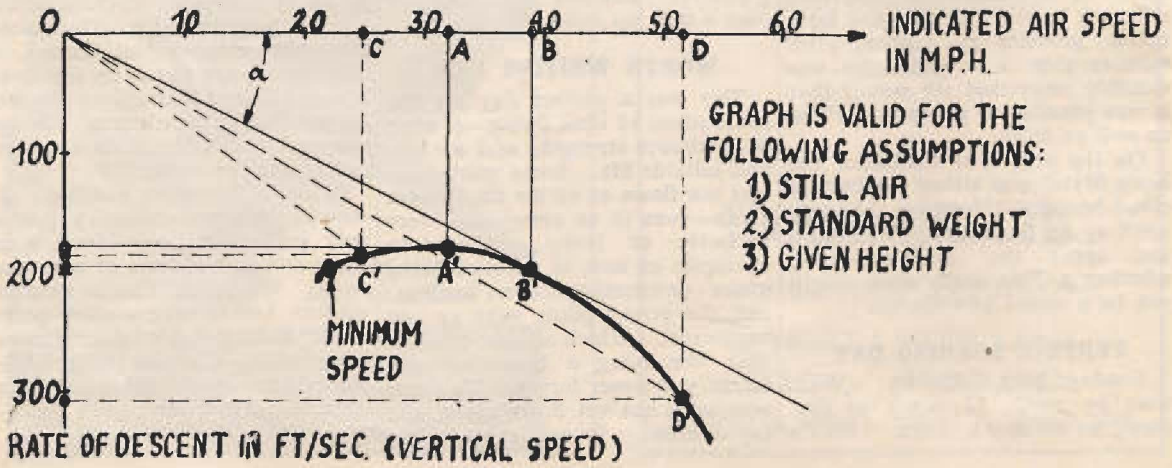
(3) The graph in the figure is to hold true for a height of 1,000 ft., say.

(4) At 1,000 ft. we shall assume that the A.S.I. reads true air-speed and that for a given IAS small variations in height have a negligible effect on true air-speed.

The graph represents the performance curve of the glider in still air under the stated conditions. From it we can read the rate of descent against various forward speeds. By inspection alone we can tell at once the best speed for endurance; it is at 'A', because at this speed the rate of descent is at the lowest value possible. In other words the vertical speed component is smallest at 'A'; hence given a certain height through which to descend it will take the longest time to do so if we fly at an indicated speed read off at point 'A'. It is interesting to note that the rate of descent, or vertical speed component, will increase by flying more slowly than at 'A' as well as by increasing speed. (The reason for this will be discussed in a later article.) There is no doubt then about finding the point on the graph for the best endurance speed.

MAXIMUM RATIO

Now let us examine the case of best speed for range in still air, given a certain height. The problem of maximum range stated simply is: to cover the greatest horizontal distance for the smallest loss in height—or expressed in other terms: to make the ratio of forward speed or vertical speed as great as possible. Again, look at the graph and consider the triangle OBB_1, in which OB is a measure of forward speed and BB_1 a measure of vertical speed or rate of descent. Now in order to make the ratio of forward speed or vertical speed a maximum, we should try and find some point on the curve which will satisfy our demand. Again by inspection it becomes evident that the desired condition is satisfied when the angle α (on the graph) is as small as possible; for the smaller it is, the greater will be the ratio forward speed or vertical speed. The angle



is smallest when it is formed between the horizontal speed scale and the tangent to the curve drawn through O, such as OB_1. Thus by dropping a perpendicular through B_1 on the speed scale to intersect it at B, we can read off the best speed for range at that point.

If you have difficulty with this explanation, take any other points on the curve such as C_1 or D_1 and test the cases separately and you will find there is no other point on the curve which, when joined to O, will give you a line making as small an angle with the horizontal speed scale as α is.

Now the way to proceed to find the best speeds for endurance and range respectively given the performance graph of the glider should be clear. It is particularly important to note in each case that

The speed for best range has a value higher than the speed for minimum rate of descent and the minimum rate of descent need not be the lowest speed at which the glider can fly.

Very often pilots are not aware of this, while sailplane designers do little to fight the ignorance of the users of their products. Every designer will have a set of computed data from which a graph similar to the one in the figure could be drawn for his type. You would therefore be well advised to ask for the relevant performance data and follow the simple procedure outlined above from which you could draw some simple and convincing conclusions on best air speeds, although sometimes qualifications to the theoretical answers will be necessary.

In later articles I shall endeavour to explain some of the snags and deal with the effects of

(*a*) height
(*b*) weight changes
(*c*) up and down currents
(*d*) head and tail winds
(*e*) deterioration of airframe

} on best air speeds

and hope to illustrate some points with a few actual performance graphs pertaining to well-known sailplane types.

F./Lt. A. MIRSKY.

London Gliding Club

FLYING continues with the Club "Tutor," Hiscox's "Gull," and the "Blue Gull," owned by Stephenson and Greig, all assisted into the air by Hatcher and Copeland's winch; but few members have been turning up so far, and they are often hard to pick out among the crowds of general public who swarm on to the ground.

On Sunday, January 13th, launches were made into a northerly wind until somebody undershot the "Tutor" into a hedge. It was repaired in the clubhouse within four days. The following week-end was too foggy for flying.

On Sunday, January 27th, a light south-westerly wind became just soarable for an hour or so in the afternoon. Before this Stephenson had tried out the "Blue Gull," but sank to the bottom. Ruffle was launched just after 2 p.m. and kept the "Tutor" up for 19 minutes. He was followed by Lauderdale, who qualified for his "C" certificate with a skilful flight of 11 minutes; the "Tutor" needed careful handling as the wind was only just soarable. This must be the first post-war civilian "C" certificate. Ellis then took up the "Tutor" on his first flight for six years, and soared without difficulty. After this the wind began to drop, and during the launch a final circuit by Greig the winch coughed and ran out of water. So we packed up, as it was getting dark; but not before a small Public School boy had examined the "Tutor" and (Slingsby will be pleased to hear) described it as *wizard*.

The Club is well represented in the New Year Honours List. The O.B.E. is awarded to Group Capt. G. M. Buxton, R.A.F., and H. C. Bergel, lately Cdr. and O.C. No. 9 Ferry Pool, A.T.A., and the M.B.E. to Fl.-Lt. J. R. Ashwell-Cooke, R.A.F.V.R. There is also a Squadron-Leader W. B. Murray, of the Southern Rhodesian A.F., but we are not sure of his identity. We also see that the O.B.E. goes to Wing Cdr. N. H. Sharpe, R.A.F.V.R., of the Yorkshire Club, and H. J. Penrose, Chief Test Pilot, Westland Aircraft, Ltd., of the Dorset Club. Congratulations all round.

The Newcastle Gliding Club Ltd.

Dances.—During the long period of waiting until the Ministry of Civil Aviation decide to notice our Movement and answer the matters with the B.G.A. placed before them many many months ago, we have had to branch out on the social side. The General Committee appointed an "Entertainments Committee," consisting of Ken Barras, Dick Patterson and Roy Ferguson, and authorised them to organize our first dance. This was held on December 18th, and was a financial and social success of the first magnitude. This committee has now been asked to organise another dance in the Heaton Assembly Rooms, Newcastle, on April 2nd, which we expect will be a crowning achievement and the forerunner of many more in the future.

City Headquarters.—Until premises are made available to us for permanent City Headquarters, we have taken a large room at 12, Eldon Square, Newcastle, which will be open to members every alternate Wednesday evening from February 20th. Opportunities will be available for new members to become acquainted, and courses of instruction lectures will be started. The Chief Instructor will deliver a general lecture on Gliding and Soaring to all members on Februaty 11th and again on February 25th.

Construction Activities.—John Allan has started work on the design and construction of a sailplane, of which we have not yet received technical details. Mr. C. Lutman has also commenced the construction of an "Olympia" sailplane.

Midland Gliding Club Amended Membership Fees

£9. 11s. 0d.—Flying Membership (Entrance Fee, £4. 4s. 0d.; Subscription, £5. 5s. 0d.; Share Certificate, 2/-).

£3. 3s. 0d.—Optional Insurance Fee, covering accidental loss or damage to any of the Club's Aircraft for one year.

£1. 11s. 6d.—Non-Flying Membership (Entrance Fee, 10s. 6d.; Subscription, £1. 1s. 0d.).

£6. 8s. 0d.—Country Membership (Entrance Fee, £2. 2s. 0d.; Subscription, £4. 4s. 0d.; Share Certificate, 2/-; for Members of other Clubs affiliated to the B.G.A. and residing more than 100 miles from the Long Mynd).

10s. 6d.—Junior Membership, for boys under 16 years.

Flying Fees have also been amended, and are as follows:—

4s. 0d.—Single-Seater Machines for the first 15 minutes, and 6d. for each subsequent five minutes.

5s. 0d.—Two-Seater Machines for the first 15 minutes, and 1/- for each subsequent five minutes.

THE D 30 "CIRRUS" HIGH PERFORMANCE SAILPLANE.

The following details of the D 30 have been obtained from the August 1944 number of "Luftwisen" (Aeronautics) and are placed for the consideration of modern designers as well as the ordinary glider pilot.

THE D 30 "Cirrus" was designed in 1933 by the aeronautical specialist group of the technical college of Darmstadt and constructed in its workshops between 1936-38. The aim of obtaining the best possible performance regardless of cost, was carried to the extreme. This was rewarded, however, as shortly after the machine was completed it set up a record goal-flight with return to base, flown by Bernard Fliusch, between Bremen and Lubeck, a total distance of 305 km. Although this machine has been only outstanding in performance in the past, it should not be forgotten, as there are many interesting technical details of which the following consists only a short summary :—

ADJUSTABLE DIHEDRAL

The 20 metre span cantilever-tapered wing has a very high aspect ratio, and is built in three sections —a 10 metre centre-section, and two, 5 metre, outer-sections whose dihedral angle is adjustable in flight. To the triple web dural box-spar (which takes bending and torsional loads, and whose top and bottom members form part of the wing skin) plywood "boxes" are rivetted fore and aft to complete the wing section. The complete trailing edge is hinged to form a camber changing flap on the centre section and also ailerons with adjustable differential control on the outer sections. The ailerons are also made to "droop" to assist low-flying qualities. Air brakes are fitted to the upper surfaces of the wings, operated by cables. The ailerons and flaps are operated by push rods, while the dihedral is adjusted by means of cables, pulleys and guide blocks.

FUSELAGE

The fuselage consists of a plywood nacelle of very small cross-section, and a tailboom which is of a thin elektron tube with transverse and longitudinal stiffenings. The nacelle has a removable plexiglass cockpit cover and a small straight skid, to which a pair of small wheels may be added.

The cantilever tail unit, with plywood-covered stabilizing surface and fabric covered control surfaces is "half balanced" (*i.e.* the stabilizing surfaces in the same sense as the control surfaces, but to a lesser degree). The controls are operated by cables.

FLIGHT CHARACTERISTICS

The following details of flight characteristics the sum of the impressions of fifteen pilots in order to give a fairly objective picture.

The general feeling was that the machine was easy to handle and fly, and its behaviour was harmless under all conditions. In towed flight the flexibility of the wings was evident and there was a tendency to yaw in bumpy air, which needed constant correction by the use of rudder and ailerons. With the dihedral and flap angles at 0°, the controls were fully effective. The power of the rudder

FLYING TESTS

Flight tests were carried out in those conditions in which a sailplane is usually found after several days' competion flying. It was neither highly polished, nor were all the joints sealed or filled.

Overall Measurements.

Span	20.10 Metres.
Overall length	6.87 ,,
Max. height	1.75 ,,
Total wing area	12.00 sq. metres.

Wing Measurements.

Aspect ratio	1 : 33.6
Plan form of wing	straight taper.
Dihedral	+ 8.5 to —4.4 (adjustable in flight).
Root chord	0.96 Metres.
Tip chord	0.24 ,,
Taper ratio	4 : 1
Incidence	= 2.5 (root profile, relative to fuselage axis).
Safety factor	8 (for normal flight (*i.e.* not inverted).

Fuselage Measurements.

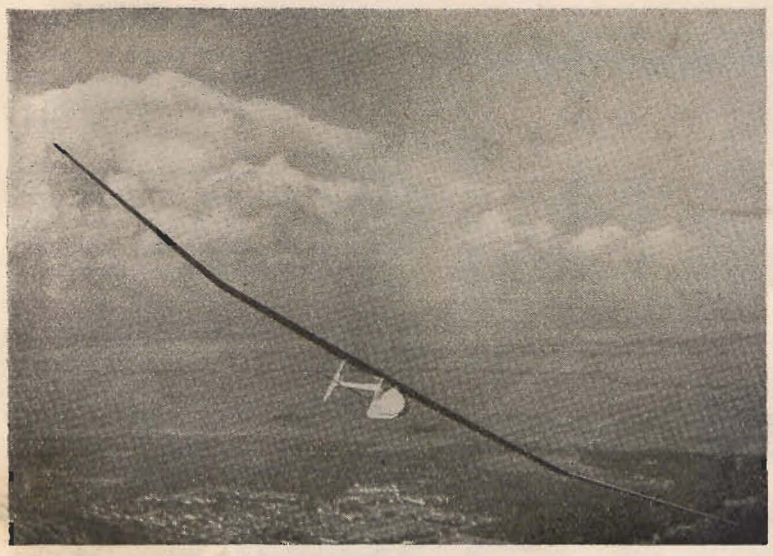
Max. cross-sectional area	0.36 sq. metres.
Max. width	0.57 metres.
Max. depth	0.70
Wetted surface area (nacelle and boom)	6.00 sq. metres.
Projected side area of nacelle	1.0 sq. metres.

Weights.

Empty weight	203 kgrms.
Designed flying weight	265 ,,
Actual flying weight	288 ,,
Weight for test flying	306 ,,

Performance Figures.

	Calculated for flying weight of 288 kg.	Tested at flying weight of 306 kg. and corrected for 2.88.
Best gliding angle	1.36	1.276
At speed of	78 km. p.h.	77 km. p.h.
Minimum sinking speed	0.58 metres per second	0.55 metres per second
At speed of	72 km. p.h.	72 km. p. h.



D.30 " Cirrus " at Darmstadt in high speed flight.

was correct, that of the ailerons somewhat too strong, but that of the elevator somewhat too weak.

The towed flight was easy and pleasant when the flaps were set at between five and ten degrees, this produced an improvement on the already good view (due to the fore and aft trim), reduced the slight yawing tendency, and by reducing the drag enabled the cable to be kept tight more easily.

It was not thought advisable to tow with positive or negative dihedral owing to the increased aileron movement required to overcome the rolling movement, placing too greater demands on the attention of the pilot.

USE OF FLAPS

The landing was simple, as the flaps enabled changes in the gliding angle over a large range to be obtained and the lateral control was maintained, even at slow speeds with the flaps right down.

The stall was basically affected by the twist in the wings, whereby the maximum incidence came at the middle of the semi-spar. The choice of such a " triangular " arrangement of the incidence arose from a desire for the best performance. The lift distribution of the sharply tapered wing thereby closely approximated to the elliptical, which gives the lowest induced drag, the disadvantage of this is that the behaviour of the machine at the stall is made worse, but, as with the D.30, when the stall is gentle in any case, this fact is unimportant, especially as such a high-performance sailplane would only be flown by experienced pilots.

DIHEDRAL AND LATERAL CONTROL

The effect of dihedral on lateral control was investigated at length

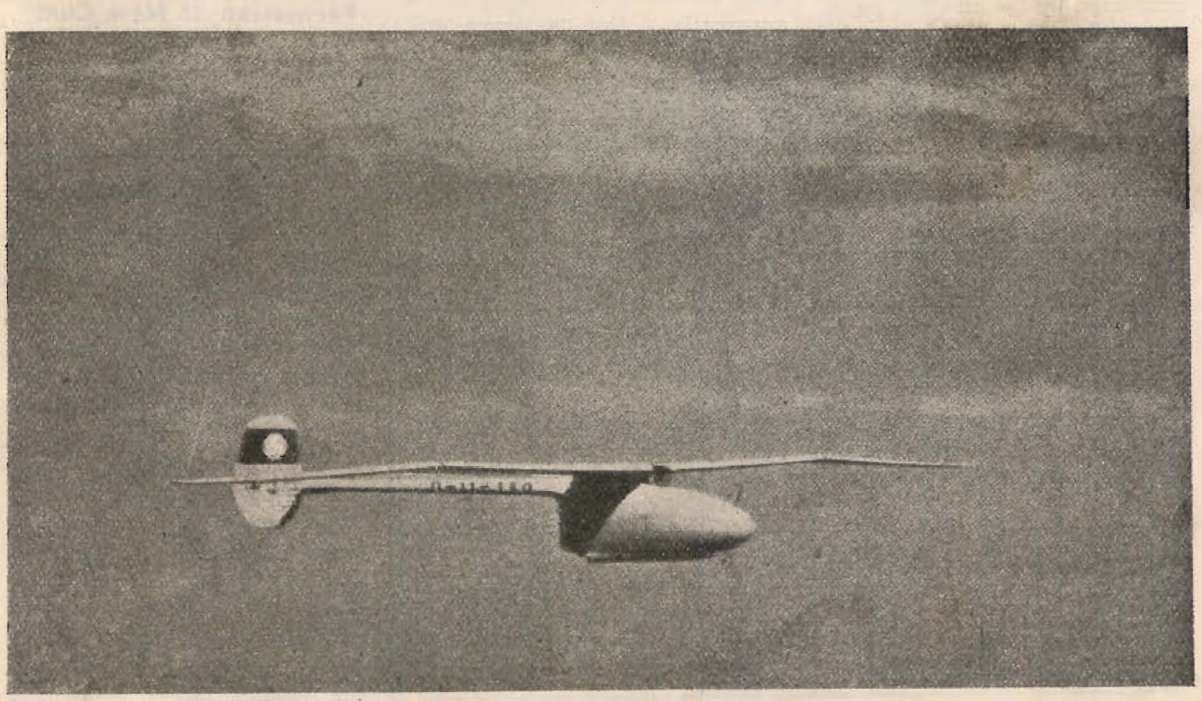


Fig. 1.—The D.30 " Cirrus " sailplane in slow flight with dihedral angle of – 4.4°.

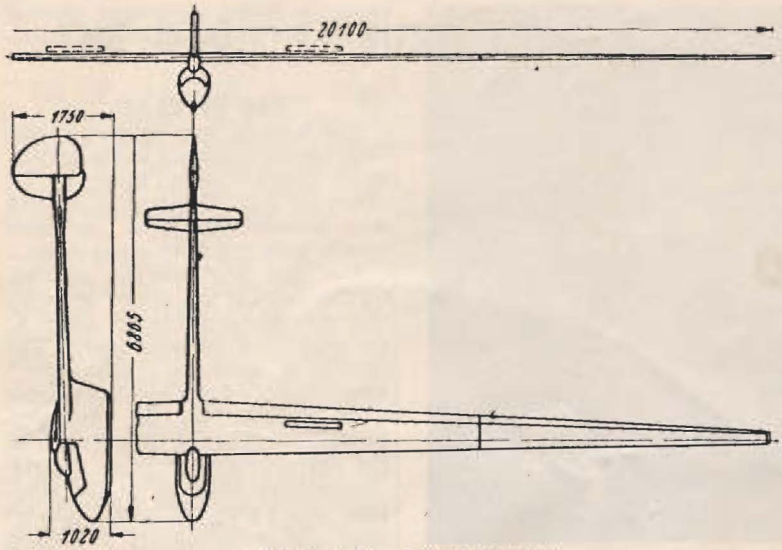


Fig. 2.—The D.30 "Cirrus."

and it was found that too large a positive or negative setting necessitated greater force to operate the ailerons when the aircraft was subjected to yawing and rolling movements, as in towed flight; spirals and side slips, thereby tiring the pilot. The actual aileron effectiveness in level flight was unaffected by the dihedral angle.

NOTE: *In the original German text, there appears a lengthy description of the tests carried out to determine the effectiveness of the controls, but this is not considered of sufficient interest to warrant translation at the moment, although this can be done if especially requested.*

CONCLUSION

The above description is interesting, if only to show what can be achieved when given the necessary advantages. Unfortunately the wing section is not stated, but is apparently a thin bi-convex one. The performance figures with different flap angles either have not been tested or for some reason were not included in the original report.

A. H. W. MACBEAN.

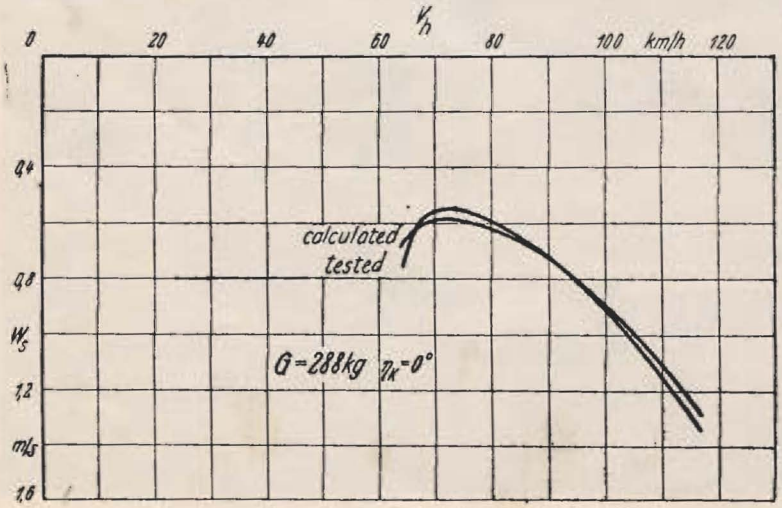


Fig. 4.—Graph of calculated and tested performances.

Liverpool Exhibition

Several thousand people interested in Gliding and light aeroplane flying attended an exhibition held at Messrs. W. Watsons & Co., Ltd., Liverpool, during one fortnight in January. Amongst various exhibits was a collection of SAILPLANE'S photographs of gliders and cloud effects, loaned for the exhibition, which proved of great interest.

OUR GUEST EDITOR

IN the next few months the Editorial page of SAILPLANE will be contributed in turn by a member of one of the British Clubs (duly selected by his or her committee). The views expressed will not be censored in any way, and if we are to judge by the first, which appears in this issue and is contributed by Mr. C. Espin Hardwick, of the Midland Club, they will be forthright challenging. Our overseas readers must forgive us if we appear parochial for a little while, but it will be for the good of all if these things are said now.

VERNON BLUNT

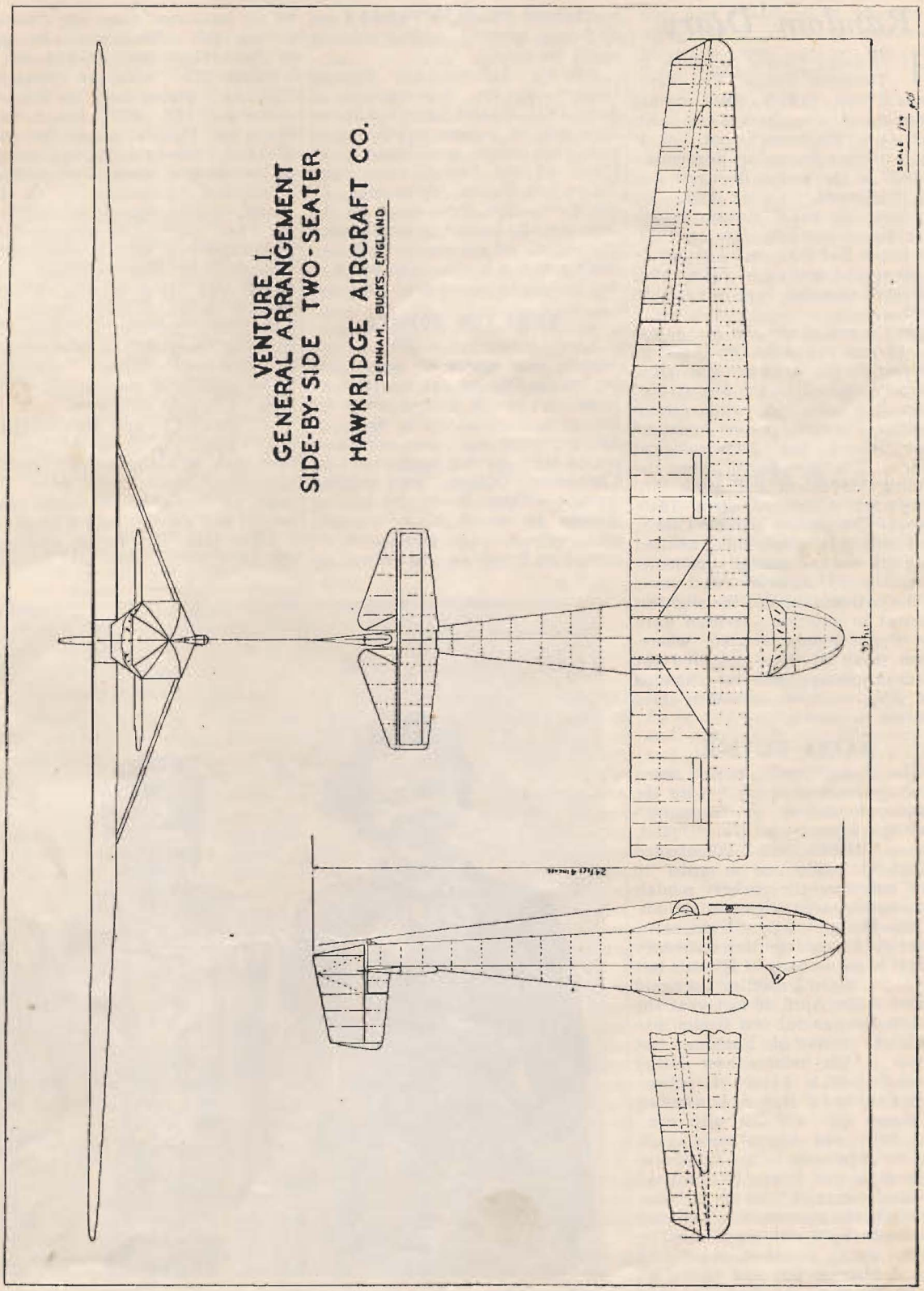
PRIMARY or NACELLED DAGLING required. Complete but not necessarily airworthy.—Reply to B. Thomas, 87, Fargate, Sheffield, 1.

Formation of New Club

A CLUB is in the process of being formed in the Richmond area, for the construction and flying of gliders and sailplanes, and low-powered aircraft. Will those interested please contact D. J. Roskilly, Esq., 2, Ruskin Avenue, Kew, Surrey.

SUBSCRIPTIONS

The circulation of *Sailplane and Glider* is limited by its paper quota. This is the reason for the reduction in size, and the thinner and therefore lighter paper. The publishers can dispose of far more copies than can be printed. To be sure of your copy, therefore, it is necessary to take out an Annual Subscription of 13/- post free for twelve numbers. Publication date is the 5th of the month which the issue is dated. Cheques, Money Orders, etc., payable to *Sailplane and Glider*, and crossed.


VENTURE I.
GENERAL ARRANGEMENT
SIDE-BY-SIDE TWO-SEATER
HAWKRIDGE AIRCRAFT CO.
DENHAM, BUCKS, ENGLAND

Random Diary

HOW many people recognise in Thurstan James, *The Aeroplane's* new Editor, the original founder of the SAILPLANE AND GLIDER? He brought out Vol. 1, No. 1, of this journal on September 6, 1930, at threepence (8 pages), and No. 2 followed it a week later. By the time Captain F. Entwistle took over the Editorship, late in 1931, the paper had become a fortnightly at sixpence; and under yet another Editor it changed to a monthly in 1933.

By the end of the war Mr. James had become one of the two Directors responsible for airframes (including military gliders) in the Ministry of Aircraft Production, while Group Captain Entwistle is now Assistant Director of the Meteorological Office. The third Editor, when the Gliding Movement had sunk into temporary abeyance after 1940, became Temporary Medical Officer at a mental hospital, being assured that this was the nearest substitute. It transpired, however, that none of the patients showed the slightest interest in aviation—at least until the flying bombs started, whereupon many of them acquired the habit of pressing their faces against the glass windows to watch these missiles approach.

HANNA REITSCH

The flying bombs might never have approached at all, but for the misplaced daring of Germany's leading woman sailplane pilot, Hanna Reitsch, who volunteered to travel inside one in order to find out why the earliest models persistently went wrong in the air.

Now Hanna is again in the news, this time for contributing to history a first-hand account of Hitler's last days in the Chancellery air-raid shelter. On April 26 last year she had to fly General von Greim into Berlin to receive his Fuehrer's last orders. She relates how Hitler handed her a phial of poison, saying softly: "Hanna, you belong to those who will die with me." But death was cheated once again, for on April 30 von Greim was ordered out of Berlin to "call all available aircraft" to its defence. To elude the surrounding Russians, Hanna took off with the General by night from a street near the Brandenburger Tor and circled up to 20,000 feet—no doubt assisted by thermal lift, as Berlin was a sea of flames beneath—before heading north for safety.

At the International Soaring Contest on the Wasserkuppe in July, 1937, Hanna Reitsch was one of a trio of women pilots taking part, the other two being Joan Price, of the British team, and Emmi von Roretz, of Austria. Of the three, Mrs. Price must be the only one who has not (so far) dabbled in Politics; all she wants of life (and can't get) is a house within reach of her husband's new job at Croydon.

EMMI VON RORETZ

Last November "Emmi von Roretz, now married," was stated by Baillie-Stewart, at his trial, to have been one of the references for his naturalisation as a German. Eleven years ago this attractive young lady, having been exiled by Chancellor Dollfuss for quitting Austria without leave, was touring Europe in search of enjoyment; and, with a "C" certificate acquired at Rossitten, she turned up to fly at more than one British gliding club. Some journalist put it about that she had ordered a "Falcon III" with the object of "gliding" across the Irish Sea.

On July 17, 1935, Emmi was flying at Dunstable on the day Alexander Korda's company turned up to shoot a scene for his film, "Conquest of the Air." A. G. Payne, of the Imperial College Gliding Club, completely disguised as Otto Lilienthal, took a deep breath through his false whiskers and beard and tried to get off the ground in a full-sized replica of Lilienthal's biplane. Then the crowd of "supers", likewise dressed in nineteenth-century costume, broke into loud twentiety-century cries of delight as Emmi took off in a "Prüfling" and demonstrated forty years' progress by sailing over their heads along the Downs. Lilienthal could have done the same, no doubt, but he would have needed half a gale: such is progress.

After this, Mr. Payne swapped affluence for security and became



Emmi von Roretz (left) and Hanna Reitsch at the International Contests, 1937.

the Cambridge Club's Ground Engineer. Emmi, after the war had started, sent greetings to all her English friends through an American intermediary. And the " Conquest of the Air " has been shown to the public, but never came my way. I hear that the Lilienthal sequence was completely cut out ; is this true ?

PHILIP WILLS

Gliding propagandists used to look forward to the day when every commercial air line would employ a soaring expert, the idea being that he would plan its routes so as to take advantage of the best up-current areas and save more fuel than its rivals. One wonders what would happen if Philip Wills tried this on with British European Airways, who have just appointed him Technical Manager. While wishing him all success, we must confess to being less interested in how well he does the job than in how often he can get away from it. That shipping business, which presumably he will now give up, used to be pretty tolerant ; though Wills would always make out he was on the point of getting the sack after any particularly long spell of good soaring weather.

GLIDERS AND GLIDERS

Because a sailplane and an aerial barge, or trailer, are both known as " gliders " to the general public, a member of a well-known gliding club was able to tell a gathering of local worthies that " Gliding had great commercial possibilities, apart from its attraction as a sport. . . A train of gliders could carry a much higher payload than a single aircraft using the same power." Well, if a steam tug with a train of barges can't carry a much higher payload than a single steamer of equal power, there will be no commercial possibilities in yachting —or will there ? However, here is a pretty problem in aerodynamics for readers. According to the local paper, the lecturer went on : " If an aircraft had six gliders in tow the power required for take-off was one-seventh of that of a single machine. Speed could be considerably reduced due to a much larger wing area, and thus an enormous saving in fuel, as the power required went up by the square of the speed." There is a catch in this somewhere : what is it ?

RAVENS GLIDING SCHOOL

Here is some gliding news from that excellent monthly paper, *British Birds*. H. A. Gilbert writes in the February issue : " While I was stationed in the barracks at Brecon during the war, it was noticed that the local Ravens had established a gliding school over Slwch Tump, about 600 yards to the north of the town. During every autumn whenever there was a south or south-west wind, numbers of Ravens attended daily to play about in the upward draught over the hill. Twenty and more were frequently seen in the air at once. The most seen together at one time was thirty-two on a November morning in 1944." This is just about double the maximum number of sailplanes ever seen in the air together at a British soaring site ; otherwise the description would fit a human gliding club pretty closely, so far. But Mr. Gilbert then adds : " It appears that courtship and mating of unpaired birds took place during this time." A.E.S.

Reviews

Books on Bird Flight

UNTIL a few months ago, the most recent English book on Bird-Flight was " The Flight of Birds," by C. Horton-Smith (Witherby, 1938, 7s. 6d.). The book gives a great deal of interesting information, and only suffers, like all previous Bird-Flight books, from being written by an ornithologist, not by an aerodynamicist. The author treats of both gliding and soaring in a single chapter, and seems to be clarifying his views on soaring in the course of writing his book ; in fact, the best part of this chapter is where he obviously uses the wording of Sir Gilbert Walker, whose assistance he acknowledges and who writes the foreword to the book. Similarly, he goes to elaborate pains to make the reader understand the difference between air-speed and ground-speed ; after which he spoils it all by saying that when one is calculating a bird's speed by flying alongside it in an aeroplane, one must make allowance for the speed of the wind !

Nevertheless, the book is well worth reading, and it gives a lot of information on anatomy, physiology and migration, of which most aeronautical people are unaware. Moreover, the author has done some original research.

SIMPLE AND GOOD

Now we have a new book, " Bird-Flight For Bird Lovers," by Jack Parham (Harborough Publishing Co., 7s. 6d.). It is written purposely in such simple language that almost anybody should be able to understand it, maybe even an ornithologist.

The first chapter compares James Rook, gliding down to his nest with a crop full of wireworms, with Elizabeth Ann, free-wheeling down a hill to the village on her bicycle, and with Jessica Brown, who is learning to fly, gliding in to the aerodrome from 1,000 feet. All three have to put on a final burst of power to reach their destinations.

STEPHEN SEAGULL

Chaper II introduces soaring, with Stephen Seagull sailing along a line of cliffs, and " fat Uncle Ernest " trying to walk down the " up " escalator at Piccadilly Tube Station and failing ever to reach the bottom.

In the third chapter we are introduced to Jim Morton and his spouse, off for a honeymoon trip by aeroplane. Unfortunately they fly in and out of a lot of thermals and, what with the alternate ups and downs, his beautiful bride is sick. At the same time a sailplane is being circled up in one of these thermals by its owner, whose identity is thinly disguised under the name of Philip Mills.

We go on to consider Bill Thrush, and a " Spitfire " pilot called Jones, both climbing at 45 dgerees,whereas Elizabeth Ann, trying to pedal her bicycle back up the hill, is unable to manage even a slope of 1 in 7, and has to dismount.

So we go on to consider landing technique and the aerodynamics of streamlining ; and finally the author gives us his own theory why a migrating bird, it is alleged, prefers a contrary wind when setting off over the Channel. He suggests it is because of the lift provided by a sea breeze, whereas with a following wind there would be a down-current over the coast and the bird is, therefore, discouraged from starting.

No other Bird-Flight book that I have seen comes anywhere near this in the clarity of its aerodynamics.

COMPREHENSIVE

Another comparatively recent book was on sale in Berlin when the reviewer was there last October. It is " Flug und Flieger im Pflanzen- und Tierreich," by Dr. Reinold Schmidt (Klasing & Co., RM. 4:60). This is a comprehensive book dealing with every living thing that flies, except man. It includes insects, plant seeds and micro-organisms, and classifies the last two according to the means by which their sinking speed is reduced —for instance, by smallness, by hairs, and by what corresponds to wings, autogiro blades, etc. He states that the artichoke fruit weighs 50 mg. and is supported by a parachute made of hairs 0.008 mm. thick, whose total length amounts to 40 metres.

The Zanonia seed, on which an early all-wing glider was modelled, has a gliding angle of only about 1 in 10, and the Bignonia, a similar one, sinks at 14 inches per second.

ANATOMICAL DIFFERENCES

The author gives some anatomical differences between soaring and non-soaring birds. For instance, in soaring birds the humerus, or upper arm bone, exceeds in length the distance from the shoulder to the hip joint, being almost twice as long in the albatross. On the other hand, the breast muscles of a soaring bird often do not exceed a tenth of the total body weight, whereas in non-soarers they may account for a quarter or a third of the total weight.

SOMETHING NEW

As in Horton-Smith's book, static soaring (that is, soaring in an up-current) only occupies a section of the Gliding chapter. But one form of lift is mentioned which is hardly ever used (knowingly) by sailplanes: that is when a body of air is so slowed up by friction that the following air has to climb up over it as over a hill.

The author also asserts that sea birds use the lift over the windward side of a wave, and that when they glide just to leeward of the crest, as they often do, they cannot be using slope lift. But he is wrong. A fully-grown wave travels at four-fifths the speed of the wind, so that the relative slope wind up the windward side is only one-fifth of the full wind speed. But to leeward of the crest the advancing wave is raising the comparatively stagnant air in the trough, and very good lift is produced which is at its strongest close to the water.

SHIP FOLLOWERS

It is stated that in the rear of a ship—a favourite soaring zone for sea birds—the up-current often reaches 2 metres per second, which is two or three times what is needed to keep up a sailplane. But how wide is the soaring area?

Many years ago Robert Kronfeld described an ingenious technique for dealing with a thermal which is too narrow to circle in. He said that he flies quickly round that part of the circle which lies outside the thermal, and then slows up on passing through the thermal itself.

SEEING IS BELIEVING

Dr. Schmidt alleges that a similar technique is used by birds. They glide fast, with swept-back wings, on the down-wind side of the circle, outside the thermal; then they turn and enter it, flying slowly up-wind with wings swept forward. I take leave to doubt this. Most people watch circling birds when the thermal is going away down-wind, and the effect of perspective is then to make the down-wind side of the circle appear to consist of a downward glide, and to make a dihedral angle look like swept-back wings; on the up-wind side of the circle, both effects are just the opposite. My experience, in watching birds, is that they deal with narrow thermals by tightening their circles.

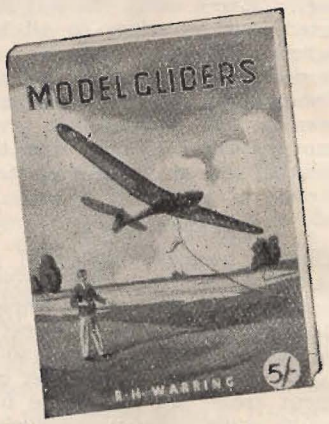
OLD CONTROVERSY

In the section on dynamic soaring, the author says falsely that a gust overtakes a bird who is gliding down-wind, and causes him to lose lift. But in considering the air forces on a flying object not attached to the ground, one must ignore the relative motion between ground and air, and a gust then becomes merely a convergence of air along a line parallel to the wind direction; it is then obvious that lift can be obtained from a gust by flying through it in either direction.

FLAPPING FLIGHT TO COME

The interesting information is given that the Arctic Tern soars dynamically by means of the wind velocity gradient, just as the albatross does.

The remaining half of the book is about flapping flight, and I have yet to tackle it! A.E.S.



The Book for MODEL enthusiasts

- The Book **MODEL GLIDERS** by **R. H. Warring,** offers a complete course in the theory and practice of designing, building and flying all types of glider models. Detailed drawings and full working instructions for the building of nine machines are given. There are chapters on elementary meteorology, the formation of up-currents, of soaring sites, etc. Over 120 illustrations of photographs and diagrams.

Size 10×7½ ins. 96 pages

5/-

or 5/4½ by post

Order from your local Bookseller or send direct to the Publishers

THE
HARBOROUGH
PUBLISHING CO. LTD.
Dept. S.G. Allen House, Newarke St.
LEICESTER

AUSTRALIAN GLIDING ASSOCIATION

VICTORIA

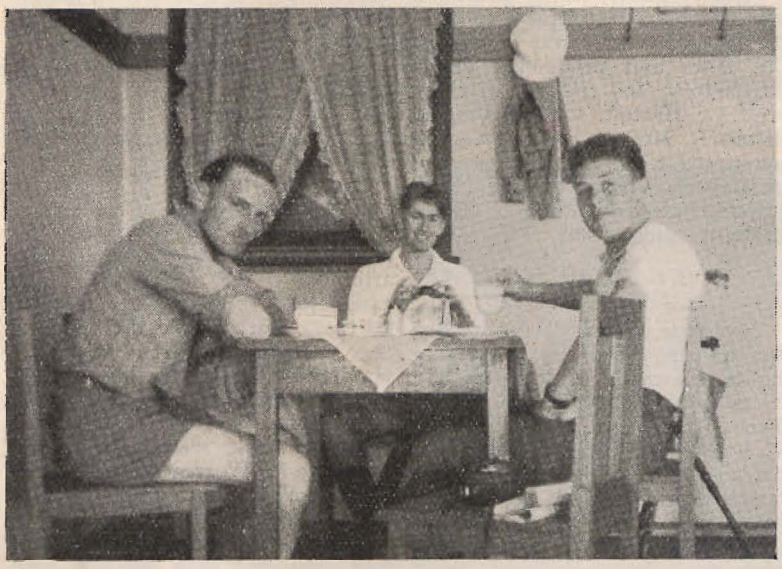
THE GLIDING CLUB OF VICTORIA

LAUNCHINGS in the month to Jan. 20th were as follows:—Winches, 273; car tow, 157; total, 430.

CHRISTMAS 1945 MEETING.—This camp was held at Geelong Aerodrome, known as the Belmont Common, 45 miles south-west of Melbourne, and commenced on 22/12/45. Most of the Club members arrived with the various vehicles and trailers at about 4 p.m. Flying was not commenced until 23/12/45 owing to delays in setting up tents and cooking arrangements, which included a hired cook. Generally speaking the weather was fine and hot and flying was carried out every day except 25/12/45, when the shade temperature reached 104 degrees Fah., and most of the members retired to the Barwon River or the Eastern Beach for swimming. The drome was in perfect condition for car towing, the north-south runways being nice and smooth and the feared west wind which occurred in other years did not eventuate. The camp concluded on 1/1/46, when most of the members returned to Melbourne with the trailers and winches, but Norm. Hyde's party with the Red "H.17" did not return until 2/1/46. Owing to the hot weather affecting the plywood the "Grunau" under construction at Fawkner could not be completed in time to go to the Walgrove Airstrip Camp in N.S.W., and this trip has been postponed to a later date.

During the camp there were 16 flights, each of 15 minutes or more duration in the Club's "Grunau Baby II" sailplane, and the relevant details of the outstanding flights are set out hereunder:—

24/12/45. K. Davies, 32 minutes—maximum altitude 1,200 feet.



Left to right: Ken Davis, first owner of H. 17; Reg. Pollard, another club pilot and Edward Smith who learned to fly at 14, although at ten years he had flown with us in the Primary to 1,000 feet, by clinging to our backs.

27/12/45. C. Lambeth, 20 minutes—launched to 1,000 feet—got to 3,000 feet. H. Bartram, 22 minutes, got to 2,000 feet.

28/12/45. R. Roberts, 56 minutes—launched to 1,000 feet—got to 3,200 feet. H. Bartram, 41 minutes—launch to 950 feet—got to 3,700 feet.

29/12/45. H. Bartram, 17½ minutes—got to 1,600 feet altitude. R. Roberts, 32 minutes—launched to 800 feet—got to 2,200 feet altitude. K. Davies, 15 minutes, launched to 950 feet—got to 1,600 feet altitude.

31/12/45. E. Ehrenberg, 53 minutes—launched to 1,000 feet—got to 3,000 feet. K. Davies, 30½ minutes—got to 2,000 feet. K. Hearn, 28 minutes—launched to 900 feet—got to 1,900 feet.

On 28/12/45, K. Chamberlin made a flight of 11¼ minutes in the "Utility Trainer, No. 1"—launched to 900 feet, he got to 1,350 feet altitude. On 2/1/46, R. Dowling made a flight of 8¼ minutes in the Red "H. 17".

The Grey "H.17" was damaged on 28/12/45. The pilot, C. Lambeth in an endeavour to get back to the starting point, attempted a circuit from a low altitude after the towline had broken, and the machine landed in a turning attitude, resulting in damage to the front of the fuselage and skid. The pilot was not injured and the machine has since been repaired. There was no other crashery at the meeting.

Keith Hearn and N. Hyde carried out dual instruction with the "Merlin," and a number of passengers were carried during the camp.

Retrieving of winch wires was done with tow car with both winch wires together on some of the days and car towing was found to be very satisfactory combined with retrieving of one winch wire on the way back to the starting point. The motor-cycles were much to the fore on communication and retrieving work. R. Duckworth's 500 cc. Velocette and Lionel Pitt's 500 cc. B.S.A. speedily brought the winch towlines back into position, and it was not uncommon to see three gliders in the air at once when conditions were good.

SOUTH AUSTRALIA

WAIKERIE GLIDING CLUB

The Club's Instructor, E. R. Barratt, reports in a letter dated 19/1/46: "No flying has been done during the past month, as efforts are being made to get the 2-seater "Pelican" flying as soon as possible. Good progress was being made up to the commencement of the stone fruit harvest about a fortnight ago, since when workshop activity has been suspended. Both wings are now almost ready for re-covering. Work on the primary has been suspended until the 2-seater is completed. During flying inactivity a tube was stolen from the Dodge retrieving car. At a meeting of the Committee of the Club held on 16/1/46, it was resolved to ask the Secretary of the

Australian Gliding Association as representing the major clubs in the Commonwealth, to further press our claim for renewal of the Gliding Subsidy."

WESTERN AUSTRALIA

PERTH GLIDING CLUB

A 4-day camp was held at the Guildford Airstrip, 14 miles from Perth. There were 10 flying members present, and 4 associate members attended each day from 26/12/45 to 29/12/45. The Club's 2-seater primary (40 feet span) was test-flown by H. A. Luckley. Arthur Farmer was expected to have his "Grunau" ready, but could not quite make it, although he spent some time at the camp and had one flight in the 2-seater. Ric. New had one flight, taking a club member as passenger, and on attaining a height of 100 feet the tow wire broke at the car end, and owing to his failure to release the line the machine made a heavy landing, resulting in a broken skid —cracked keel and strained drag and bracing wires. The test flights showed that the machine was nose heavy and that a tail skid was necessary, and after this was fitted and the tail weighted a number of circuits were made from about 700 feet altitude with pupils as passengers and landing back at the take-off point. The machine is to be modified and should be again flown about the end of January.

NEW SOUTH WALES

WALGROVE AIRSTRIP GLIDING MEETING

This meeting of Clubs affiliated with the N.S.W. Gliding Association commenced on 22/12/45 and concluded early in the New Year. Members camped under ardous conditions, the weather being very hot. Wives and families of some members braved the heat to give moral and food support to their husbands. Fox Movietone Newsreel cameramen were present on two of the flying days and took various films of the activities, including one of A.W.A. Gliding Club's primary piloted by Jack Munn, towed by the Nash tow car.

The following is a resume of the activities of the various Clubs :—

On 29/12/45, during a solo flight in the "Falcon," Jack Munn reached 1,450 feet altitude on the winch—lost height to 800 feet and then caught a thermal to 2,160 feet—lost height to 1,500 feet and again rose to 2,160 feet, but could not get above that level. The duration was 42 minutes. On 30/12/45, he was launched to 960 feet altitude and caught a thermal immediately after releasing the towline and rose to 1,000 feet during which time he had drifted a couple of miles from the strip. He then left the thermal and returned to the strip, where the Fox Movietone cameramen were waiting to take some film of the "Falcon" diving at the car on which the camera was mounted. Duration of the flight 16 minutes.

A.W.A. GLIDING CLUB

Primary glider, trailer and Nash tow car were at the strip for 5 days. The primary was test flown by Gil. Miles and pronounced highly satisfactory, and training of members, D. Hatton, C. Tamplin, E. Baker, L. McCann and K. Ogilvie commened. After 3 hours' ground training each (balancing on block) ground skids were started. Total, 12 flights and 5 skids.

SYDNEY TECHNICAL GLIDING CLUB

Two-seater primary (with wheels) was at the Strip for 4 days—8 flights were made, total 15 minutes. Pilots were J. Watt, P. Neary, S. Owens, J. Dolohan, B. McKay, and N. Fortune—the last three under instruction. The machine was damaged when it ran into a wire fence.

The "Kite II" sailplane was flown on 3 days—18 flights, total 2 hours. Pilots were J. Watt, P. Neary and S. Owens. P. Neary made a flight of 35 minutes to 2,400 feet altitude. On 25/12/45 the temperature in the cockpit reached 115 degrees Fah.

MERCURY SOARING CLUB

Ken Kirkness made 7 flights in the water glider "Miss Mercury," fitted with wheels. Three flights were with Club members as passengers—J. Burness, R. Williams and F. Hudson—average height reached was about 50 feet. The towline broke on the last flight and a heavy mush landing damaged the undercarriage. The machine was found to be tail heavy but controllable with nose ballast.

PHOENIX GLIDING CLUB

The Club's "Utility" was at the Strip but details of flights made are not available. This machine was test flown on 16/12/45—J. Watt had 2 high straight flights and J. Edwards had 2 hops. The flying speed of this machine is reported to be in the region of 40 miles per hour.

CROSS COUNTRY GLIDING

Sydney Soaring Club's Record-Breaking Tour with Slingsby "Gull."

This tour was undertaken by Dr. G. A. M. Heydon, Len Schultz, Martin Warner, Harry Ryan and Mervyn Waghorn, members of the Sydney Soaring Club, with the express intention of setting gliding records and in this way to gain publicity for gliding in general.

The road division of the party consisting of L. Schultz, wife and son, M. Warner and H. Ryan, in L. Schultz's Pontiac (towing "Gull" in trailer), left Sydney on Friday evening, 21/12/45. M. Waghorn and Dr. Heydon left in the latter's "Tiger Moth" on 22/12/45. All arrived at Parkes Aerodrome late afternoon on 22/12/45, and assembled the sailplane. On 23/12/45, with L. Schultz piloting the "Moth" (fitted with De Haviland tailskid towing attachment) practice flights (aero tows) were made. After 5 flights M. Waghorn took over the "Moth" and gave M. Warner a tow in order to get used to piloting the "Moth" on aero tows.

Length of tow rope used was 300 feet compared with 500 feet used on previous occasions.

The recording barograph failed to work on account of the dryness and heat rendering it unserviceable.

By the time Dubbo was reached the trailer had had a bad blow out, ruining a tyre and tube and later a sharp stone pierced a second-rate tyre on the car, and with tyres in this condition the party had to decide against going further north for another long-distance flight.

Shortly after leaving Bathurst on 6/1/46, Len Schultz's car was hit by a truck and badly damaged, but fortunately no one was hurt and the party were able to drive it home under its own power.

A full account of the tour, with maps, photos, charts, will appear in next month's issue of SAILPLANE.

Aero-Modelling Section.
Edited by R. H. Warring.

MODEL GLIDERS AND SAILPLANES

THERE are two distinct approaches to the design of glider models, which accounts for the widely differing types to be seen. The most popular type are relatively small, with light wing loadings launched by any of the various towline methods in common use. They can and do, achieve amazing flight durations with the aid of thermals. The highly-developed contest models of this type are, in fact, designed for thermal flying as opposed to wind soaring.

The other type of model has a more limited following and appeals mainly to the older enthusiast with an eye on beauty of flight and full-size appearance. Such models range from about 6 ft. wing span upwards and have a much heavier wing loading than their smaller contemporaries. Structurally the types are quite distinct. The larger models are built more on the lines of a full-size sailplane, using birch and spruce instead of balsa for stressed members and being covered in silk instead of tissue.

BETTER PERFORMANCE

For the normal type of model glider contest as run to-day the smaller models appear to have the better performance. But for pleasure flying and, in particular, slope soaring, the large, heavily loaded model is in a class of its own.

For contest work the best type of model appears to be one of around 5 ft. wing span, with a wing loading of 5 ounces per square foot, or slightly more. (Modern practice is now to produce contest models with variable wing loadings to suit different weather conditions, but more of this in a future article.) The younger element of aero-modelling enthusiasts prefer the ultra-lightweight type of model of around 150—200 square inches wing area and a loading of as low as 2 ounces per square foot. Provided that such a job is strong enough to stand the strains of a winch or running launch, high flight times and every possibility of thermal flights becomes commonplace due to the low sinking speed of such models. But the general trend is now towards International type models to F.A.I. specifications (see below), and it is anticipated that eventually the " open " type of glider contest will be abandoned in favour of those subject to International rules.

GLIDER MODEL COMPETITION

The 1946 Competition Programme includes four National competitions for glider models—two for models to F.A.I. specifications and the remainder open to all types (provided they comply with the recognised fuselage formula). Two of these contests are to be flown as semi-centralised events in areas, the others being decentralised and flown off on the same date at various club grounds throughout the country. No dates for these competitions are yet available, but we hope to give more details in next month's issue.



High performance model glider designed and built by W. A. Dean.

F.A.I. Regulations for Contest and Record Glider Models

THE size of the model must be between 70 centimetres (27.56 inches) and 3 metres 50 centimetres (137.789 inches). The fuselage must have a minimum value of (length/200) cross sectional area at its greatest section. Also a minimum wing loading of 4.92 ounces per square foot (15 grammes per square decimetre) is called for. The area of the horizontal stabilizing surfaces must not exceed 33 per cent. of the main wing area, otherwise these surfaces will be considered as supporting surfaces and their *total* area will be added to that of the main wings in computing wing loading.

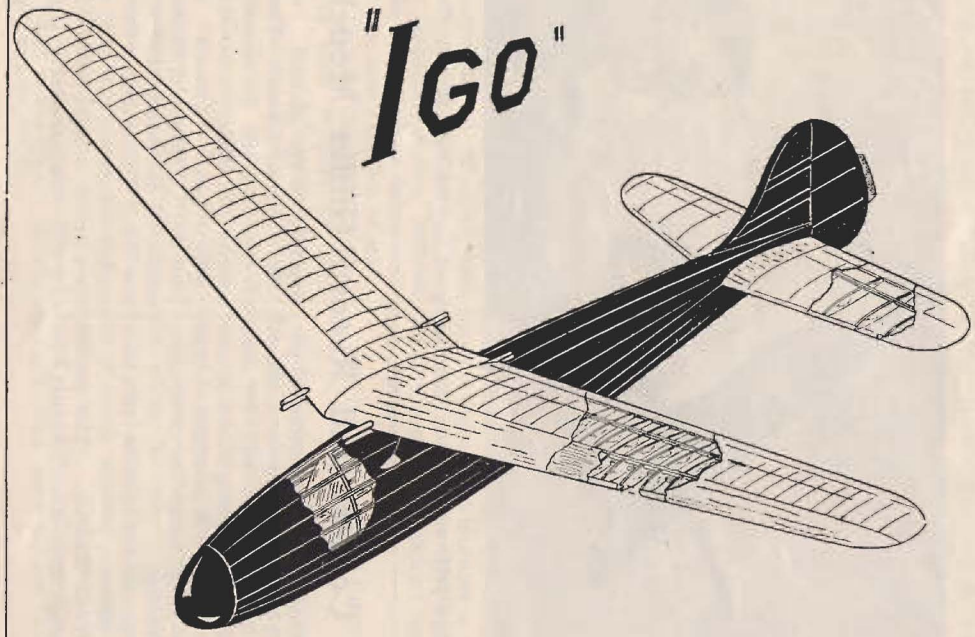
Recognised methods of launching are as follows :—

(i) *Hand Launch.* The person launching the model must be standing on the ground.

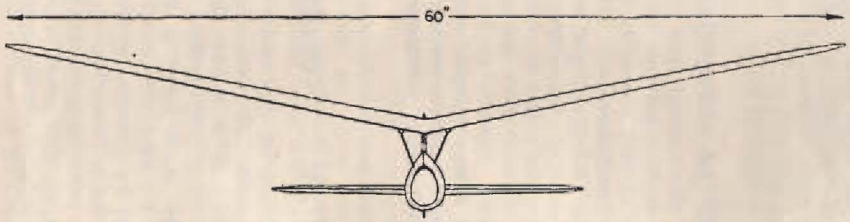
(ii) *Catapult Launch.* The length of the catapult is limited to 3 metres (118 inches) unstretched.

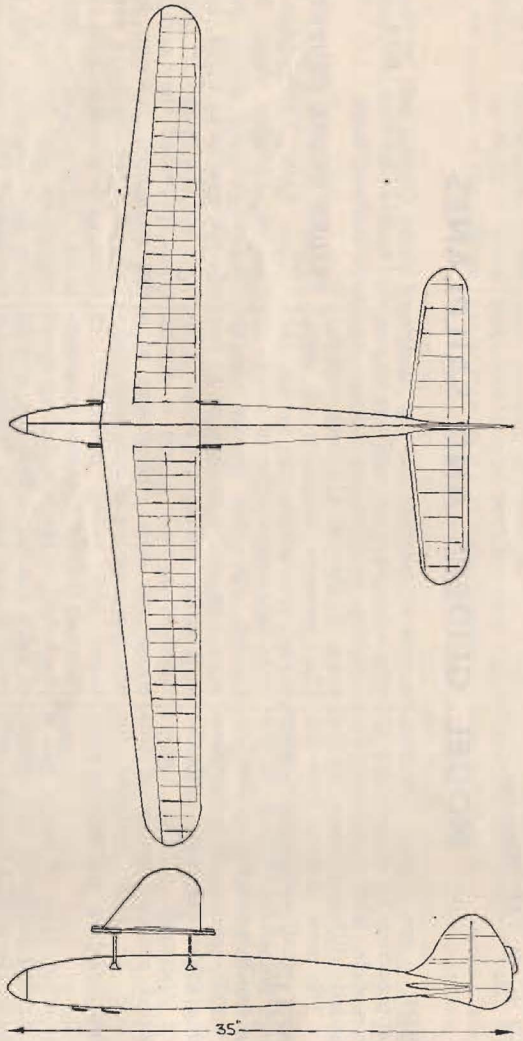
(iii) *Cable Launch* (Winch Launch). The model launched by means of an inextensible cable of tow line. The length of line not to exceed 200 metres (655 feet) and the operator to remain within a circle of 1 metre radius during launching.

(*Continued on page* **21**)



CONTEST GLIDER DESIGN BY G.W.W. HARRIS





F.A.I. REGULATIONS FOR CONTEST & RECORD GLIDER MODELS.—*Continued from page* 19.

(iv) *Running Launch.* The length of inextensible line not to exceed 100 metres (328 feet) and the person launching the model not to run a distance of more than 75 metres (246 feet).

Model Glider Records

World's Records. Being those records recognised by the Federation Aeronautique Internationale and published in their last list of model aircraft records, dated Jan. 1st, 1940.

Duration of flight. Russia.

Evgueni Solodovnikov. Time, 1 hour 43 mins. 20 secs.

Established at Moscow, 15th July, 1939.

Distance in a straight line. Russia.

Mikhail Chibirkine. Distance, 64.248 metres.

From the flying field of the Oufa Aero Club to Tcherkassy.

Altitude record. No claim.

United States Records.

Classes as follows: Class B, wing area 100–150 sq. ins. Class C, wing area 151–200 sq. ins. Class D, wing area 201–300 sq. ins. Class E, over 300 sq. ins. Minimum wing loading of 1½ ounces per 50 sq. ins. wing area.

Categories: Junior, up to 18 years of age: Senior, 18–21 years of age. Open, above 21 years of age.

Hand Launched, Class B.

Junior: Warren Fletcher. 3 mins. 49.8 secs.

Senior: Leonard Kendy. 8 mins. 52.8 sces.

Open: Howard Beitchman. 5 mins. 41 secs.

Hand Launched, Class C.

Junior: Walter Merrill. 1 min. 13.6 secs.

Senior: Robert Horak. 2 mins. 50 secs.

Open: Dick Everett. 2 mins. 58.6 secs.

Hand Launched, Class D.

Junior: Warren Fletcher. 43.2 secs.

Senior: Robert Horak. 7 mins. 1.4 secs.

Open: Hank Thomas. 46.4 secs.

Tow-launched, Class C.

Junior: Warren Fletcher. 4 mins. 24.6 secs.

Senior: Bob Smith. 4 mins. 9.2 secs.

Open: Dick Bodle. 6 mins. 6 secs.

Tow-launched, Class D.

Junior: Bob Smith. 5 mins. 16.6 secs.

Senior: Robert Horak. 8 mins. 0 secs.

Open: A. J. Schaefer. 11 mins. 53.4 secs.

Tow-launched, Class E.

Junior: Warren Fletcher. 3 mins. 26.8 secs.

Senior: Alan Hein. 9 mins. 52 secs.

Open: George Brown. 1 min. 47.7 secs.

Note: This American list was first published in May, 1945, shortly after the introduction of new ruling. It is probable that a considerable number of these records have since been broken.

British Records.

Models conforming to F.A.I. ruling, with records for classes and types of launch as per table under.

	Class A Span, 70–150 cms. (27½"–60")*	Class B Span, 150–250 cms. (60"–100")*	Class C Span, 256–350 cms. (100"–130")*
Hand Launched	R. F. L. Gosling 5 mins. 35.8 secs.	R. F. L. Gosling 5 mins. 58 secs.	——
Running Launch (Tow Line)	D. A. Scrivener 42 mins. 3 secs.	R. Minney 43 mins. 3 secs.	——
Winch Launch (Tow Line)	——	——	——

* Approximately.

Outstanding Models

No. 1. "IGO" designed and built by G. W. W. Harris, of the Croydon and District M.F.C.

The "IGO" is an F.A.I. contest glider with a very fine performance. Flown by G. W. W. Harris in numerous competitions, it has never actually won a National Competition, but is best known for the fact that it has two outstanding distance flights to its credit. No British distance records are yet recognised (although a proposal to this effect is being considered by the Society of Model Aeronautical Engineers), but the figures make an interesting comparison with the World's Record listed below.

Longest flight has been from Epsom Downs to Melbury Abbas, near Shaftesbury, a distance of 88 miles in a straight line. Also another flight of 40 miles from Epsom to Ford Aerodrome (Sussex). During the 1944 competition season "IGO" gained second place in both the Weston and Pilcher Cup events, third place in the S.M.A.E. Cup, and fifth place in the Thurston.

Full size working drawings of this model are available at 3/- through the Aeromodeller Plans Service, Allen House, Newarke Street, Leicester.

LETTERS TO THE EDITOR

Pembroke College,
Cambridge,
1/2/46.

DEAR SIR,

The Cambridge University Gliding Club has managed, despite certain difficulties, to start its gliding activities again. We have, at present, two high efficiency sailplanes, a " Cambridge " and a " Rhönadler," and two " Kirby Cadets " for training purposes. We hope that in the near future we shall have an intermediate trainer and possibly a two-seater.

Our gliding site is Marshall's Aerodrome at Cambridge. I trust that other clubs have been as successful as we have, and have such an able instructor as Mr. J. W. S. Pringle. To him, together with the other pre-war members of the Club, must go our thanks for the return of Gliding to Cambridge University.

Yours sincerely,
F. JAMES CRIPWELL, *Hon. Sec.*
Cambridge University Gliding Club.

Glider Pilot Regt.,
R.A.F., Mauripur,
Karachi, Sind., S.E.A.A.F.
21/1/46.

DEAR SIR,

First I wish to congratulate you on the all-round excellence of your Magazine, which is sent out to me, and naturally I was very interested in the article which was headed " Aero Tow by an Auster."

But I found it incomplete and I wondered if perhaps at a later date a further article could be printed.

The queries I had in mind were :—

1. How the glider behaved as it started to move, because the " Hadrian " has such a marked tendency to lift its tail, the stick has to be held right back till moving well, while this was not noticed in the " Hotspur."

2. The length of rope certainly seemed excessive, and what was it nylon or hemp, and what type of release was used (*i.e.* Lobelle type) and position of attachment on the nose ?

3. The height of 10 feet does it tend to push the " Auster's " prop in on take off, as the account has little clearance on the type we have flown certainly had not.

4. Would it be possible later to issue silhouette showing high and low maximums on tow ? And ouch, how I envy the German occupation troops their clubs. Still, I shall have a chance I hope when I get home, as I live in N. London.

I can't help feeling I shall probably be at a worse position than if I had just started by only having done towed take offs and no gliding with the big 'uns. Still, why worry, time will tell.

Please keep on giving us such good value and bags of uplift for '46.

Yours sincerely,
JOHN W. POLLARD,
S/Sgt. 7945827.

" Meadowside,"
Freuchie, Fifeshire,
Scotland.

SIR,

I would like to say how much the view of Capt. R. E. Pears as printed in the January issue seem to agree with what might be called the scientific method.

Too often the fanatical protagonists of the open primary and " solo from the start " seem to forget that with " dual " over the soaring sight controlling and soaring are integrated from the outset. It can be left to an unbiased mind the relative importance of :—

1. Early integration of flying control with that of soaring.

2. Early insistence of solo flying not yet associated with soaring.

I suggest humbly and fervently that (1) is more in accord with both scientific method and the production of the many more pupils now seeking instruction.

Yours etc.,
JOHN G. MATHIESON.

" This is Airmet "

BROADCASTS by Radio Telephony of aviation weather reports and forecasts and of navigational warnings, which were issued from the Air Ministry Meteorological Radio Station at Borough Hill before the war, were resumed on January 7th. They are now issued by the Air Ministry Central Forecasting Station at Dunstable. The navigational warnings are on the authority of the Ministry of Civil Aviation. The messages are announced by the words " This is Airmet."

The broadcasts will begin daily, Sundays included, at 07.00 hrs. G.M.T. in Winter and 06.00 hrs. G.M.T. in Summer on a frequency of 245 KC/S (wavelength 1,224 metres). They will end at 18.00 hrs. G.M.T. in Winter and at 21.00 hrs. G.M.T. in Summer. A summary of the hourly broadcasts is given below :—

First 10 minutes of every hour	..	Navigational warnings, which provide urgent information affecting the safety of the flight of aircraft in the United Kingdom (*e.g.* unserviceability of aerodromes, air light beacons and radio facilities).
10 minutes past the hour	..	Weather messages. Indicating broadly the generally meteorological situation over the British Isles and neighbouring Continent.
20 minutes past the hour	..	Detailed weather situation and changes expected in the immediate future.
30 minutes past the hour	..	Statement on latest reports, including sea-level pressure, amounts and heights of low clouds, and visability at 40 odd selected aerodromes.
40 minutes past the hour	..	Detailed weather situation again, with any changes expected, or that have taken place since the last message.
50 minutes past the hour	..	Supplementary reports to last fifty-minutes' broadcasting.

Slingsby Sailplanes

DUE entirely to the post-war demand for sailplanes and gliders, the parent firm—Messrs. Slingsby Sailplane Ltd., Kirbymoorside, Yorks—is already working to maximum capacity.

To meet future requirements and to permit quantity production at the most economic retail price, a very satisfactory arrangement has been concluded with an associate company—Messrs. Martin Hearn Ltd., Hooton Park, Little Sutton, Wirral, Cheshire.

This company has a fine record in all branches of aviation extending over many years. An established factory, now made available by the completion of certain Ministry contracts, is being laid out for the production of all Slingsby models to meet the civil, home and export market. Modern plant and layout will be employed and craftsmen of the highest order are available to go into immediate production. The closest contact will be maintained with the parent company, and Mr. F. N. Slingsby will continue personally to be

responsible for production and development of all prototypes. The machines produced at Martin Hearn Ltd., will embody all the foregoing improvements and will be to the highest possible standard.

A distributing organisation has been set up, incorporating Sales, Service and Repair, and future owners and users of the world-famous Slingsby Sailplanes and Gliders will enjoy the benefit of having an Area or Local Agent.

Stocks of replacement parts and spares will be available in each district, and the total requirements of all clubs and private owners will thus be adequately provided for.

RANGE

Kirby Cadet. — This model becomes the Primary Trainer in the range, but embodies all the foregoing improvements. The cockpit has been improved, giving much better seating and vision. All fittings have been modified and bearing areas are increased, reducing wear and necessary maintenance.

Accepted by the A.T.C. as a most satisfactory type of Primary, this machine has been the subject of much development and will meet all club requirements in this class. **Price £245.**

Kirby Tutor.—Designed as an intermediate sailplane to fill the gap between the Primary Trainer and the high-performance Sailplane.

The fuselage is basically the same as in the Cadet, but a taper wing is incorporated, giving a span of 43 feet 6 inches. The machine has excellent soaring qualities and will fill a very important role in club flying.

Can be fitted at an extra charge with a standard instrument panel embodying A.S.I. Altimeter and Variometer. **Price £260.**

Kirby Kite Mk. II.—The Kite Mk. II is designed to provide clubs and private owners with a low price Sailplane of good performance at low maintenance cost. The machine low maintenance cost. The machine is a strutted type giving simplicity of construction with the maximum interchangeability of replacement parts and spares.

It is generally agreed that a strutted type is more suitable for the heavy duties of club flying, but the Kite Mk. II has a performance far superior to that of most pre-war cantilever types of 50 feet span.

Special attention has been given to handling characteristics. All controls are responsive and of equal sensitivity, and mechanical stiffness has been reduced to a minimum.

The cockpit has been completely re-designed, is roomy and comfortable, and either open or cabin versions are available. Flying characteristics, stability and penetration are of the highest possible order, and there is no doubt that this is one of the leading machines of its class in the world. Instrument panel, including A.S.I. Altimeter and Variometer, is standard equipment. **Provisional price, £345.**

Kirby Kite Mk. III.—Employing basically the same fuselage as in the Mk. II, a full cantilever wing is incorporated. The design is remarkably clean and its lines can be considered aerodynamically perfect.

This model offers the maximum performance obtainable in its class and size and will undoubtedly take its rightful place in competitions, soaring and cross-country flying. In addition to the instruments as fitted to the Mk. II, blind flying instruments can be fitted at an extra charge. **Provisional price, £385.**

Tandem Two Seater.—Designed for both instruction and pleasure, has been accepted as most satisfactory for either purpose.

Replaces the pre-war Falcon III, and is the civil version of a very satisfactory service type eminently suitable for air-tow and cross-country flying.

A side-by-side seating version will be available at a later date.

Special Models.—Models to special specification, constructed to meet any requirements, subject to individual quotation.

Do You Wish to Join a Club?

Club or Organisation.	*Secretary.*	*Address.*
British Gliding Association	E. H. Spence (Acting)	119, Piccadilly, London, W.1.

1939 B.G.A. CLUBS STILL IN EXISTENCE

IN ADDITION TO THOSE ADVERTISING IN THIS ISSUE.

Cambridge University Gliding Club	F. J. Cripwell	Pembroke College, Cambridge.
Channel Gliding Club	F. G. Whitnall	16, Cheriton High Street, Folkestone.
Dorset Gliding Club	L. A. Lansdown	The Portman Arms Hotel, East Chinnock, Yeovil, Somerset.
Furness Gliding Club	J. C. Redshaw	12, Rusland Avenue, Barrow-in-Furness.
London Gliding Club	A. Sweet	6, Roland Gardens, S.W.7.
Norfolk & Norwich Gliding Club	A. A. Rice	5, Opie Street, Norwich.
Oxford University Gliding Club	Miss B. M. Nicklin	532, Banbury Road, Oxford.
Scottish Gliding Union	R. B. Rogerson	59, Carmyle Avenue, Glasgow, E.2.

OTHER 1939 CLUBS STILL IN EXISTENCE

Bristol Gliding Club	M. R. Chantrill	Hambrook House, Hambrook, Bristol.
Croydon Gliding Club	L. Martin	74, Lewin Road, S.W.16.
Hull Gliding Club	W. E. Walker	198, Alliance Ave., Newington, Hull.
Northern Gliding Club (formerly Rochdale)	F. Haworth	30, Feruhill Drive, Stacksteads, Bacup, Lancs.
Portsmouth & South Hants Gliding Club	K. Fripp	The Barnhouse, Broadwork Road, Rustington, Sussex.
Standard Telephones & Cables Gliding Club	A. Evison	Standard Telephones & Cables Athletic Club, Gliding Section, North Woolwich, E.16.
Ulster Gliding Club	J. Mackie	James Mackie & Sons, Ltd., Belfast.

CLUBS FORMED SINCE 1939

Aerotech Flying Club No. 1	W. A. O'Higgins	17, Brentvale Ave., Southall, Middx.
M.V. Barton Gliding Club	H. Rhodes	Metropolitan-Vickers Ltd., Barton Dock Road, Eccles, Lancs.

DISBANDED OR IN ABEYANCE

Beacon Hill, Cornwall, Cotswold, East Grinstead, Tees-side.

NO REPLY, OR LETTERS RETURNED

Alsager and District, Devon, Dorset, Dumbartonshire, Essex, Imperial College, Inverness, Swansea.

SERVICE CLUBS FORMED IN 1945

B.A.F.O. Gliding and Sailplane Club.
84 Group Gliding Club.
Air Division Gliding Club.
2 Group Gliding Club.
R.A.F. Halton Gliding Club.

January 1946.

THE YORKSHIRE GLIDING CLUB. SUTTON BANK, YORKSHIRE.

Full Flying facilities are offered to all *Soaring and Power Pilots.*

JOIN NOW and know Gliding at its BEST at Sutton Bank, Yorkshire.

For full particulars apply to:

L. A. ALDERSON, " LYNDHURST," SINNINGTON, YORK. Hon. Secretary, Yorkshire Gliding Club.

ANNOUNCEMENTS

LEICESTERSHIRE GLIDING CLUB

Coming Events

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

March 15th, Social Evening : Victory Hotel.

Easter Holidays

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

THE MIDLAND GLIDING CLUB LIMITED

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

DERBYSHIRE & LANCASHIRE GLIDING CLUB, GREAT HUCKLOW, TIDESWELL, DERBYSHIRE

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

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

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

NEWCASTLE GLIDING CLUB, Ltd.

(founded Feb. 1930)

Applications for Membership now invited in Reorganised Post War Club.

Special Registration Fee 6/-

Ensures Membership when activities restart.

Further Particulars apply

HON. SEC., 25, HOLME AVENUE, NEWCASTLE 6

ROYAL AERO CLUB GLIDING CERTIFICATES.

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

Large Stocks of Technical Books

FOYLES

FOR BOOKS

New and econdhand Books on all subjects

119-125 CHARING CROSS RD., W.C.2

Tel. : Gerrard 5660 (16 lines). Open 9-6 inc. Sats.

ROYAL AERO CLUB GLIDING CERTIFICATES

" *A* " *Certificates* : 164 (*Nos.* 3910—4073).

		School.	*Date taken.*
" *B* "	*Certificates* (43).		
3927	Frank Foster	S.E.161 E.G.S., Shoreham	11.11.45
3935	Geoffrey Cousins Howarth	84 Grp. Gliding Club, R.A.F., Salzgitter	12.10.45
3936	Gregory Jankowski	Ditto	29.10.45
3937	Donald Martin Armstrong	Ditto	14.10.45
3948	Arthur Hobkirk	S.W.94 E.G.S., Yate	25.11.45
3960	Herbert Arthur Harrison	B.A.F.O. Gliding & Sailplane Club, Minderheide	10.10.45
3870	John Burns	S.W. 83, Moreton Valence	2.12.45
3416	James Edwin Saunders	S.W.81 E.G.S., Yeovil	25.11.45
3432	James Alfred Alan Wishart	Ditto	25.11.45
1839	Douglas Melville Keyse	Ditto	2.12.45
3983	Robert Deadon Elliott	B.A.F.O. Gliding & Sailplane Club, Minderheide	3.9. 45
3984	Roy Arthur Lushington Morant	Ditto	25.11.45
3985	Lettice Ashley Cooper	Ditto	19.10.45
3986	Thomas Charles Rodney Walker	Air Division Gliding Club, Barntrup, Germany	4.11.45
3987	Christopher Leslie Thompson	Ditto	23. 9.45
3988	Harold Priestley	Ditto	3.11.45
3989	Thomas Bernard Inman	Ditto	3.11.45
3990	Harold Edwards	Ditto	7.10.45
3991	Ronald Henry Hamlin	Ditto	13.10.45
3992	Francis Walter Lambert	Ditto	28.10.45
3993	Allan Jasper	Ditto	23. 9.45
3994	Robert John Jewell	Ditto	23. 9.45
3995	Kenneth James Brookes	Ditto	23. 9.45
3996	Reginald Stubberfield	Ditto	7.10.45
3997	Norman Dennis Smith	Ditto	31.10.45
3998	George Dennis Ivor Neale	Ditto	30. 9.45
4000	Edward George Eborn	Ditto	21.10.45
4001	Peter Ernest Gordon Plum	Ditto	20.10.45
4002	Lionel Harold Huntley	Ditto	7.10.45
4031	Arnold Joseph Togneri	S.3 E.G.S., Macmerry	15. 9.45
4032	Louis Patrick Murphy	M.48 E.G.S., Castle Bromwich	9.12.45
4036	Leslie William Schulkins	B.A.F.O. Gliding & Sailplane Club, Minderheide	28.10.45
4037	John Hanbury Smith-Carington	2 Group Gliding Club, R.A.F., Oerlinghausen	29.10.45
4038	Norman Jenkins	Ditto	25.11.45
4060	Brian John Proctor Waddell	Glider Pilot Regiment	29. 8.44
2147	John Michael Bunce	C.126 E.G.S., Booker	23.12.45
1852	Leslie Joseph Goulden	S.E.166 E.G.S., Hawkinge	9.12.45
2742	Geoffrey Francis Sharples	N.W.181 E.G.S., Blackpool	22.12.45
3397	Sydney Barwell Ockelford	S.W.89 E.G.S., Christchurch	16.12.45
3478	Maurice Anthony Hofton	M.41 E.G.S., Knowle	23.12.45
2328	Frank Bull Henson	E.108 E.G.S., Desborough	16.12.45
2283	Thomas Curtis Phillips	Ditto	16.12.45
3999	George Alfred Mead	Air Division Gliding Club, Barntrup	20.10.45
" *C* "	*Certificates* (16).		
3935	Geoffrey Cousins Howarth	84 Group Gliding Club, R.A.F., Salzgitter	11.10.45
3936	Gregory Jankowski	Ditto	26.11.45
3960	Herbert Arthur Harrison	B.A.F.O. Gliding & Sailplane Club, Minderheide	2.12.45
3692	Cyril Powell Choularton	Ditto	2.12.45
3693	John Frederick Llewellyn Cartwright	Ditto	2.12.45
3983	Robert Deacon Elliott	Ditto	2.12.45
3984	Roy Arthur Lushington Morant	Ditto	2.12.45
3985	Lettice Ashley Cooper	Ditto	2.12.45
3987	Christopher Leslie Thompson	Air Division Gliding Club, Barntrup	25.10.45
3993	Allan Jasper	Ditto	25.10.45
3994	Robert John Jewell	Ditto	25.10.45
3995	Kenneth James Brookes	Ditto	24.10.45
3996	Reginald Stubberfield	Ditto	25.10.45
4036	Leslie William Schulkins	B.A.F.O. Gliding & Sailplane Club, Minderheide	2.12.45
4037	John Hanbury Smith-Carington	2 Group Gliding Club, R.A.F., Oerlinghausen	4.11.45
4060	Brian John Proctor Waddell	Glider Pilot Regiment	8. 8.45

SOUTHDOWN GLIDING CLUB LTD.

We shall commence Gliding and Soaring again at the Devil's Dyke. Old members and prospective members should write for details to :

Hon. Secretary,
FLT/LT. S. G. STEVENS,
" SOUTHERLEA,"
MEADOW CLOSE,
HOVE, 4.

THE BRISTOL GLIDING CLUB PTY. LTD.

RESUMPTION OF ACTIVITIES

A General Meeting will be held in the near future. Meanwhile a new Register and Mailing List is being prepared, and prospective members are invited to write to the Hon. Secretary of the Organising Committee at the address below, mentioning any previous flying or gliding experience.

9, ROYAL PARK, CLIFTON, BRISTOL.

AIRWAY·SEAWAY·HIGHWAY

Launches, Minesweepers, Landing Craft, Aircraft, Torpedo Boats, Invasion Barges, 'Dukws,' Trucks, Airborne Lifeboats, these and many other vessels and vehicles needed the protection of Cellon Finishes to enable them to face arctic seas, tropic sun, and the wear and tear of assault and battery. Throughout the war, the Cellon output was reserved for tasks in which durability of finish was essential to the efficiency of the weapon, vehicle or craft. The necessary high quality ingredients of Cellon Protective Finishes are now gradually becoming available for commercial purposes, and meanwhile Cellon's experience is making the best of those materials which are permitted.

CELLON
CERRIC CERRUX

FULL DETAILS OF FINISHES FOR ANY SPECIFIC PURPOSE FROM CELLON LTD., KINGSTON-ON-THAMES. TEL.: KINGSTON 1234 (5 LINES)

CVS-548

Marshalls' Flying School Ltd.

for

POWERED FLIGHT

Flying Instruction on Tiger Moths

AERO TOWS

Air Charter and Air Taxi

GLIDER REPAIRS

and

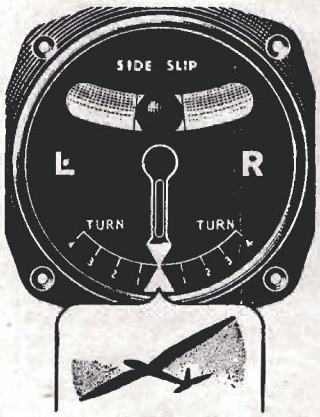
OVERHAUL

Aircraft Sales and Service

Aerodrome 2 miles from the Town, with Restaurant and Club facilities

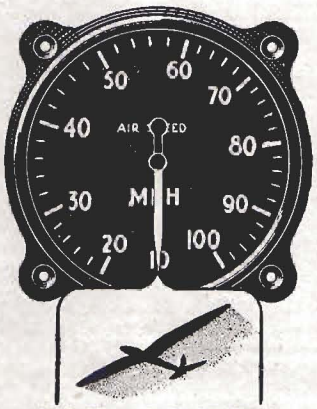
Marshalls' Flying School Ltd.
The Airport, Cambridge
Telephone 56291

Essential Equipment



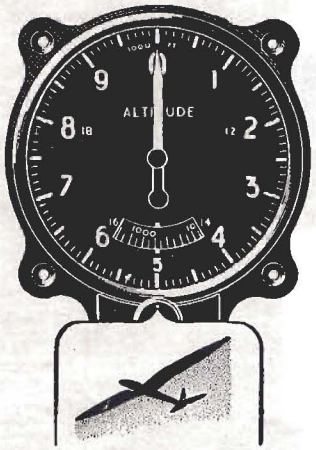
TURN & BANK INDICATOR

9v. Electrical
Operated by dry-cell batteries
Weight — 1 lb. 9 ozs.



AIR SPEED INDICATOR

Special Sailplane
Calibration — 20/100 M.P.H.
Weight — 9 ozs.



ALTITUDE INDICATOR

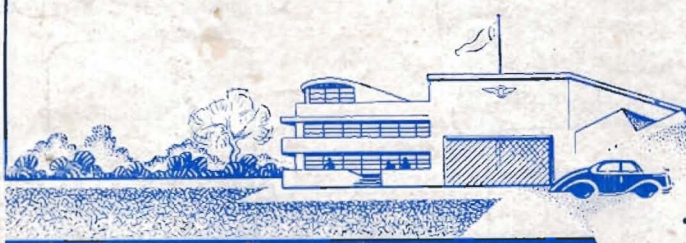
0-20,000 feet
Simple robust design
Weight — 12½ ozs.

K. D. G. Instruments Ltd

PURLEY WAY · CROYDON · UPLANDS 6888

SLINGSBY
SAILPLANES
Limited





FULLY APPROVED FOR DESIGN AND MANUFACTURE OF . . .

. . . TRAINING & HIGH PERFORMANCE SAILPLANES *for* SERVICE *and* CIVILIAN USE

KIRBYMOORSIDE
YORK · ENGLAND
TEL · KIRBYMOORSIDE 312