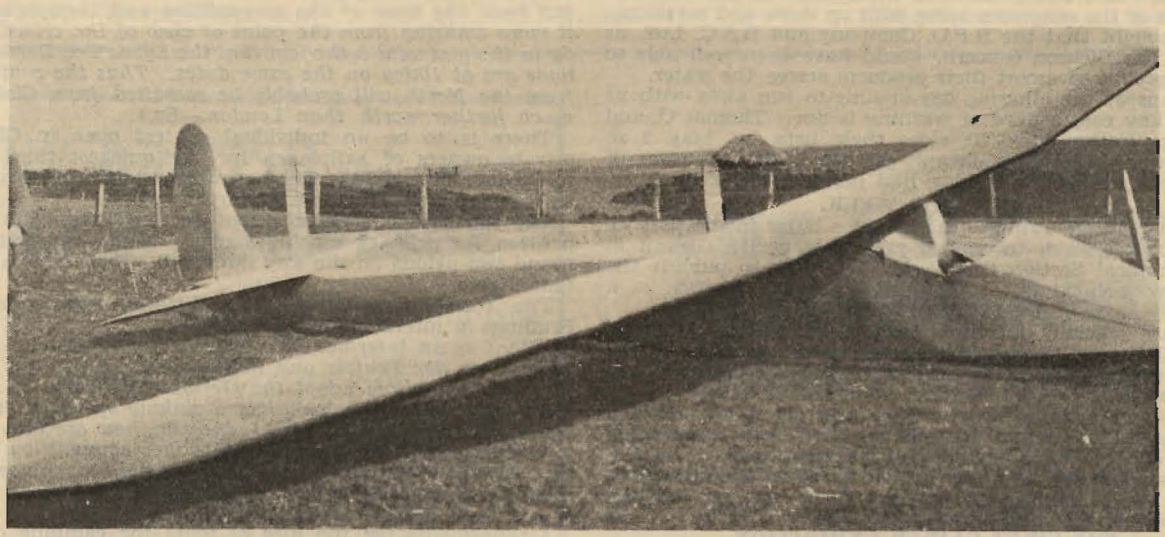
April 24, 1931. Vol. 1. No. 33.

THE SAILPLANE AND GLIDER

Price 3d.

LEADING THE BRITISH FIELD.



A new picture of the R.F.D. sailplane which in only four afternoons and unfavourable weather conditions has totalled 2½ hours' soaring in the hands of pilots previously without "C" Certificates.

ON THE NEED FOR BROADENING THE MIND.

There are two excellent ways of getting on with a job; one is to muddle through in the traditional fashion of our Country, whereby one learns slowly from each mistake and frequently bitter experience, the other is to watch other people and learn from their errors. The latter course has its pitfalls, however, superficial observation may lead one to suppose certain precautions are merely the result of racial or personal idiosyncrasies instead of the fruits of experience.

Lack of vision or the mere pursuit of obvious gain has led this country in the past to neglect completely the realms of motorless flight. Its possibilities as a sport and as a means of full-scale research have been derided or scouted. Not so very long ago at the renaissance of British Gliding a contemporary of scientific bent said there was nothing in it or to it, rather reminding us of the scientist who proved a generation or two ago that no steamship could ever carry enough coal to cross the Atlantic.

We are not going to recapitulate for the umpteenth wearying time the whole history of modern gliding nor trace back to the Treaty of Versailles the whole development of the sport in Germany. We all know all about that. What we have all not been able to do is to visit the Wasserkuppe and observe how gliding is done there and what differences of organisation are required for adapting the sport to a people of different temperament.

The ecstatic accounts of our friends, the personal reactions between us and our distinguished visitors, Dr. Georgii, Herren Stamer and Lippisch, have all helped to give us a very clear idea of the ideas and ideals at the back of the German Gliding Movement. These mental images have been strengthened by the excellent photographs taken by such fine artists as Herr Alex. Stocker and Herr Karl Diga. Their vivid pictures have travelled all round the World.

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There are two really sound reasons for going to the Wasserkuppe this summer, one is to learn from the experience of others and so progress without the retardation caused by avoidable mistakes, the other is to see how the German way of doing things can be best modified to suit our own temperament.

An extremely cheap trip is being organised to the Rhön Competitions this summer by Thomas Cook and Son Ltd., Berkeley Street, London, W.1 (Ref. B.H. 68/51438), for the remarkably low figure of £15 for a fortnight inclusive of everything. A large number of people are taking advantage of this trip, but we feel that at least one member from every Club in the Movement should try and make one of the party. The effect of a large British contingent at the Competitions would be a splendid gesture towards international amity. Further it would add to the fun.

A group from the London Club are going to take a machine and enter it for the Competitions, it would be even finer if other groups could take a machine. Perhaps Mr. Crabtree could collect some of his friends in the North to take one of the sailplanes being built up there and we should have thought that the R.F.D. Company and B.A.C. Ltd., as well as the Dickson concern, would have been well able to gather groups to escort their products across the water.

Perhaps we are allowing day-dreams to run away with us and in any case a word of warning is due. Thomas C. and his organisation have to close their lists by May 2 so people who want to go cheaply for the ridiculous price of £15 for a fortnight's holiday had better book *at once*.

NOT THIS WEEK.

We regret that owing to the loss of a letter in the post we have not been able to publish an article by Dr. Georgii in our Technical Section this week. We hope to publish the article very shortly.

A DISAPPOINTMENT.

We are officially informed that there will be no International Competitions at Scarborough this Summer as *The British Gliding Association* was unable to raise the necessary prize money.

At the Council meeting held on April 20 it was decided that the B.G.A. should organise an inter-Club competition at the end of the Summer. In the meantime the B.G.A. are to support and give any help required to the organisers of the two meetings, one in the North and one in the South, which are to be held at Whitsun.

THE FIRST GLIDER EXHIBITION.

There *is* to be a glider exhibition! From May 6 to May 16 there will be a complete range of gliders on show at the Used Motor Exhibition at the Agricultural Hall, Islington. A stand which comprises the whole of the North gallery on the first floor has been placed at the disposal of *The British Gliding Association* by Mr. Glass. Various Clubs are loaning equipment and if there are others which would like to co-operate they should get in touch with Mr. Waplington at 44A, Dover Street, W.1, at once.

THE WHITSUNTIDE RALLY AT BALSDEAN.

Mr. York Bramble is organising, in conjunction with the Southern Soarers' Club, a Rally and Inter-Club Contest at Balsdean. This will be held during the Saturday, Sunday and Monday of the Whitsuntide week-end, that is from May 23 to 25. Mr. Bramble acknowledges gratefully promises of donations towards the prize fund of five pounds from Mr. R. F. Dagnall, and five pounds from Mr. H. L. Beardmore. He will welcome further donations from manufacturers and others interested in the promotion of the sport.

The details of the various competitions will be arranged by a contest committee in due course. Arrangements are being made for a North v. South Contest for teams of four in a soaring competition to be decided by the highest aggregate of maximum altitude attained within 15 minutes of launching. Sealed barographs to be used.

[*The idea is really good. It should induce proper soaring, but limit the time of the competition and therefore make it more amusing from the point of view of the crowd. The fly in the ointment is the fact that the Lyons Tea Demonstrations are at Ilkley on the same dates. Thus the contingent from the North will probably be recruited from Clubs not much farther north than London.*—Ed.]

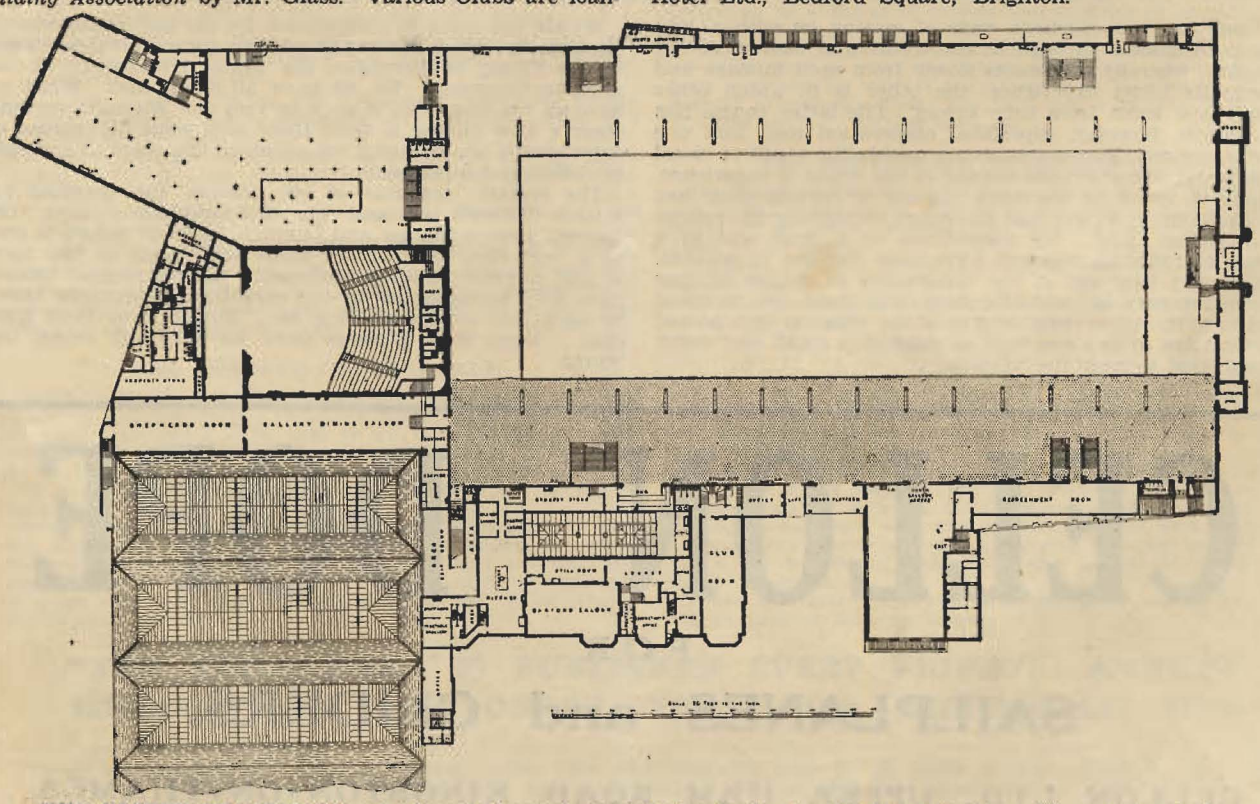
There is to be an individual contest open to Club or private owners of sailplanes for the quickest time round two pylons on a ridge. Three complete figures of eight have to be made from the central starting point.

The third item is to be a spot landing Inter-Club Competition for primary machines only. Route to be an "S" round two pylons on the way down hill. Each Club allowed four flights.

The fourth item is to be a distance competition on Pruflings or intermediate machines.

[*What is an intermediate machine? Do "Scuds" B.A.C. VII's, Hols der Teufels and so on come within this class? Will the committee adopt the German definition of a sailplane as a machine which has a sinking speed of 7m. per sec. (2.3 ft. per sec.) or less? If they do, how are they going to calculate it? The snag of a distance competition as far as a spectacle goes is that pilots go putting machines down miles away from the crowd and they take hours and hours to get back.*—Ed.]

Arrangements for the hire of tents for camping on the site are possible, providing Mr. Bramble is informed seven days beforehand. Potential campers must make their own arrangements for food and bedding. Hotel accommodation should be booked well in advance. All communications should be addressed to Mr. A. York Bramble, New Yorke Hotel Ltd., Bedford Square, Brighton.



THE GLIDER EXHIBITION.—A plan of the first floor at the Agricultural Hall, Islington. The whole of the shaded area will be devoted to gliders. Three or four models of the latest Rice folding caravans will also be on show on the stand. Readers will remember the comforting presence of one of these "homes from home" at Ditchling last October.

"FIRST AGAIN!!!"

"The B.A.C. VII. Two-seater, auto-tow Sailplane, was successfully demonstrated at the meeting of the Kent Gliding Club at Gillingham on Sunday, April 12th, when 20 members of the Club were given joy-rides."

This latest product of B.A.C. Ltd., would be the "DERNIER CRI" in attracting the Public to your next Gliding Meeting and reviving interest among your Members.

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RETROSPECT AND PROSPECT.

By Sebert Humphries.

The first post-war revival of British Gliding was an abrupt affair, brought to life by newspaper publicity and prize-money. After one great week on the South Downs, near Firle Beacon, the enthusiasm was diverted by way of power-gliders, thence to light aeroplanes. But during that week it was shown that a nimble aeroplane pilot could soar in any airworthy glider provided that the upward jet of air was sufficiently violent. Raynham, Fokker and Gordon England floated round, just able to maintain their height; Maneyrol hopped off on the last afternoon in an unnatural-looking tandem monoplane and soared till long after dark in half a gale (and until equally long after the departure of all journalists except the die-hard *Manchester Guardian* man), landing after 3 hours 21 minutes and 7 seconds in the pool of light given by the combined headlights of all the cars on the Downs. Spencer Gray followed him into the air with a fifteen-shilling machine built from a derelict Bristol body and a captured Fokker wing, soared equally well in the violent up-draught, but came down at dusk, to leave the course clear for the Frenchman.

As a show, that gliding week was a success, but it led to nothing in England and no public interest was taken in motorless flying until Herr Kronfeld was brought over here in 1930. His extreme expertness nearly killed the new Movement at birth. Apparently with ease he floated like an airship to three thousand feet, hovered in front of talkie cameras and delivered homilies to the public thereby, and one day, without warning, pottered off westward from Firle Beacon to land sixty miles away outside Portsmouth, while telephone bells rang in country police stations, and policemen looking for him went without their teas. Hence an unreasoning public delirium, and a Jack-and-the-Beanstalk-like growth of gliding clubs.

Hard Work.

But it was not so simple as it looked. Suitable gliding sites were unexpectedly rare, and even more unexpectedly difficult was the obtaining of gliding rights. Cheap training machines refused to soar, and would only toboggan down aerial hills, whereafter enormous manual labour brought them back to the launching point. A dozen people were needed to launch each machine, and all the members of the party expected a turn at piloting, so that in a hard day's work there might be no more than two slides and a bump for each man. Machines broke and could not be mended on the spot. Beginners had no guiding hand to correct their mistakes in mid-air. The interval between lessons was too long. In many Clubs the subscriptions were unduly low and activity was therefore perpetually crippled. Machines had to be taken to pieces after each day, so that in the absence of a hangar they might be stored in the local cow-shed. Winds had a nasty knack of blowing from the wrong quarter or at the wrong speed; capable instructors were few.

The beginner, who had wept with joy at the sight of Kronfeld in mid-air, and who had rushed off to the first club, suffered from a nasty reaction, and in many cases faded out of the Movement altogether. Which just about brings us up to the state of affairs at the beginning of last winter.

But during the winter the genuine gliding enthusiasts have built a far more solid foundation to the Movement, and now at last it is possible to see real soaring above at least one Club site on any reasonable Sunday. In fact, one expects to find a couple of machines chasing each other up and down the ridge, with at least one machine piloted by a member whose air experience has been limited solely to gliders.

In other words, there is now a solid nucleus to the Movement, where before there was only a nebulous enthusiasm for gliding in the abstract. But a nucleus is not enough by itself. This year there must be a steady evolution of new glider-pilots.

Some are still to be found ready-made: ex-War pilots, who welcome the chance to leave the ground again, and light-plane pilots, who like the air, but who cannot indefinitely face the expense of power-flying. But even they have to learn a new technique of gentle handling, flat turns, and engineless flight in general.

The main source must be beginners, with stout hearts, and somehow they must be bundled through the boring early stages before aforesaid stout hearts are broken by donkey-work on the ground and the excessive brevity of flying-time.

Auto-towing.

The most promising method for really intensive training in the earliest stages is auto-towing, a method in which man-handling and catapults are replaced by the power of a hearty car. The beginner's machine is towed up-wind across an aerodrome too slowly to lift him off the ground, but fast enough to bring his rudder into action. When he has learnt the elements of directional control he is towed just fast enough to lift him a foot or two into the air, whereupon his lateral and fore-and-aft controls come to life.

So soon as he gathers the rudiments of all these three controls he is towed still faster, so that he can ease the machine up to thirty feet or so (which seems to him to be three thousand). The car slows up slightly and he eases the nose of the machine down so that, still attached to the wire, he approaches the ground, flattens out, and lands. If he should forget to keep up his speed, leaving the machine in a horizontal position in which it pancakes hard enough to break its landing-gear, the car can at the last moment accelerate, bring the machine back to its proper air-borne speed, and land it.

When the beginner is obviously safe, but not over-confident, he can be allowed to release the machine from the towing cable a few feet off the ground. Down gently with the nose, back gently as the ground comes up, and land. Then follow gentle "S" turns; then, on a calm day, 90° turns; then a complete circle from two or three hundred feet. Then the practical limit of aerodrome towing—a release from five or six hundred feet.

The next development of auto-towing is to launch the man from a ridge, so that he may blunder away into up-currents. In all probability he will make little use of them at first, but he will be safe, inasmuch as he now knows how to direct the machine and how to push it about where he wants it. Being now on the door-step of soaring, his further progress rests with his own intelligence. And at last he can begin to benefit from meteorological lectures and books, which earlier in his training have only given him the griefs of Tantalus.

Real Soaring.

Now he has the world by the tail. He can ignore beginners' slopes and hills of uncompromising baldness, and can go to abrupt hillsides smothered in trees, houses, and high-tension wires. He is launched by auto-towing from smooth ground at the foot of hills, and from the several hundred feet of height thus gained sails downwind to the hillside and rises there on the up-currents, returning to the car when hungry and/or thirsty. If a motherly controlling body should shudder at such enterprise, then he can go to America, which, so far as the Gliding Movement is concerned, is still a relatively free country—though even there a certain amount of red tape restrains pilots from using too freely the upward currents from centrally-heated sky-scrapers.

Auto-towing is without any doubt the least laborious and most intensive method of training. But it has certain innate drawbacks. An aerodrome, failing a perfectly smooth desert, is needed for towing in winds all round the compass, but the presence of kite-flying does not appeal to power-plane pupils attempting to land, to whom any aerodrome seems far too small at the best of times. The towing car must be powerful in order to have complete mastery over the glider; but a big cheap elderly American car has been shown to be sufficient. But, above all, in the training of beginners *the car must contain an utterly reliable instructor with powers of life and death over the driver,* and thus over the speed of the car. Carelessness in the control of the car could annihilate a panicstricken pupil. Given these three factors, a smooth, large aerodrome, a hearty car, and a sound instructor, auto-towing is invulnerable, as is shown by the auto-towing school at the Chicago Air Port.

The alternative to this method is the club-catapult, a comparatively modern affair, seeing that the French sailor, Le Bris, used a form of auto-towing in 1855, when he released himself in his artificial albatross from a farm cart, rising to 300 feet, with the rails of the cart and the driver accidentally attached to the machine, the whole combination subsequently landing intact.

Catapulting is inexpensive, and this is a point appealing to the many who think that gliding ought to cost even less than motor-cycling; though one is puzzled at the reason for this staggering but too common assumption. At least, catapulting is inexpensive so long as the labour entailed is amateur; but the amateur labour naturally insists on the reward of a flight in turn; whereupon everybody has a taste and nobody satisfaction.

The launch, with its rapid acceleration, needs little space on the hilltop. The surface of the ground need not be too smooth; in fact, if the machine should slide over a mole-hill or a small bush, the take-off will be noticeably expedited.

Lighter Gliders?

The advantages of catapulting would be increased if only the launches for each particular pupil could follow on more rapidly, and this point is already taken by those instructors and manufacturers who aim to lighten the machines with-

out weakening them. If the weight could be brought below one hundredweight, then a launching crew of two would be ample for early instruction, the releasing of the machine being operated either by the instructor, or else by the pupil pulling a trigger on a signal from the instructor. Under such conditions a hard-working party of three could receive twenty launches each in one day, so that with this greatly intensified training there would be no temptation to hurry the progress of length of flight beyond the capacity of the pupil. Far too many machines are put out of action for the day by pupils who have had time to forget the lessons of previous launches, or who, conversely, are pushed along too ambitiously by an impatient instructor.

The policy of light machines and small parties could only appeal to clubs whose subscriptions are adequate. The light machine would be clearly less rugged in construction than the hefty aerial toboggans often used by hard-up clubs, and the ratio of the number of machines to the number of club members would have to be higher. But the advantages of the enlightened policy are so clear that would-be gliding pupils of a desirable type must see the force of the argument and pay accordingly, preferring "something for something," rather than "nothing much for very little."

SOUNDER FINANCE.

This point of adequate finance has its witty side when the arithmetic is considered. A keen member may only miss ten week-ends in the year. He pays a subscription of two guineas. He therefore pays one shilling for each week-end. On an average, club members travel about twenty-five miles each way to and from the site. Forty-two times that equals over two thousand miles each year, which at three ha'pence a mile is £12 10s., or at threepence a mile is £25. Or per week-end is 6s. 3d., or 12s. 6d. And this to obtain a shilling's worth of gliding!

One usually receives about as much as one pays for, certainly not more. If only gliding people will lay out something approximating to an adequate amount of hard cash, then, either by auto-towing or by catapulting, the Movement will go forward.

NEWS FROM THE WASSERKUPPE.

A correspondent writing to us from the Wasserkuppe says that the only news at present is that two courses, one beginners, and one advanced, are in full swing. Two inches of snow fell last night, so the aircraft were very easy to push about. The "Falke" is a soaring success. Everyone is enthusiastic about it. A power pilot made his "C" the other day on the "Falke" on his second flight! That is something impossible on any other type.

The whole secret of it is that the ailerons are sensitive, and the elevator not too sensitive. One flies it happily and with perfect confidence. One can soar on the Wasserkuppe south slope with a wind of 6 m.per.sec. (about 15 m.p.h.) in the "Falke." As you know, it is a modernised "Prufling" and is not so fast, not so jumpy on the elevator, has a lower sinking speed, and is quite unspinnable.

One dare not mention the "Hols der Teufel" or such kites in the same breath with the "Falke." Although the former can float about in very light winds, it is so slow that it is almost uncontrollable. It was designed, as you probably know, by Lippisch 'way back when the world was young.

The beginners, among them three Englishmen, are doing "A's" on the lower slopes in the old dependable Zogling. One chap (Deutscher) did a beautiful cartwheel on landing to-day, wiping a wing off and making a decidedly nasty crackling noise. He wasn't hurt at all, but the poor Zogling was carried up piecemeal.

Forty Englishmen have reserved the whole hotel up here for the contest. The proprietor is now studying the language. [*We are one.*—ED.]

I suppose you have heard about the towing flights in Darmstadt. These have been the first towing flights with high performance sailplanes. The take-off is always a bit ticklish, as their minimum flying speeds are considerably higher than a man's maximum running speed. There was some worry about whether the wing attachment of cantilever jobs like the "Darmstadt" could stand up to the forces due to yaw when being towed, but the fears seem to have been without foundation.

Groenhoff's flight the other day of 87 miles was very good. He was towed up so he could get cloud-contact, and then he contacted with the hills of the "Bergstrasse" and later with the Black Forest. Of course, this flight is not in the same class as Kronfeld's long flights in which he gained cloud contact by his own efforts, but it is none the less a good performance.

WORTH WHILE.

B.A.C. Ltd. have produced an excellent booklet or catalogue in which are a fine collection of pictures of their types up and including the B.A.C. VII as well as a page of useful hints to those who would auto-tow. We have in THE SAILPLANE from time to time described the new types as they come out, but new Clubs who have not seen our descriptions, or Clubs which are thinking of adding to their equipment, could not do better than write to B.A.C. Ltd., Lower Stone Street, Maidstone, and ask for a copy of this catalogue. Such inquiries should be accompanied by mention of THE SAILPLANE.

A PILOT'S CRITICISM OF THE "PROFESSOR."

The "Professor" was designed to be a soaring and sailing aircraft for the final training of "C" pilots. The design has been made simple so that it may be built by amateurs.

The performance as a soaring craft is nearly as good as the best; as a sailing aircraft (i.e., distance and cloud) it is probably fair to say that it is second class. The *Fafnir, Darmstadt, Wien* and *Kakadu*, to name craft that I have seen, have a distinctly better sailing performance.

The controls, as may be expected in a Lippisch design, are well matched. The pendulum type elevator is moderately sensitive and becomes more so at high speeds. The rudder control is adequate to fly the machine correctly, and the aileron control—a difficulty in aircraft of large span—is reasonably effective. I believe the latest "Professors" have had the aileron control increased.

I will describe a flight in this craft. Owing to its weight, a double elastic should be used for the take-off, which is then clean and quick, besides feeling pleasantly smooth.

Owing to the large span, it is necessary to hold off bank on a turn and to keep a good speed. A quick turn may be made by doing a steep bank and using the elevator, but this does not seem to be efficient. Compared with a Prufling, she felt rather awkward when working level with the top of the hill, and I expect that I will always feel more comfortable in the wider space of a higher altitude, which can nearly always be reached. I got the impression that near the ground the air is sticky (presumably owing to the earth's boundary layer), so that if one can make some height one can easily maintain it, but if forced down to hill-top level one has to land.

The landing is the difficulty; the greater the efficiency of the craft the more accurate is the judgment needed to get it down where desired. To illustrate this, consider a pilot making his last turn at 45 m.p.h. with his wing-tip 14 feet from the ground. Flying straight over flat ground he will travel over 200 yards before he reaches normal gliding speed at ground level, after which he can do his landing.

There are two possible resorts. One is to push the machine onto the ground when you have got to stop, but banging the craft about is a poor substitute for accurate piloting. The other one is to land up a slope, and the effectiveness of this may be illustrated by the fact that a rise of 16 feet will reduce the speed from 40 to 32 m.p.h. roughly. I do not think that the importance of uphill landings has been recognised in this country.

The easy course and gentle efficiency of the Professor gives a stimulating feeling of new technique to be learnt and new possibilities.—"KENTIGERN."

The Glider.

(With apologies to Lord Tennyson's "The Brook.")

I'm launched upon a hillside green
With nose turned to a valley,
And being catapulted off,
I make a sudden sally.

With bird-like ease I flutter down
And scatter crowds below me,
Displaying unsuspected skill
To those who do not know me!

I climb up in the rising air
And see the rain-drops falling,
I reprimand a careless lark
For very badly stalling.

I float about and in and out
With here a little sailing;
I reassure a thoughtless bird
Who thinks his engine's failing!

I slip, I slide, I gleam, I glide,
Past many a Spartan Arrow,
By twenty Avros and a Moth,
And here and there a Sparrow!

I pass them at a thousand feet
And with a cloud go riding;
I watch the Wasserkuppe Herrs
Engaged in German gliding!

Then turning round, I hurry down
And diving through the ether,
I have to force my sailplane down,
It wants to glide forever.

MARGARET CHATTERTON.

THE MECHANISATION OF GLIDING.

By Shiela M. Green.

[*Mrs. Green has done all the driving for Mr. Lowe-Wylde's experiments and demonstrations. As these have been made over scores of different fields and locations ranging from the concrete track at Brooklands to the top of the South Downs it will be at once conceded that she knows more about the art of auto-towing from the towing-end than anyone else in the country. Her observations and warnings are the result of intensive experience and are therefore worthy of the closest attention.*—Ed.]

Recent months have shown an increased tendency towards the use of the motor-car as an aid to Gliding which began with its use as a sort of mechanical horse to speed up the return of the machine to the starting point. The next and obvious step was to use it in replacement of the human launching team and from that we went on to what is popularly known as "Auto-Towing."

This method of gliding has been extensively developed in America, but unfortunately its usefulness was abused by rash individuals and resulting fatalities caused a certain amount of alarm and definitely raised a lot of prejudice against it in the British Isles.

Recent and extensive experiments, however, have shown that Towed Gliding is a very efficient and certainly a safe way of giving flying instruction and there is not a shadow of doubt that it has come, not only to stay, but to revolutionise Gliding, and the Gliding Movement generally. From an instructional point of view, it is absolutely ideal, *as provided the instructor and car-driver know their respective jobs* the pupil is not at any time in danger, and breakages to the machines will be less frequent.

During the last two months, demonstrations have been staged at most of the important aerodromes throughout the country, and some 12,000 people have witnessed this development of motorless flight. Approximately 100 pilots, of varying experience, have flown the demonstration machines, and the only serious breakages occurred at the hands of power pilots who approached Gliding from a very erroneous point of view, and in every way proved the contention of the United States Aviation Underwriters in a recent Bulletin to all their licenced pilots when they said "They fear the airplane pilot in a Glider more than they fear any other individual who gets into one." This especially so when he has less than 200 hours to his credit.

In the initial stages, the pupil is towed along the ground, on a short length of cable (about 80 yards) at just below flying speed. At this speed all the controls function, and until he can keep the machine in flying position, straight and level, he is not allowed to leave the ground. Having learnt this, the pupil is given flying speed and instructed to fly the glider a few feet high. After having mastered the art of flying absolutely level and steadily behind the car, over a series of flights up to a height of about 20 ft., he is allowed to operate the release which drops his cable. He then practises gentle glides in free flight.

Obviously, this is a much safer and more pleasant method of learning the art of gliding than the catapult method, by which the pupil is launched into the air with no previous training and with no one to correct his errors. In auto-towing, during the training stages, when the pupil must not release the cable, by gentle deceleration or acceleration on the part of the car-driver, all mistakes can be counteracted. The pupil is then told of his faults and makes another attempt.

From the more advanced point of view, auto-towing is also excellent. The pilot can gain a height of 600 feet or more and remain in flight for several minutes, thus when he is launched from a soaring site, he is bound to put up a better show than the man trained by the catapult method. Apart from the reduction of man-power required, auto-towing allows of longer and more frequent flights than does the original method of launching from a hillside, and thus that great bane of the membership of a Gliding Club—the extremely hard work with infrequent flights of short duration—is removed. During Primary training, when a short tow cable is being used, the car quickly tows the machine back to the starting-point ready for the next flight, but the skilled pilots will always succeed in flying the machine back.

From my experience as car-driver, there are several points to note. Firstly, the acceleration from a standstill must be as rapid as possible, so that the pilot gains control of the machine almost immediately. Secondly, *there must be no gear change when the machine is in the air*, as this provokes a violent jerk, most disconcerting to the pilot as well as putting unnecessary loads on the Glider especially if climbing steeply. Thirdly, the car must be driven absolutely smoothly. Over a bumpy aerodrome or field, this necessitates the use of the hand throttle only as one's foot is being continually jerked off the accelerator pedal.

The speed of the car is naturally determined by the speed of the wind. With Mr. Lowe-Wylde's flights, I have maintained the speed of the car two or three miles per hour faster than his taking-off speed, to help him to climb steeply and gain height quickly for demonstration purposes. This must not be emulated until the pilot is really skilled. For a man attempting his "A" Licence, I maintain his taking-off speed. Anyhow, I would definitely advise the fitting of an air-speed indicator on the car, so that knowing the flying speed of the glider, no mistake of speed can be possibly made by the driver. Also, I think that for tuitional purposes, the throttle should be controlled by the instructor, as this eliminates all possibility of misunderstanding between the instructor and driver, and in time of emergency, reduces the time-lag which is otherwise inevitable.

Now comes the question of choice of car. I would advise one of about 20 h.p., and capable of 35 m.p.h. in an intermediate gear. Many old cars can be bought now for £10 or £15, answering to this description, and it need not be licenced, but kept on the aerodrome solely for the purpose of auto-towing. I have used a 1922 Buick with admirable results.

To a Gliding Club the adoption of auto-towing certainly means a greater initial capital outlay; this would probably be in the neighbourhood of £120/£150, but I think that this is a question which, if faced squarely at the outset, can be met. In the past Clubs have commenced with the bare £50 or so necessary for the purchase of a Primary Trainer.

Ab initio instruction with a catapult-launched Primary Training Glider is beset with frequent crashes. The machine has to be repaired and this means an expenditure of time and money. If funds are so low as to be almost non-existent, the delay is greater, the repair is often a patched-up one, and the net result is a complete cessation of operations. There are few Clubs who have emerged from their first year's working with a less expenditure than between £80 and £90, and the present position is that they own a more or less battered Primary Training Glider, absolutely incapable of giving a satisfactory performance for such members as have learnt Gliding. On the other hand, the auto-towing method, by its increased safety to pupil and machine, justifies the use of more efficient equipment; the lower maintenance cost more than meets the higher initial outlay; gliding can be more regularly carried out and a larger number of flights made during each meeting, together with the one great fact that when the pupil has mastered the rudiments of flying, he has a machine upon which he can steadily progress right up to the soaring stage.

With all these advantages, there surely seems very little excuse for carrying on with the inefficient Primary machine, laboriously launched, then retrieved, from a more or less good site *if the wind happens to be blowing the right way.*

In conclusion, may I point out that by auto-towing, three people only are required to hold a gliding instructional meeting, and if a pilot decides to have some practice one day, he has only to find a car-driver.

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CORRESPONDENCE.

One Point of View.

Sir,—As one of the Official Observers appointed to The London Gliding Club, I should like to repudiate the suggestions made by the A.N.G.C. to the effect that tests for British Certificates are not comparable with German tests. To begin with, the Germans do not trouble to put Power Pilots through their "A" and "B" tests at all. We actually have, in the L.G.C., a member who is a Power Pilot and took his "C" at the Wasserkuppe. He did one or two trips on a Zogling and was straightaway sent for his "C" on a Hangwind. He did exactly five minutes, and was granted his "A," "B" and "C." This can hardly be termed strict.

At the L.G.C., on the other hand, we go to the opposite extreme. Having taken an "A" on the Dagnall, *ab initios* must also take their "B's" in the same way. Power Pilots, however, may take their "B" tests on the Prufling, which is, of course, used for all "C" tests (at present). Our "C" tests are very strictly observed.

On Sunday, April 12, I sent two of our "B" pilots off on "C" tests. The first one did exactly five minutes, but the last two minutes was below the level of the top of the hill and the Certificate was not granted. The second flight was of 5 minutes 14 seconds' duration, but once again the last two turns up and down the hang at Totternhoe were below the level of the hill top; in each case the flying was good and the landing normal, and in Germany each would almost certainly have been granted a "C." We, however, take the view that in Germany they are all powerful and may use their own judgment in matters of this kind. We with our more limited experience must stick to the letter of the law of the F.A.I. through the B.G.A.

(Signed) Douglas Culver.

. . . . and the other.

Sir,—I read with interest, that the A.N.G.C. have formed a sub-committee, with a view to tightening up present regulations so that British Gliding Certificates should be made comparable to those issued in Germany. This move by the A.N.G.C., is one of the best the movement has made for some time.

The flight of 30 sec. is not enough for the "A." I know of fifty men, who launched off a high hill on a calm day, could make 30 sec., but they would know as much about gliding, as I would of flying the Do.X.

The pupil should not only be able to fly 30 sec., but should have a thorough knowledge of flight, and be able to answer, and understand, the following simple questions, and be able to put them into practice.

(1) The position point (how it is chosen).
(2) Point of balance.
(3) Correct flying position.
(4) When machine is too far depressed.
(5) When machine is in a side-slip (cause of same).
(6) When machine is too much elevated.
(7) When machine is too much to the left or right.
(8) Positions of the control stick.
(9) Why they should never leave their machine.
(10) How to tell the flying position of the machine.
(11) How to land uphill.
(12) How to avoid obstacles.
(13) What not to do.
(14) How to land.
(15) Correct steering connection.
(16) How to rig a machine
(17) Correct position to sit in a machine.

These are but a few of the questions that a pupil should be able to answer and understand thoroughly, before passing out for his "A."

I have been surprised to find that pupils, with whom I have come in contact, know little or nothing about the above questions. I have seen many good flights, more by good luck, than a thorough understanding of gliding.

If we are to pass pupils, on German lines, why not have German trained men as observers? Although I do not claim to be an expert gliding pilot, I am proud of the fact that I own a German "B" Certificate, which I would not exchange for fifty British "Bs." I have also wondered how the "As" and "Bs" are obtained in this Country, and who passes them out?

I should be only too pleased to offer the B.G.A. my services during week-ends, to act as observer, and pass pupils out, on the lines that I had to obtain my Certificate in Germany, providing that the B.G.A. paid my out-of-pocket expenses.

Wishing The Sailplane the best of luck.

(Signed) Norman L. Derham.

[*These remarks of Mr. Derham's, who obtained his "B" Certificate at Rossitten, are particularly interesting in that Mr. Crabtree, a member of the sub-committee referred to, is a German-trained "C."*—Ed.]

The Manufacturer's Recommendation.

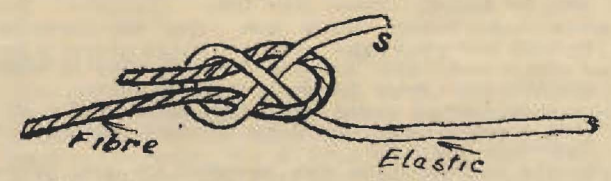
Sir,—We have recently carried out a number of trials with the assistance of practical yachtsmen to determine the best method of bending elastic and fibre ropes together.

Long since we abandoned the use of metal thimbles as if only one strand of the lashing becomes fractured the thimble comes adrift.

Wire end connectors also are only satisfactory in weaker cords carrying comparatively light loads: they are extremely dangerous with heavy duty ropes such as ours which give a load of approximately 300 lbs. at double extension.

The method suggested by your correspondent "Sapper" is good, especially for two inextensible fibre ropes, as it does not jamb: with elastic ropes, however, we need a knot to jamb and tighten spontaneously as the load is applied. Hence we have found the ordinary single "sheet-bend" illustrated to be far better.

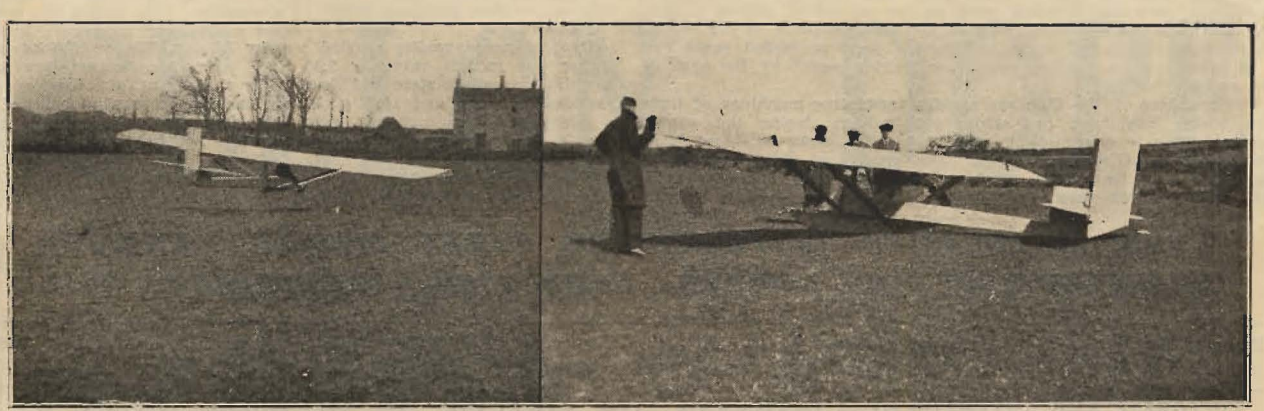
There is no need to splice the fibre rope. If the sheet-



bend is made as shown in the accompanying sketch and pulled tight, the ends of the elastic and hempen ropes can be seized or lashed to their respective standing parts. This lashing carries no strain—all the load is on the knot which only tends to tighten in use. It seems important to proceed thus:—Form the bight with the fibre rope and bring the short end (s) of the elastic through as illustrated—not vice versa.

In the past few months we have recommended a number of Clubs to use this "sheet-bend" and so far we have never heard of it failing.

(Signed) Burley Limited.
E. D. Burley.



AN EASTER HOLIDAY.—The Furness Club try out their B.A.C. II at their first meeting.

NEWS FROM THE CLUBS.

WHERE GLIDING CAN BE SEEN.

Beds.—The Bedford Gliding and Flying Club. Week-ends at Woolley Hill, on the Huntingdon-Thrapston road, between Spaldwick and Ellington.

—The London Gliding Club. Meeting place, Turveys Farm, near Totternhoe, on Saturdays and Sundays.

Dorset.—See under Somerset.

Edinburgh.—The Edinburgh Gliding Club. Sundays, at West Craigs Farm, between Corstorphine and Turnhouse Aerodrome.

Essex.—South Essex Aero Club. Week-ends, Wheaton's Farm, Laindon (L.M.S. Southend branch).

Glam.—Merthyr and District Gliding Club. Sundays, 10 a.m. to sunset. ¼-mile left Dynevor Arms, Merthyr Tydfil—Swansea Road.

Hants.—The Southampton Gliding Club. Every week-end at Red Lodge Farm, Bassett.

—Surrey Gliding Club. Sundays from 10 a.m., weather permitting, at Stocks Farm, Meonstoke (Old Winchester Hill).

Hereford.—The South Shropshire and North Herefordshire Gliding Club at Dinmore, ¼-mile from main Hereford-Ludlow Rd. Every Sunday, and Thursday from 2 p.m.

Herts.—Herts. and Essex Gliding Club. Sunday afternoons, Eastern Roadways Garage, one mile north of Stortford.

I.O.W.—The I.O.W. Gliding Club, at Bowcombe Down, 1½ miles W. of Carisbrook, on main Newport/Freshwater road. Every Sunday from 11 a.m.

Kent.—North Kent Gliding Club. Saturdays 1 p.m., Sundays 10 a.m. Joyce Green Aerodrome, near Dartford.

—Kent Gliding Club. Week-ends above Lenham, on the Maidstone—Ashford road.

—The Isle of Thanet Gliding Club. Saturdays and Sundays from 2 p.m. Manston Aerodrome, Thanet.

Lanark.—The Glasgow Gliding Club. Barrance Farm, Easter Whitecraigs, near Glasgow. Every Sunday from 11.15 a.m.

Lancs.—The Furness Gliding Club, at Raikes Moor Farm, Hawcoat, Barrow-in-Furness. Saturday, 2.20 p.m.; Sunday, 10.30 a.m., weather permitting.

—The Stockport Gliding Club. Every Sunday afternoon at Woodford Aerodrome, Manchester.

—The Preston and District Glider Club. Week-ends at Butler's Farm, Beacon Fell, 2 miles from Inglewhite and 7 miles from Preston.

Notts.—The Nottingham Gliding Club, Mr. Ellis's Farm, Kneeton Road, East Bridgford, Notts. Every Sunday, weather permitting.

Somerset.—The Dorset Gliding Club, Westland Aerodrome, Yeovil.

Staffs.—The North Staffs. Gliding Club. Week-ends at The Downs Banks, Barlaston Downs, near Stone, Staffs.

Sussex.—Southern Soarers Club. Newmarket and Balsdean, between Lewes and Rottingdean, near Brighton. Week-ends by arrangement, for Soaring. ('Phone: Hove 5116.)

Warwick.—Rugby District Gliding Club. Cote Hill Aerodrome, Husbands Bosworth, Rugby.

Wilts.—The Wiltshire Light Aeroplane and Glider Club at Easton Hill, Alton Priors Range, Bishops Cannings, near Devizes.

Worcs.—North Cotswold Gliding Club. Every Sunday at Fish Hill, above Broadway Village, from 10 a.m. to sunset. Saturdays and Wednesdays from 2 p.m.

Yorks.—The Bradford Gliding Club, Saturdays, 2.30 p.m., Baildon Moor. Sundays, various alternative sites are being tested with a view to permanent use.

—The Huddersfield Gliding Club. All day Sunday near the Flouch Inn, 11 miles from Huddersfield, beyond Newmill, on main Sheffield Road.

—The Leeds Gliding Club. Week-ends at Warfedale with the Harrogate Club.

—The Scarborough Gliding Club. Every week-end at Flixton.

[Clubs are invited to send in full details as to where and when they can be seen at work. This feature should help Clubs considerably as readers who are not members can go to look at the nearest local Clubs and see which they like.—Ed.]

THE CHANNEL GLIDING CLUB.

Owing to insufficient members turning out when weather conditions were good, and foul weather conditions, when members were present, the C.G.C. have had a blank week as far as actual gliding is concerned. Time has not been wasted, however. Repairs to the B.A.C. II, which was damaged on Easter Monday, have proceeded apace and it is hoped to have this machine in service again by the end of the week.

Two members of the Club are rapidly completing machines of their own which they have had under construction during the winter months. One is a secondary, the other of a more advanced type. The latter is of original design. The quality of the workmanship being put into both these machines must be seen to be believed. Still more of this anon.

On Thursday, Herr Krause, accompanied by the Lyons Tea people's representative, visited Folkestone and surveyed the site that they propose to use for their coming demonstration in August. Herr Krause expressed himself as being highly pleased with this. A long chat followed, during which arrangements were discussed. These are being put in hand immediately and everything that will assure the success of the meeting is being carefully considered.—L. H. H.

THE FURNESS GLIDING CLUB.

On Sunday, April 12, the Club machine once again took the field—unfortunately it did so in more than one sense on the second flight, with the result that the forepart of the skid was smashed. The wind conditions prevailing were most uncertain, as was more evident when some days later a slow-motion film was shown of the operations and clearly indicated a "bumpy" state of affairs.

As a start-off the proceedings were anything but encouraging, particularly in view of the fact that the Lancaster and Morecambe Motor Club had announced their intention of paying us a visit to see our machine in flight. To ourselves the arrival of the visitors was most timely and we lacked no assistance in dismantling the machine and transporting to our field headquarters for reconditioning. One member with cycle and side-car hitched on to our trailer effected a speedy and safe journey back to H.Q.

The damaged skid, for such it was, was speedily removed, and the spare fitted in place, and in little more than an hour's time we were ready for the field again. This time in view of a further change in wind direction, etc., a change of site was decided on, and as this was only some 100 yards away the machine was soon assembled ready for service again.

Several successful flights were carried out, the visitors supplying the bulk of the brawn for the "Sandow de lancement." Flying was then suddenly terminated by an over-abrupt landing, caused by the rope failing to release, and skid No. 2 gave up. By this time the visitors were preparing to depart and accordingly they were relieved of any possibility of missing something spectacular.

Looking back over the sequence of events, as witnessed by them, it seems that perhaps the disappointing (to us) exhibition would stand them in good stead, in so far as those interested in Gliding would have realised that we gliders have our share of troubles, but that with the proper functioning of the "team spirit" these can be made light of.

During the week our Ground Engineer, Mr. W. Butterfield, who has had extensive experience in aircraft construction (R.100, etc.) read a paper on Motorless Flight to a meeting of Club members. Mr. Butterfield very ably described the nature of air currents, their action on aerofoils, and the governing features of gliders and sailplanes, and made a point of stressing the need for "flying speed" to ensure proper functioning of the control surfaces of these machines.

The lecture was unfortunately attended by a meagre number and it is as well that the absentees should know that the lecturer had a very enthusiastic reception at Manchester on Friday, April 17, when he gave a similar paper before a gathering of technical men, at which the local Gliding Clubs were well represented. The paper was in both instances suitably illustrated by diagrams, etc., and effectively backed up by a display of Gliding films depictive of catapulted and auto-towed flight.

With the advent of the lighter evenings the members of the Club are being asked to scour the neighbourhood for a site where certificate work can be indulged in, failing which we shall be glad to hear of neighbouring Clubs, who have such a site, in anticipation of trying out our machine there.—R. C.

THE SOUTHDOWN SKYSAILING CLUB.

The Southdown Skysailing Club met on April 12 at Ditchling Beacon, and having tried several grounds in the vicinity during the last month or two we are satisfied that this ridge is one of the most useful in the country.

Although we met at Easter very little could be done on account of the bad weather.

On April 12 the test flight was made about 11.45 a.m. and the machine passed O.K. Mr. S. Wood, holder of the Southdown speed record on R.F.D., then made a good flight. This was followed by short hops on the level until Mr. Cook chased the launching party and by a piece of clever rudder work managed to catch one. Fortunately for the gentleman concerned the machine was ground sliding and he was unhurt; but his boot tore out the anti-drift wire fittings and an aileron king-post broke in sympathy. This ended the morning's work.

Repairs were speedily carried out by Messrs. Ely and Wood, and flying was in full swing by 2.30 p.m., when Mr. Lawson flew with his usual excellent style and finish; but at 4.0 p.m. Mr. Lawford was unlucky; a bump and stall with the machine cross wind resulted in a heavy drift landing and though the drop was only three or four feet it was sufficient to strain the fuselage so that the machine had to be dismantled.

Please note that flying will take place every Sunday from Mr. Nixon's barn at Ditchling Beacon.

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