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The First Journal devoted to Soaring and Gliding



NOVEMBER 1950

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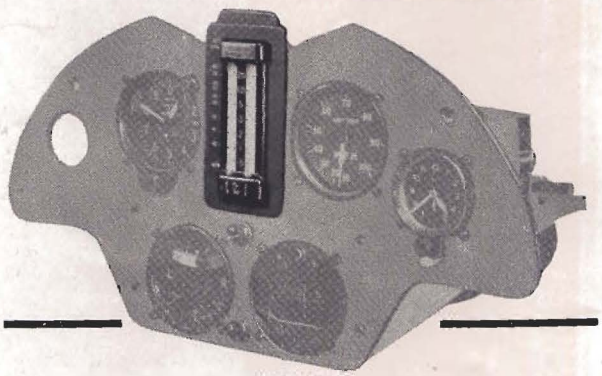
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THE FIRST JOURNAL DEVOTED TO SOARING AND GLIDING

NOVEMBER 1950 ★ Vol XVIII No 11

EDITOR:
LIONEL ALEXANDER

ASST. EDITOR:
VERONICA PLATT

ADVERTISING
and
EDITORIAL OFFICES:
139 STRAND, W.C. 2

PHONE: TEMPLE BAR 6451/2

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COVER PHOTO:
"T/21" at the Mynd. (*Bowdler*).

Editorial

THE usual storm over the International competitions has blown over. The usual improbable theories have been adumbrated—that the winning "Weihe" was built by blackleg labour behind the Iron Curtain; that MacCready lives on an exclusive diet of Porterhouse steaks and Coca-Cola; that ladies in gliding are a Bad Thing. Now, in the calmer and more stable atmosphere of autumn, the summer upheavals give way to the training programme.

In this sphere, incredible as it may seem, British gliding has something to be thankful for. The "Weihe" may be out of reach, the "Olympia" *vieux jeu*, the new "18-metre Gull" not yet in evidence—watch for next month's thrilling instalment, which will include a report on this machine—but we have at least the honour of being served by the fat lady of gliding, the immortal "Sedbergh." Terrible name, that. We prefer her romantic aliases of "Daisy," "Bluebell," "Buttercup" and "Dragonfly."

A concerted effort by all of us towards improving training, with the help of this machine and others can produce the results. The pundit who taught Lilienthal low hops would do well to impart some of his experience to the younger generation instead of resting on his laurels which will, in any case, by this time, be falling into the sere, the yellow leaf. Closed shops on high-efficiency sailplanes should be ruthlessly eliminated. Training to Silver "C" standard and beyond should be the rule rather than the exception, both in private and service clubs. Mr. Slingsby might direct his attention to eliminating the draught which always blows down our left ear when we land the "T-21." The government might assist financially . . . . but miracles take a little longer.

If we train more and spend less time bemoaning our failures, then, when in about twenty years' time the sky is full of high-efficiency sailplanes at £100 apiece, we shall have the pilots to fly them. Hard training is the real solution to the difficulties and inadequacies of British gliding. The *laudator temporis acti* may argue that gliding should be less of a cold war and more of a sport; but it seems to us that if you can have a good time indulging in all the accepted activities, such as talking, pushing, mending and doing retrieves in the early hours of the morning, *and* win competitions as well, then you enjoy yourself just so much more. By all means let us not compete in international competitions—if we don't, the loss will be ours—small loss, you may say, for avoiding the inevitable hurly-burly attending these functions—but if we continue to compete, let us do our opponents the courtesy of entering pilots worthy of their country. This is not to say that we have not done so hitherto; but the days when the pioneers carried all before them are over. We have rested our burden for far too long on the shoulders of a few stalwarts, soon to become—as they themselves would readily admit—"vetusted," to use Guy Borgé's expression, and unless their successors appear from an enlightened and enhanced training programme, British gliding will continue to be beset by the disappointments and arid squabbles which disfigure the pleasant countenance of the sport.

Just before going to press, we received a visit from Mr. Slingsby—most people know him as "Sling." Apart from the pleasure of seeing his face and listening to his salty witticisms, we heard that the much awaited "T-34," which is variously known as the "Gull V," "18-metre Gull" and "that thing 'Sling' says he's making," has flown. It is hoped that it will be possible to give some details in our next issue: in the meantime, we wait with uneasy patience until the great moment when someone actually buys one, and perhaps even flies it against a "Weihe." This is a more momentous occasion that may at first be realised, as it is the first British high performance sailplane to be built since the war, and it is fitting that it should come from a firm which has done so much to further British gliding in the past.

"YOU'VE GOT HER!"

By John Free

WHEN I learned to fly an aeroplane my instructor had recently returned to this country after being shot down in a fighter over the desert in North Africa. And although his face had been badly scarred, his own flying (as I began to appreciate as my training progressed) was impeccable.

I can see him now sitting hunched up in the front cockpit, or strolling around the forced landing field gathering armfuls of fresh mushrooms, while I taxied faithfully behind. I remember him for his guidance and understanding, for the confidence and sense of security he inspired. Perhaps I remember him best for the healthy respect for aircraft and flying which he hammered into me in no uncertain fashion. In those days I thought of him as some aerial god, and his every word constituted my lore!

With those introductory paragraphs I have tried, in the light of my own early experience and good fortune, to give an overall *impression* of what I have come to regard as the ideal dual instructor. Alas, at the time of writing such people, in this country anyway, are few and far between.

That which follows represents a few random notes, making no wild claim to finality on the subject, which I hope may be of some assistance to future two-seater gliding instructors. Should this paper incite some controversy, and perhaps constructive criticism, then I shall be well satisfied.

The Aircraft.

The "Kranich" (either in the two-seater or solo category) is undoubtedly one of the finest sailplanes ever built. Owing to its bulk, however, and the fact that the pupil must occupy the front seat in order to get any value from the flight, it is a sad proposition from the point of view of giving serious elementary training.

This will be appreciated more fully when it is remembered that the instructor's view over the slope, and on the approach, as seen from the aft cockpit is greatly restricted by the position and area of the wings. The "feel" and "sound" of this aircraft are also very different from those experienced while flying the less responsive and open training types.

It follows, therefore, that the "Kranich" is an excellent machine in which to give instruction in aero-towing, high performance conversions and flying. So much for the advanced two-seater.

This article has been based on the assumption that the "T.21 B" is used to instruct ab initio pupils, at least up to the first solo stage. If we leave aside the well-known argument that the "T.21 B" has side-by-side seating which sometimes causes difficulty with certain pupils (I believe this has always been rectified by using horizon bars, the pitot tube or wind screens) it is generally agreed that this machine is most satisfactory for the job it was designed to do.

Passenger Carrying.

I have included a section on passenger carrying because it is my firm belief that this stage in the would-be instructor's training is vital. Nevertheless I have heard of at least three different pilots, strangely enough members of the same club, who started giving dual instruction without driving passengers around at all. This is entirely ludicrous. Let us, then, pause to examine this serious business of passenger flying.

Always get the passenger to sign a "blood chit" absolving the club from all responsibility in the event of accident. This is a very necessary safeguard, and it is your worry to see that it is done before the passenger gets aboard.

Now take the poor fellow under your wing a little, tell him where to tread, ease him into the cockpit, explain the Sutton Harness and its functions, make him part of the aircraft by strapping him in tightly and then, if parachutes are to be carried, quickly run through the standard drill. One of my worst nightmares is that I have ordered "abandon aircraft" only to find the passenger is petrified and hasn't the remotest idea of how to go about the urgent job of making a graceful exit!

Concern yourself about his comfort and whether he can see properly. If necessary provide some cushions and a pair of clean goggles. Instruct him to keep his hands, knees and feet from jamming the controls, and quickly explain how to read the instruments so that he is able to take an interest, in the air, in what is going on. Only small points, I know, but how frequently they are forgotten.

Have you thought about investing in a sickbag, fairly large and reinforced in such a way that it will hold water for about two hours? This can usually be put to a more personal purpose also! No need to excite his imagination by putting it on show, you can so easily keep it in your own pocket.

Enquire whether your passenger has flown at all before, and then put him at his ease, but try to do it in such a way that there can never be any doubt in anyone's mind as to who is the first pilot of the aircraft. You are. You must make the decisions. You must accept the responsibilities.

As usual make a cockpit check, and fly according to the book of rules in order to set a high standard of both pilotage and airmanship. Talk to him in a quiet, matter-of-fact way and, as the flight progresses, tell him what is going on. If you must stall the machine to discover what the a.s.i. reads, have the courtesy to tell him what to expect in advance.

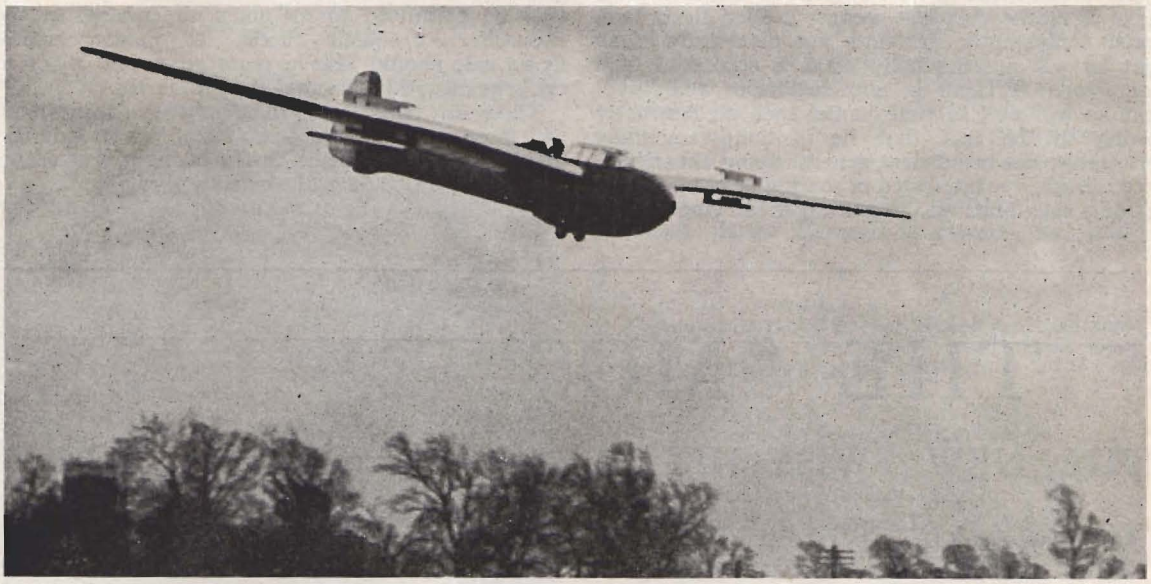
Execute gentle evolutions, and remember that normally passengers do not like doing tight, interminable circles in cloud. And if the flight turns out to be fairly long invite him to ask questions in order to keep his mind occupied. This will serve the dual purpose of helping you tone your voice (having found out if you can be heard clearly) to the correct pitch for giving instructions in the air. This will also afford the opportunity of your experimenting with your own and other accepted methods and phrases of conventional dual "patter".

The golden rule should now be, no matter how bad the situation do not raise your voice so as to convey a state of panic to the other "bod"! If you cannot

put him, and keep him, completely at ease it is better to say absolutely nothing.

After each flight try to spend a little time with the passenger answering his questions. Invite his comments and observations also. Here is a continual source of interest (and often amusement) and forms the good habit of discussing each flight with a view to de-briefing your pupil in the future. Now you both have more than a little in common!

As in most things first impressions matter a great deal, and in the case of a potential club member, a new member who has already "signed up" or merely a passenger experiencing flying for the first time, it will be apparent that as a two-seater pilot you are one of the best salesmen the British Gliding Movement has.



The C.U.G.C's "Kranich." The Author is in the back seat. Note rear cover removed for better visibility, wheels not jettisoned, and enormous airbrakes.



T/21 ("Bluebell"). The Editor at work. Note side-by-side seating, good visibility, poor spoilers (they are fully open), and general robust construction.

Thinking About Dual Instruction.

It seems to me that towards the completion of this period of passenger carrying, chief flying instructors should think seriously about stipulating a definite height—say 1,000 ft.—above which the new two-seater pilot may give some instruction in straight and level flying and medium turns. Gradually introduce him to, and authorise him to give, some restricted dual instruction.

Our present rate of development in this field must make us realise that just because a pilot flies a two-seater competently this does not necessarily mean that he will automatically make a successful dual instructor. If there is any suspicion whatsoever that he will not, in time, make such an instructor (owing to the fact that he is temperamentally unsuitable, has insufficient general flying experience, is too erratic, too interested in soaring or other similar reasons) then limit him to passenger carrying only.

A man is not a dual instructor because there is no one else to do the job; he is a dual instructor by virtue of his own individual ability and skill in that special capacity.

Most major clubs and the Service are gradually converting to this method of training, but not *every* pupil, now that the instructor is in a position to discover this in the two-seater for himself, will be considered fit to go solo. And in the interest and safety of all concerned it is hoped such pupils will only be permitted to fly under supervision in the two-seater. Frequent checks for pupils already flying solo should take a more prominent place in the sequence of instruction than hitherto.

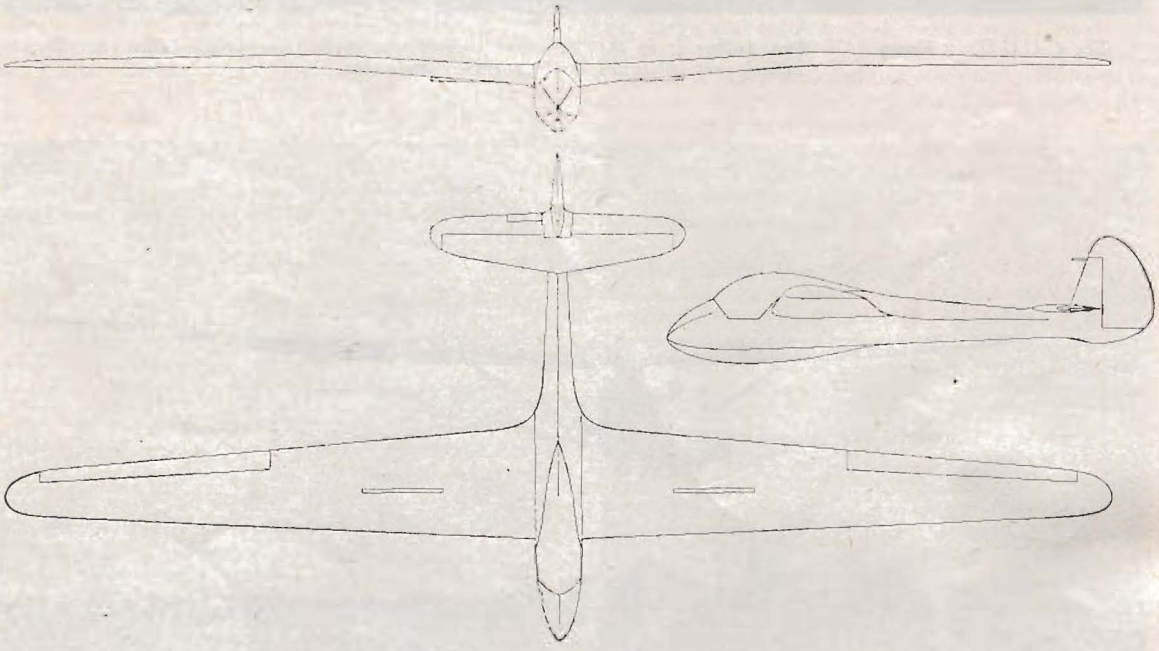
These are hard facts which must be appreciated and faced now that the " two-seater " is at long last gaining its rightful place in the training programme of the British Gliding Movement.

(*To be continued*)

THE "MOSWEY IV"

THE NEW SWISS HIGH-PERFORMANCE SAILPLANE

Translated from the German in *Aero-Revue Suisse* by R. Wild.



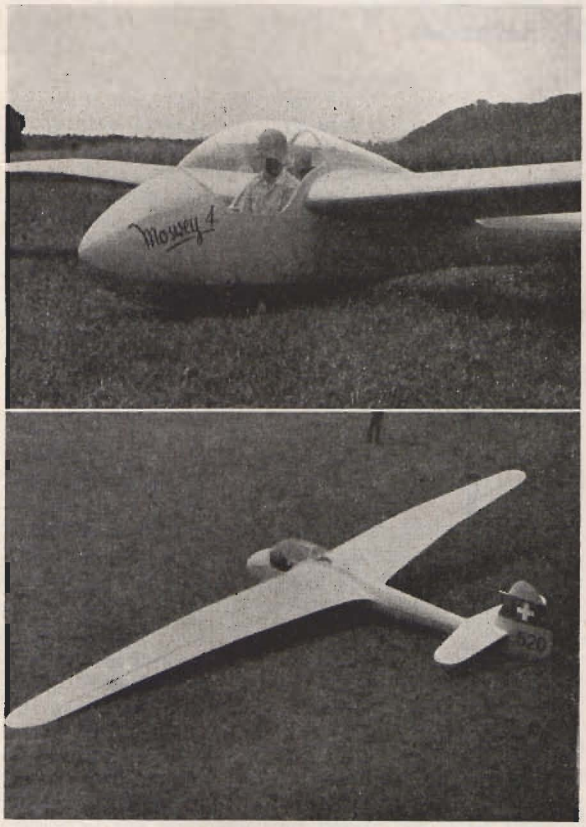
Designed and built by G. Müller, Zürich.
Span : 47 ft. 4 ins.
Length : 20 ft. 10 ins.
Height : 3 ft. 8½ ins.

Weight empty : 400 lbs.
All up weight 620 lbs.
Best gliding angle at 55 m.p.h. 1 in 30.
Minimum sink at 40 m.p.h. 2 ft. 2½ ins. per second.

"MOSWEY IV."

THE plane is designed along similar lines to the "Moswey VI" but has about the same dimensions as the "Moswey III". Performance, stability and cabin space have been improved compared to the "M. III". Ruggedness for ground handling was considered of great importance. The plane is absolutely spin-proof.

Construction. Cantilever, single-span semi-high wing plane of semi-monocosque construction, with fabric covering. Gull-type wing; fuselage has



characteristic Moswey shape with very carefully shaped big canopy.

Wing built in halves, connected to fuselage by three pins each. Spar and plywood clad nose constitute rigid torsion box. Dive brakes, (D.F.S. type) extend vertically from upper and lower surface of wing, have see-saw form and mesh when retracted. Narrow ailerons with three covered hinges each. Differential operation. Ailerons remain effective even when plane is stalled, and are aerodynamically and mass balanced.

Wing connection made from aluminium alloy; special centring device, so pins can be inserted easily without pressure.

Fuselage has plywood shell with support structure. Good torsional stiffness, front part is double walled. Keel-shaped base with single curvature facilitates repairs, keel structure carries seat, control-block and instrument panel.

Aft of the wing, the fuselage tapers sharply and serves only as a tail carrier. Fin is integral with fuselage, carries pitot head. Rudder and elevator are aerodynamically and mass balanced, Tailplane is easily removable, Elevator carries trim tab, adjustable from cockpit. Cabin is rather roomy, pilot in reclined position, extremely good visibility, even to the rear. Four small containers in the interior walls for small tools, etc. Luggage compartments in wing root leading edge.

Controls are actuated by push pull rod system, no temperature lags, no maintenance required.

(*Continued over*)

Ministry of Civil Aviation.

Private Pilots Licenses—Concessions for glider pilots.

Some important concessions have just been made for glider pilots who wish to gain Private Pilots licenses. The new rules are as follows :—

1. A Silver "C" or "A" category instructor has to do only the practical flying tests and the full technical examination. (For those who do not know, this entails such knowledge as whether or not gliders give way to balloons.)

2. A "B.2." category dual instructor must do the practical flying test, the full technical examination and three hours cross-country flying as pilot in charge *in an aeroplane with an engine* during the six months immediately preceding the date of application, including one flight during which the applicant landed at two intermediate places, one being not less than fifty miles from the place of departure.

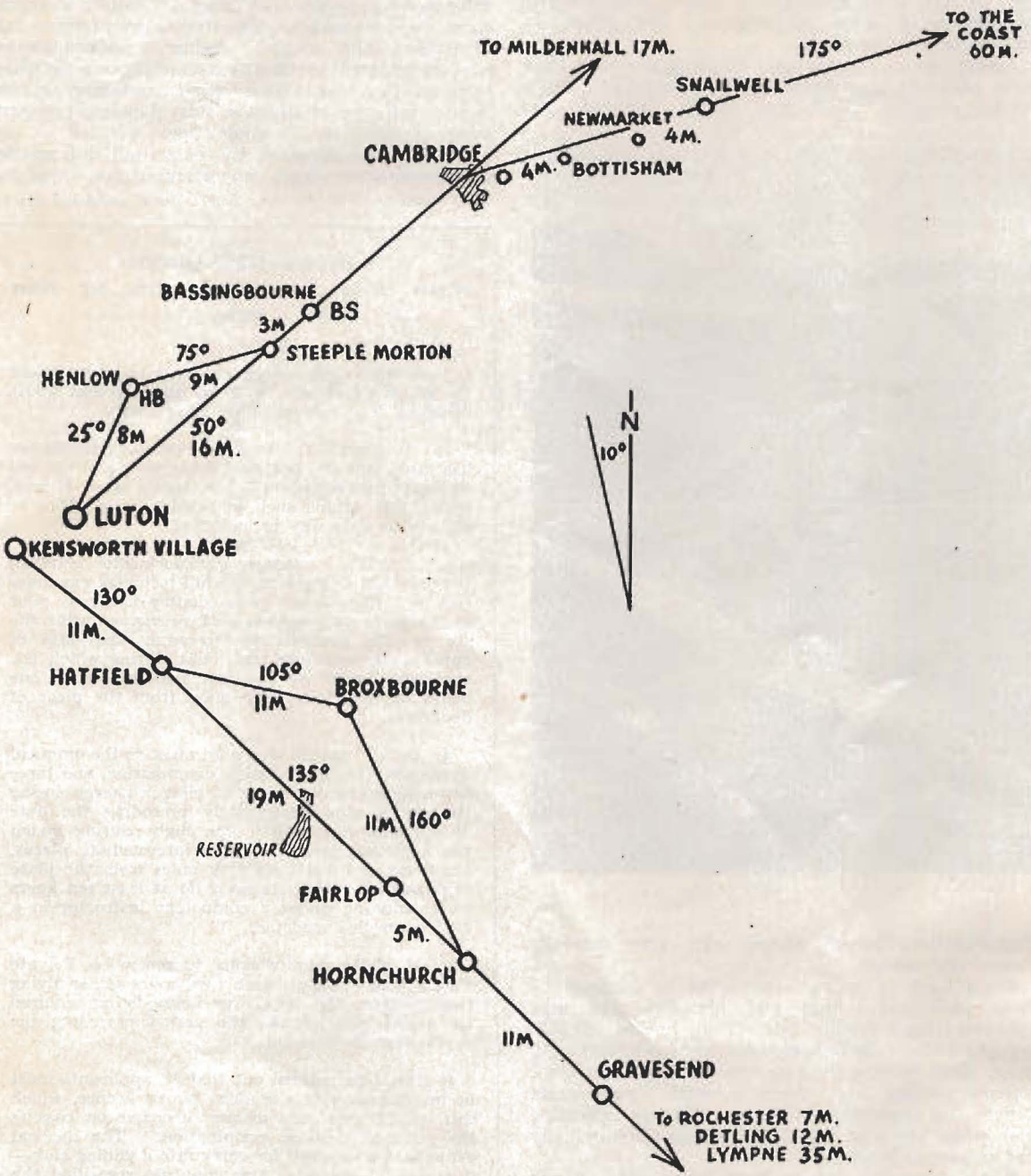
3. A "C" certificated pilot must do the practical flying test, the full technical examination, and three hours cross country flying as pilot in charge during the six months immediately preceding the date of application including one flight during which the applicant landed at two intermediate places, one being not less than fifty miles from the place of departure. Also, he must do at least ten hours flying training under a competent instructor in a dual controlled machine.

4. A glider pilot wishing to renew his Private Pilot's license may count two hours glider flying time towards the usual five hours flying required for qualification during the period preceding the application for renewal.

It should be pointed out that all applicants must be in possession of a student pilot's licence, which can be obtained as a matter of course on passing the relevant medical examination. The medical examination required for entry into a gliding club—if any—will not do. Any enquiries regarding the operation of this scheme should be addressed to the Ministry of Civil Aviation, and not, repeat not, to the "Sailplane and Glider."

On assembly of the planes, all control connections are absolutely fool proof. All control levers etc., are mounted on one central control block attached to the keel.

Plane was designed for mass production, many jigs are used, many components are interchangeable with those of " M. 5," and " M 6," thus facilitating production and repairs.



PLAN YOUR CROSS-COUNTRY FLIGHT

By DUDLEY HISCOX

FOR years now I have enjoyed floundering about in the air light heartedly. However, I took seriously a section of the first Kemsley Cross-Country competition. That taught me the utmost importance of prior on-the-ground planning in order to make satisfactory distance flights.

Believing that Silver " C " aspirants may be helped by their use, here are two flight plans for getting away from Dunstable. The first is for a wind North of West and the other for a wind South of West. There is of course no particular difficulty in making similar plans for other gliding sites, or other directions.

Plan for W.N.W. Wind.

If you are up to 3,500 feet or more you have done a Silver " C " climb and will most likely be above A.5. road beyond Kensworth Village. Alright, off you go at 130° on the compass and ready to use more lift if and when you find it—and the odds are that you certainly will.

Suppose you don't, then you have set course for Hatfield aerodrome, 11 miles away. It can be easily recognised by its one long runway and with a following wind you will reach there from 3,500 feet.

If the going is good and you are 4,000 feet or more over Hatfield make off next at 135° which is the course for Fairlop, 19 miles, and for Hornchurch, 24 miles.

Dwelling houses, glass houses and Epping Forest beneath may give you a mild scare, but a huge reservoir on the course is a " can't-miss " check. You should pass over its top or North half. Fairlop aerodrome is then only six miles and any altitude in excess of 2,000 feet should get you there alright, or there is an old A.T.C. gliding site close to the N.W. corner of the reservoir and beside the river Lea.

Again, if you have 2,000 feet at Fairlop you will be able to continue and get over to Hornchurch, less than another 6 miles. Fairlop will *just* give you your Silver " C " distance but Hornchurch is 38 miles from Dunstable.

There is usually bags of lift around Hornchurch and Ford's Dagenham factory, so if you can afford the retrieve, press on at 140°. Gravesend, Rochester, Detling and Lympne aerodromes are all in a line on that course.

If at Hatfield you have not climbed to 4,000 feet, or feel apprehensive anyway, then set off on a course of 105°. That will take you towards Broxbourne, a small L-shaped grass aerodrome surrounded, more or less, by glass houses. It is only 11 miles. From Broxbourne a course of 160° will take you past Fairlop, another 11 miles, and on to Hornchurch.

Plan for W.S.W. Wind.

By the time you have climbed to 3,500 feet or more, you will have drifted over Luton. The normal course from there is 50° which takes you over Hitchin, Letchworth and Baldock to the aerodromes Steeple Morden, 16 miles, and Bassingborne, 19 miles. The same course brings you to Cambridge, another 12 miles. You will then be 38 miles from Dunstable.

In this direction the country-side is " open " and a safe forced landing should not be difficult so long as the field is selected and your approach planned before you are below 800 feet. Nevertheless in the event of weak lift East of Luton go off on a course of 25° that will lead you to Henlow, 8 miles away which could be reached with very little over 2,000 feet. From there a course of 75° will take you to Steeple Morden which is again only 9 miles.

If at Cambridge you are in lift, carry on; at 75° Bottisham, Newmarket and Snailwell aerodromes follow each other in quick succession in that direction being roughly 4 miles apart. In any case Newmarket is an easier retrieve than Cambridge.

Straight on at 75° leads to the coast just North of Great Yarmouth, the longest possible run into East Anglia from Dunstable.

The chart accompanying these notes can be carried in the aircraft and a map looked upon as a mere luxury.

The bearings given allow for magnetic North being 10° West.

ACCIDENTS.

DURING the aviation meeting in Daellikon, near Zurich the well-known pilot, Siegbert Maurer crashed with his two-seater sailplane " Moswey 6 " after the fuselage had broken up at about 3,000 ft. altitude. Maurer had a split-second escape and parachuted to earth. His passenger, 15-year-old Hans Haupt who did not have a parachute (and did not know how to unfasten his seat belt, translator), was killed. In the interest of sailplane flying and especially sailplane construction we urgently request the Federal Air Administration to publish a statement of the cause of this regrettable accident.

[We also regret to announce that the well-known Jugoslav " Arao ", which attracted favourable comment at Orebro, has been crashed—No details are yet available. Mr. L. Marmol's " Lunak ", was recently spun in while being flown at St. Auban by a local Instructor, who was killed. The aircraft spun off a slow turn at considerable height, and was written off..

The latest addition to new types which have been bent is the " Prue—215 ", which lost a wing and killed its pilot.—Ed.]

SOARING IN FRANCE

By GUY BORGÉ

JUST at the end of the 1950 season, it is instructing to study the situation of soaring in France, a problem that depends upon two principal factors : (1) men, (2) machines.

(1) Men.

The improved quality of French pilot training has never been more apparent. In the regional competitions of the Clubs, as in the National Centres, one is happily surprised by the consistently high standard of flying of pilots coming from numerous different sites. In relation to the results and the hours of soaring, the number of accidents has become negligible, one improvement caused by the suppression of the disastrous S.G.38 school. It is so much easier to me to talk of its bad results as I got my " A " and " B " badges in primaries.

Clubs and Centres use the two-seater system with the excellent " C.800 " or " Castel 25." The first solos are made in " Castel 301 " or " Emouchet." But on certain difficult sites (like Saint Auban or Cessieu for instance), any pupil soloing for the first time is radio-guided by his instructor. The results appear to have been astonishing ; I saw at Saint Auban some perfect beginners' landings with a 50 yards precision in " Emouchet " and very clean circuit procedure.

A good factor in improved flying comes from the standardised teaching at the La Montagne Noire Centre of any instructor, who must pass the official soaring instructor's examination.

After 5 years of continuous soaring, most of the instructors have become experts in stable financial conditions since they were paid by the governmental organisation, the S.A.L.S. I say " were," because a recent decision has just been taken by the State to cease paying 85 instructors in the Clubs because of the lack of money. Soaring will become more and more difficult in these Clubs, never rich, that cannot in their great majority pay their instructors. They could receive the help of gratuitous instructors, but certainly with some less good results. (My goodness ! (Ed.)).

The number of the new holders of soaring certificates steadily increases. The official statistics proceed from the France Aéro-Club but the actual numbers are naturally much greater because official recording takes time. By the 15th September, 1950, France owned :

7,460 " B " Certificate pilots.
4,480 " C "
1,010 Silver " C "
65 Golden " C "

In comparison, there were in the world 10 years ago by December, 1940, 1,767 Silver " C " holders and 41 Golden " C."

A certain slow-down is noticeable in enlisting of beginners, and I think that it is caused by present economic difficulties. Young boys under 18 years have difficulty in finding time and money for flying, and after some air disasters in the world the parents do not want to hear of any flying for their children. However, the majority of the French pilots are under 21 years and the price of flying in the Clubs is lowest for them and free in the National Centres.

No French pilot has yet earned the Diamond Badge. Only two pilots own the 311 miles leg : M. Eric Nessler with 314 miles in U.S.A. and M. André Suisse with 348 miles, a national record of course. This last pilot needs the 186 miles goal flight for wearing the 3 tantalizing diamonds. Nine pilots have succeeded to this goal leg : Mrs. Choisnet-Gohard, Messrs. Ambrosi, Aubert, Ebely, Fonteilles, Kirschroth, Lepanse, Pierre and Borgé. But the 16,400 feet leg, mainly by the excellent situation of Saint Auban is more favourized with about 30 holders.

The Air Army has proved to be interested in Soaring. Besides its own Centre at Le Bourget du Lac directed by Captain Fonteilles, it has evolved a new scheme by which any soldier may freely soar in the Clubs during his service. The Army repays to the Club 5 litres of petrol (about 1 gallon) per launch. And this year a great competition reserved to the military pilots was organized at Cazaux. This contest of which the good results will appear in a future issue has proved successful and it will perhaps be organized next year on an international basis.

(2) Machines.

The situation appears much less brilliant for this important factor of Soaring. The lack of money has prevented the S.A.L.S. building a great number of new machines to replace the vetusted (*sic*) or broken ones. This year, only 25 " C.800 " two-seaters, 30 " Castel 311 P," 30 " Emouchets " (a poor figure for a training machine indeed) have been ordered, and no performance sailplanes apart from the " C.M. 8 " prototypes. Dramatic situation because the " Grunau " sailplanes have generally been glued with " corite " glue lasting about seven years. Then, by 1952, all the " Grunaus," " Meises " or " Kranichs " will be grounded. I have seen some " S.G. 38's " absolutely dismantled and falling in pieces at the slightest contact, because of lack of glue. I draw attention of the users of German-built machines to this important point.

It is absolutely impossible to give the actual number of sailplanes in service to-day, and I think that the S.A.L.S. itself does not know it. One certitude appears, that this figure varies in constant diminution ! It is easier to break a machine than rebuild it, mainly without money. The following number is based upon my own observations. You are free to believe it or not.

This doubtful figure is 800 sailplanes, decomposed in : 120 performance sailplanes (70 " Nord-2000," 20 " Weihes," 12 " Air-100," 4 " Meises," 4 " Minimoas," 4 " Mu-13," 5 " Avia-40-P ") ; 240 two-seaters (150 " C.800," 60 " Castel-25," 20 " Kranichs," 2 " Goeviers," 6 " Castel-242," 2 " C.M.7 ") *about* 450 training gliders (150 " Nord-1300," 100 " Emouchets," 80 " Grunaus," 80

" Castel-301," 40 " Castel-310 "). I don't include the " S.G.-38 " (perhaps 100), kept as soldiers of an old era.

Eight different types of two-seaters are in active service, and 20 of one-seaters. Certain sailplanes are rare birds, for instance the "Mingo," a German unknown performance sailplane that flies at Meaux. 3 " Wolfs " at La Montagne Noire, entirely renewed but that don't soar; perhaps because of their long Handley-Page slots in the wing leading edges, they suffer from a very bad reputation for spinning. I should have liked to be the imprudent pilot testing them but I was forbidden to prove my courage, and the " Wolfs " sleep amidst dust. As other rare specimens in France there are 1 " Hutter-17," 1 " Rhönsperber," 1 " Rhönadler," 3 " Rhönbussards," 1 " Delanne-60 " (Germans took a batch of them in 1940), 1 " Eider " (two-seater version of the " Emouchet "), 5 " Spalinger-S.18 " grounded because of the fatal accident of Mazoyer in Geneva, caused by the failure of the wing fittings. Readers will be perhaps interested to know the Troyes Inter Clubs Centre keeps the original " D.F.S. Maikefer " motor-glider (see *Sailplane*, July and August, 1950 issues). A few tests were carried out but always stopped by a bad running of the engine.

This tour around the French soaring is certainly pessimistic, and I fear that the next year be less good by the lack of instructors and money. The S.A.L.S. is preparing a general re-organization beginning on the 1st January, 1951; without knowing its aspects (I think that the formula of the Inter-Clubs Centres will be developed in all the important sites), it is difficult to foresee the future. The only rule now is: " Wait and see."



Two future French pilots.

NOTES ON AERO TOWING

By Fred D. Hoinville.

FOR THE TOW-PILOT :

Use longest possible take-off run, into wind if possible, but better crosswind and long, than into wind and short.

Turn away from any high ground as soon as airborne. All turns, rate 1 or less.

All take-off signals to be clearly discussed and understood.

Take up all slack *firmly* before take-off.

Tail will lift sharply at once when throttle opened. Let it.

Climbing speed—55 to 60 on *full throttle*.

Cruising speed—60 to 65 for " Olympia "; less (55) for older types. (This may be increased if the glider pilot approves after testing.)

Don't exceed 65 in bumpy air. Too rough on the glider pilot.

Don't make any sudden movement. All turns, accelerations, deccelerations etc., must be gently. (Except take-off, full bore.)

Don't tow low over bad country. Go round it or HIGH.

Don't tow into cloud or heavy rain.

Best height to tow is at *inversion level* where air is very smooth. (Can usually find an inversion between 3,000 ft. and 10,000 ft.—worse luck !)

On take-off, do a circuit within gliding distance of the drome to gain height. Two circuits, if you prefer.

When glider releases, make *certain damn sure* he has released before making any sudden movement, then peel off AWAY from him and DOWN to take the rope away.

When dropping the rope, don't come below 400 ft. until the final dive and zoom over the selected spot. Don't forget the rope trailing behind. Avoid all other aircraft and ground obstacles.

DON'T FORGET TO DROP THE ROPE. (Plenty have).

Best time to tow is early morning or late evening. If towing in midday, go right to that inversion.

If anything goes wrong during the take-off, DROP THE ROPE and get out of the way. Keep taking off if possible, but DROP THAT ROPE.

FOR THE GLIDER PILOT :

Best rope length—about 200 ft. Best rope thickness—as thin as possible with safety. A heavy rope causes surging and makes it hard to stay in place.

For " Olympia " about 7/16th thick. For " H17 " 5/16th to 3/8th.

For a long tow, lock all safety releases (automatic over-run type) to prevent accidental and unwanted release.

For take-off, lift off the ground as soon as possible, then stay below 15 ft. until the *plane* is airborne.

During climb, stay slightly below plane, just above the slipstream; if you touch the slipstream slightly, it will just give you a gentle rock. If you get right into it, it will give you a strong lurch, but you can easily climb up out of it and resist the roll. Don't shoot up TOO high. (NOTE: The majority of pilots now agree that it is better to stay slightly below the tow plane, instead of slightly above, as we once thought, and, provided a light rope is used, I agree that they are right. A heavy rope is another matter.)

Try to maintain an even height behind the plane. This prevents surging and helps the tow pilot a lot.

If you get too high, DON'T dive, but skid outwards to take up any slack in the rope, then skid inwards and downwards, back into position.

(*Continued on page* 251)

THE SIERRA WAVE

By ELVYN C. PYE

OUR editor has asked for a Weather Observer's report on the Sierra Wave. Such a report will necessarily be a composite of what we at the Bishop Weather Bureau Station have observed and—probably even more—of that which has been reported to us. It is really pretty difficult, this far along in the story, to separate our own experiences from those of which we have heard so much but have not actually had, ourselves. For this subject has become a little more than familiar to us. By this I certainly do not mean to imply that the subject has become at all boring nor that we have become experts in it ! It is just that we have been considerably tossed about in the Sierra Wave since March, 1947. So I'll try to give some idea of how The Wave looks to us but make no claim that this appearance more than resembles the actuality.

The name of The Wave varies as much as most other opinions about it vary—Sierra Wave, Sierra Madre Wave, Bishop Wave, etcetera. In Bishop we first just called it IT. Then we used Moazagotl but that is the name of a cloud form, only, and did not describe the phenomenon that caused it. When we found the cause to have so many wave characteristics we called our standing wave the Bishop Wave or just The Wave.

In appearance The Wave varies as the viewpoint of the observer. To a camera enthusiast the Wave may appear as stacked lenses of beautifully irridescent clouds in a cerrulean sky. To a record-hungry sailplane pilot just released from tow into the lift, it probably shows up mainly as smooth " green " air with some rough " down " if he gets out of position. These aspects most of the S.C.S.A. members are familiar with.

What the weather observer sees may not be so familiar to many of you. For us The Wave often first shows up as a gleam in the eye of the chart-plotter when he locates a low-pressure area coming in on the California coast somewhere between Monterey and Santa Barbara. The best " bounce " conditions in the Owens Valley are associated with such a LOW when a good cold front with a tight pressure gradient accompanies it. With the LOW centred this far south the circulation pattern around it gives us winds from about 230—250 degrees, which is near enough at right angles to the Sierra-Nevada range to assure a sharp drop of air over the mountain ridges into the Owens Valley to the north-east and consequent wave formation downwind from the Sierra obstruction.

If the LOW should start to fill before it gets close enough in to give us the right wind, or if it should swing considerably north of us, the Wave generally doesn't amount to much. So a check on the pressure tendencies ahead of the frontal system as far east as the Continental Divide is generally helpful to determine what the path of the LOW may be.

Given the right pressure system moving in, the first indication that The Wave is actually forming is generally found on the pilot balloon graph. Although single-theodolite pibals are certainly inaccurate in a region where vertical currents of much size exist, the velocity curve on the graph of a run is a good indication of these same vertical currents. Since a constant and definite rate of rise of the balloon is assumed in calculating the wind directions and velocities for a single-theodolite balloon run, an actual rate of rise less than that assumed (i.e., the balloon in an area of down-draft) would give an apparent increase in velocity. Also an actual rate of rise greater than that assumed would give an apparent decrease in velocity. This sinuous velocity curve sweeping back and forth across the graph always accompanies wave conditions. Generally this distinctive curve is first found in the upper levels and sometimes it doesn't get any lower. In that case the wave is too high to help a sailplane pilot. The shape of the curve is distinctive and the limit of the values gives a fair indication of the lift that is present and the height necessary to tow to get into it.

If the pibal shows the wave to be present and descending from the upper levels, typical altocumulus lenticularis—and sometimes the stratocumulus " roll "—clouds of ten make their appearance within a few hours. Cloud forms do not always accompany the Wave, however. If the air is dry no clouds at all may appear and yet a strong wave may form. Also the " lents " may form above the height attained by our balloon runs and we may have no advance warning of their appearance. The pressure pattern I mentioned does not always seem to be present, either, when these high waves form. A favourable pattern would probably appear on the high level charts in such a case, even if it did not show up on the sea-level chart.

On the other hand, the Sierras may be deeply buried under Stratocumulus and the Wave clouds may be almost hidden by the lower broken fractocumulus and fractostratus cloud patches drifting over the valley.

The extent of downward movement of the air flowing over the mountains varies considerably. The farther down it comes the stronger The Wave. When it actually strikes the ground fairly severe dust and sand storms occur and often this foehn wind is severe enough to do damage to trees and structures in the Owens Valley. Such a condition occurred Sunday, March 5, of this year. The strength

of the resultant updraft was great enough that Bob Symons soared the P-38 for about an hour with props dead, and went up and down the valley at will. He gained from 16,000 to 29,300 MSL, at one time, and says he should claim a twenty-five thousand foot pin for his passenger, Bill Partridge, because he *soared* to better than 25,000 feet MSL—soared a P-38 ! The visibility on the ground at the airport during this period was zero most of the time and wind was from the south-west with velocities as high as 65 m.p.h. Power and telephone lines, trees, roofs, and cars were damaged the full length of Owens Valley and in Long Valley north of us.

The foehn wind generally doesn't strike the ground —at least with such force. In most cases it is necessary to tow to 9—12,000 MSL to contact the lift at all. The position of The Wave, once it is formed, is fairly constant. It may shift east or west, however. Perhaps this is caused by change in the wind velocity. It has been suggested that higher velocities move the first bounce farther out over the valley. Although Bob thinks this is too great a simplification of the actual cause, the first bounce was nearly five miles east of normal position on March 5. Or maybe the first bounce was wiped out by the great turbulence and the second was so much stronger that we were confused.

Occasionally weaker lift areas are found between the major " bounces ". Symons speaks of harmonics of the main wave. Ross suggests that the standing wave may break away from position and drift downstream while a new wave forms in the normal position—as water wavelets do below an obstruction in a stream. One aspect of the wave position seems pretty well agreed upon, however. This is the " vertical " axis of the lift area ahead of the wave slopes upwind from the vertical with increase in height. Ross and Deibert had to move upstream continually to stay in the best lift and were well west over the Sierra crest at 36,100 although the base of their lift was in normal position over the valley. It may be that pilots who lose the lift are drifted back out of the proper position ahead of the wave crest because of the frequently very strong winds at high levels.

If I've said more about opinions of pilots than about personal experiences of weather observers, it may be because the weather station is principally a clearing-house of pilots' information. Of course this is not strictly true, but the Weather Bureau is not actually involved in our Wave Project as such. Some of the Weather Bureau personnel are soaring fans and some of us do some flying. Betty MacMillan Loufek was the first person, I believe, to break a record in The Wave and she did it while on duty at the Bishop Weather Station. Halbert Root, of the U.S. Weather Bureau, did some early work in standing waves in the atmosphere while on duty at Sandberg Weather Station. I got in on some of that, too. But Pilot's Reports are very important observations in all phases of Aerological Meteorology and, at present, the main source of our information on The Wave. So if I just re-hashed what S.C.S.A. pilots have seen and said of The Wave, it is because S.C.S.A. pilots probably know more about it than anyone else, so far. Good Soaring !

**Editor's note.*—Mr. Elvyn C. Pye, who is a member of the S.C.S.C., is officer in charge of the Bishop Weather Station.

Bishop Weather Station is located on the Bishop Municipal Airport, 2½ miles east of Bishop, California. 1 mile west of the Owens River. The 12-14,000 foot White Mountain Range is 10 miles east and the 12-14,000 foot Sierra-Nevada Range is 25 miles west. Floor of the Owens Valley is oriented NW-SE and is approximately 14 miles wide near Bishop. The nothern end of the valley is partially cut off by mountains rising to 6-8,000 feet about 30 miles distant. The southern end of the valley gradually drops into the Mojave Desert. Pilot balloon observations are considerably affected by turbulence in the narrow valley and frequently to considerable elevations by " wave " action in the lee of the Sierra Range.

Bishop was first established as a First Order Weather Bureau Airport Station in April, 1944, at the present location in the Administration Building of the Bishop Municipal Airport—at that time an Army Satellite Air Field. The station was closed in October, 1945, and re-established in the same location in March, 1947. Operation was 24 hours per day until January 15, 1949, when the hours were cut to 16, 0700 to 2240 PST daily. Continuous record of temperature and pressure were maintained by thermograph and barograph. Service A teletype is operated by Weather Bureau personnel.

It has come to our notice that Jock Forbes is going to the U.S.A. shortly to see for himself, and we hope to publish the result of his researches at some future date.

NOTES ON AERO TOWING—*contd. from p.* 249.

Don't stay high—it pulls the tow plane into a dive.

During take-off and up to 1,000 ft. keep your hand ON the release, in case of emergency.

If anything goes wrong during take-off, DROP THE ROPE and land at once. Be prepared to land outside the drome, if necessary.

During all turns on tow, swing out a little wide in order to keep always in line with the centre line of the tow plane. This helps the tow pilot a lot. If you cut inside the turn, you force the tow plane to turn the other way, by pulling his tail inwards.

When you release, if possible arrange that YOU will turn LEFT at once and the tow plane turns RIGHT as soon as the pilot makes sure that you are off the rope.

If the release won't release, signal tow pilot by overtaking to one side, with rope on, if possible. He can then take you over the drome and release the rope his end.

If forced to land with the rope on, come in high so the rope will clear all obstacles, then dive steeply to skim the ground at high speed. This will let the rope hit the ground AFTER you level off skimming the grass. Let the glider hug the ground until it slows to a landing and stop. If the rope catches, at least you won't have far to fall and you can buy another glider, if necessary.

(*With acknowledgments to Gliding Angle*).

Gliding at the Mynd



1. "*T/21B.*"



2. "*Falcon I.*"

Photographs by J. B. Bowdler. Super Ikonta; Panatomic X; Pale yellow filter.

EIGHT HOURS ALOFT

by JOHNNIE DUER

THURSDAY morning, Sept. 15th, dawned clear and cold at Carp airport and when I awoke I had every intention of catching a train to Toronto.

However, shortly after 10 a beautiful cloud-puff appeared and I couldn't resist having just one more try. I put the "GB" together in record time, grabbed 2 chocolate bars and a sweater and at 11.30 a.m. I was releasing at 1,500 ft. and heading for a promising cloud.

I encountered 2 metres lift almost immediately and finally got the dial up to a steady 3, and spiralled up to cloud base.

Since I wasn't interested in distance, I decided to fly over to the Gatineau ridge so that if the thermals died I would still have a chance of finishing 5 hours on the ridge.

I had never ridge-soared before, so after an hour and a half of thermal flying I decided to drop down and try it, the thermals being so good that I was sure I could pick one up off the ridge and climb back without trouble.

At 2000 I began looking for lift back of the crest and became apprehensive because my sink was not easing off. Finally I was right on the crest and slipped across it and down another 100 ft. before I had everything under control. This was one of the most exciting experiences of my life, soaring just off the tree-tops and swooping up and down the ridge. I managed to get several hundred feet above the crest of the ridge and finally found a thermal and climbed right up into the clouds. It got very cold after the warmth of the lower levels and a few hours

(*Continued on page* 263)

ULTRA LIGHT AIRCRAFT ASSOCIATION

EXTRACTS FROM OCTOBER BULLETIN

INTO THE FIFTH YEAR

This month marks the fourth anniversary of the Association's foundation, a fact which should be a cause for celebration by our members, especially in view of the recent outcome of our Permit-to-Fly negotiations with M.C.A.

We reported briefly at the end of our last issue that the Association had reached a successful conclusion in its fight to secure relief for the few grounded and frustrated owners of ultra light aircraft whose plight was the subject of Editorial and other comment in our June issue.

The full text of the letter setting out the conditions under which the Ministry of Civil Aviation will accept the Association's recommendations for the issue of Permits-to-Fly in respect of certain ultra light aircraft is published below. The letter will repay careful and immediate study by all members of the Association concerned in this matter.

It is only right and proper that we should place on record our appreciation of the Minister of Civil Aviation's realistic and sympathetic attitude in making this very real concession, and also our satisfaction at the speed with which these negotiations have been brought to a successful conclusion. We are indeed happy to do this.

We also wish to record our appreciation of the untiring efforts of the technical members of the Association's Executive Committee who have borne the burden of responsibility in the negotiations with the Ministry.

No doubt we may be accused of banging the big drum and, possibly, of offending against editorial etiquette but we feel justified in pointing the moral of all this. If it had not been for the existence of the Association and its persistence in this matter, there is very little doubt that the individuals concerned would still be in a hopeless position in regard to legal flying. The concessions obtained in respect of Permits-to-Fly, the introduction of the Ultra-Light Category C. of A. Requirements, and even the restoration of Permits-to-Fly themselves after the war, have been the result of the Association's policy to obtain the Freedom of the Air for the greatest number. This object will, of course, remain a cornerstone in the fabric of the Association's basic policy.

It will not escape the more discerning of our members and friends that, although this latest concession affects comparatively few members, it brings the Association to an important stage in its development. The fact that the Ministry has accepted the Association as competent to make technical recommendations in airworthiness matters, affecting ultra light aircraft, is extremely important, and the successful discharge of our new responsibilities can lead to the broadening of the scope of the Association's activities in these technical matters.

Thus we may celebrate the fourth anniversary of our foundation and express the hope that the ensuing year will see a greater degree of progress and the further strengthening of the Association's position in all ultra light aircraft activities.

R.9693/45/RL. 11th September, 1950.

Dear Sir,

Following recent discussions with your Association, the Minister, after consulting the Air Registration Board, has agreed to certain modifications in the procedure governing the issue of permits-to-fly in respect of ultra-light aircraft of pre-war design.

You will recall that the Minister's predecessor, Lord Nathan, accepted a recommendation of the Special Committee set up after the war to advise him on all aspects of private flying that aircraft which had at any time (i.e. before the war) been granted a permit-to-fly should be permitted to resume flying without certificates of airworthiness subject to certain safeguards, including official inspection to ensure a sound state of maintenance. The concession was later extended to aircraft **similar in all essential respects** to a type which flew satisfactorily before the war and constructed or in process of construction prior to the date of the original concession (August, 1947).

The Association have drawn attention to the difficulties which the owner has in a number of cases met with in securing a permit. Either he has been unable to establish that his machine is in all essential respects similar to one which flew before the war (owing to there having been a change of engine or other modification) or he has been unable to produce the evidence which the Air Registration normally requires as to the soundness of the methods and materials used in carrying out repairs and minor modifications.

The Minister appreciates the disappointment of these owners when they find, perhaps after considerable effort on their part, that they cannot legally fly their aircraft. He has accordingly agreed, on the advice of the Board, to accept the Association's offer to place their design and inspection organisations at his disposal for the purpose of investigating the airworthiness of aircraft claiming the benefit of the concession but which have not yet managed to secure a permit. **Provided application is made by the owner not later than 30th November next,** the Ministry will consider issuing a permit on the basis of :—

(1) a certificate by the Head of the Association's Inspection Organisation as to the condition of the aircraft ;

supplemented, where any modification affecting the design has been made (such as the installation of a different type of engine) by :—

(2) a certificate by the Head of the Association's Design Team as to its suitability and as to the soundness of the workmanship employed ;

and followed, after the completion of flight tests to an approved schedule, by :—

(3) a certificate by a qualified pilot nominated by the Association to supervise the tests that they have been completed to his satisfaction.

The Minister will also consider accepting a certificate as at (1) in lieu of a recommendation by the Board for the purpose of annual renewals of permits, including those now current. The Association would be responsible in such cases for ensuring that the owner has made adequate arrangements for maintenance and periodic overhaul of his aircraft.

As the object of these arrangements is simply to enable aircraft already built or building prior to August 1947 to be flown under adequate safeguards for the remainder of their useful lives, it follows that after the issue of a permit no further modification of the aircraft will be permissible, except such minor modifications as do not substantially affect the constructional features of the aircraft.

You will doubtless make it clear to your members that the obtaining of a certificate (or certificates) from the Association in support of an application for a permit is an alternative to the normal procedure whereby a permit is issued on the recommendation of the Air Registration Board. In submitting his application (which as already stated must reach the Ministry by 30th November) the owner should state which of the two procedures he wishes to be applied.

Yours faithfully,

W. W. SIMPSON.

Executive Committee.

We regret to announce the resignation of Mr. C. P. Choularton from the post of Chairman of the Insurance Sub-Committee. Mr. Choularton found that, being resident in Manchester, he was unable to keep as closely in touch with the Executive as he would have liked. He is, however, available to look after the Association's interests as our Regional Representative for the Manchester area.

We are glad to welcome Mr. N. H. Lester, who has been elected Chairman of the Insurance Sub-Committee in place of Mr. Choularton. Mr. Lester is an insurance broker by profession, and he has already been able to obtain us extremely favourable terms for the cover of the " Zaunkoenig ". He will be pleased to advise and assist all members with their insurance problems.

DESIGN SUPPLEMENT

Contributed by Group-Captain E. L. MOLE, Chairman, Design Sub-Committee.

Slingsby " Motor-Tutor ".

At last, we are glad to announce, the " Motor-Tutor " has been awarded its Certificate of Airworthiness in the ultra-light category, This interesting machine has passed the strict A.R.B. tests with flying colours and has the distinction of being the first British post-war " ultra-light " aircraft to do so.

As members already know, the " Motor-Tutor " is a development of the Slingsby " Cadet 2 " glider which has been well tried and proved in the A.T.C. The glider has been modified by the installation of a 36 h.p. " Aeronica JAP " flat-twin engine in its nose, to balance which the cockpit has been moved backwards to a position under the wing, the centre section " neck " being replaced by four fuselage struts to accommodate it. The tail components are the same as the " Cadet 2 " glider, and the wings are the glider wings modified slightly to suit the fuselage wing attachments and to incorporate the fuel tank.

A conventional undercarriage with tail skid is fitted, the main wheels being of the divided type with shock absorption by means of bungee-in-tension. Simple foot operated brakes are provided. Specification and performance details are given below.

The flight test report stated that throughout the course of the trials the effectiveness of the controls was adequate in all manoeuvres, and no unorthodox manipulation or abnormal exertion was required on the part of the pilot. One of the most interesting points in the report was the behaviour of the machine during stalls : power off, no true stall could be obtained even with the stick held fully back, and the height lost during recovery was negligible. With cruising power on, the stall occurred at a speed as low as 20 knots I.A.S. (26 knots true air speed), and the height lost during recovery was only 50 ft. In no stalling case was there any tendency to spin.

Although the " Motor-Tutor " has only a moderate cruising speed, it has very short take-off and landing runs, a useful angle of climb and unusually safe flying qualities. We congratulate Mr. Slingsby on his enterprise in producing the machine, which we feel will serve as a valuable link to enable glider pilots to convert to powered flying without the expense of dual instruction. Indeed, a number of glider pilots without previous power experience have already flown it successfully after a short preliminary period of taxying and low hops.

Mr. Slingsby plans to sell the completed " Motor-Tutor " at a price of about £590, and also is prepared to supply complete sets of prefabricated components, together with all the necessary materials required by amateur constructors to complete the assembly, for about £285—less engine and propellor, which can be obtained for a further £60 and £18 respectively. We shall be pleased to recommend applications from suitable flying or constructional groups for loans from the Kemsley Flying Trust for the purchase of the machines or the kits of parts.

Specification.

Span	43 ft. 4 ins.
Length	20 ft. 2 ins.
Height	6 ft. 2 ins.

Performance.

Maximum speed	68 m.p.h.
Cruising speed	60 m.p.h.
Stalling speed	31 m.p.h.
Wing area	170 sq. ft.
Empty weight	570 lb.
All-up weight	853 lb.
Wing loading	5 lb./sq. ft.
Fuel capacity	9 gallons.
Rate of Climb	350 ft./min.
Take-off run (still air)	90 yards.
Range (still air)	240 miles.
Endurance	4 hours.

Coventry Victor Engine.

Since last month when we reported excellent progress with the development of the " Coventry Victor " engine, members of the Air Registration Board have visited the firm and have agreed to allow

us to carry out flight tests of the first experimental engine subject to the satisfactory completion of a period of ground running with a propellor attached. Accordingly, the Association has negotiated successfully with the Kemsley Flying Trust and obtained their agreement for financial assistance to get a " Dart Kitten " prototype built for this purpose. The firm expect this particular engine to be ready for flight tests within three months.

Whilst on the subject of the " Coventry Victor " engine, we are glad to publish the following extract of a letter received from Mr. J. J. McLellan, Hon. Secretary of the Flintshire Aviation Group, with whose remarks we fully concur :

> " I am really disappointed that Groups and Individual members alike show absolutely no visible appreciation for the very fine example that Major W. A. Weaver is setting all the other engine manufacturers by his great spirit to modify his " Neptune " engine for aero work.
>
> It's a good job this country has—if only a few—people like Major Weaver left in it.
>
> I would like you to make mention in the next Bulletin that all of us here very much appreciate Major Weaver's efforts. Also, in case there are any members who are doubtful about the engine, may I say that I know the " Coventry Victor " engine of old, and can swear by it ; it lines up to its name for smoothness and silence and, of course, unbeaten reliability."

As the result of the recent negotiations with the M.C.A. over the question of Permits-to-Fly, the previous uncertainty as to the fate of various amateur construction projects has now been cleared up.

" *Drone G-ADPJ* " 34 h.p. " Bristol Cherub ". Entirely reconstructed by Mr. A. C. Waterhouse of Clifton, Rugby. This aircraft has now been given a permit for test flights under U.L.A.A. supervision.

" *Drone G-AEKV* " 32 h.p. " Carden Ford ". Reconstructed by the ground staff of R.A.F. Station, Upper Heyford. This aircraft has also been given a permit for test flights under U.L.A.A. supervision.

" *Dart Kitten G-AERP* " 36 h.p. " Aeronca JAP " The original prototype. " Kitten " previously fitted with a French " AVA " 2-stroke engine, and re-built and re-engined by Mr. W. S. Ogilvie of the Herts & Essex Aero Club, Broxbourne. This aircraft has now received its final permit-to-fly.

Luton " *Minor G-AMAW* " 34 h.p. " Bristol Cherub III ". A new machine completely built to pre-war design by Fl./Lt. J. R. Coates of R.A.F. Station, Oakington, Cambridge. This machine was issued with a permit for test flights under A.R.B. arrangements ; we understand that it has passed these very satisfactorily and the final permit-to-fly is now awaited. Fl./Lt. Coates writes that he completed 3 hours' flying that day without a snag. His rate of climb appeared to be comparable with that of a " Tiger Moth ". He thanked the Association for the assistance given so freely, and added " I could not have gone anywhere at all without it ". He mentioned for the benefit of any members interested that the K.L.G.F. 70 plug is now approved for the " Bristol Cherub III ".

" *Luton Minor* " 34 h.p. " Scott ". A new aircraft built to pre-war design by Mr. D. E. Felce, of Hinckley, Leics. The A.R.B. had previously refused to recommend a permit to fly for this aircraft on the grounds that there was insufficient evidence as to the reliability of the engine, and the Association agreed with this view. Mr. Felce, however, who is a highly experienced engineer, submitted that he had located the cause of previous unreliability reported with " Scott " engines to be due to the design of the propellor being over-coarse in pitch, so causing loss of power, overheating and seizure. He had tried experiments with a finer pitch propellor, and was convinced the engine would now be satisfactory.

The M.C.A. at the request of the Association, has agreed to consider issuing a limited permit for the controlled programme of local experimental flights on the recommendation of the U.L.A.A., subject to a period of ground running tests under U.L.A.A. observation being successfully completed. Thus, Mr. Felce has been given a fair chance to prove his contentions in practice.

The Daily Express Air Race

The Association was well represented in the recent Daily Express South Coast air race, the following members being included amongst the 76 entrants :—

Pilot	Aircraft	Result
A. L. Cole	Comper Swift (75 h.p. Pobjoy R)	12th in race at 137.86 m.p.h. 2nd in class
G/C. E. L. Mole	Chilton (44 h.p. Train)	44th in race at 129.66 m.p.h. 4th in class
C. A. N. Bishop	Miles Hawk Trainer III (Gipsy Major I)	23rd in race at 134.65 m.p.h. 8th in class
Edward Day	Miles Hawk Trainer III (Gipsy Major)	20th in race at 153.70 m.p.h. 6th in class
D. F. Ogilvy	Miles Falcon (Gipsy Major I c)	Retired
Bernard Collins	Proctor III (Gipsy Queen II)	9th in race at 160.15 m.p.h. 5th in class
C. G. Alington	Percival Q6 (2 Gipsy Queen II's)	59th in race at 173.45 m.p.h. Winner of class
Air Vice Marshal D. C. T. Bennett	Youngman-Baynes H.I,. Monoplane (Gipsy Queen 32)	Non-starter
F. G. Miles	Miles Aries I (2 Cirrus Majors)	Non-starter
H. E. Scrope	Mew Gull II (Gipsy Six II)	Non-starter

The ultra light class (aircraft weights less than 500 kilograms) had four entrants including, in addition to Mr. Cole and Group-Captain Mole above, Mr. R. E. Clear (Comper-Swift) who won the class and was 5th in the race at 140.92 m.p.h., and Captain Christie (of Norway) in his neat B.H.T.—1 " Beauty "—a Swedish single-seater powered by a 62-h.p. Walter Mikron engine, and fitted with a retractable undercarriage. He finished 3rd in the class and 41st in the race at 150 16 m.p.h.—the fastest time for the class.

The race was excellently organised by the Royal Aero Club, and was thoroughly enjoyed by all who took part in it. It seemed a pity, however, that such a considerable effort and valuable prize money resulted merely in a scattered procession of (for the most part) elderly British aircraft along the South Coast. The race called for no particular flying skill nor navigational ability ; the result, however, was claimed as a triumph for the handicappers—except, of course, by some of us at the tail end of the procession.

We suggest that if such tempting prize money is likely to be offered again in the future, the race should be announced at least one year ahead, and that the regulations should be framed as an incentive for the construction of new designs of racing aircraft (we favour, of course, high performance ultra lights !) by technical schools and colleges, and by various amateur design groups thoughout the country. By such means, the cost and effort of the race could result in real and tangible benefit to British sporting aviation.

The 1950 W.J.A.C.—U.L.A.A. Combined Summer Training Camp.

As mentioned in our last Bulletin, the Summer Training Camp took place this year at Redhill Aerodrome from the 20th August until the 3rd September. The following reports will be of special interest to any members who are contemplating joining next year's Camp.

Report by a U.L.A.A. Member who attended the Camp as a Pupil.

Despite the indifferent weather the camp was a great success and much enjoyed by all concerned. Redhill Aerodrome was universally acclaimed as an improvement on Elstree (used last year) although the grass field is very rough. To add to the interest and excitement pilots had to contend with a swarm of R.A.F.V.R. " Tiger Moths," sailplanes winching up to 800 feet, and resident flying club aircraft. However, all permanent organisations at the airfield proved most helpful and co-operative, and some U.L.A.A. pilots even managed to get some instruction on the link trainer on a wet day.

It was a noticeable feature that everyone who had attended previous W.J.A.C./U.L.A.A. camps reached the solo stage in a much shorter time than last year —a sure sign of their increasing experience.

This year's camp was a most interesting experiment in that it combined pure flying with the practical application of a serious approach to cross-country flying for pilot-navigators ; the course having been developed by the indefatigable Mrs. Patterson, without whose untiring efforts there would have been no camp. Here, too, no report would be complete without mention and thanks to our old friend Miss Jean Bird, who is always so ready to help with her vast store of experience.

Briefly, the idea of the course was to start in a simple way with games and ground lessons on navigation theory. Each day's lesson was then flown off to demonstrate its practical value. By gradually stepping up the lessons and their following flights a high standard of ability and confidence was instilled into the pilots who were then able to undertake interesting cross-country flights with greatly reduced chances of being " temporarily misplaced."

It was unfortunate that the weather proved so unco-operative towards the end of the camp, when everyone was at peak solo efficiency and raring to go on cross-country flights.

As one of the pilots on the course, however, I can assure Mrs. Patterson that the value of the instructional methods was conclusively proven. The course was undoubtedly tough. I well remember sitting down to do a Private Pilots Licence practice test paper on " Legislation " at 11.15 one night, but there were always jokes and plenty of fun to make it all well worth while.

From the U.L.A.A. point of view, considerable interest was evoked by the presence, during the second week, of Mr. W. G. A. Harrison's " Dart Kitten."

Now we eagerly await next year's camp when it is hoped that yet more advanced instruction and more ambitious flights may be achieved with better " met." conditions.

JOHN O. ISAACS.

Report by Duty Officer from U.L.A.A. who attended during the Second Week of the Camp.

Redhill Aerodrome, already the host of the Surrey Gliding Club, Aeronautical College Students, Volunteer Reserve and others, extended a further invitation (through the Experimental Group—Thank you, Miss Bird) to the four members of the U.L.A.A. who were taking the post-graduate course in Flying Training which Mrs. Patterson has brought to a fine art.

Altogether we were eleven " permanent residents " including Bill Mackie (with a travelogue of Aunts), John Isaacs, the two Dorothys ; Miss Jean Bird, hospitably allowing the " Moth Minor " to be used for instruction, and raising the standard of fun and games by her own humorous acceptance of situation ; the Duty Officer and of course, Mrs. Patterson.

Visitors enlivened weekends and evenings, notably Geoffrey Dorman who perched nonchalantly on the briefing table told (in his own inimitable manner) of his recent 33,000 mile flight in 26 days.

Edward Day, this year's King's Cup winner, during a visit, whetted enthusiasm for sporting flying by going over his own methods of preparation for the Race.

Our thanks were unanimously directed to Captain Edward Davis for kidnapping the whole camp and taking us to a show at his theatre in Croydon, where afterwards he made us free of the building divulging the secrets of what goes on behind the scenes.

The " Dart Kitten " (owned by " Harry " and flown in by Mr. Weyl, the designer and constructor) stayed for a week, and a fair idea was received of its capabilities and manoeuvrability as one of the approved Home Construction types in the hands of Group-Captain Mole, and Miss Jean Bird who demonstrated its safe stalling characteristics, and " Flight " and " Aeroplane " pilots.

Cordial relations were established and maintained with the V.R. throughout, close co-operation by the W.J.A.C.S. resulting in table tennis facilities and anti-room antics of innocent and amusing nature.

Press Photographers were keen to take posed pictures of the W.J.A.C. girls in their uniforms but turned somewhat blind eyes to the U.L.A.A. boys— or were they camera shy ? Publicity of a helpful type can be gained from this kind of picture, and the Pathe Pictorial film made of the camp, will show members what a good time and a help and incentive the competitive spirit of the girls *v.* boys can produce.

To Mrs. Patterson must go the highest praise for organisation and control. Not only did she take over the running of the whole camp, but also undertook instruction (together with Miss Bird on the " Moth Minor ") on the two " Piper Cubs," and gave Ground

School lectures of a severely practical nature, embracing the widest scope of meterology, air navigation and instrument flying. Admiration for her own high reputation as a pilot, and her cheerful philosophy and never-ending fund of stories of those early " intrepid birdmen " with an extraordinary capacity for getting in and out of trouble, was high among all members of the Camp, and made discipline an esay task and lightened the load of responsibility.

Next year those who are within reach should drop in and see for themselves the good work being done by the Chairman of the Training Sub-Committee. It is not *ab-initio* flying, and one should have a Student Pilots Licence, and at least 5 hours solo before joining the Camp.

U.L.A. Operation and Cost of Investigation Planned.

An investigation into the operation and cost of ultra light aircraft has been planned on the initiative of the Kemsley Flying Trust, who have made arrangements for the first production " Motor-Tutor " to be taken over by Southend Flying School. The Association was deeply interested to learn of this plan, and proposed to the School that they should also take over a " Dart Kitten " for comparative trials of the two different categories of ultra light aircraft. This suggestion has been accepted by Mr. Bernard Collins, Manager of Southend Municipal Airport and the Flying School.

Mr. Collins is a member of the Association, and is probably the most experienced pilot on ultra light aircraft in the country. He intends to operate the two aircraft intensively on the normal school basis, using them as a means for pupils to put in hours cheaply for their Private Pilots and Commercial Licenses. A careful account is to be kept of all operating and maintenance costs, and his full report will be published at the end of the investigation which should be of value both to the U.L.A.A. and to the flying club movement as a whole.

We congratulate both the Kemsley Trust and Mr. Collins on their initiative in this matter, which we feel sure will produce some interesting results. Mr. Collins has been kind enough to offer to welcome all U.L.A.A. members over to Southend Airport, where they will be given the opportunity of flying both the " Motor-Tutor " and " Dart Kitten " at the 30/- per hour rate laid down. We hope many of our members will avail themselves of this opportunity; they should apply direct to Mr. Bernard Collins, Manager, the Municipal Airport, Southend-on-Sea, Essex.

Proposed Construction Group in Croydon Area.

The formation of a construction group is contemplated in the Croydon area, with the object of building a " Dart Kitten " from a kit of parts. All members interested in joining this group should write to the Hon. Sec. for particulars; details of their technical experience (if any) would be appreciated.

Kemsley Flying Trust Grants.

We are pleased to announce that the Kemsley Flying Trust has agreed to advance a loan to the Aerotech Club to enable them to purchase an " Aeronca " aircraft and to pay for its C. of A. overhaul.

The Trust has also agreed provisionally to advance a loan to a constructional group being formed by Mr. A. W. Ord-Hume to enable them to purchase one of our JAP engines and a propellor.

We are prepared to sponsor suitable application from affiliated flying or constructional groups for loans from the Trust to purchase aircraft, engines or equipment that they may require. Interested groups should send for copies of our Applications Questionnaire for this purpose.

GROUP NEWS

The first " Film Lecture " took place at their Clubroom on Cardiff Airport on Sunday evening, 1st October, 1950, and was well supported. The films shown were the Shell Petroleum Company's " How an Aeroplane Flies " in six parts—1. Lift (15 mins.), 2. Drag (17 mins.). 3. Thrust (7 mins.), 4. Forces in Balance (8 mins.). 5. Stability (10 mins.), and 6. Controls (11 mins.), a total showing time of 68 minutes. It is hoped that another " sound " Film Show can be given in late October, probably on " Engines " and " Navigation." *(To be concluded).*

THE MIDLAND GLIDING CLUB LIMITED

The Long Mynd, Church Stretton, Shropshire. Telephone: Linley 206.

Full particulars may be obtained from the Secretary, F. G. Batty, F.C.A., 2, Lombard Street West, West Bromwich, Staffs.

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NEWS FROM THE CLUBS

THE SCOTTISH GLIDING UNION

Courses

In the early spring, plans were made to have eight courses, each lasting one week. The object, as with all courses, was to encourage and foster the ambitions of anyone interested in gliding. At first we were discouraged when the first course failed completely due to the lack of response, and we prepared ourselves for further disappointments. But adequate advertising and enthusiastic secretarial work proved the pessimists wrong, so that in the end this has been a most successful season. Six courses were held in the months of July, August and September, and fifty-nine people attended them. Thirty-six "A" certificates and five "B" certificates were gained, not to mention a fifteen minute broadcast by the Scottish Home Service on the progress and prowess of one of the members of a course.

There were 1,328 launches, adding up to ten-and-a-half hours' flying time, thirty-five gallons of petrol for every course, and, as a side effect, enough tea (and five pounds of sugar) per course to satisfy any average person for months.

So much for the statistics which can measure most things bar the thing that really matters—the amount of satisfaction that is obtained. Two weeks were graced with sunshine and fair winds. But the remainder had more than their share of course, blustering winds, rain and misery; an amount sufficient to reduce anyone to silent tears of woe. But our volunteers could not be disconcerted. Wet feet and soaking clothes seemed to be merely an incentive to happiness, and so far as we could ascertain everyone thoroughly enjoyed themselves. We were doubtful about one lad who seemed petrified with fear at the thought of gliding, and who seemed bathed in a gentle misery for the whole week. Perhaps this is a case of time healing all wounds, but within a short time he sent us a most enthusiastic letter claiming that his week at Balado was the best holiday that he had ever spent.

If the weather was too bad for S.G. work there were plenty of diversions. Bill Lawson had now two thirty-five minute films which encompass the subject of Gliding and Gossip at Balado, and which make up a pleasant and instructive show, whilst trips on Loch Leven or to Bishophill, not to mention organised evening parties to the neighbouring cities of Glasgow and Edinburgh were put on at short notice. This is not to say that there was never a dull moment, but there were very few. We could quote many enthusiastic letters, but modesty forbids. But there is not a doubt that the idea of a Holiday with a Purpose, as against the usual Holiday for a Sun-tan, was welcomed. Expense is the factor that must deter many, but there is no cheap way of using thirty gallons of petrol on every course, unless the training is to suffer.

Each course had an instructor, and they must be given full credit for achieving the moral and statistical results that were attained. It was up to the instructors to set the tone and the atmosphere of the course, and nobly they did it. Due credit must also be given to Hamish Macaskill, who operated the 1,300 launches with great patience.

We must confess, however, that we are not pure philanthropists. The profit motive still niggles in our breasts, and must remain the *raison d'etre* for the continuation of the courses. Not a few outstanding accounts have been liquidated as a result, and even more important, eleven keen members have been recruited to the club. The joint course secretaries, Robert Parker and Dorothy Lawson, are to be congratulated on a fine performance.

CAMBRIDGE UNIVERSITY GLIDING CLUB

This may be season of mists and mellow fruitfulness, but it is also the season of panic. Our publicity meeting, held at great length in the lecture room at Peterhouse, by dint of moving by hand a half-ton bust of Lord Kelvin, was a greater success than we had anticipated, and the result is that Marshalls is besieged all day and every day by a milling crowd of newly-joined and about-to-join persons, who make "Bluebell's" launches a gauntlet-running process matched only by that at Camphill. The congestion is frightful, the Chipmunks pick up the wire, Meteors do steep turns at nought feet round the "Kranich" on the launch, Marshall tears his hair, and Basil trots around with a smug expression on his face and his pockets bulging with pound notes. Occasionally, someone remembers to ask about the Martlew-Clayton winch, which is now in the stage where it is recognisable as such, and where no one except its inventors can see which parts of it really are missing, But they are.

Occasionally, someone comes in to have a look at us—Frank Foster did a nice little trip from Dunstable the other day—and his aircraft is immediately fallen upon by many willing, if sometimes inexpert hands and torn asunder, most of the pins having been removed in the process, and little fundamental damage having been done. The categorisation of Ted, our Ground Engineer, as a B.G.A. approved person, has turned our heads, and we rather pride ourselves on our derigging. Ted can always put matters to rights. An air of distinction has also been added to our grounds by the arrival of the immortal "Blue Gull"—of *entente cordiale* fame—which a syndicate is thinking of buying. She now rejoices in an Olympia-type hood, and has been put through her paces, to the intense admiration of the newly-joined members mentioned above, and the consternation of the B.G.A. technical committee, for whom we have added insult to injury by sending them a report of all we have done. One of our members, who has just been appointed to a Very Important Post in journalism, was doing a loop in the "Gull" the other day, as a consequence of which one of our new members (2,000 hours power) was heard to express surprise that gliders can barrel roll.

The flow of country members into Cambridge at week-ends

continues unabated. Instructors are pressed into service straight off the train : the Chairman of the Flying sub-committee—the academic way of describing a C.F.I.—works day and night interviewing pupils who want to go solo—his smallest headache is finding an aircraft for them to go solo onto—and John Free is heard interminably to announce that it is nothing to do with him, boy, while he starts on briefing yet another *ab initio*. In short, if "Bluebell" and the instructors do not suffer from vertigo, if the winch continues to live a precarious existence, if tutors do not stop all their pupils flying, and if Marshall doesn't retire from aerodrome-running with a nervous break-down, we shall be in for a successful winter. Anyone who matters will not, of course, be found at Marshalls, but at the Gardenia restaurant, Rose Crescent. Except, of course, for Ted. When he can clear the non-paying guests from their beds under the Pon's main spar, he works. This is the most unkindest cut of all.

THE BRISTOL GLIDING CLUB

Now that the thermal (?) season is over we are hoping for some good west winds to make a successful autumn hill soaring season at Roundway. The "Olympia" and "Grunau" have now joined the "Blue Tutor" there, being transported on the club's new welded angle iron trailer. Parties go out each Friday night, laden with provisions, and stay the whole week-end.

The first two week-ends in October provided soaring winds and on the 10th, J. R. Allen connected with a small front and made our first cross-country from the site, landing at Pewsey. On the same day F. A. Brooker got his "C."

More recently the weather has been flat calm and we have been experimenting with different winch runs. By retrieving the cable over sundry fences, ploughed fields and tracks we have managed to get the belly-hooked "Tutor" to 1,100 feet.

Lulsgate is now left entirely for training and the two-seater "Cadet" and "Green Tutor" are kept busy from dawn till dusk; at least they were one Saturday when 67 launches were done between the showers. We have been pleased to welcome a number of new members from the recently formed Bristol University Gliding Club. At present affiliated to the B.G.C. this club hopes eventually to possess its own sailplanes.

This year's series of weekly training courses finished in September, and thanks to an energetic Course Secretary the thirteen courses were attended by nearly 100 pupils, coming from as far afield as South Africa, Belgium, India, Egypt and the U.S.A.

PHILIPPINES GLIDING CLUB

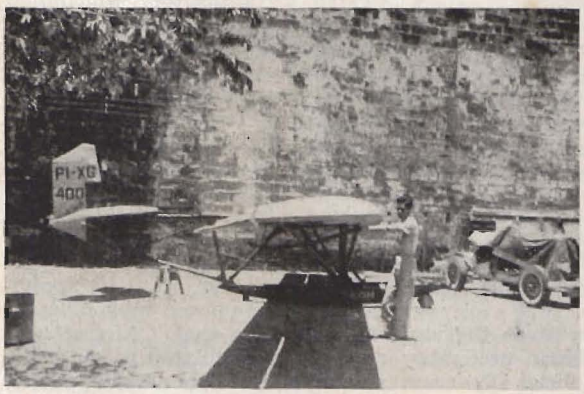
We have here in the Philippines, built a primary glider. It was constructed out of local materials except for the instruments, struts and joy stick. It has a wing-span of 12m. and a chord of 1.5m. The airfoil used is the G-398. This model was test flown in the Manila International Airport, attaining a maximum altitude of 52m. by auto-tow.

Due to the numerous air traffic in this airport, glider instruction is inadvisable so that at present it is left standing in the school compound. Plans are being drafted to organize a glider club and establish a training ground at a site 20 kilometres from the city. Being new in our country, gliding presents numerous problems which I hope will be overcome in the near future.

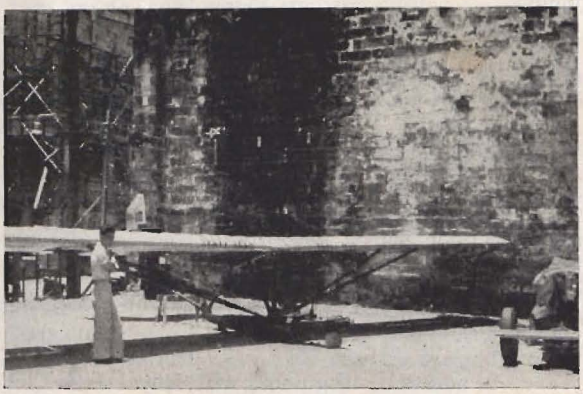
Credit for the design goes to Prof. Antonio de Leon of this Institute. He studied in Budapest and came home just after the second world war. He has experience in designing and flying gliders and much of my interest comes from his lectures. I am fortunate to be given the privilege of modifying the present design to a utility type. I expect to graduate in November and if plans do not miscarry, will buckle down and work on gliders.

ELMIRA

George Whyte, a glider pilot in the U.S. on a visit from Scotland spent the week-end at Elmira, and took soaring flight with Paul Schweizer, Sunday. The Scotchman, who belongs to a Glider Club near Edinburgh experienced his first aero-tow flights at the local airport this week. Activities at the field where his club flies in Scotland are limited to bungee (shock-cord) launchings, and the simple expedient of being pushed off the brow of a cliff, the visitor said.



The Philippines "Primary."



The resemblance to a "Dagling" is striking—but primaries have a family resemblance the world over.

The hill from which Whyte and his co-members glide and soar is inaccessable by auto, and the pilots and crew men must climb the steep trail on foot, carrying the gliders with them. When one considers the efforts put forth by a group like that, it enables one to appreciate more fully the advantages enjoyed in our locality, for soaring.

Letters to the Editor

THE BRITISH GLIDING ASSOCIATION

Londonderry House,
19, Park Lane,
London W.1.

13*th October*, 1950.

Kemsley Winter Cross-Country Competition.

Our President, the Viscount Kemsley, has most generously donated the sum of one-hundred guineas to the British Gliding Association, with the object of stimulating interest in gliding during the winter months, and encouraging research into winter flying conditions. The Association is therefore able to offer cash prizes to be competed for between the 1st November, 1950, and the 28th February, 1951, both dates inclusive.

Prizes will be awarded to the Club or individual/s owning the gliders in which the winning flights are made, as follows :

1. Aero-Tow Launch Class.

a. First prize of 25 guineas for the longest cross-country flight in a sailplane off an aero-tow launch.

b. Second prize of 15 guineas for the second longest cross-country flight in a sailplane off an aero-tow launch.

c. In addition, 10 guineas will be awarded to the gliding club providing the launch for the first prize winning flight.

2. Winch, Auto-Tow and " Bungey " Launch Class.

a. First prize of 25 guineas for the longest cross-country flight in a sailplane off a winch, auto-tow or bungey-launch.

b. Second prize of 15 guineas for the second longest cross-country flight in a sailplane off a winch, auto-tow or bungey launch.

c. In addition, 10 guineas will be awarded to the gliding club providing the launch for the first prize winning flight.

Conditions for the Competition.

1. The Competition is open to pilots of " C " Certificate category and above, and is limited to flights commencing in the British Isles.

2. Qualifying flights may be made in Club-owned or privately-owned aircraft.

3. The mimimum qualifying distance in both classes is 15 miles. In the case of aero-tow launches the point of release shall be pin-pointed on a ¼-inch map, and certified by the towing pilot, and the distance shall be measured from this point. In the case of winch, auto-tow, or " bungey " launches the distances will be measured in a straight line from the point of take-off.

4. In the event of two or more qualifying flights covering exactly the same distances in either of the two classes of launch, the winner will be judged from his narrative of the flight.

5. The height lost between the points of release and point of landing must be less than 1% of the distance covered.

6. All current Airworthiness Requirements, and Air Navigation Act Requirements, so far as they apply to pilot or aircraft, must be complied with.

7. Pilots need not give prior notice of their intention to compete for the prizes, but qualifying flights must be reported briefly to the Secretary of the British Gliding Association within 48 hours of completion. Full Registration of such flights should then be made with the Association within one week of completion, and supported by the following documents and information :

a. Aircraft type, registration number, if any, owner, C. of A. number and date.

b. A certificate over the signature of two witnesses, preferably Royal Aero Club Official Observers for either gliding or power flying, testifying the exact place, date and time of departure, and method of launch. The pilot's name and C. of A. number of the aircraft must also be given on this Document. In the case of an Aero-Towed launch, the towing pilot's certification of the point of release (see paragraph 3), is also required.

c. The signature of two reliable witnesses who should testify as to the date, time and exact place of landing.

d. A barograph chart of the flight duly certified by a Royal Aero Club Official Observer for either gliding or power flying, or alternatively two responsible persons.

e. A recent calibration chart of the barograph. (The Judges will reserve the right to ask for re-calibration of the instrument if it is considered necessary).

f. A pin-point reference to the landing place, taken from a ¼-inch map.

g. A short narrative of the flight, with details of the meteorological conditions prevailing and phenomena encountered.

The following have kindly consented to act as Judges :

Colonel R. L. Preston, C.B.E.
Captain A. G. Lamplugh, C.B.E.
Commander Alan Goodfellow.

The decision of the Judges on all matters concerning the competition is final.

A. KINLOCH.
Secretary.

SIR,

In the interests of justice, we pray you to make known to your readers that the Cambridge Club's reference to their activities in the 1950 National Comps., briefly as it is referred to in their notes, has cleared up a mystery which had been puzzling the minds of their temporary (very temporary !) nearest down-wind neighbours, ever since those delectable days at Camphill in July.

They refer to their tent Africa, " the largest and darkest tent on the site," and to their " drainpipe cooking stove which cleared all tents and caravans down-wind of it."

Believe us, Sir, until the publication of these notes we were under the impression that " Africa " was an erection calculated to serve the passing needs of the visiting public, and that the " drainpipe cooking stove " was an offshoot of the Harwell Research Establishment,

erected with top priority in order that atomic experiments could proceed (as indeed they did !) unhampered by any interruption engendered by National Soaring Championships and such-like.

Africa. That illuminating word of explanation cleared our puzzled minds in a flash. Of course . . . *Africa !* The natives in their shorts and suspenders (we did not observe any G-strings. The white eyeballs set in dusky faces. The cooking pots. The earthenware nappies. The smoke. The flames. The strange babel of sounds. And even Doctor Slatingstone on frequent benevolent visits, retiring only when a smoke-inflamed larynx refused any longer to convey those endearing and gentle phrases of remonstrance best calculated to appeal to the simple native mind.

And the drainpipe cooking stove, Sir. We, as the aforesaid near neighbours for twelve-hours-that-seemed-like-twelve-long-days, can affirm that never was such a wholehearted effort made to cook a drainpipe. Wood. Oil. Petrol. Kettle-water. Petrol. Oil. Wood. More kettle-water. The sheer *ingenuity* displayed by these simple inhabitants of " Africa " was in truth a staggering example of the triumph of matter over mind.

In retrospect, we almost regret that we did not stay down-wind and absorb a further moral lesson from these simple folk. But we, too, had our problems. To sit in a small caravan within five feet of a thirty-foot flame. To breathe the incense-laden smoke from the fires of pagan sacrifice. To assume, in less time than Chief Alexander took to cook a single simple sizzling sausage, a facial hue so dusky that we ourselves were likely to be hailed at any moment by a passing Ethiopian as his blood-brothers. No, Sir, it was too much. With firmness and, we hope, decorum, we moved camp.

We should like, however, to place on record, for the benefit of those who might have mis-interpreted the spirit of our removal, the fact that we bore no ill-will to our erstwhile neighbours. We salute Chief Alexander, whose skill at frying thousands (repeat *thousands*) of sausages over a roaring (repeat *roaring*) fire is only excelled by the fluent grace of his verbal eloquence and his flawless lucidity in debate. But we are wholeheartedly with the French when they say : " Bon avocat, mauvais voisin."

Believe us to be, Sir,
Yours truly,
For the Occupants of the Caravan,
T. REX YOUNG.

Red Gables,
Sanderstead,
Surrey.
17th October, 1950.

SIR,

In his article " Circuits Maketh the Man " Mr. Free does well to emphasise the importance of circuit training. However, while giving what is for the most part very sensible guidance, he does to some extent venture into dogma, in spite of his wish to avoid doing so. Surely the majority of pupils nowadays are being taught the " square circuit," but a certain flexibility is often permitted to allow for difficult conditions. The enforcement of over-rigid specifications is only too likely to lead to the " cross-wind-turn-over-the-pig-farm " mentality. If there is a possibility of doing any manoeuvre in more than one way, I feel that most pupils would like to know the reasons for the expression, in categorical capital letters, of only one point of view.

Mr. Free makes the statement, with no elaboration, that a high proportion of accidents occur " somewhere down-wind." I certainly have not observed piles of wreckage on the down-wind leg, and I take it that errors of judgment while down-wind are thought to have led to catastrophe at a later stage. If we assume that misjudged approaches cause a high proportion of crashes (I am not sure that this is so) it is certainly possible to commit the initial error of judgment on the down-wind leg, but it is also possible to do so earlier or later, and I cannot see that there is evidence for such an emphasis.

Since it is reasonable and necessary to carry out practice manoeuvres on the down-wind leg, we commence our "square circuit" procedure shortly before turning across wind for the approach. If all goes well we make an across-wind leg, turn into wind and land. But if all does not go well ? If we have been over-cautious, have no brakes and are not very good at side-slipping ?—Mr. Free would have us sail past the winch in a serene straight line to our doom !

Surely a pupil should **know how to do** " S-turns." The procedure is indeed unnecessary in a perfectly judged circuit, and is inadmissable at some sites owing to air traffic conditions, but this does not justify its condemnation out of hand. I do not see that " multiple cross-wind legs " are inherently more dangerous than single ones, and under some conditions they provide a very sensible way of getting down. I would instance (1) the approach on the top of a hill where the strength and location of the " clutching hand " is unknown, and (2) the approach on a strange field, if one feels like having a comparatively close look before choosing the exact place for landing.

Mr. Free's ideal circuit finishes with a " fairly long (but not low) run into wind." This I vigorously oppose. However high one is at the start of this leg, it is difficult to avoid being near the ground at the finish, and a prolonged run into wind at a flat gliding angle is tricky to judge. If one hasn't got it right to begin with, " corrections for wind gradient " can at best only lead to a landing in the wrong field. Given very effective air brakes it is possible to make a generous allowance in case of error or down-draughts ; however, it seems sensible to reduce the chance of such error by avoiding a long final leg. A pupil who is fit for solo should be capable of completing the final turn at 100-200 ft. without hazard. The run into wind is then quite long enough to make the necessary corrections for drift. Mr. Free gives no figures but I think he would insist that the final turn should be higher up and further away ; my impression is that such insistence is being overdone.

If one has seen the attempts of solo-trained pupils to carry out " S-turns " after inadequate instruction, one may be forgiven for developing an abhorrence of such manoeuvres, but I would point out that the first efforts at landings are not usually too hot either. It is **not knowing how** that leads to accidents. If two-seater training is available there is no reason for not knowing how, and I hope that the scope of training is not being unnecessarily restricted.

I am, Sir, your obedient servant,

P. H. BLANCHARD.

SIERRA WAVE CONTRACT SIGNED

THE U.S. Air Forces' Geophysics Research Directorate and the University of California at Los Angeles have signed the prime contract for the Sierra Wave Project. This will extend from June 30, 1950, to June 30, 1951. The Southern California Soaring Association will sub-contract all of the flight operations and the reduction of airborne data connected with the project from U.C.L.A. The Naval Ordnance Test Station at Inyokern, which originated the study, will run the radar and theodolite tracking of the gliders and reduce and assess these data. U.C.L.A. will evaluate the results and investigate the theories of the wind flow.

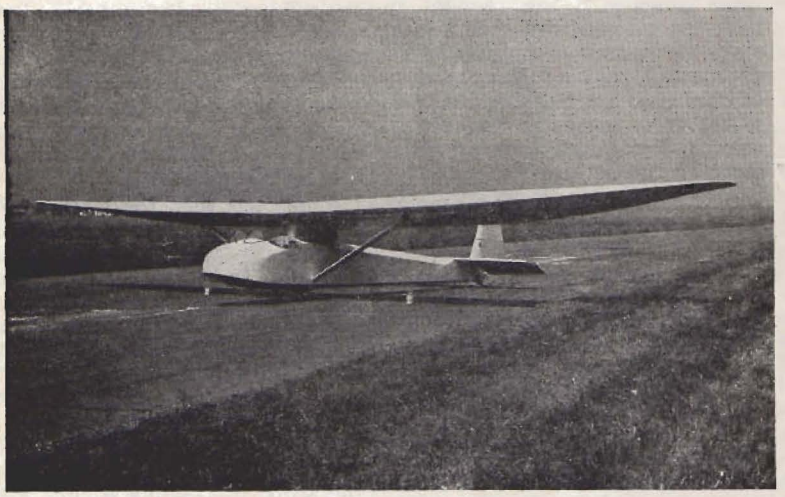
The first flights are scheduled for this winter and are expected to be largely concerned with the calibration of the sailplanes, tests of the equipment used, and trial runs to develop techniques. Subsequent yearly contracts, if obtained, should see continuous improvements in the methods and equipment. It is hoped that a pressure cabin sailplane will be developed to explore altitudes on the order of 50,000 to 70,000 feet and up.

The Sierra Wave Committee of the S.C.S.A., under the chairmanship of Dr. W. B. Klemperer, will be responsible for those phases of the programme assigned to this organization. Dr. Klemperer is expected back from Sweden in the latter part of this August. At that time, he and other representatives of the S.C.S.A. will meet with U.C.L.A., the U.S.A.F., and N.O.T.S., to plan the years' activities and to set up the rules and responsibilities.

The purposes of the study of the " Sierra Wave " are basically to make air navigation safer, and to determine the effect of these powerful currents on weather forecasting and climate. We, who have followed the exploits of our pilots who have flown in the wave, have a greater appreciation of the phenomenon than do most people. It is significant, for example, that Paul MacCready flying his "Orlik" was jounced around so violently at 60 m.p.h. that his " G " meter read 8.3 positive and 3.3 negative. Imagine what would have happened if a fast airplane had flown through this ! Then, the time Bob Symons soared a " P-38 " with dead engines to 31,000 ft. (where he put the flaps down to keep from going higher) indicates the magnitude of the condition and the probable, but largely unknown effect such a wave has on the weather down wind of the Owens Valley. There is also the " altimeter error " noted by Symons that could possibly cause air accidents under wave conditions. It is interesting to consider that if the knowledge obtained by this study prevents even *one* airline or military plane crash, then the project will have paid for itself !

From " *The Thermal.*"

On Service—for The Service



The T21B, 2 seater is now in quantity production for the Reserve Command Royal Air Force as well as for export to foreign governments.

Slingsby Sailplanes Ltd., Kirbymoorside, Yorks.

Continued from page 252

later, having demolished my two chocolate bars I decided to go back on the ridge.

This time I started at about 300 ft. above the ridge and found that I was slowly gaining altitude. I realize now that I had expected the lift *behind* the crest, whereas it was actually in front of the crest, and seemed to extend on a line from the crest, perpendicular to the slope of the ridge.

As I gained confidence and altitude I began to imitate the birds I had seen soaring and was soon wheeling around spots where the air shot up crevices, then hovering with my nose into the wind and riding up several hundred feet in the jet of air. The feeling of excitement changed to one of exhilaration as I realized almost everyone's ambition —to soar as gracefully and effortlessly as the gulls. This was something new for me, being able to waste altitude, and knowing that at any time I could fly directly to the lift and depend on regaining my height.

Once again I found a thermal and climbed back to cloud base. After the 6½-hour mark had passed I decided to go no longer than 8 hours as I was becoming quite fatigued. At one stage I crossed my legs around the stick and, using the ailerons to control yaw, cruised back and forth under a big cloud which was affording some lift.

At 6.20, with 2,500 ft. on the dial I encountered 2 metres of lift and hurriedly uncrossing my legs, spiralled up about 2,000 ft. However, it got so cold that I soon dropped down again, being too tired to care if I stayed up any longer or not.

At 7.20 I was at 2,500 feet again, looking over the field I had chosen for the " Moth " to tow me out of, and waiting for 7.30 to come, when I encountered 1 metre of lift.

I was quite dismayed and frustrated at this turn of events and couldn't decide whether to climb in it or not; In fact, I was quite annoyed with the " Grunau " because it refused to come down by itself and I hated to have to force it down !

Finally, at 7.30 I pulled the spoilers and shoved the nose down, touching down a few minutes later.

I reached a few conclusions from the flight. One was to always take

(*Continued on next page*)

ROYAL AERO CLUB GLIDING CERTIFICATES

(Issued under delegation, by the B.G.A.) **SEPTEMBER, 1950**

GLIDING CERTIFICATES: " A " .. 153 (12385-12538 inc.)
" B " .. 82
" C " .. 30
Silver " C " 6 (286-291 inc.)
Gold " C " 1

" B " GLIDING CERTIFICATES

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8933	Alan Smith	27 G.S.	19. 8.50
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9810	Brian Arthur Haining	125 G.S.	5. 9.50
10067	Robert Henderson Tasker	44 G.S.	11. 6.50
10137	Walter William Busby	105 G.S.	29. 8.50
10193	Thomas Walter Whitworth	105 G.S.	23. 9.50
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12418	John Jeremy Noble	105 G.S.	19. 8.50
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288	J. McKercher	Luneburg G.C.	12394	20. 8.50
289	J. H. Hickling	Midland G.C.	6668	7. 9.50
290	C. A. Rennie	Celle G.C.	12307	6. 8.50
291	P. F. Marshall	London G.C.	10242	4. 9.50

GOLD "C" CERTIFICATE

8	A. W. Bedford	Empire Test Pilots School	10461	24. 8.50

(*Continued from page* 263)

food on a cross-country or endurance flight, and also to take three times as much clothing as you think you'll need, and finally that we should do a lot more ridge soaring wherever it is possible.

I realize now that there were dozens of days during the summer when I could have got a tow over to the ridge and put in 5 hours even if there hadn't been a cloud in the sky.

I'll agree with Shorty Boudreault that the element of uncertainty in thermal flying certainly adds something that you don't get on a ridge. However, we have arguments enough with power pilots, without arguing amongst ourselves!

FOR SALE

Prince Bira wishes to sell his personal De Luxe Caravan delivered Feb. 1950, special 2-berth, large wardrobe, writing bureau, fireplace, h. and c., electric pump, space for refrigerator and calor gas, veneered oak panelling, sycamore roof, attractive blue red carpet, extra wide bay windows. Tel. Bolton Denham 2762. Price £1,050 net.

In Brief—

Obituary.—Readers by now will have learnt with regret of the fatal accident of Paul Tuntland, one of the best-known and well-liked figures of soaring in America.

The accident came at the end of a two and three-quarter hour flight in the "Prue 215" at El Mirage Field on Saturday, September 9th, 1950.

According to reports, no one observed the glider in flight just prior to the accident, although several people saw the ship spinning minus its right wing and saw the parachute just start to open.

Fortunately a barograph trace survived the crash and should aid an analysis of the accident.

Investigations are being conducted by the Soaring Society of Southern California, CAA and CAB.

Swiss Xmas Holidays.—Small family party going Samedan December 21st, non-gliding, would like hear others interested, view reduced terms all concerned.—Box 268.

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