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The First Journal devoted to Soaring and Gliding



DECEMBER 1949

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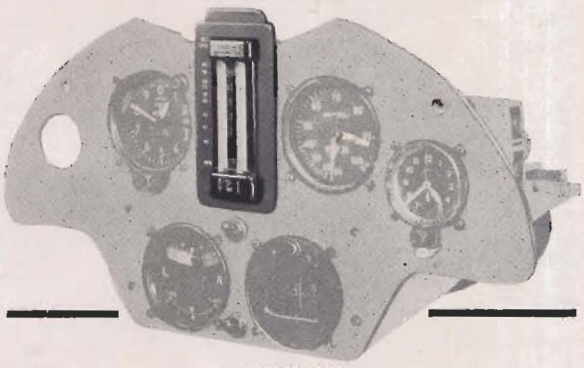
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THE FIRST JOURNAL DEVOTED TO SOARING AND GLIDING

DECEMBER 1949 ★ Vol XVII No 12

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COVER PHOTO:

Arthur Hardinge in his self-built "Olympia" soaring over Mangere (Auckland), New Zealand. Photo: Whites Aviation, N.Z.

SHROPSHIRE SUNRISE

Dawn glows cold on the high Long Mynd:
Quilting the valley, the mists lie still:
Over the sleeping breast of the hill
Breathes the sigh of the south-west wind . . .

Jalopies stutter and grind and roar,
Frying of bacon scents the air:
Yellowly gleaming in sunrise glare
Sailplanes roll from the hangar door

Busily polish the wide white wings,
Ink the barograph, hear it tick,
Open the divebrakes, check the stick,
Cables, pulleys and wingroot pins.

Coffee, bacon, marmalade, toast,
Flying-suit, parachute, gloves and hat,
Harness buckled: canopy pat,
Joggle away to the launching post . . .

Surge into flight: the sailplane rides
—Men, on the bunjy, roll below—
Smoothly the cold, glazed seawinds flow
To cresting clouds in the deep air tides

Where the long winds swell into golden height
And sailplanes soar in a King's delight,
High above sombre, earthbound things,
Godlike glitter the slender wings . . .
High as heaven the sailplane sings
The ageless glories of life and light,
The timeless triumph of soaring flight . . .

A.L.M.T.

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EDITORIAL

IN this issue we publish a portion of the account by Arthur Hardinge of his sailplane "barnstorming" tour of New Zealand earlier this year. We had intended to publish it all in this issue, but our plans were changed, owing to circumstances which arose rather late in the month. The event is so important in world soaring history, however, that we cannot allow it to pass without the fullest possible space and publicity being given to it. Time will, no doubt, show the great debt that N.Z. gliding will owe to Arthur Hardinge—and the rest of the world gliding fraternity will be inspired by his example, which is in the true tradition of the Gliding aristocracy, and deserves to rank beside the achievements of Wolf Hirth, and Kronfeld.

B. Bira (Prince) has again gone to the Argentine. This time with a "Gull I". We expect to hear of new records being set up this Christmas in La Plata, what with Joe Ortner and all. One of the longest-joined members of the Club Planeadores of Buenos Aires, Sr. Francisco Reinoso is in the country for several months, and will be seen at our Clubs in time.

The R.A.F. Gliding & Soaring Association has now been formed, and is promised a neucleus of machines from the B.A.F.O. clubs. They are also hoping to order the first two of Slingsby's new 18 m. span sailplanes—hoped to be better than the "Weihe" or the "Air 100"—in time for next year's British and International Competitions. Headquarters are at Detling, but it is hoped to spread activities to most districts in U.K. The Association is open to all ranks. Those interested should enquire at their Station Orderly Room. A.M.O. No. N. 1237 of 1.12.49 refers.

Next month in addition to the conclusion of Arthur Hardinge's story, we shall publish the account of a famous S. African pilot, who took his Silver "C" in 16 days in Switzerland.

Finally—may we wish you all good flying, good thermals, and good luck in 1950. Good fellowship we know you will have, wherever the gliding fraternity meet.

A Comparison Between Two Similar High Performance Sailplanes

The "Weihe" and the "Air 100"

By GUY BORGÉ

IT is interesting to compare the "18 metres" high performance sailplanes, the "D.F.S. Weihe" (German) and the "Arsenal Air 100" (French), because they have become adversaries in recent soaring competitions. I was lucky to fly both machines very much at close intervals, and so find their characteristics and contrasts.

The "D.F.S. Weihe", built by Hans Jacobs, is a simplified mass production model of his late "Reihe." Two years ago, French teams retrieving in Germany found many parts of "Weihes": ribs, cockpits, bulkheads, spars . . . and it was decided to use them for constructing new machines at the Minié works near Paris. These sailplanes were delivered to National Centres, Inter-Club Centres, and a few important Aéro Clubs, like Grenoble, Arcachon, Rhône, and Gaston Caudron.

The "Weihe" has great flight qualities in its unique neutral stability and high performances which become particularly noticeable near other sailplanes, and especially when landing, as its air brakes are very inefficient. I do not know a more tricky plane to land in small airfields, and at each approach I find I must apply full brakes and use side slips. I take great care not to damage the long thin fuselage; in France several "Weihes" had their fuselages broken in two parts during unlucky cross country landings.

But at the end of his travel, the tired pilot appreciates the extraordinary easiness of dismantling. One day two peasants appeared after I had landed in a small field, and without any previous instruction I gave them orders to remove the horizontal tail, then to hold the wing tips and to take away each wing. Three or four minutes after the beginning of the operation, my "Weihe" was completely derigged.

The rigging is also easy, but sometimes too easy. On one occasion I saw a friend of mine, hurrying to soar, rig his "Weihe" without thinking to connect the elevator controls. He took off aero-towed, and violently dived in from 30 feet; he had not thought to use the elevator trimmer. The machine was badly damaged, but the pilot happily unhurt.

The landing skid of this heavy ship is not very well designed, because it requires droppable wheels (a great danger to the fuselage) during manoeuvres and takings off.

The most recent records were broken in "Weihes": the Persson's record, the French distance record of 347 miles. But I think the pilots would have obtained as good or even better results, in "Air 100's."

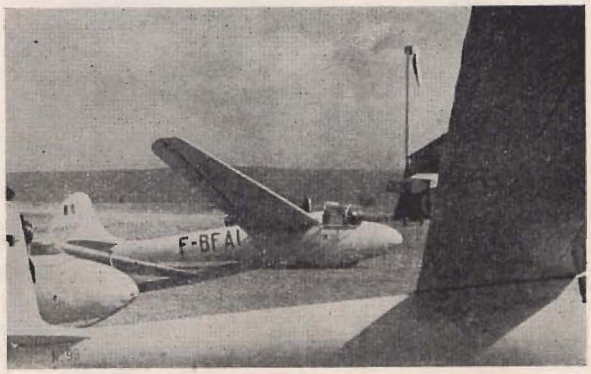
The "Air 100" (drawings and description of which appeared in the April, 1948, issue of *Sailplane*) represents great progress in design when compared with the 9 years older "Weihe." She is extremely solid and capable of enduring the worst treatment. Inside big clouds she is as smooth to fly as a "Minimoa." In spite of her greater wing loading, her performance differs little from that of the "Weihe." On several occasions I circled "Air 100" for a long time 100 feet above or under a "Weihe," and the vertical distance between us remained constant. But I was very careful when I circled under an "Olympia" because I could very easily overtake it. The "Mu 13" was the only sailplane able to outclimb me.

Handling of the "Air 100," particularly in lateral direction, thanks to the slot ailerons and to the wing stiffness, is really astonishing. Flying this big ship is like flying a 40 feet sailplane.

"Air 100" differs from the "Weihe" in that her airbrakes raise the sinking speed considerably; air-brakes and wheel-brakes are coupled (as in the "Goevier two-seater" and the "Bréguet 900"), making a spot landing easy. I have never flown an "Air 100" cross country, but I think she must be a delight on such a trip. Derigging is easy, although less speedy than for the "Weihe."

The latest "Air 100's" have an interesting winching system. Using 2 shoulder hooks, they are capable of high climbs even without wind—1,600 feet by 1,100 yards of wire. The cockpit is roomy; I flew with the artificial horizon, a heavy battery, an electrical converter giving A.C. for the horizon and a big oxygen bottle, yet there was plenty of space available; specially designed cushions make for comfort. The "Air 100" wing is not high like that of the "Weihe," but it fills a shoulder position, so that one loses a great area in the fuselage between the wing spars.

All metal parts are connected by wires to guard against lightning in Cumulo-nimbus clouds. M. Henri Lambert has fitted a wire lattice over the



"Air 100" No. 4. Starboard winching hook is visible below cockpit. Notice smallness of slot aileron.

cockpit of his " Air 100," forming a Faraday cage against electrical discharges.

In spite of international interest, only 13 " Air 100's " have been built due to lack of funds, but the S.A.L.S. (Service de l'Aviation Légère et Sportive) has put forward a new scheme of future sailplane production. It provides for production of four all-French types only : " C.800 " two-seater for instruction ; " Emouchet " for training ; " Castel C.311 " for general soaring flight ; " Air 100 " for high performance, but such a scheme seems very logical, and these 4 machines will together be sufficient for our needs. When the French centres and clubs can obtain sufficient " Air 100's," my countrymen will be sure to put up still more splendid performances.

GUY BORGÉ.

N.B.—The following figures refer to the " D.S.F. Weihe " and production model of the " Air 100 " built by Roche Aviation. Figures differ slightly from those printed in the April, 1948, *Sailplane* issue, which refer to the prototype machine.

Plane	Year	Length ft.	Span ft.	Area sq. ft.	Aspect Ratio	Empty Weight lb.	Full Weight lb.	Wing loading lb./sq. ft.	Max. Glid. ratio	Min. Vert. speed ft./sec.	Load charge
" Weihe "	1938	26,2	59	195,8	17,8	429	737	3,76	29 at 43 m.p.h.	1,90 at 31 m.p.h.	9
" Air 100 "	1947	26,3	59	193,6	18	627	825	4,26	30 at 40 m.p.h.	1,97 at 35 m.p.h.	12

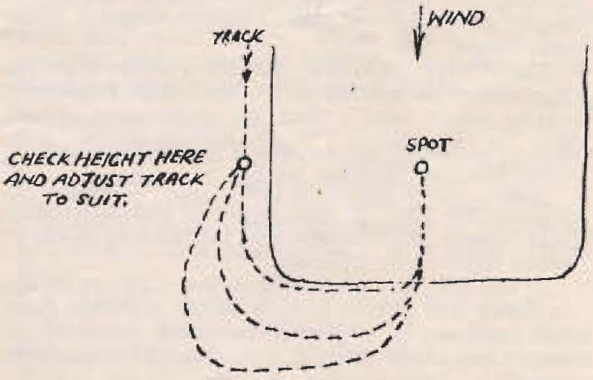
" Weihe " Root airfoil = *Göttingen* 549. Tip airfoil = *M.*12.
" Air 100 " ,, ,, = *Göttingen* 549. ,, ,, = *Göttingen* 576.

CIRCUITS AND NO BUMPS

WINTER is here, gone are the thermals, so the time is ripe to take this circuit business seriously. A great deal of skill can be acquired during these winter months of gusty, high gradient winds and poor visibility conditions, which may be very useful one day when landing away or in one of those myriads of unpredictable situations which continually confront the soaring pilot. The lowly winch circuit has much to teach, especially if flown on every " flyable " occasion and in " Mk1 Cadet." In fact the precision of such circuits will soon bring next season's successful soaring " types " to the fore. What greater satisfaction than repeating under widely varying conditions, a well planned trip followed always by an enviable spot landing ?

The secret of success in this flying business seems to be, constant and unflagging attention to detail, so always start right. The clothing should be warm but not bulky ; attention should be paid to the strapping-in, the important thing is to be comfortable. Cushions behind will bring the rudder pedals within reach (we've all heard that one after a sloppy turn " I couldn't reach the rudder pedals properly ") and don't forget when sitting on cushions, always use the same number, it's surprising how much of the circuit can be wasted finding the correct horizon position if the pilot's seat height has been altered. It is well to remember that when precision flying is really essential (such as that weak thermal at 500 ft.) the horizon ace has the dice heavily loaded in his favour against the ASI prune who is always at least 180 degrees behind in a tight 360. A stall or incipient spin is very common when circling " off centre " on a new found thermal, in which event all the precious height will be gone and also the chance of getting away. However, strict attention to the horizon will prevent such an occurrence.

This brings up another point, I know a number of glider pilots with years of experience who are still " shaken " at the thought of spinning and in a few cases, even of stalling. What better time than the winter circuit to really " button up " these manoeuvres ? Start with the gentle stall " off the top " and build it up on each circuit until quite familiar with the complete stall (nose well up) and



pay great attention to the recovery from the resultant vertical dive. The next step is of course to stall turns and incipient spins (one has to do a surprising number of the former before becoming really proficient) finally we come to the full blooded spin but this should only be practiced in an aerobatic machine as ham handed recovery can place considerable strains on the airframe (another reason is that the spiral dive is a close relation of the spin). All these manoeuvres will instil confidence and prepare the pilot for the most turbulent " lift." Assuming 1000 ft. on the launch, the circuit, approach and landing technique will not be interfered with by these extra exercises which should not use up more than 300 ft.

Another excellent exercise is to practice " peeling off " the top into a copy-book 360 (always use a bubble) it's amazing how many times " contact " is made right " off the top." Some schools of thought say it is due to a winch thermal being disturbed by the launch, but whatever the explanation it certainly is a great joy to see, after two complete circles, the green ball still off its seat. So with this exhilarating picture before you, go to it and keep that bubble in the middle.

Just one more word about these tight circles, there are still many glider pilots who do not realize the importance of rudder elevator change over at steep angles of bank. If you want to reach cloud base the nose must be kept in the correct horizon position by the occasional touch of top rudder and don't neglect to keep the rate of turn constant by tucking that stick back. A good scheme, once you are " centred " and climbing all the way round, is to note something on the horizon and count it round each time, this will prevent a good 16 second 360 becoming gradually a flat 24 second affair which usually gives the impression that the thermal is fading, when actually one is straying from the core.

Now about this all-important approach—and this is where the really polished flyer comes into his own. No matter how good you think you are it seems that the " spot " should always be at least 100 yards inside the perimeter. Having chosen it, it is of course, quite another matter putting the kite on to it. But don't despair, experience shows that once the side slip is properly mastered (and it's not easy) a spot landing can be carried out in all wind conditions. By far the easiest and safest approach is as shown on the diagram (with the exception of some hill sites). This system does away entirely with those dangerous low turns in the gradient, doesn't take you too far outside the perimeter and gives that nice long straight approach into wind, where the final height adjustments can be made. Remember that, most accidents occur in this final stage of the circuit and the usual reason is a stall due to the pilot under estimating the gradient effect. Here is the golden rule, tuck the nose down on the last turn to give 20 per cent more speed. The advantages are obvious and besides, a straight fast approach looks good and if overshooting, the ground speed can easily be brought down (again with a little practice) by what I believe is generally known as " fishtailing."

So let's " go to it " and enjoy our winter circuits in the knowledge that on each trip we are learning something which will enable us to take full advantage of the right conditions when they come along about the end of March—We hope. H.B.S.

F.A.I.

MINUTES OF THE MEETING HELD AT CLEVELAND, OHIO, September 2-5, 1949—*concluded.*

ITEM 3 OF THE AGENDA :

REQUIREMENTS FOR GOLDEN AND SILVER SOARING BADGES.

Denmark proposed that the distance requirements for Silver and Golden " C " be accomplished by go and return flights. This proposal was rejected because it was agreed at a previous F.A.I. Glider Committee meeting that slope soaring would make these requirements too easy to meet, and depreciate their significance.

The U.S. proposed that the Silver badge duration requirement be lowered to 2 hours, or that a bronze soaring award with a duration requirement of one hour be established. After discussion the U.S. withdrew its proposal.

South Africa proposed that no barograph be required for the duration flight of the Silver and Gold badges, if the flight and the landing is made within sight of the officials.

It was felt that no modifications of the rules are necessary and that it was up to the National Aero Club concerned, what substantiating evidence it would require in lieu of a barograph trace with regards to these duration requirements.

ITEM 4 OF THE AGENDA :

(See Item 1.)

ITEM 5 OF THE AGENDA :

ESTABLISHMENT OF DIAMOND SOARING AWARDS : 5.5 (to be added).

(*a*) It was approved that higher awards be established.

(*b*) It was approved that performances of 500 km. and over, and altitudes gained of 5,000 metres and over, and goal flights of 300 km. and over be recognized for these awards individually.

(*c*) The technical details for establishing such performances are covered by the rules for distance, gain of height and goal flights. All flights must be made solo.

(*d*) It was approved that for each of these performances accomplished, a small diamond will be added to one of the gulls of the golden badge at the point where the wings join the body.

(*e*) Performances previously established may be approved.

ITEM 6 OF THE AGENDA :

RESPECTIVE FUNCTIONS OF THE OSTIV AND THE GLIDING COMMITTEE :

It is restated that the OSTIV is a sub-committee of the Gliding Committee of the F.A.I. and is under the supervision of the latter. The OSTIV'S primary mission is scientific and technical research. The OSTIV's will be asked by the Gliding Committee for advice and council.

ITEM 7 OF THE AGENDA :

POINT TO POINT RECORDS FOR GLIDERS IN TOW FLIGHT :

It was proposed by Egypt that point to point records in tow flight be established.

This proposal was rejected because it has no connection with gliding and soaring as such.

ITEM 8 OF THE AGENDA :

ANY OTHER BUSINESS :

8.1 :

International Soaring Competition.

8.1.1. :

It was approved that the international soaring competitions of the F.A.I. be called "World Championship Soaring Contests under the F.A.I." The minimum events for these championships will be :

(*a*) Height.
(*b*) Free Distance.
(*c*) Goal Flights.
(*d*) Goal Speed Races.

8.1.2 :

WORLD CHAMPIONSHIP SOARING CONTEST FOR 1950 :

Colonel Enell, General Secretary of the Swedish Aero Club, gave a report on preparations for the 1950 event. The event will take place starting in the first half of July with two or three training days, with a total duration of 14 days. Five teams from each country will be invited, but it may be necessary to reduce this as the total number of gliders competing will be limited to 30. A team consists of a pilot and a maximum of three crew members ; each country will have one team captain, and the event will take place at Orebro, Sweden. The entry fee will not exceed $50.00 per pilot, and $25.00 per crew man, which covers room and board and towing expenses, etc., during the contest ; it does not include retrieving costs—all retrieving must be done by the team car procured at the team's expense.

The competition will be divided into the following three events :

(*a*) Free distance combined with height.
(*b*) Goal Flights.
(*c*) Goal Speed Races.

8.1.3 :

The U.S.A. delegate extends an invitation for the World Championship Soaring Contest, to be held in the U.S. in 1952.

8.2 :

It was decided that the next meeting of the F.A.I. Glider Committee will be held in Orebro, Sweden, in conjunction with the World's Soaring Championships of 1950.

8.3 :

The next OSTIV meeting will be held in Sweden ; the first two days will take place immediately preceding or during the official training period of the 1950 World Championships.

8.4 :

Request of German Glider pilots to be admitted as observers to OSTIV meetings :

The Gliding Committee voted not to discuss this proposal, but to refer it to the General Conference of the F.A.I.

8.5 :

It was approved that a special booklet be made up containing Glider rules for records and soaring awards. This project was assigned to the Swiss Aero Club and it shall submit its results to the next meeting of the F.A.I. Glider Committee.

8.6 :

It was proposed that national glider records of the member countries of the F.A.I. be circulated once a year by the F.A.I.

It is the wish of the Gliding Committee that this be done.

THE BRITISH GLIDING ASSOCIATION

Circular No. 5/49

1. Award of B.G.A. Cups and Trophies. "Annual Awards" for 1948

The Council have endorsed the following "Annual Awards" for the year 1948 :

(a) *The De Havilland Cup* to F. Foster for the height gained of 10,800 feet during his flight from Dunstable on 13th July, 1948.

(b) *The Manio Cup* to J. W. S. Pringle, M.B.E., for his Goal Flight of 108 miles from Malvern to Cambridge Airport on 30th March, 1948.

(c) *The Wakefield Trophy* to P. A. Wills, C.B.E., for his Distance Flight of 160 miles from Staverton to Fowey on the 25th April, 1948.

(d) *The Volk Cup* to C. J. Wingfield, for his Out-and-Return Flight of 114 miles from Redhill, Surrey, to Welford, Berkshire, and return, on the 6th May, 1948.

(e) *Seager Cup*. No award recommended, pending further investigation.

It is much regretted that these awards have not been announced sooner, which has largely been brought about by the difficulty experienced in obtaining reports of outstanding flights.

2. Records

The Council has approved the following records :

1. *Category* 11 *British National Out-and-Return.*

J. W. S. Pringle, M.B.E. and J. Grantham in "Kranich" from Cambridge Airport to Dunstable and return, 12th August, 1949, 77.2 miles (124.26 km.).

2. *Category* 1 *B.G.A. U.K. Local Goal Flight*

D. H. G. Ince, in "Olympia" from Long Mynd to Yarmouth on the 9th August, 1949. 192.88 miles (310.41 km.).

3. "Annual Awards" for 1949

The Council have decided that these cups and trophies shall be awarded to British pilots for flights commencing only in the United Kingdom, as follows :

de Havilland Cup	Greatest height during the year.
Manio Cup	Best goal flight during the year.
Wakefield Trophy	Longest distance during the year.
Volk Cup	Best out-and-return flight during the year.
Seager Cup	Best two-seater performance during the year.

In order that no outstanding flight shall be overlooked in making these awards for the year 1949 will all pilots who have made such flights kindly submit details before the 10th January, 1950.

4. Photographs "A" and "B" Certificates

Photographs are now optional for "A" and "B" Certificates.

5. Gliding by Young Persons. Amendment re Certified Points

The Ministry of Civil Aviation have decided that members of a Gliding Club, flying under the supervision of their club, who are over the age of 14, but under the age of 16, are no longer restricted to flying within three miles of a certified point. The circular giving this information is No. 122/1949, reference R.71390/49/RL1.

6. Equipment for Disposal

(a) *The Scottish Gliding Union Ltd.*, write to say :

"We have at present surplus to requirements one "Dagling" Open Primary Glider by Hawkridge Aircraft Ltd. This machine is two years old but was in use for one season only. It is in perfect condition and has suffered no damage since new."

(b) *The Derbyshire and Lancashire Gliding Club.*

Report for disposal :

1. One ex-German "S.G.38."
2. One "EoN—Primary."

A. KINLOCH,
Secretary.

MINIMUM QUALIFICATIONS FOR B.G.A. INSTRUCTORS

As passed by the Council, 11th November, 1949

"A" Senior Instructor

Permitted to instruct dual or solo on light gliders (max. 1,250 lb. A.U.W.) without restriction.

Qualifications

1. 250 hours flying as first pilot. Not more than 50 hours power flying may count towards this total.
2. 50 hours flying giving dual on 2-seater gliders, or 10 hours and the possession of recognised service or civilian light aeroplane instructors' qualifications.
3. Must be Silver badge holder.
4. Must have been club or service approved winch or auto-tow driver for at least 12 months.
5. Must have held "B 1" and "B 2" categories for at least 12 months each.
6. Knowledge of B.G.A. Basic Syllabus and AP 1732.
7. Evidence of 10 hours blind flying, including instruction in recovery from spins.
8. Ability to carry out normal aerobatics on gliders.
9. Must have club authorisation to carry out D.I.s. on gliders, winches and/or two cars.
10. Test by B.G.A. examining board.

"B 2" Instructor "dual"

Permitted to give dual instruction in 2-seaters (max. 1,250 lb.), and to instruct pupils for their subsequent solo flying. Not approved to give instruction in ground slides and low hops.

1. 50 hours flying as pilot in charge. Power pilots may count power time as 1/10 after a minimum of 10 hours on gliders.
2. 12 flights or 1½ hours flying on dual glider being taught how to instruct by an experienced instructor.
3. Same as "B 1" "Solo."
4. Must have had club approval for carrying passengers for 3 months.
5. Knowledge of B.G.A. Basic Syllabus on dual training and of AP 1732.
6. Same as "B 1 solo"
7. " " " "
8. " " " "
9. Must be club approved winch or auto-tow driver.
10. Must hold a "C" certificate.
11. Test by B.G.A. examining panel on dual instruction and general operation.

"B 1" Instructor "solo"

Permitted to instruct pupils to fly in light gliders (max. 1,250 lb. A.U.W.), but not permitted to give dual instruction.

1. 20 hours gliding as pilot in charge.
2. Must have been club or service approved winch driver for at least 3 months.
3. Evidence of 50 winch launches or auto-tows as pilot of glider.
4. Must have been a club approved assistant instructor for at least 3 months.
5. Knowledge of B.G.A. Basic Syllabus on solo training.
6. Capable of lecturing in elementary meteorology, theory of flight and airmanship.
7. Must have club authorisation to carry out D.I.s. on gliders and winches and/or tow cars.
8. Omitted.
9. Evidence of three aero-tows as pilot of glider.
10. Holder of "C" certificate.
11. Test by B.G.A. examining board on solo instruction and general operation.

TOUR OF NEW ZEALAND with the "YELLOW WITCH"

(*Copyright reserved*).

"OLYMPIA" SAILPLANE.

By ARTHUR D. HARDINGE.



ACCEPTING the enthusiasts' impression of sailplaning, I conceived the idea that it was possible to organise and successfully complete a comprehensive tour of New Zealand, providing co-operation be assured in the country of destination.

The obvious thing to do was to negotiate through Air Dept. Civil Aviation Branch for advice and co-operation, they said it was a good thing for New Zealand and were keen to have the sailplane, but their welcome was indeed a rude awakening.

The foundations for the tour were laid, and after correspondence with Aero Clubs and Gliding enthusiasts in New Zealand, hangarage, manual assistance and aerotowing were assured. The tour would be educational for all connected with aviation also the general public.

Gliding is a sport to be exhibited before audiences who have sufficient interest to attend Air Shows, and as N.Z. pilots are first-class and very keen despite their regulations, would be of value to them with the hope of converting them to sailplanes.

The modern sailplane is a far cry from the old primaries.

My club, the Victorian Motorless Flight Group and the aid of the Beaufort "Pheonix" Group, gave the "Yellow Witch" her first opportunity to spread her wings, what a wonderful effort on their part. She did not have a name until the second day's flying and after the fence jumping episode and the ability of the machine to cover large distances with minimum loss of height, the title of "Yellow Witch" seemed quite ideal. Mrs. R. Roberts, our secretary, takes the honours for such an intriguing title.

Top: Arthur Hardinge in his home built "Olympia" (Chilton plans)
Middle: Discussing his machine with AVM. A. de T. Nevill, C.B., C.B.E., N.Z., C.A.S., at the R.N.Z. Aero Club pageant at Mangere.
Bottom: Being aero towed.
(*Photos: WHITES Aviation, Ltd.*)

After the Xmas camp the " Witch " was returned to Coburg for crating, and after the last nail had been driven, the carriers took her away and aboard the S.S. " Waitaki " bound for Wellington.

As the construction of the " Yellow Witch " had virtually broken the bank, the persons concerned who were directly responsible for financing the tour were all very close to me, my mother, sister Mavis, who assisted by glueing on leading edge panels and other jobs requiring an extra helping hand, my aunt, Mrs. L. Neill and her daughter, Mrs. Kit Batten.

Kit was to play an important part in the tour, as my secretary as well as visiting a number of her friends and relatives as we moved around the North and South Islands; it was largely due to her efforts, her cheerfulness and drive against numerous setbacks, that the tour was a success from a demonstration, as well as financial success.

The V.M.F.G. and Beaufort clubs gave me a very nice send-off and something else of value for the trip, and so I left Melbourne, joining Kit in Sydney.

We boarded the " Wanganella " at Sydney on the 10th Feb., 1949, both filled with all kinds of thoughts as to the outcome of the tour, whether it would be successful, or a miserable failure.

Am afraid I had less enthusiasm than Kit, knowing the awful risk of undertaking the trip, but I wouldn't tell her for anything in this world, lest the two of us be so utterly dejected, and give up due to the large outlay with little prospect of the equivalent return.

I had never heard of a glider pilot " barnstorming " but now it was a grim realisation and the money just had to be paid back and I had to stay in New Zealand until it was, so there wasn't any other choice but to make the best of it.

After a pleasant crossing to Auckland, the Tasman Sea being unusually calm, was relieved to see two gliding enthusiasts, Jim Harkness and Gordon Hookings, the latter having flown " Olympias " with Cambridge University. We stayed with Gordon's people at different times during the tour, were always welcome, and proved a wonderful family, and always so ready to help us through our setbacks.

After visiting the Aero Club at Auckland to arrange aero-towing, Kit and myself, left two days later to fly to Wellington, during this flight I was horrified to see some really tough country to fly over in a powered machine, let alone on aero-tow.

We passed the famous volcano, Mt. Ngauruhoe in full eruption, giving some first-class convection, rather violent I would say, and by Mt. Ruapehu, some 9,500 ft. high, a rather big piece of mountain.

Auckland Aero and Gliding boys had warned me of the reception I would receive at Civil Aviation, Wellington, and they were quite right, the result of this Departmental bungling, they would not permit the " Olympia " to fly, because it was a " backyard " built machine, they have a particular aversion to amateur built machines. Australia hadn't a Type Record or Certificate of Airworthiness for any machine, and therefore I had to wait several weeks for an authority from Australia, and furthermore Australia would be required to accept full responsibility for structural defect, third party or should the pilot crash his aircraft resulting in loss of life. Civil Aviation were not prepared to break a quarter of a regulation to allow the " Yellow Witch " to fly, for a significant reason, if a stranger is permitted to fly a " backyard " machine, the local gliding enthusiasts should be permitted the same privilege, so they wouldn't budge a fraction of an inch. My authority came through and the " Witch " was dispatched to Auckland by rail. Kit had left Wellington to visit friends, as she could see the stonewall tactics of Civil Aviation and I wanted her to leave rather than be worried to a shadow by the officialdom, so planned to meet her on 15th March. I flew back to Auckland, Whenuapai, the Air Force drome being used for civil aircraft, and stayed with Ron Richter of the Aero Club. When the " Witch " arrived she was uncrated and assembled, but not flown until a check was made by the District Surveyor, a weight and balance report had to be made out and determination of the C. of G., fortunately the " Witch " met all requirements, but could not fly until the piece of paper (authority) arrived from Wellington.

At last Friday the 10th March, the authority arrived, but another delay " Olympia—H " had to be painted on the fuselage for identifying the one and only " Olympia " in New Zealand. This was attended to very smartly by Aircraft Services and she was towed into the runway.

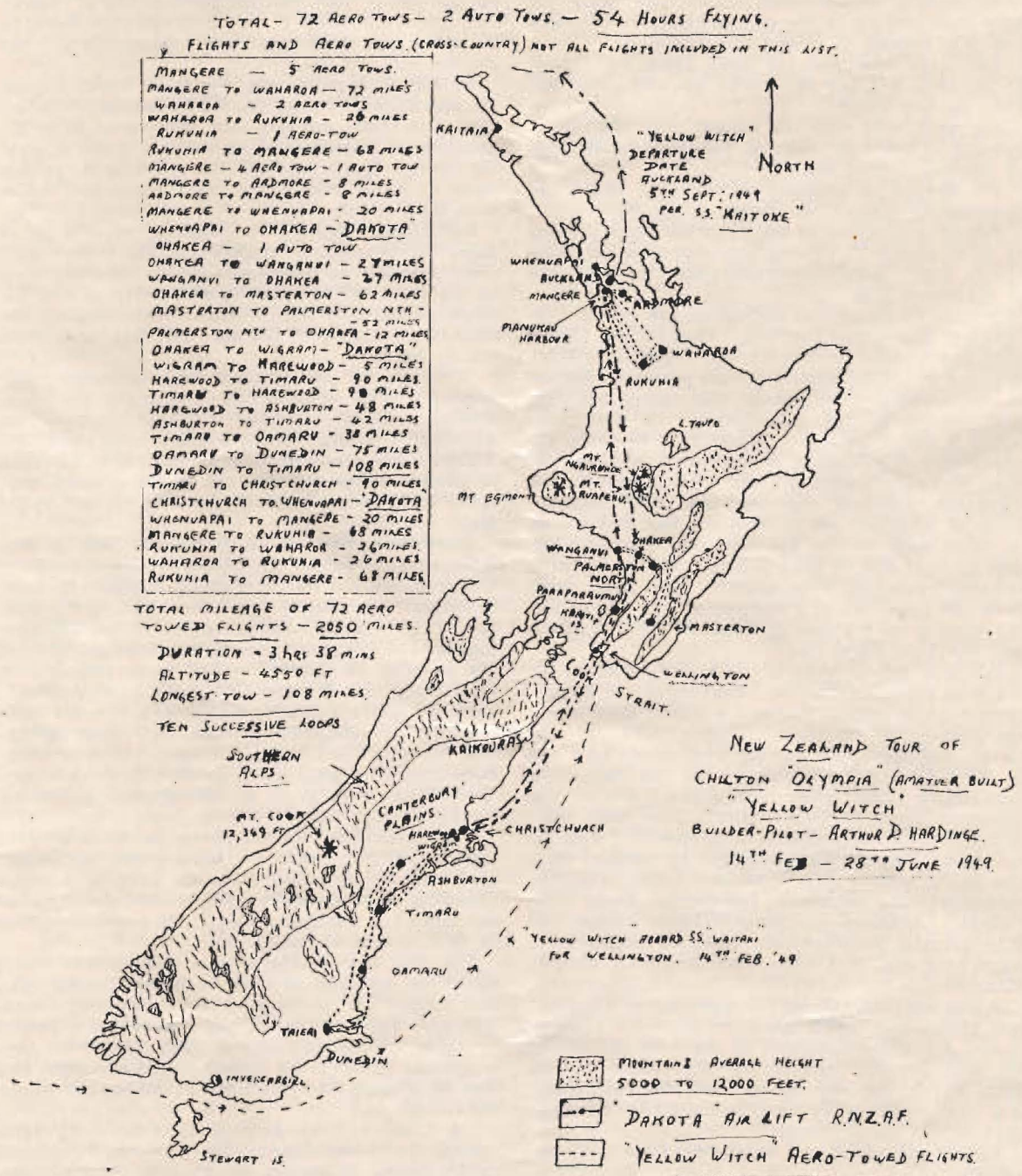
Bob Prentice, chief instructor at Mangere, gave the first three tows successfully, these lads were very sceptical until after the first tow, and my experience of 8 aero-tows did not help to impress them very much. Johnny Kaye, another instructor who had towed " Horsa's " behind a " Stirling " during the war, gave the fourth and last tow of the day.

Peako Aero Club at Waharoa wanted the " Olympia " for their field day the following day, so Fred McKeever with his private " Tiger," had one practice tow, and off we went to Waharoa, Freddie and myself on our first cross-country tow, and 72 miles ! Needless to say we were rather nervous of the prospects, also the fact that cloud base was dropping at Waharoa and about 1,000 ft., and a range of mountains of 1,500 ft. to be negotiated.

We managed to cross the range before the cloud and rain reached the region, and arrived at Waharoa on time for the display but in pouring rain. Fortunately the cloud bank passed over. During the programme, Bill Hewitt of the " Flying Kiwis," a hard flying circus, invited me to fly to Rukhuia the next day, so Fred towed the " Witch " over for the afternoon show, arriving at 1 p.m. After release she started to go up and at 3,100 ft., gave it away to aerobat the height off and land, we were due to leave Rukuhia at 4 p.m. in order to make the 68 mile tow to Mangere.

A successful day for all at Rukuhia, and " Olympia " on tow arrived at Mangere releasing at 4,200 ft. for a delightful cruise over Auckland in perfectly stable air.

One look at the sky next morning caused a quickening of my pulse, good cumulus forming so I made tracks for Mangere accompanied by Whites Aviation photographers for some aerial shots for their magazine.



The " Witch " was airborne about 1 p.m. and at 3,300 ft. released for the benefit of the photographers and aerobatted to 1,000 ft., where I contacted a decent thermal and climbed to over 4,000 ft., convection coming off Mangere, and the mud flats where the tide had receded in the Manukan Harbour, permitted the " Witch " to cruise six miles out over the Harbour and remain aloft for 3 hours 38 minutes. An interesting point, I could easily have crossed the Harbour and carried on for many miles, but as a trailer was not available, just had to forget about cross-country flying and the fact I wanted to ensure

keeping the " Witch " intact for the duration of the tour, landing on prepared aerodromes being far safer than picking on the odd paddock which might not be as smooth as viewed from the air.

Two days later she was aloft again for 1 hour 25 minutes, but the sky broke up and could not keep up any longer.

She went back into the hangar until the official opening of the New Zealand National Air Pageant on Saturday, 19th March.

Kit arrived as arranged on the 15th March and immediately started her duties as secretary.

Saturday came and so too, came the wind, blowing at 40 to 45 m.p.h., causing cancellation of all flying events, only a few private owners flew their machines at their own risk.

Several thousand had arrived at the drome. Sir Bernard and Lady Freyberg, Group-Capt. Sheen with them, came to inspect the " Yellow Witch," hoping I would fly, because of their particular interest in the machine. The pageant was opened officially, and because of the cancellation, the Aero Club asked if the " Olympia " would fly. Knowing the capabilities of a sailplane in high winds, we organised Fred McKeever's light delivery V8 and with Gordon Hookings directing the auto-tow the " Witch " took off with the 300 ft. aero-tow line and 600 ft. of cable used by the old Auckland Gliding Club. The total of 900 ft. gave a height of 775 ft., after release, performed two circuits with large drifts from the upper wind, a number of " S " turns and the landing on the spot in front of the Club House and the Vice Regal couple.

Kit and myself were then treated to afternoon tea with their Excellencies. Success of the Sunday show held in perfect Pageant weather, gave us the opportunity to establish ourselves with all Aero Clubs, representations coming from every aero club in New Zealand were able to see the method of aero-towing and most instructors had several thousand hours to their credit. They were quite intrigued with the prospects of co-operating with the sailplane. Johnny Kaye supplied his services for a tow to Ardmore to visit Professor Leech, a gliding enthusiast at Auckland University Engineering College. Ardmore was an Air Force drome, but Experimental purposes only now, we talked for a short time and once more were in the air back to Mangere.

A message from the Air Force stating a "Dakota " was available on 30th March en route for Ohakea, caused a stir of excitement so the " Witch " towed by Bob Prentice arrived at Whenuapai on the 29th March, she was loaded into the " Dakota," and next morning we were bound for the Southern part of the North Island.

Kit stayed behind and was to meet me in Christchurch.

The " Dakota " arrived at Ohakea and was greeted by Group Capt. A. E. Clouston, world famous airman. Being a precise man, the Group Captain wanted to know how long to assemble the " Witch ", I said half an hour, so he replied, that gives us time for lunch then I'll give you a tow with the V.8. Sufficient pieces of rope acquired from all sectors of the drome were joined together to provide about 1,300 ft. The wind had swung directly tail-wind, but the Group Capt. said there was plenty of runway and too much effort to take the machine down to the other end, so away we went, staggering into the air, the V.8. flat out.

At 800 ft. I pulled the release in about neutral air, and several minutes elapsed before the " Witch " started to climb, not long after we were at 3,700 ft., duration 56 minutes and for the last 2,000 ft. over the control tower, received the green light, gave a series of loops, stall turns, tight turns and stalls, with tight spirals.

No " Tiger Moths " on Ohakea, so planned a flight to Wanganui, a gliding club exists, with Owen Handley as secretary, the lads were surprised to see the " Witch " arrive on Sunday at the Air Show arranged by the Air Circus, unfortunately the rings were lost from the aero-tow line and could not fly again.

We took off for Ohakea next afternoon, Bill Hewitt towing quite gently considering his usual routine. Friday, I planned to fly at Masterton with the " Flying Kiwis," Bill arrived with his " Tiger " and prepared for the flight. F/O. McCloud of Ohakea tower said you are in for a rough trip, cloud base worries and wind picking up, but visual flight was O.K.

Away from Ohakea to Palmerston Nth. proved quite smooth, but in the narrow valley behind the Tararuas, flanked by the Puketoi Ranges, 50 miles of extreme turbulence was encountered, quite often the " Tiger Moth " losing height in an alarming manner and could not gain sufficient height to clear the 2,500 ft. Mt. Bruce, we had to go around with only a gap of a few hundred yards to fly through, receiving severe buffetting all the way.

Felt rather relieved to pull the release over Masterton, but as we had to fly back again the same afternoon and into a head wind, we were far from happy. Two flights were given at Masterton, and headed for Palmerston Nth.

The turbulence started early particularly over Eketehuna, Mt. Bruce we were almost stationary at 70 m.p.h. air speed, Paihatua gave us a sound thrashing, and eventually we re-crossed the Tararuas and landed at Palmerston Nth. with the desire never to fly into that valley again.

The field day by the local aero club was like a miniature agricultural show, sideshows, motor bike and midget car racing, and the flying programme. The first flight of the " Witch " provided a height record of 4,550 ft. in strong lift, and later in the day, performed 10 successive loops. Stayed overnight and flew to Ohakea towed by Cyril Plumtree, one of the instructors.

A " Dakota " was available next day 11th April bound for Christchurch, the " Witch " stacked neatly inside. A landing was made at Paraparaumu to load Air Force supplies. I thought of making a towed flight from Rongotai to Blenheim, but the region is far from encouraging and possibly one of the worst areas in the world for turbulence, the Kaikouras on the South Island standing up about 9,000 ft. and not very hospitable, and the Wellington side just as inhospitable. Gliding at Wellington is not very practical due to bad areas of down draughts.

If any one desires to make an aero-tow flight across Cook Strait, they are quite welcome to the honour.

Squadron-Leader Powell welcomed us at Wigram, Christchurch, he had flown " Rhon Buzzards " and eagerly supplied his services as tow-pilot.

Flew at Wigram 12th and 13th April, giving aerobatic displays and lectures to personnel and pilot pupils.

On the 11th April I saw the famed North-West Arch, a gigantic lenticular cloud in the vicinity of 100 miles in length and of magnificent structure, great possibilities for standing wave flights.

It was in a decaying stage and disappeared overnight and did not reappear. The phenomenon is common during the warmer months, so are the high, blustery North West winds, reaching 100 m.p.h. at the upper levels, so the Sailplane would need to possess exceptional penetration to fly in lesser conditions.

I met Wyn Stuckey and his wife Eleanor, and Cliff Holland, these fine lads are frustrated by Air Dept., but Cliff has joined the V.M.F.G. and eagerly awaiting the commencement of the flying at Berwick. Johnny Neave supplied towing for the 17th April at the Civil drome, Harewood. 15,000 Christchurch residents turned out to see the Pageant, and the " Olympia " received a warm reception. A talk on gliding gave the public, impressions of the capabilities of the modern sailplane.

The following day Len Mitchell flew from Timaru, to collect the " Witch " for the Easter Monday display. Cloud base was 400 ft., but on the Canterbury Plains, a magnificent stretch of perfectly flat terrain, there was no fear of obstructions and the fields were large, with 90 miles to tow, we felt somewhat uneasy but cloud base improved and arrived at Timaru, 1 hour and 32 minutes on tow. Two flights in the afternoon satisfied the South Canterbury Aero Club, but the " Witch " remained overnight. Lloyd Burch wanted to fly back to Christchurch, but failing light prevented a return tow. Len Mitchell and Bill Turner provided the tow next afternoon arriving at Harewood in 1 hour 20 minutes. The " Witch " was transported to the " King Edward" Barracks for a static display, two nights only.

Kit arrived the 23rd April, promptly informing her we were leaving for Ashburton in the morning, her passage booked in the Canterbury " Dragonfly." Cliff Fantham elected to do the tow, as we left Harewood the wind started to blow, and we arrived at Ashburton with 45 degrees of drift, the wind blowing in gusts to 50 m.p.h.

A large crowd attended but all aircraft remained at Harewood, except the " Dragonfly " so the three aircraft staged the pageant.

" Olympia " remained aloft for 42 minutes in good but broken lift, and surprised the local pilots by flying upwind in the strong conditions. The main programme was cancelled and to be conducted a week later. I stayed overnight with the Rev. J. Evans another gliding enthusiast.

Len Mitchell came to take the " Witch " to Timaru for her week's contract, a pleasant flight to the Salt-water Creek field at Timaru, with the magnificent snow-clad Southern Alps on the starboard side. Timaru club members have a wonderful club spirit and they gave us a truly warm welcome whenever we landed.

Weather wasn't really good for our contract week, so Kit and myself spent a short but interesting time at the Hermitage and Mount Cook with the Tasman and Hockstetter Glaciers, a veritable wonderland of mountains, snow and ice.

Rugged mountains all forming the Southern Alps gave an air of grandeur, silent, awe-inspiring but formidable to airmen due to the heavy gusts and turbulence under certain wind directions.

We returned to Timaru and prepared for the trip to Ashburton on 1st May, and although cloud base at Ashburton was 800 ft., it was 50 ft. at Timaru which is rather low but nevertheless the fee was attractive so away went the " Witch " dodging trees, buildings and other obstacles, until 7 miles from Ashburton, and we were happy to climb to a " safe " height. My aerobatic routine was eliminated except for a " beat up " and tight turns over the crowd, cloud averaged 800 ft. base.

Cloud base went to zero late in the afternoon, and could not return to Timaru till next afternoon.

Under my contract with the Aero Club, I went aloft occasionally through the week, performing aerobatics over the main street to attract customers at the drome, Oamaru was scheduled for the following Sunday, 8th May, so a formation of 1 " Proctor," 5 " Tiger Moths," and " Olympia " cruised from Timaru to Oamaru and back up wind to Hilderthorpe Airfield near the Waitaki river.

This display drew 3,500 people from a population of 10,000, cloud base was 11,000 ft. and perfectly stable air, the " Witch " behaved admirably in the aerobatic routine.

The weather packed up overnight, Kit and myself forced to stay in Oamaru until Thursday, 12th May. Ron Bush arrived from Taieri in the morning, but adverse winds and cloud base delayed take-off until late afternoon. We saw a " Dakota " and " Lodestar " heading for Dunedin, but both returned, cloud base had dropped and they could not land. We received the O.K. at 3.30 p.m. and the tow started at 3.35 p.m., the " Tiger " had not been refuelled so our petrol was a worry, we could not fly high as the upper wind was 50 m.p.h. and at 300 ft. it was 25 m.p.h., so we headed for the open sea at low altitude to reduce turbulence and make best possible average speed.

Kit on the way by road saw the two aircraft at Karitane, 22 miles from Dunedin, heading into the black storm clouds at low height, pouring rain saturating the tow pilot, but alright for the sailplane. We were flying at 300 ft., the Otago Heads and Dunedin are ringed with peaks averaging 2,500 ft. and cloud base 1,400 ft. With the strong wind hurling up all sorts of turbulence, we struggled over the last 20 miles seeking a gap to fly through, fortunately at Port Chalmers, a saddle 1,200 ft. gave us 200 ft. clearance, we were over one barrier, but more to follow, it was nearly dark, petrol was very low, two more saddles to cross before Taieri was reached and nearly one and three quarter hours for 75 miles, the " Tiger's " motor was still turning over, thank heaven.

(To be concluded).

A TRIMMER FOR INTERMEDIATE TYPES

By PETER FLETCHER

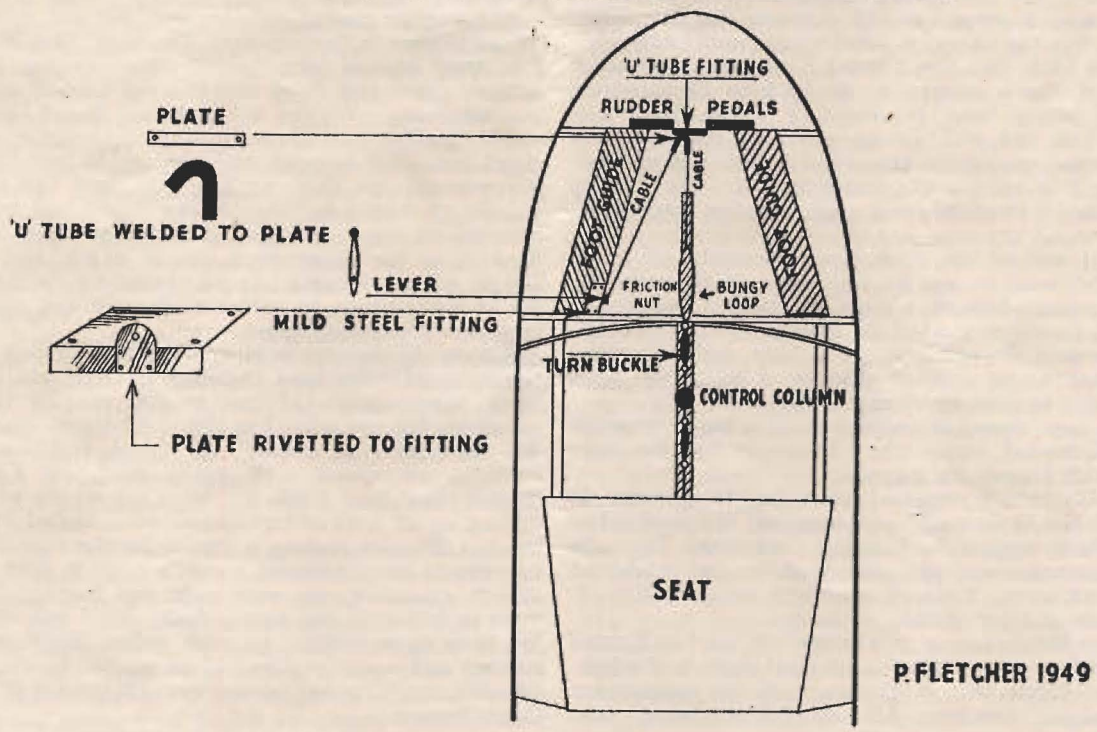
AS most intermediate machines have no form of trimmer to compensate for different weights of pilots and are usually designed to be nose heavy when the pilot weighs over about ten stone, it follows that with heavy pilots there is a very marked nose down tendency which makes it necessary to have a constant back pressure on the control column, which becomes very tedious if the flight is prolonged for more than say half an hour.

About two months ago I flew the London Club's " Prefect " and I noticed that a piece of bunjy was attached from a point at the base of the control column to a point between the rudder pedals in an effort to damp out the nose down trim with heavy pilots, and this gave me the idea of making an adjustable trimmer for the Tutor. Originally I suggested a double loop of bunjy from the eyelet in front of the turnbuckle connecting the elevator cable to the control stick, to a point between the rudder pedals adjustable on a " bowsie " for different pilot loads, but a friend of mine eventually made the arrangement which I will describe and which is very successful, 100% safe and costs almost nothing to make.

A loop of bunjy cord is attached by a simple hook to the eyelet in front of the turnbuckle where the elevator cable picks up forward of the control stick. The other end of the bunjy is attached to a piece of thin wire cable which passes through a simple " U " tube fitting attached to the cross member between the rudder pedals, and back to a lever mounted on a mild steel bracket attached to the inside edge of the left-hand foot guide on the floor. The lever is mounted on to the bracket with a friction nut, thus it is possible to have it fully forward when no load is applied to the bunjy, and the machine is trimmed as it was before this device was fitted or progressively back according to the pilot weight or speed desired. It has proved very successful up to fifteen stone pilot weight and makes the machine very much more pleasant to fly, and it is so positioned as to be easily adjusted in flight.

It should be fitted to all machines used for hill soaring and can be made easily.

FORE AND AFT TRIM FOR INTERMEDIATE GLIDERS



THREE OVER TEN THOUSAND

IT looks as though Keith Chamberlain of the Gliding Club of Vic. will be the holder of the Australian Altitude record. Keith's famous flight, during which he was whisked to 11,600 feet in a thundercloud without blind flying instruments, and which concluded in his being dumped some ten thousand odd feet by the World's Biggest Downdraft, is by now well known. Corrected figures show that his net climb above lowest point was 11,000 feet.

In November, 1948, Fred Hoinville (SSC) reached 11,410 feet near Camden, NSW., after a net climb above lowest point of 10,910 feet, and on the same day Aub. Parsons (Hinkler Soaring Club) reached 9,800 feet, in the same area.

On the day of Keith Chamberlain's flight, Dr. G. A. M. Heydon (SSC), some hundreds of miles away at Narromine, NSW., climbed 10,700 feet above his lowest point to a height of 12,300 feet.

The flights of both Fred Hoinville and of Dr. Heydon, have been accepted as Gold "C" height legs. The pilot's accounts of these two flights follow.

Fred Hoinville. Camden, NSW. 11,410 *feet.*

"On the 28th November, 1948, at about 2 p.m., I took off in my "Tiger Moth" Brolga with my mother as passenger, for a short joyride, while awaiting my turn in the Sydney Soaring Club's "Gull I," and cruised around the Camden aerodrome in search of thermals.

"Just outside the Western boundary I found one which must have been rising at 15 feet a second as I was able to soar the "Tiger" with throttle closed, and gained several hundred feet in this way, to the great delight of my 67 year old mother, who loves flying, but dislikes the engine noise. An ideal gliding type in the making, she thoroughly enjoyed the tight circling. After noting carefully the apparent point of origin of the thermal, I moved a quarter mile further South and found another of the same quality, so hurried back to report the joyous news.

"On landing, I was told that it was my turn, so told the tug pilot exactly where to go—politely, of course—and we went. Wishing to gain all possible altitude, I deliberately cut loose at 600 feet as we reached the lair of the first thermal, and sniffed around after it without finding it, so set off for the second spot, arriving at 500 feet and finding it at once.

"It wasn't very strong so low down, and only showed zero to 2 feet green, but gradually picked up strength as height increased, and from then on there wasn't a darn thing to do except keep circling fairly tightly to stay in the narrow lift area, while admiring the scenery, particularly the lush greenness of the variometer, which sneaked smoothly up the scale to 5 at 4,000, then 7 at 6,000, then 10 around 9,000, then fell off gently to 3 at 10,000, where cloud base was reached and a dinky little cumulus marked the spot. It wasn't X-shaped, though.

"Entering the terrifying monster—which must have been fully as large as a fair-sized house—I roamed around inside it, frequently busting through the edges, and finding no fair damsels to rescue, and no dragons of turbulence, finally left it near the top as lift failed altogether at 10,600 feet indicated height. The day had been cloudless until this and several other small cu's formed. Temperature near the ground was 79 Fahrenheit and about 30 at the top. Sea level pressure was 1003 millibars. A light south-west wind blew, down low, being rather stronger up high.

"The barograph was checked later by the CSIR and showed a true climb of 10,910 feet above the low point of 500 feet, and as Camden is 220 above sea level, this gives a true height of 11,630 above sea level as the maximum reached.

"Inside the enclosed cockpit of the "Gull," it was stiflingly hot below 3,000, mild at 8,000, and merely cool at the top. Observers below, seeing the "Gull" rise so evenly, thought that wave effect may have caused the lift, and it is a fact that Aub. Parsons, who went up ten minutes later in the Hinkler Soaring Group's "Grunau," and reached almost equal height, did find that lift was widespread from 9,000 feet up when he left the vicinity of Camden and found himself some miles further north-east.

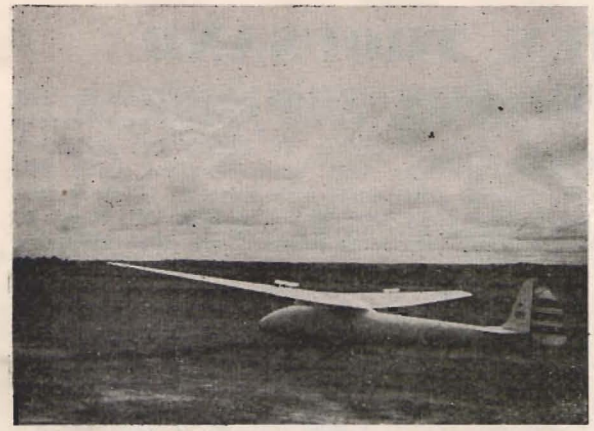
"In my own case, after sadly leaving the little cu., I roamed about keeping in the Camden district and found normal sink of about 3 feet everywhere except in or under the few small clouds, and the thermal which I used was narrow and sharply defined. I landed at 3.45 p.m. after 75 minutes of bliss, trying to look nonchalant, and was greeted with a roar of 'What height?'"

Dr. G. A. M. Heydon. Narromine, NSW. 12,300 *feet.*

Dr. Heydon has sent the following account of the flight which he made on the 9th January, 1949—the same day as Keith Chamberlain's flight. Dr. Heydon was then aged 67.

"On the 9th January, 1949, at Narromine aerodrome, during the Christmas tour of the Sydney Soaring Club, I was launched by aero-tow in the "Gull I." There was a light breeze on the ground from the SE, and about nine-tenths cumulus clouds travelling from the same direction; some of these clouds were dark and thick; no rain and no lightning were seen at the time of launching. At about 2.30 p.m. I cut loose at 1,600 feet and climbed without difficulty to the base of a dark cloud which I entered at about 5,000 feet. It turned out to be a mild thundercloud, although I did not know that when I entered it.

"Shortly after entering the cloud the air became rough and I soon ceased to attempt circling or anything beyond keeping the turn indicator and the bubble as central as possible and the speed reasonable. I found that the utmost concentration was required to control the aircraft. I never looked at the compass (the course was doubtless erratic) whenever I glanced at the variometer the green ball was right up until well over 12,000 feet. Rain, followed by hail, was soon encountered, and the hail



Dr. Heydon's "Gull IV" in Australia. Fitted with 190 mile range radio. Official Australian photo.

(small stones) continued throughout most of the flight. I saw lightning twice.

"After a time the rain put the ASI out of action, and thereafter I controlled the speed roughly by sound (too quiet when approaching the stall, and very noisy in the hail when the speed became at all excessive. When the altimeter indicated between twelve and thirteen thousand feet (I did not note the exact height), I reflected that I had probably got Gold "C" height, that the cloud might get rougher higher up, and that oxygen deficiency, even though slight, might just make the difference between being able, by the utmost concentration, to control the "Gull," and not being able to. I was also very cold. In fact my nerve was weakening and when I began to see occasional red ball I was actually glad and soon began to assist it by pulling out the spoilers.

"After getting down to about 9,000 feet things became quieter and I even indulged in gentle circling. I came out of cloudbase at 4,000 feet in heavy rain and landed softly in an enormous field of wheat stubble about ten miles west of Narromine. I proceeded to radio the party on Narromine aerodrome, and tell them what a beautiful field for aero-tow off I had landed in; then I got out of the cockpit and discovered why the landing had been so soft, sinking up to my knees in a sea of mud. The "Gull" had to be dismantled to get her out of the paddock.

"On this flight I had a German electric turn indicator which was about perfect. I had flown "Gull I" previously in cloud on three separate occasions (perhaps 2½ hours in all) without as much difficulty as was experienced on this flight. The reason of course, was that this cloud was much rougher than the others, though not very rough for a thundercloud. The "Gull I" is difficult to fly blind, it circles badly; experts in England as well as Australia are agreed about this.

"After calibrating the barograph and inspecting the records, the CSIR people made the height gain in this flight to be 10,700 feet. The flight lasted 53 minutes of which about 40 was in cloud."

Thermals Over Water

News from Waikerie.

Waikerie aerodrome is situated in a slight bend in the Murray River, which is quite a large area of water at this point, and apparently has more uses than irrigating orchards and providing a waterway for a few surviving paddlesteamers. In support we quote Jock Barrett:

"I thought that we would be irrigating to-day but my luck was in, no water arrived for us, so Les Brown and I had some flying instead. I was the lucky one, the "Kite" and I went to 4,100 feet for just on an hour. We had just had a nice rain (The annual shower we presume—Comment by so-called Editor) and the sky was fairly clear in the morning. Cloud started forming about 9.30, and by 11 a.m. it was almost completely overcast with no wind, clouds tending to form in streets East-West. When I was launched at 3.15 p.m. the clouds were breaking up and the sun was breaking through. I was down to 700 feet before I contacted some weak lift over a pool of sunlight. I was struggling for the first fifteen minutes not at all sure that I would make it. 2,000 feet took a long while to get then I managed to get some steady stuff going up at about 3 feet and reached 3,400, then I lost it again and darned if I could get anything more than bubbles of up and down.

"At 1,800 I noticed a smooth patch on the river, with ripples each side, a sure indication of the centre of air going up, so flew for it and sure enough went into something with a little more life in it. I found that I had to wind her in pretty steep to get the best climb and with 6 to 8 feet per second it wasn't long before we were at 4,000 feet, and doesn't the countryside have a different look after seeing it from 1,000 feet for so long! I did not quite reach cloud-base which was about 800 feet above me and not very thick. I was told that a pelican was circling with me while I was at the top but I did not see it."

VISITORS

We were glad to welcome recently Francisco Reinoso of Veronica Platt's late Club—the Club Planeadores Albatros de Argentina—and also Ellis Udwin of the Rand Flying Club who had flown a "Fairchild" to London. Incidently he couldn't find Croydon but found an apparently abandoned airfield at Sheerness and put down there. Reinoso has been gliding for 15 years but has never been able to get his five hours' duration. Udwin is a Silver "C" and was one of the winning team in last year's Gliding Rally in South Africa. Both have expressed their intention of joining the London Club.

FOR SALE

G.Q. PARACHUTE, back type, perfect condition, just repacked, original cost £40, now offered at £25, complete with bag. Briggs, Fosse, South Cerney, Glos.

American Navy Type PARACHUTE, perfect condition, with bag, seat type. £20 or offer.—Box 267 *Sailplane*.

ULTRA LIGHT AIRCRAFT ASSOCIATION

"THE FLYING FLEA."

By Group Captain E. L. Mole, Chairman, Design Sub-Committee, U.L.L.A.

Since publication of our notes in the June Bulletin on the history of the Flying Flea we have received a long letter on the subject from Mr. John Mackay of Stirling. He queries whether the improved post-war flea, the "H.M.290" has really overcome the dangerous instability of the original version, as the wings are situated more or less identically. He points out, however, that the "H.M.290" is being flown successfully in France, whereas we (thanks to the C. of A. regulations) cannot get off the ground.

Mr. Mackay remarks that Mignet's original book on building the "Flying Flea" sold in thousands of copies, and that he knows of four people in the little town of Stirling who have bought plans of the "H.M.290." He enquires the position of anyone building the "H.M.290." Can they fly it, or are they condemned just to looking at it?

We referred Mr. Mackay's letter to Mr. A. R. Weyl, A.F.R.Ae.S. (head of our Design Team) for comments and his remarks are given below. It will be noted that he has very kindly offered to place his Dart "kitten" design at the disposal of U.L.A.A. and he intends to try and obtain a Permit to Fly for the type, which flew successfully before the War with an Aeronca J.A.P. engine. In the writer's opinion this aircraft, together with the post-war "Fairey Junior" and the "Slingsby" Motor Tutor will do anything the "Flea" can do, and probably do it better. They have the advantage of conventional control systems so that pilots experienced on them can graduate to the more advanced aircraft easily. They should present little more difficulty to the amateur constructor than the "Flying Flea."

The Motor Tutor is now in the last stages of its C. of A. trials and six have been ordered by the Kemsley Flying Trust for the benefit of our Groups on a pay-as-you-fly plan. Moreover, Mr. Slingsby is planning to make the machine available in kits of parts for amateur constructors. It won't be long now before we can get into the air in a safe and type approved aircraft, and our members can no longer blame us if they remain grounded.

Notes by Mr. Weyl on Mr. Mackay's letter referred to above.

"As I have no experience with the 'H.M.290' I cannot say for certain, but I believe that this type is as free from the design deficiency of the original 'H.M.14' as were the subsequent types with 'conjugated wings' or with additional elevator flaps in the trailing edge of the aft wing.

"The aerodynamics of Mignet's types are twofold; normally the aircraft should fly at medium and high incidences and thus form a 'flying slot.' In this condition the Mignet type is perfectly safe. It cannot spin (at least up to incidences of 30 degrees), and no 'Pous' have been known to autorotate, but with a correct position of the C. of G. it is longitudinally unstable *with free controls*; i.e. the pilot has to exert some control force on the leading wing.

"When the wing system of the 'Pou' operates at small incidences there is no more slot effect, and the system becomes aerodynamically a close tandem. In this condition the swivelling of the leading wing produces no more elevator effect, and as the close tandem is stable in the inverted position, the aircraft goes into a nose-dive and tries to assume an inverted attitude, whilst the pilot is unable to prevent it. This explains the peculiar circumstances of all accidents with the original 'H.M.14.,' that nearly all the victims were experienced pilots and seldom raw beginners.

"Mignet remedied the deficiency simply by excluding the possibility of assuming small incidences. I have already mentioned the 'conjugated wing' and the additional elevator flaps. The 'H.M.290' employs another device; the severely reflexed trailing edge of the aft wing. This acts as a permanent nose-up elevator; when the aircraft assumes a higher speed (smaller incidence), it pulls the nose up again and the effect is independent of the magnitude of the slot effect, or nearly so. There is no stall with the 'Pou' in the way experienced with conventional aeroplanes. On the contrary, the higher the incidence, the more pleasant and safer it becomes as it becomes longitudinally more stable. Hence there is far less danger with a backward C. of G. position on a 'Pou' than on any other aeroplane. As long as the slot effect is present, the leading wing cannot stall.

"Our criticism against the 'H.M.290' is that Mignet (after having concocted his 'H.M.14' book of 500 pages with no useful drawings) has now contrived to offer one sheet of drawings and nothing else. This will not do for the amateur constructor. We should like (given the money) to construct a specimen of this type for experimentation and type C. of A. trials. We hope to be able to do so at a later stage, but at the present time, whilst our movement is very young, it is our policy not to expose ourselves to undue criticism through any connection with the 'Pou' design, which, after all, did have a bad reputation.

"I have had some experience on the original 'H.M.14' and can only confirm that this original version was as dangerous as interesting.

"Those who would build a 'H.M.290' to-day would find that they would not get a C. of A. for it easily or cheaply. It would take a long time before A.R.B. would agree to recommend one, and there is little help that U.L.A.A. would be prepared to give at present for reasons of policy quoted above.

"We are trying to secure 'Permits to Fly' for types which flew well before the war, and which amateur constructors could build now under supervision. In this case we might be in a position to offer drawings and non-commercial building rights to our members. I am placing my 'Dart Kitten' design at the disposal of the U.L.A.A. in case we should succeed in securing type Permits. This 1937 type never had a C. of A. In order to obtain one now we

should have to construct a specimen under A.R.B. supervision and submit it for flying trials. The Association cannot, unfortunately, afford to do this."

RESEARCH NOTE

By Mr. A. R. Weyl, Chairman Research Sub-Committee

We trust that all members and groups overseas who reside in very dry climates will take due notice of the official information reproduced below, and will not be deterred from building and using properly constructed wooden ultra-light aircraft components in view of the propaganda which is forthcoming from the manufacturers of metal aircraft. Wood is a living material of exceptionally elastic properties and lends itself far better to construction by amateurs, and for repair, than any method of all-metal construction.

Douglas fir (Oregon Pine) is heavier than Sitka spruce, but it is also stronger (particularly in compression) and given proper design has a good weight/strength ratio. Care must be taken, however, to ensure adequate glueing areas.

We are greatly obliged to the Air Registration Board for the following information.

Wooden U.L.A. in Dry Climates

I am to acknowledge your letter of the 20th August, 1949, and to confirm that " Douglas fir " is an approved substitute for " Sitka spruce." This is covered by D.T.D. Spec. No. **469** (450) . . . .

On the question of shrinkage of timber, I am to remind you that a considerable number of composite aircraft constructed mainly of spruce have given many years of satisfactory service in countries such as India, Singapore and the Africas, and there have been no adverse reports regarding shrinkage of the timber or failure of glued joints.

It is understood, however, that there was a certain amount of failures of " Casein " glued joints on aircraft constructed during the war, and although this may have been the result of wartime production when many firms without previous experience of aircraft construction were given the opportunity to produce aircraft, the Ministry of Supply have prohibited the use of " Casein " glue on aircraft which are used in tropical countries.

So far as the Board is concerned, however, it does not prohibit the use of " Casein " glue since it is quite satisfactory provided the maker's instructions regarding the use are rigidly followed.

Yours faithfully, J. NORMAN,
for Secretary, Air Registration Board.

Correspondence

The letter " Finger-Trouble," by Mr. Geoffrey Dorman has considerably aroused my interest, and only lack of time has prevented my replying to it earlier.

While Mr. Dorman has considerable justification for his views, I think he rather completely misses the point. As far as I can see, and from my knowledge of Scottish enthusiasts, we are in the U.L.A.A. because we are prepared to build and fly our own aircraft, and all we ask is to be allowed to do so. We cannot, and probably never will, buy a complete machine, simply because we do not have the money, and are not likely to have it in the future, but most of us can afford the price of the necessary materials, and it is generally possible to get a good second-hand engine such as the " Pobjoy R," " Cirrus Minor " and " Aeronca J.A.P.," even if we do have to save up for some time and do without other things as well. The whole trouble is that we have no plans to work to, no " book of words," no permission to go ahead, no nothing, only our own enthusiasm, which keeps our thoughts alive, but produces no aircraft.

I should like to couple Mr. Dorman's letter with the description of the London-Manchester flight. Louis Paulhan and Claude Grahame-White certainly had no U.L.A.A. to spoon feed them, but what was much more important, they had no A.R.B. to hold them back, and their progress was not hampered by masses of regulations and red tape. They could build what they liked, and fly it if it would fly, their achievement was acclaimed as an honourable endeavour. Build and fly something now, and you will be a criminal lodged in the County Jail. In the field of human endeavour, to such depths have we sunk. Some people call it progress; some of us don't. Without let or hindrance we can build a boat, a motor cycle or a car and use it to our heart's content (petrol permitting) but we cannot, so far, build an aircraft without plunging headlong into the most fantastic bureaucratic structure that has ever afflicted any man made means of travel.

Unless this barrier can be broken down, we have little hope of getting into the air, and there seems little enough reason for the continued existence of this barrier. In the past there have been numbers of excellent light aircraft, some of which have been built and flown in fair quantities. One can call to mind the " Heath," " Corben Ace," " Pietinfol," " Luton Minor," " Dart Kitten," among those which were simple to build and fly. They flew well in the past, why not let them fly now?

I would hate to think that any aircraft would be built without proper inspection, that would be asking for trouble, but surely the whole business could be boiled down to a case of working from a recognised set of drawings, with materials from a known source, or to a definite specification. Inspection of finished component parts or units could surely be arranged via a very few area inspectors, who could possibly be suitably approved members of the U.L.A.A. To a practical man there appear few difficulties; during the last war we made vast quantities of intricate and accurate aircraft components and assemblies with boy and girl labour alone, and there is nothing in the world to prevent an average craftsman making a good constructional job of a light aircraft.

I don't think it's much good offering us complete aircraft, we just cannot buy them, but we can all buy sets of plans and books of instructions, although so far the only plans we can buy are those of Mignet's latest " Flying Flea." The sooner some British plans are on sale the better it will be for the movement, and I think that when plans appear it will be found that there is no lack of interest and enthusiasm. Mr. J. Miller says, " Give us the plans and we will produce the aircraft." He is dead right, Mr. Dorman! We'll do it, just as soon as we are allowed.

Stirling. JOHN MACKAY.

NEWS FROM THE CLUBS

THE VICTORIAN MOTORLESS FLIGHT GROUP

Spot News

Harold Luckly of the Gliding Club of W.A., is back home in Perth again after his travels and sends good wishes to you all. Harold reports that he and his partner are hard at work on their " Olympias." (That is not a misprint—they are making *two* " Olympias.") The groups building the two " H17's " hope to have them in the air by Christmas time.

Social Activities

Mr. Uwe Radok gave a most absorbing and interesting lecture to some sixty pilots of the V.S.A. and the Gliding Club of Victoria on the Meteorology of Soaring Flight, at which we were honoured by the presence of Dr. Fritz Loewe. We thank Uwe most sincerely for delivering this lecture, which provided much food for thought and not a little enlightenment. Some interesting and very beautiful photos of standing waves at Heard Island were shown, too, and we had better keep an eye on Arthur Hardinge or he will be tucking the " Witch " under his arm and stowing aboard the next ship to the Island. Supper was served after the lecture and the evening ended in the usual manner—i.e. yabbity, yabbity, yabbity.

Another night we took our photograph albums along to Lorrie Johnstone's studio and admired each other's pictures. Alf Bickerton, of the Beaufort Club, brought his projector and movies along. The movies taken at Berwick of V.S.A. activities were a great success and Alf had to run them through again straight away by popular demand. The general opinion now is that Alf and his camera must get special consideration and co-operation and the V.M.F.G. members are going to try and control the impulse to make like the Keystone Kops and Buster Keaton whenever they hear a camera.

Then there was the flat-warming party given by the newly-wed Patchings. This was a very enjoyable occasion, in spite of the Social Committee's spivs, who organised that Lucky Dip. While most people were pulling out such objects as empty milkbottles, onions, four-inch nails (claimed to be coat-hangers by the spivs), one dipper was quite demoralised and utterly shattered to emerge with a perfect sensitive altimeter. It was really pathetic the way he clutched it, expecting the S.C. spivs to discover the Terrible Mistake they had made and it was noted that he made a smart bee-line for the punch-bowl. Mrs. Iggulden Snr. received a nicely-bound book on Aeroplane Carburettors, which puzzled her a little but with which she managed to revenge herself for years of listening to people talking gliding by cornering various types and reading out horrible facts about Aeroplane Carburettors to them; Bettye Richardson was highly pleased to receive a book on Air Line Operating.

Random Remarks

Congratulations to the Gliding Club of Victoria on their very nice display at the recent Aviation Fair. The Club had an excellent position just inside the main entrance door and put it to good use with the " Blue Grunau," rigged and set up on tripods, the trailer in the background and a display of enlarged photographs. Next door to their display, was an ancient Cobb & Co. coach and, of course, one of our new members wanted to know if that was what the G.C. of V. used for retrieving. Perhaps we're prejudiced, but to our eyes the " Grunau " and the " Vampire " were the only aircraft there.

Welcome to Fred Dunne, another wandering Kiwi, who has been coming to Berwick with us these last few Sundays. Cliff Holland and Fred are very busy working on the old Indian motor-bike outfit. Your correspondent observed them doing something desperate with a hacksaw—perhaps it was quite in order and not being well up on the mechanical side of things, one hesitates to comment . . . but, a hacksaw ?

Spring is Here Department

Nance Iggulden and Viv Drough have announced their engagement. Congratulations, kids, we know you'll be very happy. Nance and Viv look like a couple of people who've discovered a formula for making bottled thermals. Best of good wishes to them both.

GLIDING AND SOARING CLUB OF SOUTH AUSTRALIA

By Brian P. Creer

Since our last, rather optimistic report to *Sailplane* much has been happening in our sunny (?) little state—but all of it on the ground.

A lease of five years has been given us for the continued use of our present flying field at Virginia on which we have cut and partially graded runways ; only to find that the field is now to be ploughed up but at least the strips will be left.

We recently bought a hangar, 60 ft. by 25 ft., from a former gliding enthusiast, Bill Habie of Renmark.

This was dismantled at the Renmark aerodrome by a team of hand picked club " wood butchers " and transported the 160 odd miles to Adelaide. As the asbestos covered wooden framed hangar was brought down in one, yes one load on a 5 ton Austin truck (the load weighing some 7½ ton) this was no mean feat in itself.

The hangar, in its original form had sliding doors opening at the 25 ft. ends but a plan is now afoot to roll the doors along the 60 ft. frontage. We also hope shortly to add a clubhouse complete (à la London club) with a " Bay " observation lounge.

The hangar is now being erected on the field, and should be finished sometime in this coming month.

Negotiations have been underway these last three months with the Sydney Soaring Club for the purchase of their Australian distance record holder the Slingsby " Gull I."

All things being equal we should see this machine at X thousand feet on the first leg of a (very long) cross-country about Christmas.

Amid several sentimental outbursts by some of our older members some short time ago the







Top.—Brian Creer in the "Fledgling Primary" before its sale to the Pt. Wakefield Club. (*Photo R. Killmeir*).

Centre.—Bill Selfe and the Studebaker Winch. 1,700 ft. on the two-seater has been attained with this winch. (*Photo A. J. Delaine*).

Bottom.—Laurie Middleton (front) and brother Gerry. Photo from wing tip operated by pilot. (*Photo Brian Creer*).

club's first machine our Fledgling "Primary" left the workshops for the last time.

She had been bought by a newly formed club at Pt. Wakefield.

This club has since bent her but by the time this reaches print she should have several more hours up.

Gliding Trophy

Two Adelaide newspapers have jointly presented a trophy for competitive gliding in South Australia.

This is really one of the most encouraging things to have blessed the movement for many years.

The trophy is to be presented to the SA Gliding Association for the most outstanding soaring flight of the year by an Association pilot.

The trophy itself is a most imposing prize, standing some 25 inches from a polished wooden base and surmounted by a beautifully made scale model of a "Gull" sailplane.

Police—Police ! !

This is the story of five of our club members (the writer being one—but not THE one) who struck the kind of strife that only gliding types can strike while visiting Melbourne to attend the conference with the Dept. of Civil Aviation recently.

As you can well imagine, when five assorted gliding types are let loose in Melbourne anything can happen.

It did !

The five had decided to visit the Public Library but all had different ideas as to where it should be.

At length one of their number proudly produced a map of the city and with the aid of a slide rule, a. weather brief and a chronograph, set out, followed at some length by a somewhat dubious four.

He arrived at the "spot" dead on ETA but the Library had mysteriously disintegrated into a pile of rubble on a vacant allotment. Deciding that even the most ardent bookworm couldn't read under all that masonry, another hopeful set off, followed at an even greater distance by an even more dubious four.

This time friend No. 2 disappeared into a building several blocks ahead of the others and they, thinking that perhaps this WAS it hurried up.

They arrived just in time to find "Columbus," wild eyed, hair askew rapidly retreating from the building.

"Is this the Public Library," they asked.

"No !" he shrieked, "It's Police Headquarters."

Workshop Notes

Our "Grunau" is now, I am happy to say, nearing completion. The controls have been installed in the fuselage and skinning is well under way.

Both wings have been skinned and one is now fully complete except for fabric.

Also on the drawing board is a new fuselage for our faithful two-seater which will be, in appearance not unlike a "Grunau" with tandem cockpits.

Engineering Dept.

Sounds good doesn't it? It should for to us it means a lot.

Dotted around the workshop at the present moment in various stages of repair, construction and destruction, are our Studebaker winch (repair), a new Ford V8 winch (construction), and our Buick, maid of all work (repair, destruction, and construction).

The Buick is having a complete face lift and will emerge with a complete new body.

We are all, I stress all because even her re-designers are included, wondering just what form she will finally take.

Whatever it may be it is guaranteed to withstand the well-known rigours of a gliding field (and they appear to be international) a little better than was previously the case.

New Personalities

Into the club recently there has been quite a flood of what the local press deems "New Australians"

There are, at the time of writing, about fourteen of these Latvian, Lithuanian, Polish and Estonians hard at work on various club projects, mainly the Buick and the erection of the hangar.

They are fine fellows who have made many firm, if new, friends in a strange land simply because they are among glider enthusiasts; thus they are among friends. What a wonderful bond of friendship binds the followers of the great God Green Ball regardless of race, colour, or political beliefs (particularly regarding devaluation !).

One of the "new bods" is a Silver "C" pilot Yonas Paragyis a personal friend of that grand old gentleman of gliding. Wolf Hirth. Yonas boasts a duration flight of 22 hours.

Yet another of the talented migrant members is a Polish aircraft designer—test pilot.

Yonas heads a syndicate which plans to build a "Goevier" two-seater here.

In closing I should like on behalf of my club and myself, wish *Sailplane*, and all its readers, wherever you are, the very best of Christmas thermals and the merriest of standing waves.

BRIAN P. CREER.

SOUTHDOWN GLIDING CLUB

The year's target of 2,500 launches was actually passed at the end of October. While there is every reason for gratification at this achievement it must be remembered that the year at Friston must surely be an all time record for "three minute circuits." In spite of this lack of soaring however, flying hours and certificates gained are both well in excess of the corresponding figures for the whole of last year.

The Autumn has brought some very interesting flying on the West face. Several of the more timid spirits in the club have been observed well the other side of the River Cuckmere.

During October a belly-hook was fitted to "Tutor No. 1." This is a great success and it seems to increase the height of a winch-launch by 300 to 500 feet, according to conditions. One noticeable feature of the new hook is that it apparently allows the machine to be winch-launched without the slightest tendency to hunt. The new arrangement was first tested on an almost windless day and the height then obtained was 950 feet which seemed fair enough. On the next Sunday the wind was westerly and fresh. The first pilots launched (including the writer) expected to go really high, but no, 1,150 feet was the limit. Then Johnny Billenness (who always manages to go higher and stay up longer than anybody else) was launched and went to 1,400 feet and we knew that the unsparing efforts that Ray Brigden and Chris Hughes had put into fitting the new hook were not wasted.



"Zither Theme" from "The Third Man."
(Bill Jordan, Asst. C.F.I. Southdown Gliding Club).

DERBYSHIRE AND LANCASHIRE GLIDING CLUB

Notes for August, September and October, 1949

Saturday, Aug. 6. Wind S.W., veering, 20 m.p.h. A good thermal day, enjoyed by all until 18.00 hours. At 18.05 hours, two (nameless) people suddenly went mad and started cross-country flights. Still, these short retrieves are good practice.

Saturday, Aug. 13. Poor flying weather, thank goodness, enabling us to make frantic last minute preparations for the Competitions. Nothing seems fit to use; there are no replacements, even on order; no preparations of any kind seem to have been made, and nobody who had previously promised will now be able to come, after all. A depressing day.

Sunday, Aug. 14. Wind WNW. 15 m.p.h. A nice day again, with "T-21," "Cadet," "Tutor," and "Eon Baby" doing 24 hours between them while the Competition preparations look after themselves (more successfully than you would have thought—we must have some non-flying workers hidden about somewhere). Mogg completed nice "B" and "C" certificate flights in ideal conditions to round off the day.

Friday, Aug. 19. Competition fever rising rapidly. There are thousands of things still to do, yet we spend our time launching early arrivals for practice. The crazy round of senseless duties spins faster—faster—.

Saturday, Aug. 20, *to Sunday, Aug.* 28. COMPETITIONS.

Saturday, Sept. 3. Wind SSW. 5 m.p.h. Training circuits, with a few odd thermals off the winch to liven up the proceedings. Max. height, 3,900 feet gain.

Sunday, Sept. 4, *to Sunday, Sept.* 18. Training weather. Hundreds of launches in "Cadets," "Tutors," and both "2-Seaters." We are getting down to serious instruction with the "T-31" Tandem 2-Seater Tutor, and all Primary

machines have been put away—we hope for ever. Successful experiments were made with winch wire parachutes, á la Surrey and other clubs, and we shall gradually bring these into general service as new wires become necessary.

Sunday, Sept. 25. Wind SSW. 5 to 10 m.p.h. Training circuits, chiefly in the " T-31." In trying to give pupils the longest possible time at the controls, this machine had the misfortune to go to the bottom, much to the delight of everybody who had nothing to do with it. However, it was quickly retrieved and was flying again the same afternoon. " Kinder Scout " had been taken to North Wales (Clwyd Range) for the week-end, and managed to save its face by three quarters of an hour " below the top." Anyway, more soaring than it would have done at home.

Saturday, Oct. 1. Wind NW. 15 m.p.h. The last real thermal day, and that rather half-hearted. Quite a lot of fun and time, but max. height only 2,400 feet gain.

Sunday, Oct. 2. Wind W. 15 m.p.h. Pleasant hill-soaring all day until rain at about teatime made us pack everything away for an early finish.

Late Night Final. A wave sprang up just before dark, and Derek Roper gained 4,500 feet in " Gull I " before getting the wind up about the light. Several others took off and were going up nicely, but were beaten by the time.

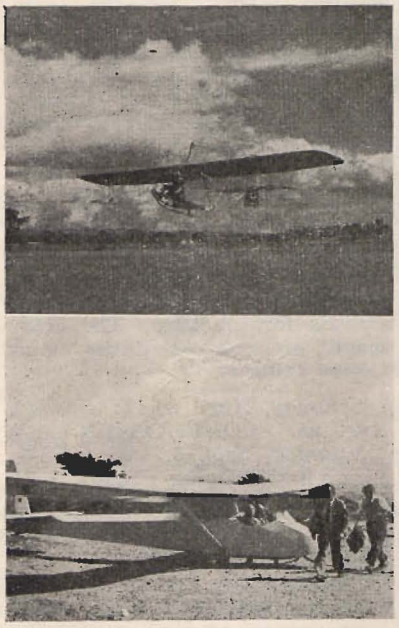
Saturday and Sunday, Oct. 8 *and* 9. Fog and rain. A few launches in " T-31 " were " inserted " between showers.

Saturday, Oct. 15. Wind SW 20 to 25 m.p.h. A comfortable height could be held over the South Slope at the Club, but as usual in these conditions, the lift was better a couple of miles down the slope at Egam. Our local Order of the Irremovable Finger unfortunately had to be awarded to-day to an " Eon Baby " pilot who took off with the brakes on and didn't realise it, even when he kept undershooting successive emergency fields. The eventual landing left the " Baby " a little the worse for wear and the pilot sadder, sorer and wiser.

Sunday, Oct. 16. Wind SW. 10 m.p.h. Similar to yesterday but hardly soarable. Plenty of circuits and training. " Kinder Scout " in North Wales again, and again with better weather than at home. 5½ hours this time, sometimes *above* the top.

Saturday and Sunday, Oct. 22 *and* 23. Another almost blank weekend on account of rain and low cloud. A few launches over the South Slope were made on Saturday morning before rain stopped play.

Saturday and Sunday, Oct. 29 *and* 30. Wind SSW. 5 m.p.h. " Cadet " and " T-31 " were the only machines out, but both these worked hard. Jack Clare encouraged us all by getting straight out of the " T-31 " into a " Cadet " and doing some very nice circuits, never having been in a " Primary " machine of any sort.



Top.—" Air Ranger " takes the air at Balado, Scotland.
(West Fife Photos).

Bottom.—Yorkshire Club " T 21 " at Sutton Bank.

SCOTTISH GLIDING UNION.

The annual subscription to the Scottish Gliding Union is £3. 3s., but we employ two additional methods of raising funds. Indirect taxation as it were. The first method is that of a personal insurance against the first £40 required by our insurance company in the event of any untoward accident. This costs our members £2. 2s. before they are allowed to set foot in an aircraft. The second method, of exquisite moral pressure, is that each member is expected, with heavy emphasis on " expect " to raise £2. 2s. by the sale of pin-cards. This is a slight variation on the customary Gift Scheme—euphonism for raffle—which has been extremely successful in past years. It is generally hoped that the amount of money raised will more than compensate for the number of friends lost, but quite obviously it is of primary importance that the flying side should pay, and make these methods unnecessary.

Last month has been a guinea pig one in this respect, and the relevant statistics have been carefully kept. Despite the fact that the weather during the last month was considerably worse than is usual (33% worse to be precise) an overall profit was made. All the gliders, bar one, showed a profit; the exception was the " Eon Baby ", our best non-syndicate glider, and this was due more to the crushing insurance rate rather than anything else. Things are coming to a pretty pass when the best gliders are those that a club, with a membership preponderantly composed of beginners, cannot really afford. Several ingenious schemes have been proposed to overcome this difficulty and fittingly enough, our Treasurer, La Barre, a future " contact man " if there ever was one, has suggested a scheme, popular at least for the present, of syndicating this machine amongst a dozen members so that each would guarantee to cover a proportion of the loss, if any, made on the " Baby ". This idea has the advantage of giving each syndicate member a direct financial incentive to fly and get his money's worth even if the weather isn't fit for a dog to be in.

The weather conditions have been somewhat discouraging with the exception of Sunday, Nov. 13th, when a north westerly wind, fanning across the Ochils, produced a standing wave of limited dimensions at the back of the airfield—but just too far away. At a similar distance to windward were obvious

(Continued on page 287)

Letters to the Editor

DEAR SIR,

The Library of the Research Committee of the British Gliding Association is now available for the use of members of gliding clubs. It includes text-books on gliding and a large range of books and papers on meteorology and other technical subjects.

The Committee would like to see more use made of this library, which has been built up entirely by donations and is therefore available for use without charge, except for the cost of postage.

A catalogue of the library has been sent to every gliding club secretary for display on the club notice-board. Books must be borrowed through the club secretary or other person appointed by the club for the purpose, as it is essential that someone shall be responsible for seeing that they are returned. The period of borrowing is one month, which can be extended on application.

Borrowers should, I suggest, save their secretaries trouble by writing out the items required, handing over stamps or postal order for the postage (given in the catalogue), and preparing a stamped envelope addressed to the B.G.A. Secretary.

We should be grateful for donations of further books to the library; in particular, "Kronfeld on Gliding and Soaring" has been so far unobtainable.

Another matter: the Research Committee has written to the Director of "Airmet" at Dunstable suggesting improvements in the broadcasts of upper-air data for glider pilots, which are given out daily on 1224 metres at 8.25 a.m. Many of its suggestions have been adopted. One result is that a further talk on upper-air conditions is given at either the beginning or end of the 8.40—8.50 a.m. broadcast, by which time the data given out at 8.25 can be entered on a tephigram.

An article by J. C. Neilan on the use of the tephigram was published in *Sailplane & Glider* for July, 1948, page 8. The procedure described by him in the last paragraph of page 9 is now much simplified, as dew points are broadcast directly and do not have to be worked out from relative humidities.

Tephigram forms for entering the upper-air data are no longer sold by the Air Ministry, but are obtainable from H.M. Stationery Office, York House, Kingsway, London, W.C.2, or its branches at Edinburgh, Manchester, Birmingham, Cardiff, Bristol and Belfast, or else through a bookseller. They cost 10s. 2d. per 100 (being 8s. 6d. plus purchase tax), or 2d. each plus tax. Postage on 100 forms should be 9d. One double-sided form can be made to last 4 to 6 days by using coloured pencils.

Not all glider pilots are aware that the Airmet forecaster is "on the air" at 20 and 40 minutes past the hour throughout the day, and there is no better source of up-to-date information on the weather from the aviator's point of view.

A. E. SLATER.

Librarian and Secretary,
to the Research Committee,
British Gliding Association,
Londonderry House,
Park Lane, London, W.1.

DEAR SIR,

As it is close on twenty years since Gliding was started in this country, I think it is time we sorted things out and realised where the numerous Gliding ideas now practiced originated. It is all too prevalent, particularly amongst B.A.F.O., to think and state that Gliding owes everything to Germany.

I would like to ask therefore, through your columns, who it was that first introduced winch launching and auto-towing?

There are numerous other ideas which I think can be definitely credited to certain people. For instance, S. G. Stevens, now Chairman of the Southdown Club, first used boom retrieving, trolley retrieving and training by means of a pulley launch, that is to say, winch and pupil alongside each other at the start.

William Nadin, of the Midland Club, invented two-way winching, using two winches and telephone intercom., and the A.T.C. Gliding School at Kidbrooke claims that it introduced two-way winching with one winch. It also invented the controlled stick, and introduced the parachute in launch cable, and I think there is no doubt that it can claim to have solved the problem of where to put the wheels in a glider, including a tail wheel.

There are numerous other ingenious ideas, some of which have been superseded and some of which have been absorbed into the general Gliding procedure, which originated in this country.

Can we have some of your readers' knowledge in this direction?

Yours faithfully,
JOHN FURLONG.

DEAR SIR,

Your contributor to the article "A Warning" in your November issue exhorts my Club—and presumably others—to "see to it that flying is not over until either daylight has come to an end or cloud is right down on the deck," which is a fairly clear indication of the standard of safety he considers adequate.

"This flying is a dangerous business and it is our job to make it as safe as possible" is admittedly the attitude of the Writer, but there is obviously some point between keeping the aircraft in the hangar in all weathers and flying them in all weathers which permits a high standard of safety while allowing a reasonable amount of flying to take place.

Let me make it quite clear at once that my Club will allow and help any member or group of members who wish to fly to do so under any reasonable con-

ditions, providing that the member is competent to judge whether it is fit for him or his group to fly and providing he or they are operating their own aircraft. So far as Club aircraft are concerned, my Club is acutely conscious of the fact that it is only through insurance of our aircraft being possible at a reasonable rate that we are able to operate as a Club at all, and it is my opinion that it is only by confining our flying to days when conditions are " too easy to miss " that we are likely to keep our claims to such a level that the present rate of insurance will continue to be justified. It is the Clubs which insist upon flying in almost all conditions " either until daylight has come to an end or cloud is right down on the deck " which are doing most to imperil the present insurance rates and with them the whole gliding movement apart from wealthy syndicates.

It might help to explain your contributor's disappointment at finding me unhelpful when he wished to fly on the Saturday of his visit, if I were to point out that—

(a) he was not a member of my Club and had not his own aircraft available.

(b) that had he joined on a short-term membership he would have had to carry a £30 excess on any damage to the aircraft, and my Club is not anxious to risk anyone who is a most infrequent visitor incurring a debt of this amount.

(c) had he been launched in a Club aircraft and tried the Northerly slope without success, there was neither trailer nor towing vehicle available for the retrieve.

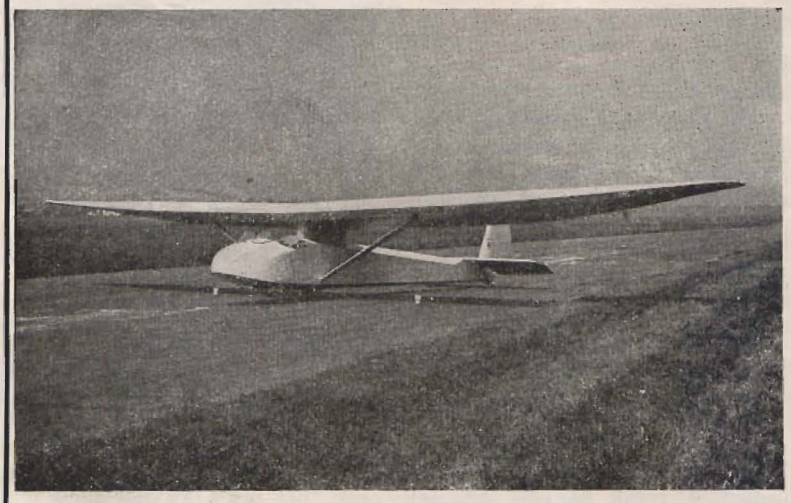
So far as ab initio training is concerned, my Club is now planning to offer these facilities, but for the last few years would have been glad to offer them to any group of enthusiasts who were willing to carry the financial risk involved and to pay the costs of operating the aircraft. It is the financial aspect—which may be largely ignored by those who are fortunate enough to borrow sailplanes to fly—which must be borne in mind by every Club which wishes to continue to operate, whether it is the financial aspect of keeping crashery to a minimum by confining the activities of the soaring pilots using Club aircraft to days when conditions are easy, or to deciding whether or not it can offer ab initio training at a cost which enthusiasts are willing and able to pay.

Your contributor is a professional aviator of experience and ability. He is used to precise and complex organization as befits his calling. We on the other hand are the same bunch of amateurs he knew fifteen years ago with additions of similar material. While membership is open to all, the Club remains private property and will be run in accordance with the wishes of the members, with due regard to safety and within the bounds of financial stability. Would-be reformers joining the Club, working with us and proving sincerity will get a hearing; others accepting our hospitality must take us as they find us; while those who not only wish but expect to use our Club aircraft on a short-term membership at less than cost will find both welcome and co-operation somewhat lacking.

Yours faithfully,

W. C. SHARPE.

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CHISLEHURST,
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CHELTENHAM.
September 13th.

DEAR MRS. PLATT,

I wrote to you some months ago to enquire the address of the Troyes Gliding Club. Well, I have now returned after about three-and-a-half weeks there and thought you might be interested to hear a few comments on the Club.

The most distressing fact was that a month before my arrival the French Government removed the subsidy for foreigners and I had to pay 200 frs. per launch. What was most annoying about this was that the Club had plenty of time to inform me but they did not do so.

They do not charge per hour in the air as well, so it was all right for experienced glider pilots such as Mr. Coulston of the Newcastle G.C. who did something like 26 hours for 36 launches. However my position was different. I got my "B" in June, having had no experience of dual control flying. My first few flights were absolute chaos—they were in the "Caudron 25's." I had never before realized the significance of aileron drag—had not flown in thermals and there were always the difficulties of the different approach system for landings and the fact that the instructors always insisted that at the moment of touching the ground the stick should be held back "au ventre"—all part of the "méthode classique." Furthermore owing to the lingual difficulties, I did not learn much from the instructors in the air—although several of them nattered and jabbered incessantly. Thus I awaited the end of the day to gain the services of Mr. Pritchett, of the Hereford G.C. who was an invaluable interpreter. Thus I spent the first week in the two-seater—36 launches.

By the time I was flying a decent glider — the "Emouchet" — the weather had broken and it was not until the last two days of my stay that I did any thermal flying (solo). I had a flight of 48 minutes (reaching 980 metres) to gain my "C" and the following day I had a flight of 40 minutes. These flights fully compensated for the first week's hard work, and the next two weeks' negative weather, and I should like to go there again if I get the opportunity. As you said in your article, foreigners are made very welcome by instructors and pupils and I shall always remember the regular (weekly) champagne parties and the game of "Cardinal Puff," which I am sure none but the French could play.

Yours faithfully,
DAVID FLETCHER.

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5 MAUDLIN PLACE,
NEWCASTLE-ON-TYNE, 5
5th September, 1949

DEAR EDITOR,

Having got "back to earth" I thought you may care to hear how I faired at Troyes! The A.A. could do nothing until the last week of August, so Dr. DeRedder waited till then, but I pressed on regardless and left the car at Newhaven. The train journey from Dieppe to Troyes was simple and cheap, and I didn't miss the car at Troyes as I was too busy flying. Mrs. Orbillot arranged for us to stay at Hotel d'Angoulême in Troyes—cost of room 180 frs. per night! So we were all set for a long stay. The first day I got out to the aerodrome about 10.30 a.m. I was checked out in the "25S" two-seater and sent off in "Emouchet" for as long as I liked! 3 hours 20 minutes later I landed, only because it was *very* cold at cloud base of 2,300 metres. After this I flew the "310P," "Grunau Baby III," and then the "Nord 2000." The "N 2000" had an electric T. and B. so I was able to get a lot of "P.S.V." hours in! I reckoned about 5 hours of my total (25 hours 21 minutes) were spent in sizeable cumulus, but my best height was 9,240 feet (at the *very top* of the highest Cu over Troyes during my stay). I reached approx. 7,000 feet many times, and the cumulus clouds didn't seem to want to build any higher. The C.F.I. seems to like one to get the brevet "E" height before tackling the distance, but I may have got the wrong impression about this. Incidently there appears to be a "standard charge" of 500 frs. for a retrieve, irrespective of distance flown. There is a standard charge of 240 frs. per launch for foreigners (120 frs. for Frenchmen) so you see a course of instruction spread over a month could be quite expensive for beginners. My 25 hours only cost £7 (and this included quite a number of longer flights which I was asked to do) and this could have been even less had I restricted my launches to "soaring flights only."

Please don't imagine for a moment that this is a moan—I'm just giving you the data for future reference. I had a most delightful holiday and made a lot of friends, both French and English. Lieut. G. Miller, R.N., of the Portsmouth G.C., enjoyed the course very much, I know, also Fletcher, but they will be telling you their own story.

I hope you gather from this rambling statement that I had a delightful soaring holiday and am extremely grateful to you for the introduction to P.P.P. (Planeur Pilot's Paradise).

Yours very sincerely,
A. COULSON.

News from the Clubs

(*Continued from page* 284)

soaring conditions over the Ochils themselves. Several bold attempts were made to make use of the wave, and, in particular, two gallant ones were made and even so, two failures were recorded. One in the "Eon Baby" from a winch launch of some 600 ft. and the other in the "Olympia" from an auto tow which attained a similar height. Advice, on these occasions, was freely given and never asked for, and indeed, it was difficult to decide on what technique should have been adopted. A two-way radio would seem to be a logical development in gliders which have a somewhat restricted vision; unfortunately a small radio of this type is at present more or less impossible, according to the present licensing laws.

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"B" .. 33
"C" .. 16
Silver "C" } No Awards
Gold "C" }

"B" CERTIFICATES

No.	*Name.*	*A.T.C. School or Gliding Club*	*Date Taken*
4991	Robin George Turner	London G.C.	30. 9.49
6362	Denis Patrick Conway	49 G.S.	2.10.49
7251	Roger Frederick Back	Imperial Coll.	28. 9.49
9518	Glyn Griffiths	126 G.S.	2.10.49
10007	Hubert Knight	Hereford G.C.	17. 7.49
10088	Michael Eveleigh Rankin	126 G.S.	2.10.49
10113	John Lee Cotton	Hereford G.C.	11. 9.49
10311	Ann Cotton	Hereford G.C.	11. 9.49
10730	Jocelyn Roger Laville	84 G.S.	2.10.49
10736	George Angus Thomson	Scottish G.U.	25. 9.49
10832	Joseph Walters	R.E.G.C.	3. 7.49
10837	John Thornber Tallent	Derby & Lancs. G.C.	11. 9.49
10849	William Hall McKinlay	Midland G.C.	14. 9.49
10850	Terence John Townsend	Portsmouth G.C.	4. 9.49
10857	Ian Rex Reynolds	Luneburg G.C.	9. 7.49
10858	Alexander John Ross	Gutersloh G.C.	7.11.48
10859	John William Edward Berry	London G.C.	24. 9.49
10861	John Postlethwaite	Portsmouth N.G.C.	29. 8.49
10877	George Thackray Weems	E.T.P.S.	29. 5.49
10881	Leo Haselden Haynes	Southdown G.C.	4. 9.49
10883	Robert Archibald Leopold	Gloucester G.C.	25. 9.49
10890	Raymond Victor Base	Gloucester G.C.	11. 9.49
10900	Michael Douglas Backhouse	Gutersloh G.C.	23. 3.49
10901	Vincent Hugh James	Uetersen G.C.	9. 7.49
10924	Raymond Frederick Hulbert	162 G.S.	25. 8.49
10927	Ralph Cliff Ward	22 G.S.	18. 9.49
10935	Clifford Norman Young	Gutersloh G.C.	8. 6.49
10940	Philip Henry Hudgell	Scharfoldendorf G.C.	10. 7.49
10944	John Roger Leech	London G.C.	19. 8.49
10946	Alan Frederick Flowers	142 G.S.	25. 9.49
10948	Peter George Francis Steele	Luneburg G.C.	19. 6.49
10960	Alfred Walter Andrew Kay	London G.C.	10. 7.49
10963	Douglas Everard Goldsworthy	Troyes (France)	3.10.49

"C" CERTIFICATES

2873	Clive Patrick Francis	A.H.Q., B.A.F.O.	19. 4.49
2959	Gilbert Brooke Hill	22 G.S.	28. 8.49
3105	Kenneth Cavendish FitzRoy	Surrey G.C.	28. 9.49
9184	Alan Barter	Hereford G.C.	31. 7.49
10308	Geoffrey Brian	Gloucester G.C.	13. 8.49
10327	David Edmund Fletcher	Gloucester G.C.	8. 9.49
10832	Joseph Walters	R.E.G.C.	11. 9.49
10849	William Hall McKinlay	Midland G.C.	16. 9.49
10857	Ian Rex Reynolds	Luneburg G.C.	4. 9.49
10858	Alexander John Ross	Gutersloh G.C.	15. 4.49
10877	George Thackray Weems	E.T.P.S.	16. 6.49
10900	Michael Douglas Backhouse	Gutersloh G.C.	7. 8.49
10901	Vincent Hugh James	Uetersen G.C.	20. 7.49
10948	Peter George Francis Steele	Luneburg G.C.	28. 8.49
10960	Alfred Walter Andrew Kay	London G.C.	9.10.49
10963	Douglas Everard Goldsworthy	Troyes (France)	8.10.49

WANTED

"GRUNAU BABY," condition immaterial, anything considered, even up to "write off," but must be cheap. Details and location to: Box. No. 263.

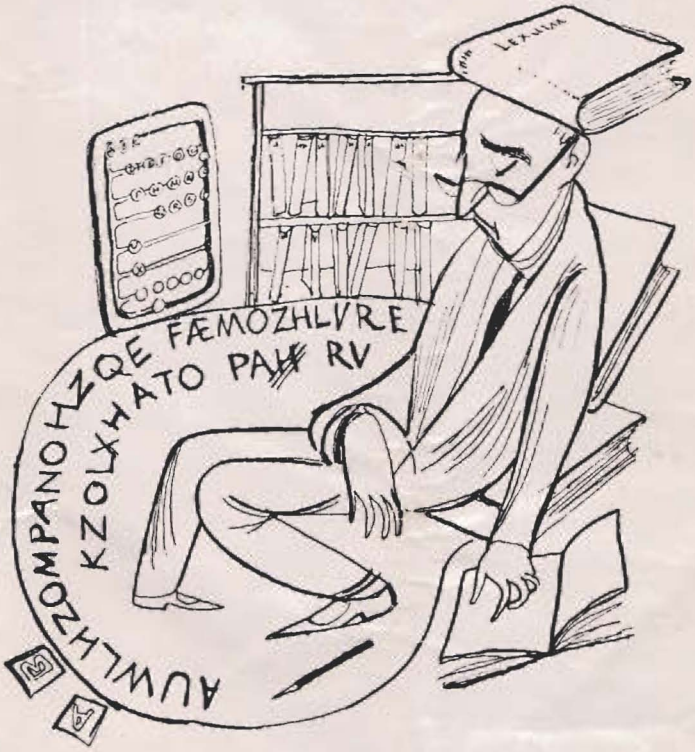
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