Sailplane and Glider

The First Journal devoted to Soaring and Gliding

APRIL 1951

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Sailplane and Glider

Sailflying
Sailflyer

and ULTRA LIGHT AIRCRAFT

THE FIRST JOURNAL DEVOTED TO SOARING AND GLIDING

APRIL 1951 ★ Vol XIX No 4

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CONTENTS

COVER PHOTO:
'S18' above Muottas. Muraigl, Engadine, Samedan.
By Thedy Heimgartner.

Editorial

WE are glad to notice on our return from foreign air that from now on the B.G.A. intend to choose their teams for International Contests in a manner less open to criticism. The scheme now evolved recognizes that our teams in the past, have lacked training and the necessary experience of competition flying and have therefore been outclassed. This was noted by our Acting Editor last month, and we should not have touched on the matter again except that since our return there has been a curious event which we find it hard to believe is without any relation to the criticisms of the B.G.A. and the International Contests which appeared in these columns last year.

A week or so before the A.G.M. of the B.G.A., we were tactfully and charmingly informed by the Secretary that this year the Press were to be excluded from the Meeting. The reason given was that we were not members and as the B.G.A. is a Company, the meeting was reserved for members only. This is within the rights of the B.G.A., or anyone else, but from long experience we view these Iron Curtains with suspicion. We cannot help feeling that this attitude of the B.G.A. is foolish. Truth will out, and if it is unpleasant it is always better to face it. Of course, if the officers of the B.G.A. fear our personal comments that is another matter. Still, perhaps they also are mending their ways and are ashamed to let us see the improvement. We are encouraged to hear that they have now got their official organ, which (owned by members of the Council) is not independent, dare not criticise them, and is needed and used to bolster up their falling self-esteem. Our criticisms have indeed hit home.

We pass from these puny affairs to the real news of the month. The *Daily Mail* of Saturday the 17th of March, published in its Editorial, the news that the United States Senate were asking for money and powers to investigate *Weather Control*, a subject besides which, said the *Mail*, the *Atom Bomb* faded into insignificance. Whoever can control the Weather can control Mankind, not negatively, as does the possessor of the Atom Bomb, but positively, since Mankind's happiness and prosperity, indeed his food, depend on weather and climate.

When your Editor was in the U.S.A. last June, before the International Contests, Paul MacCready, American Gliding Champion and later second in the International Contests, discussed with him what would be the effect on the Competition if he were to make his own weather for the purpose of winning the Competition. After long discussion it was that though winning the Competition was important, there were other more important objects to be achieved and these might be vitiated were Paul MacCready to put out his knowledge prematurely. Many people know how to create rain ; it is now a Defence secret how to stop it. It is a great pity we are not able, for reasons of the highest importance, to tell the real story behind the Orebro Contests, but it makes the report of the B.G.A. on those contests read like a tuppenny novel.

Paul MacCready has now gone into the Weather Control business, with two Associates, Eugene Bollay and Robert D. Elliott, both well-known in Aerological Research. Our readers may now see the reason we have been reporting every scrap of information about Standing Waves the world over, that we could find. Not only because soaring in them to stratospheric heights is in itself a sporting achievement, but because only pilots in gliders and dirigibles can procure the information which is necessary to Weather Control. At least, what gliding pilots have discovered has led to the present level of knowledge of the subject. Sailplane pilots first discovered thermals ; it was Robert Kronfeld who first flew on the rising warm air before a thunderstorm, and led to our knowledge of " Fronts." The reports of soaring flights which have appeared in *Sailplane* these past seven years, have been analysed by Meteorologists and other scientists and certain conclusions have been reached, all of which have helped to fill in the picture. That is why we have asked for maps of the flights, and printed them, and tephigrams as well when we could get them and there was something to be learned from them. Apart from their interest as purely practical flight documents, which is why most soaring pilots read them, these accounts are also of purely scientific interest, an aspect which has escaped most commentators. So please continue to send them. They all help in the investigation of Weather Control. Lord Ventry tells us that he recently went to Camphill where he discussed the possibilities of using his new dirigible in investigating the phenomena of Camphill. If this happens, the results will be of great interest to the Derby and Lancs. Gliding Club. They will also be of world-wide interest to scientists. We are glad, therefore, to be able to state that news of the progress of Lord Ventry's airship and its voyages will appear in *Sailplane* from time to time.

Soaring on the Famous Bishop Wave

By FLT. LT. R. C. FORBES (Diamond 'C')

SINCE I first experienced the thrill of staying airborne without power I have read and heard fantastic stories of inexplicable meteorological conditions known as Standing Waves.

Pre-war the only really well-known Wave was the Moatzogotl and this was used frequently by the Continental Glider Pilots. Since the War, however, the Moatzogotl has been 'out of bounds,' and two new waves have been discovered, one in France at St. Auban, and the other in Bishop, California.

For the last three years I have been toying with the idea of visiting either the French Wave or the Bishop Wave, and in the end, to suit the other two-thirds of my family, the opportunity arose to visit Bishop.

Prior to my leaving this country in the Queen Elizabeth on November 30, I had spent some time at the Institute of Aviation Medicine at Farnborough. Apart from finding out my height limits in the decompression chamber I also learned a little about the more recent developments of high altitude flying. This knowledge, unfortunately, was not used but might have been useful had circumstances been different.

FLT. LT. R. C. FORBES

After a most enjoyable but really rough trip to New York, I landed in the midst of one of the worst winters the Western part of the States had experienced since they started to keep records of the weather. However, any discomfort caused by the snow and extreme cold was more than offset by the comfort in the homes, where central heating maintains an even temperature inside, no matter how much it may vary outside.

While in the States I spent half of the time near Chicago, and one evening I surprised Bert Handwork by contacting him at Indiana University, where he is now a student. Ex-Bafo sailplane pilots will remember Bert from Scharfoldendorf Gliding Club and his grand efforts in the B.A.F.O. Gliding contest at Gütersloh where he flew the 'Minimoa.' Over the 'phone we arranged to visit Joe Steinhauser's Gliding School the following Sunday. On the Sunday Bert arrived bright and early in a car which would have been perfectly in place at any Gliding Club in this country.

Joe's School is at Chicagoland Airport, near Mundelein, about 30 miles from Chicago, and after a hazardous ride over icy roads we arrived to find there was too much snow to allow flying to take place. Anyway a most enjoyable afternoon was spent with Joe Steinhauser.

Little interest appears to be shown in the Gliding movement around the Middle West—but a different state of affairs exists in the Eastern States.

The opportunity was also taken to contact Hollis Button 'way up in Valley City, North Dakota. British Glider pilots will remember Hollis as being the recipient of the beautiful 'Horten IV.' Unfortunately, the 'Horten' was broken slightly on its first flight but there are hopes that it will be flying again this Spring. Button was recalled to the Air Force on the 1st of January of this year, and we might see him over here before very long.

On the 26th of December, after a real American Christmas, and all the good things that go with it, I set off by train for Bishop. The less said about this long journey the better, but the car journey we had planned (but had to call off because of weather) could not have been less enjoyable.

Sunny California really lived up to its reputation and when I arrived at Mojave it was more like June than December. The four and a half hour journey by bus from Mojave to Bishop through the Owens

Valley was made all the more interesting by my travelling companion—a cowboy, who knew every inch of the area and its history.

On arrival at Bishop, on the evening of the 28th, I booked in at the lovely Inyo-Mono Inn—the name derived from the two counties in the Valley, Inyo County and Mono County.

I had barely time to sign the Hotel Register when Bob Symons came to drag me out again. A few words about this person would not be out of place.

When one thinks of Bishop one automatically thinks of Bob Symons at the same time. I would say without hesitation that Bob knows more about Standing Waves than anyone else in the World, because he has worked with them and played with them for many years. He runs a private Charter Service part of his time and the other part is spent in the employment of the Southern California Power Company, where his main job is to fly ' P-38 ' (Lockheed Lighting) on rain and snow making sorties. This is a highly specialised business and Bob obviously has it at his finger tips.

Two of his power flying stories are worth recording. In February, 1950, in company with John McDonald, Bob was out in the ' P-38 ' seeding the clouds. On their return to base the Wave was over Bishop and the dust rising from the Valley made it impossible for them to land. Bob calculated how long they could stay airborne, flying for maximum endurance, and reckoned they would stay up for an hour and a half, hoping for the aerodrome to clear in the meantime. Flying about 10,000 feet they encountered the Wave. John McDonald in the nose of the aircraft suddenly called over the inter-comm. ' Hey! Bob, the port engine has stopped.' Bob, busy feathering the starboard propeller replied ' Yes, now the other one has stopped too '. They were gaining height at 3,000 feet per minute with both props. feathered in a machine weighing 8 tons. Above 30,000 feet the cold was such that Mac began to complain, and since they wanted to save the aircraft accumulator for unfeathering the props. they could not use their heated clothing. There was nothing for it but to come down again. Three times the aircraft went from 12,000 to 30,000 plus feet before the Valley cleared sufficiently to allow a landing to be made, and the ' P-38 ' was flown up and down Owens Valley with lift all over the place.

Bob and McDonald between them hold the unofficial World's light plane altitude record with a height of 32,000 feet. Unfortunately the last 2,000 feet of the climb were made with the propeller of their ' Bellanca ' stopped. Naturally this flight was made in the Wave too.

Bob Symons and three or four others own a ' Pratt Reed ' and ' T.G.3 ' with which most of the Wave Soaring is carried out, and these are hired out to people who do not have their own Sailplanes with them. These machines, to use an American expression, are ' rugged.' They are ex-Army surplus two place machines and improved by their present owners, now carrying ample oxygen supplies including pressure breathing equipment, two way radio which works satisfactorily and electric turn and bank indicators. They have two features essential to Bishop soaring—they are strong, and have a really high rate of sink at high speeds. Far from being a drawback the latter is essential where such terrific rates of climb are experienced. When I first saw them I was not impressed, but later on I was to change my mind about the ' Pratt Reed ' at least. In this country they would be absolutely useless as sailplanes because their rate of sink and angle of glide are, to say the least, exceptionally poor.

My first night in Bishop was spent meeting the pilots who were holidaying there with sailplanes. Among them were W. S. (Bill) Ivans of San Diego, and Irving Gare who was Bill's crew man. The latter two had the beautiful all-metal single-seater ' Schweizer 81-23 ' with them, and this machine was perfectly fitted up. I had the opportunity of flying this machine later on, and I like it, although it was a bit ' short-coupled ' for me. With only one flight during which I attempted various aerobatics (without much success I may add) it seemed to compare in performance with the ' Olympia ' but perhaps I underestimate its performance.

Later on during my first evening at Bishop we all gathered at Bob's house to see his movie films and coloured slides of the Wave. The coloured slides were beautiful, but much more interesting from my point of view were the movie films; some of which were taken at one frame per second and projected at normal speed. One could see the Wave rollclouds forming and could just imagine the large vertical currents involved in the process.

Needless to say we were frequently in touch with the meteorological station based on the Airfield, and the morrow promised nothing more than had occurred for the previous week. The half-a-dozen pilots who had been there for a week were getting a bit fed up with the non-appearance of the Wave. The met. people proved to be correct when the 29th December dawned as bright and clear as anyone but us could wish, so Bob took me up in the ' Bellanca ' to show me the local flying Area.

Like the Bishop Sailplanes this country is really rugged! I see now why Sailplane pilots have not yet attempted long cross-country flights in the Wave. The conditions are very similar to the Swiss Alps, but on a much larger scale horizontally. I'd hate to land anywhere other than on the Airfield, because even if I did land in one piece it would be an extremely hazardous task getting back to base again.

The 29th was uneventful and the met. forecast was so gloomy from the Wave soaring point of view, that most of the pilots decided to return home on the following morning.

My room in the Inn faced the wrong direction, and to see the weather I was forced to get out of bed and walk out on to the street. This is quite an effort in the early hours of daylight, so when I awoke early on the 30th morning and looked out of the window at bright blue skies I decided the met. people were pretty good in this place and promptly turned over and off to sleep again.

I don't suppose I had been asleep more than 5 minutes when Bob Symons knocked at the door to tell me it was almost 7 a.m. and the Wave was waving.

I was out of bed like a shot and with Bob we

rounded up the other pilots. Because of the gloomy outlook there had been little preparation for flying and such things as refuelling the tow plane, a 'B.T. 13' and rigging the sailplanes and checking oxygen etc., had been neglected, and in the morning all took time. In consequence, the first machine took off around 9.30 a.m. The Wave was lying roughly north and south just East of the Sierras and to the south, perhaps 15 to 20 miles, of Bishop. In consequence, with just one tow plane some time elapsed between tows.

The first glider off was a 'T.G. 3' flown by its owner. Bob came back to report good lift. Next a relatively inexperienced pilot carrying a passenger took off in the 'Bishop T.G. 3.' The pilot was well briefed prior to his departure and was told to find the downdraught before he got to 20,000 feet so that in the event of things going wrong a quick turn to downwind would bring him down quickly in the downdraught. Very soon, and before Bob had returned to Base we heard this glider pilot call up to say that he was now at 22,000 feet and that this would be his last transmission because he did not want to take his mask off. (Hand microphones were in use at that time, but now the mikes are installed in the masks). This pilot landed about one hour later having tried to get down from 22,000 feet and having reached 30,000 feet in the process. Next time he will pay more attention when Bob briefs him.

The next pilot off was Bill Evans in his '1-23.' Bob asked me to fly in the towplane this time to give me some clue as to what was happening up there. After take-off we headed towards the White Mountains hoping to slope soar en route to the Wave. No lift was experienced as the downdraught of the Wave happened to be striking the mountains where hill lift would normally be expected. After travelling parallel to the Whites we turned at right angles to them to pass through the downdraught in the shortest possible time. Soon we hit this downdraught followed fairly soon by about one minute of severe turbulence. Then suddenly we were in absolutely perfectly smooth air climbing about 2,500 feet per minute at which time we were at 12,000 feet. Bill Evans cast off and almost at once disappeared from view. Most gliding people know by now of Bill's excellent performance when he reached 42,000 feet above mean sea level. He had originally planned to fly to Salt Lake City about 500 miles away to the North East, but he used his oxygen extravagantly through forgetting to switch over from 'emergency' to 20,000 feet during one of his downdraughts periods, and he was left with about half an hour's supply.

I won't dwell on the story of Bill's flight because it will probably be in print shortly. However, he had grave doubts about getting back to base while still at 25,000 and 20 miles away because of the strong downdraught and headwind. Eventually after about 3 hours in the air he arrived back at Bishop the holder of two World Records.

As soon as I came back to Bishop with Bob Symons after towing Bill Evans off I wanted to get airborne, but there was still one machine to go before me. Since it was almost lunch time and we still had had no breakfast, we decided to have a meal in the town and be back in time for the next tow.

I was going to fly the 'Pratt Reed' and because it was a two-place side-by-side machine, and because I knew Irving Gare had not flown all the week I offered him the ride with me. I had just arrived at Bishop and still had about three weeks to stay there, and treated this particular flight, as a practice flight, happy in the knowledge that this was the first of many flights I would have in the Wave.

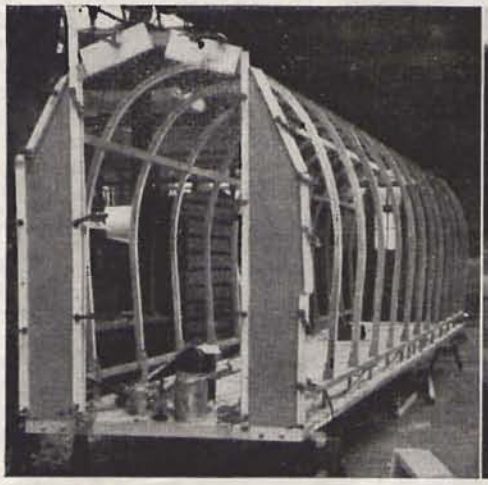
Take-off was uneventful, if you call two pairs of hands fighting with the two control columns trying to keep the 'Pratt Reed' on an even keel behind Bob's bucking 'B.T. 13,' uneventful. However the turbulence was less then I expected. At about 10,000 feet a m.s.l., we hit the smooth rising air and released. The variometer was an Askania 15-0-15 metre/sec. instrument but because of the bottles being double capacity it only indicated roughly 1,500 feet per minute. After about a couple of minutes heading into wind the lift began to fall off and I found myself dropping towards the ground at quite an uncomfortable rate. This was contrary to all the advice Bob had given me about flying more into wind. Bearing in mind this advice I increased the speed but all that happened was that the sink increased. I don't know what my lowest point was but it was well below my release point and I had visions of landing in the scrub and rocks below. After settling down I decided I was too far upwind and turned around through 180° to find lift almost immediately. From that point onwards it was a case of flying straight and level at the same speed as the wind so that we neither lost or gained ground. Since this was my first experience in wave soaring I thought it better to play safe and find the downdraught in case we required it. Having found this down current we climbed on the edge of the up current so that we kept the rate of climb inside the limits of the variometer. This became increasingly difficult to do because as we went higher we found the wind was much stronger and we had to fly correspondingly faster and our machine rate of sink increased out of all proportion. By steps we reached 25,000 feet and although the outside temperature as recorded on the thermometer was —20°C., we were quite comfortable in the cockpit. (This machine had been lined inside and all around the cockpit with glasswool and aluminium foil).

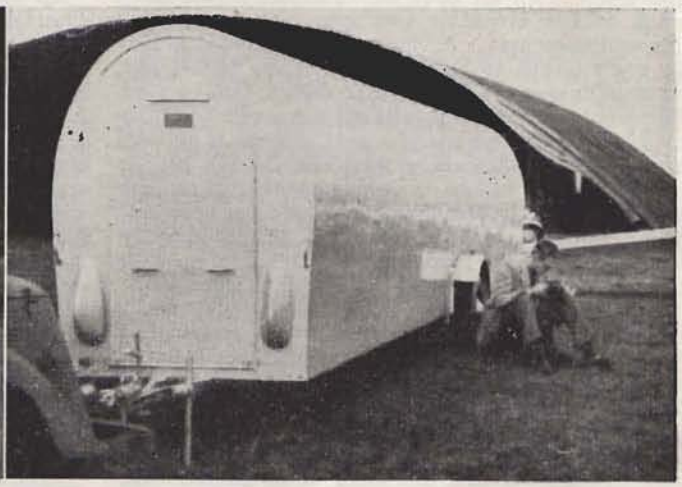
Over she goes ! Club Planeadores, Merlo, Buenos Aires.

(*Continued on page* 78)

THAT HANGAR ON WHEELS

by J. C. RICE, A.R.Ae.S.
(*Midland Gliding Club*)





THE balmy days of spring are here, cross-country enthusiasts on the wing with the retrievers on the scent. So a few words about the trailer will not be ill-timed.

We have seen the vertebrate type of glider trailer consisting of a spinal tube with ribs welded on to take the undergear and glider. We have seen the very in-vertebrate type consisting of a veritable birdcage construction (reminiscent of the early biplanes) in which the glider was threaded hopefully into the wire maze. We have seen wonderful devices with huge panels that hinged down, and ' Kranich ' trailer used by the Naval team carrying canvas which no landlubber could hope to furl in a stiffening breeze.

The demand for economy, having spent one's all on the sailplane, has produced very ingenious methods of using junk in the construction of the trailer. But is it really worth while to risk damage to a fragile sailplane by exposing it to weather, vibration and dirt by towing it in a flexible, insecure trailer? Surely the modern tendency to house the sailplane in a weatherproof hangar on wheels is far the most satisfactory, even if one has to spend more on the trailer in the first place.

For the benefit of those contemplating the building of a trailer, may we recommend the type illustrated above. The egg-shaped section was suggested by Gerry Smith who spends his waking hours between Rolls-Royce's and Camphill—the best of two worlds.

This shape has the merit of eliminating the ' cant-rail ' and any joint along the roof. It gives a stressed skin rigidity to the trailer without undue weight. In a strong cross-wind the advantage over the slab-sided trailer is easily apparent as the gusts do not tear at the trailer to the same extent. The tendency to throw off the rain is obvious and if the trailer is properly constructed and kept in good condition; any sailplane is better off in such a trailer than in most hangars. The structure is reasonably robust to stand what glider trailers get; the retrieving crew has been known to go to sleep at the wheel and pile up on a telegraph pole with remarkably little damage to the sailplane although two bays of the trailer were rendered renewable. That happened to Phillip Will's ' Weihe ' trailer seen above. Another trailer of this type was run with one wheel up a bank, ' Wall of Death ' fashion, so that the trailer turned on its side.

Here again the sailplane escaped with no more damage than to the aileron. One is horrified to think of what would have happened to such sailplanes in the ' stick and wire ' trailer of the last decade.

In the factory-built trailers shown here a single sheet of hardboard covers each bay from the lower edge on one side right over the top to the other side. The joints are feathered (scarfed) joined with waterproof glue, and taped, the whole body becoming a single tube of immense strength. The lower surface or floor is carried on a light, lattice-type steel frame to which the wheels are fixed. The monocoque form is achieved by building up laminated sticks on steel formers using Aerolite No. 300 synthetic resin adhesive, already so very well known in glider construction as to need no more mention.

This method of building up the stick enables one to use any reasonable ash without having to obtain long lengths free from blemish—an impossible thing to do with economy nowadays. The Aerolite 300 is workable at ordinary hangar temperature except in winter and sets well overnight, so that two sticks can be made each day without trouble. Of course, the makers of Aerolite 300, will tell of many ways of hastening the setting process,

(*Continued on page* 82)

(*Continued from page* 76)

We were still going strongly when I saw large beads of perspiration on Irving's forehead. I asked him if he were feeling O.K. and he had just said ' Yes ' when he was violently sick in his oxygen mask, stopping his oxygen supply. The height was now around 26,000 or 26,500 feet. He immediately pulled the mask off and the remainder of his early lunch or late breakfast was spread all around his side of the cockpit. As most people know it is bad for one's health to hang around above 25,000 feet without oxygen so I had little option but to turn downwind and dive at maximum speed to a healthier level. Poor Irving's troubles were not yet at an end. Around the 10,000 level he found he couldn't get his ears cleared so we had to delay our descent as best we could while he swallowed and held his nose and blew. I don't know what our rate of descent actually was but I know the barograph couldn't keep up with us and recorded dots instead of a straight line.

This finished my Wave flying for that day but I was not one bit worried because I was assured that the Wave would be there many more times before I left. Unfortunately this was not to be and I spent the rest of the time at Bishop waiting for a Wave that didn't come. Just after I left there and had returned to Chicago I got a wire from Bob Symons to tell me that one of Elmira Club members, Clarence See, was at 32,500 and I still haven't heard whether he got any higher or whether he is still up there or what.

Although I got no more Wave Soaring I had a thoroughly enjoyable holiday. On successive days I was a guest of the Bishop Rotary Club, and the Lions International, and later on Bob and I went to the monthly meeting of the Southern California Soaring Society in Los Angeles.

I said earlier on that there was little interest in gliding in the Middle West, but the reverse is certainly true in California. This is a go-ahead group of gliding enthusiasts.

It was a pleasure to renew acquaintance with Fred Walters and Doctor and Mia Klemperer, and to meet their charming daughter. Fred Walters gave an interesting talk on the International Contest in Sweden and his travels thereafter through various European countries.

Their charming and most efficient President, Stan. Hall, installed this year's officials, and the amount of ' Gold ' and ' Diamonds ' among them would make our Treasury envious. Their projects for 1951 are enormous and include finding out what makes Bishop Wave tick. Johnny Robinson, the only Gold ' C ' in the world with 3 ' diamonds ' is the pilot on this project so we expect results—especially with Dr. Klemperer in the background.

I may add that I was sorry to leave Bishop to come back to the snow and frost in the West, and more sorry still to know that the Wave came just after I left. I have promised myself another trip to Bishop in the not too far distant future.

According to Bob Symons and others the Lenticular cloud lies between 80,000 and 100,000 feet with the roll cloud around the 20,000 feet level, so we can expect the World Height record to be beaten just about once more, i.e., 44,100 feet, before special equipment will have to be used. Failing the ability to procure a light weight pressure suit a pressurised Sailplane will have to be built. This, I know, is in the process of being constructed, and when it is completed there is nothing to stop it getting to 60,000 feet or more. When Group Captain Cunningham made the World height record in a ' Vampire ' the point was reached where his critical mach number and his stalling speed were only a few miles apart. This point in a sailplane will be reached at a much higher altitude, so there is no reason at all, apart from pressurization why a Sailplane should not reach much higher altitudes.

As far as flying in the Wave itself was concerned I found it extremely boring, just sitting there with the variometer showing up most of the time. However the dangers are obvious, and should not be treated lightly. One must know one's height limitations and the only way of finding out is to undergo tests in a decompression chamber. Normal precautions, such as carrying a baling out bottle and having the oxygen and pressure breathing equipment thoroughly tested, should be observed.

In conclusion I thank Bob Symons and Mrs. Symons and John McDonald, Bill Ivans and Irving Gare, Clarence and Mrs. See, all the willing helpers on Bishop Airfield as well as the members of the Southern California Soaring Society for all the excellent co-operation I received, making my holiday something to remember. I take this opportunity, too to wish, Group Captain Paul and Wing Commander Ingle and the others who are trying the soaring in the French Waves this month as much fun as I had in Bishop, with a bit more Wave Soaring.

SOARING IN FRANCE

Three Remarkable Days in January by GUY BORGÉ (*Diamond 'C'*)

THIS year has begun remarkably in France at the St. Auban Centre. Two world records, 9 Gold 'C' altitudes and 7 Diamond 'C's' were obtained on January 18, 19 and 20.

18th January. Mrs. Marcelle Choisnet-Golhard and Miss Queyrel in the 'C.M. 7' two-seater, gained 19,600 feet, a new world record.

19th January. Two Diamond 'C' altitudes were obtained.

20th January. Three pilots, Mrs. Gaudry, Mrs. Mathe and Mr. Veyrac attained 27,200 ft., in some 'Nord 2000 Olympia' launched by winch. Mrs. Mathé made a gain of about 24,900 feet, certainly a new feminine world record.

Maximum lift amounted to 20 feet/second above Peyruis, but nightfall prevented her climbing higher. Icing was beginning at 20,000 ft.

On the 28th February Mr. Max Gasnier gained a Diamond with a climb to 21,300 feet in the 'Arsenal 4.111.'

1951 has started well, and we hope that it will continue. The S.A.L.S. has just disclosed figures for soaring in 1950. The results indicate a diminution in relation to 1949, which was a record year, but 80,000 hours of soaring a year and 400,000 launches seem impressive enough, and show certainly the greatest activity in the world. It would be interesting to compare it with the German activity before war.

In 1950 there were 79,673 hours' soaring in France (83,137 in 1949), 40,0975 launches (44,5906), 1,640 'B' badges (1,903), 993 'C' (1,159), 1,362 legs of Silver 'C' (1,834), 251 complete Silver 'C' (210), 62 legs of Gold 'C' (149), 11 complete Gold 'C' (29).

The National Centres played a big part in these achievements and succeeded in improving the training of French pilots during their holidays.

In 1950, Challes les Eaux received 163 pupils (of whom 20 were foreign), La Montagne Noire 155, Pont Saint Vincent 226, Saint Auban 248. Eight Inter-Clubs Centres were opened, with 6 for the only Paris area: Beynes, Etampes, Lognes, Meaux, Persan, Chavenay, and 2 in the country, Bordeaux, Troyes.

268 Aéro-Clubs were active, either self-controlled, or in an Inter-Clubs Centre.

The leading Club still was the Rhône Aéro-Club which flew 1,800 hours in 8,500 launches with 10 sailplanes.

A good sign is the great number of young pupils entering the official examination of the B.E.S.A. (Brevet Elementaire des Sports Aériens), necessary to those under 21 years old and wishing to soar. The Programme appears very complete, with aerodynamics, history of aeronautics, machanics, algebra, geometry, geography, strength of materials, instruments, air navigation, air rules. It asks for a six-month period of evening courses with 2 or 3 of them each week. In 1950, 1,873 pupils have appeared for examinations and 900 have received the diploma.

Aeromodelling, first initiation to soaring, is active with 2,000 sections in public or private schools, and 700 in the Aéro-Clubs.

In 1950 the S.A.L.S. ordered a few types of sailplanes: 5 'Bréguet 900,' 15 'Castel 311 P,' 30 'Emouchets,' 9 'Caudron C. 811' (this excellent machine was described in *Sailplane*, January, 1949), 37 'Stampe' planes for aero-towing, 4 jet sailplanes Fouga 'Sylphe.' Technical studies have been undertaken in several ways:

(i) A motor two-seater designed by Jarlaud with a small propulsive engine to execute aerological prospections.

(ii) Modification of a plane (a 'Boisavia' using a 240 h.p. engine) to aero-tow sailplanes to 20,000 ft., and execute Wave research.

(iii) Construction of a new performance two-seater, the Castel Mauboussin C.M. '71' derived from the 'C.M. 7.' This latter sailplane has not given great satisfaction, it has effected some excellent performances in breaking several distance and altitude records.

(iv) Study of a special hook for aero-tow planes, with a reel designed to roll around the tow rope on a small winch after release of sailplane.

(v) Completion of equipment of the National Centres with a huge hangar of 2,150 square yards at Pont Saint Vincent and some new technical buildings at La Montagne Noire.

S.A.L.S. has also studied a new method of teaching flying based upon a mixture of sailplane and motor plane, reserved to the young pupils, most interesting for military training and the new Atlantic Armée. Pupils should begin with five hours of flying in the new '75 C.V.' planes, like the 'N.C. 853' and the Sipa 'S. 90'; then executing 20 winch launches in sailplanes, and 10 aero-tows for picking the 'B' and 'C' badges, which give a reduction of 7 hours in the civil pilot Licence. After sailplane, 3 hours of flying would then be needed in planes. Cost of this instruction is estimated to:

8 hours of '75 CV' plane at 2,500 francs	20,000 francs
20 winch launches	4,000 ,,
10 aero-tows	4,000 ,,
	28,000 francs

S.A.L.S. would grant subventions of 1,000 francs an hour for the plane, then 8,000 francs for the 8 hours, and 240 litres of petrol for the glider badges, then a resulting total of 23,000 francs. Combination of the 'B' and 'C' badges, plus the civil pilot badge would be worth 5,000 francs (about 5 pounds) and would constitute an economical proposition. We shall see by results how good is this new method of training.

Military soaring has taken a new development and its importance becomes perceptible. The 57 military soaring sections in the Aero-Clubs have flown during 1950 a total of 56,622 launches and 9,500 hours.

(*Continued on page* 89)

NOTE ON VERTICAL AIR CURRENTS ON THE TASMANIAN AIR ROUTE

By E. DESMOND and U. RADOK

(concluded)

APPLICATION OF THE THEORIES TO THE OBSERVATIONS

(a) Actual and Theoretical Profiles

Fig. 1 shows a section through the Eastern escarpment of the Central Tasmanian Plateau in the region of the so called Western Tiers (North of Tunbridge ; the section is based on the approximate isohypses, given on the Tasmanian Surveyor General's map scale 4 miles to 1 inch). The broken curve gives Queney's typical profile for b = 1 km., a = 2 km., i.e., $z = 1/\left(1 + \frac{x^2}{4}\right)$. It appears that a still larger ratio of b/a would give a better approximation, but the present one will suffice here. It is also seen that the theory of small perturbations can claim no strict validity here.

(b) Actual Vertical Stratification

No aerological data exist at present for Tasmania, apart from a short series of aircraft soundings made in 1944. Thus it was necessary to use the values for Laverton near Melbourne instead. This should not introduce any serious errors however, for the synoptic situations in question.

Fig. 2 (*page* 82) shows the radiosonde ascents for Laverton on two of the days when the disturbances were reported ; all the other flights resembled that of June 28th in showing pronounced inversions at comparatively low altitudes. On June 26th, on the other hand, only a weak isothermal layer is indicated ; thus Queney's condition of a constant co-efficient of vertical stability is approximately realized with s = 8.3 x 10—3 sec.—1 and a critical velocity of approximately s.a = 16.5 m./sec. (37 m.p.h.). This should be compared with the value observed over Western Junction on the same day, 26 m.p.h. (at 6,000 feet cf. Table 1). The wave length to be expected in conjunction with the profile in Fig. 1 would be about 8 miles.

However, for all the other days Queney's assumption of a constant ' s ' is in contradiction with reality, in view of the pronounced inversions recorded at Laverton. Table 1 gives details of these inversions together with the critical velocity according to Kuttner's formula (where in order to get H the mean height of the inversion layer over Laverton has been reduced by half the height of the Tasmanian plateau over the adjacent valley) and the lengths of waves with the velocities of propagation corresponding to the actually observed wind velocities over Western Junction. These wave lengths have been computed by means of the formulae given by Haurwitz (1931) for the case of two infinite isothermal layers and therefore represent at the best approximations (cf. above).

Table 1 : Inversions over Laverton, observed upper winds over Western Junction, critical velocities (Kuttner), and approximate lengths of stationary waves (Haurwitz).

Date	p^2 / p^1 mb	t_2 / t_1 oC	δ^0	H feet	u/crit m.p.h.	u/6000′ m.p.h.	Wave length (miles)
19/5	728 834	+1.3 —3.0	16	5,200	67	35 70 at 10,000′	4.3
2/6	788 900	+4.1 +2.5	13	3,300	48	46	3.0
23/6	820 850	— .1 —3.3	7	3,300	34	29	2.4
26/6	850 970	0 0	2	3,000	18	26	2.4
28/6	798 835	+3.4 —1.0	9	4,600	43	43	3.8

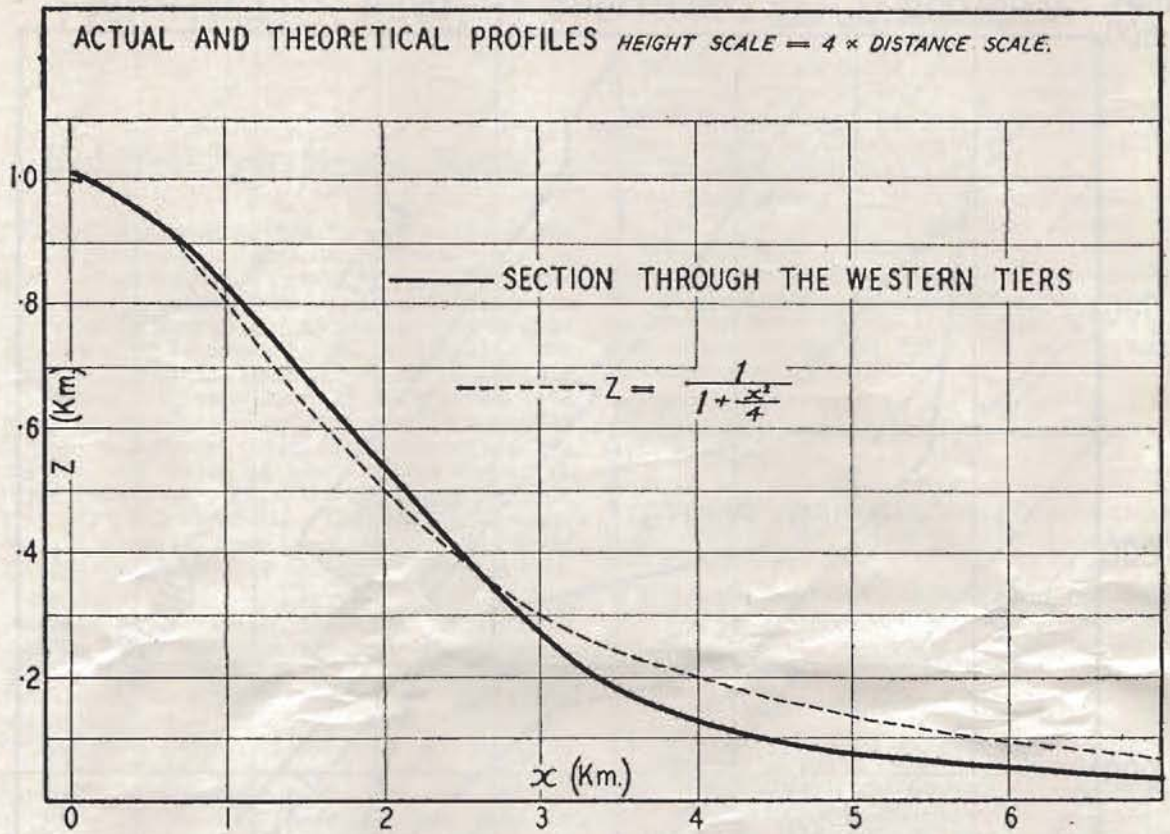
Taking into account the parallelism between the observed and the computed critical velocities and also the observed restriction of the disturbance to a limited altitude range, Kuttner's treatment appears to fit the observed conditions slightly better than Queney's. Both theories indicate values for the wave length which are considerably smaller than those observed over the sea off Flinders Island ; it should be noted, however, that in Kuttner's version all waves which are long compared with the height of the inversion could be stationary in the case of the velocity reaching the critical value.

The presence of an inversion together with a certain minimum velocity of the air stream may thus represent the necessary condition for the appearance of the disturbances and the most important factor for their prediction. However, the example of June 27th shows that the existence of the inversion is not necessarily a sufficient condition as well. On that day no flight was made at Laverton, but it seems reasonable to assume that the weak subsidence inversion indicated on June 26th was developing during June 27th into the pronounced inversion of June 28th, in a continuing intense Southwest flow. The absence of disturbances during June 27th thus pointed to some difference in the synoptic conditions which will be briefly discussed in the final section.

SYNOPTIC CONDITIONS IN THE TASMANIAN REGION

The synoptic conditions over Tasmania were studied for the days in question in somewhat more

FIG. 1



detail than had been possible on the basis of routine weather reports, by taking into consideration also the monthly returns submitted by climatological stations.

The two days on which waves were reported in the Tunbridge sector are seen to be characterised by pressure ridges in the lee of the plateau; on the intermediate day, on the other hand the same region is occupied by a trough. The latter would be expected on theoretical grounds (cf. Bjerknes 1933, P. 492), and in particular in the case of Queney's waves. The ridge, on the other hand, was found whenever the Tunbridge disturbance occurred and would have the effect of causing the flow to be at right angles to the escarpment in the Tunbridge sector. This may actually be a further condition for the occurrence of the disturbances. Both the ridge and the trough would then be features of the undisturbed air flow rather than caused by the plateau.

A confirmation of this was derived from an examination of the barograph traces recorded at two stations which are exposed to the undisturbed West to South flow (Cape Sorrell and Cape Bruni) with those from Low Head and Pats River (Flinders Island) which could be expected to show pressure fluctuations caused by the topographical features of Tasmania. All four curves were found to contain almost identical pressure fluctuations, with the lags to be expected from waves in the unaffected air stream.

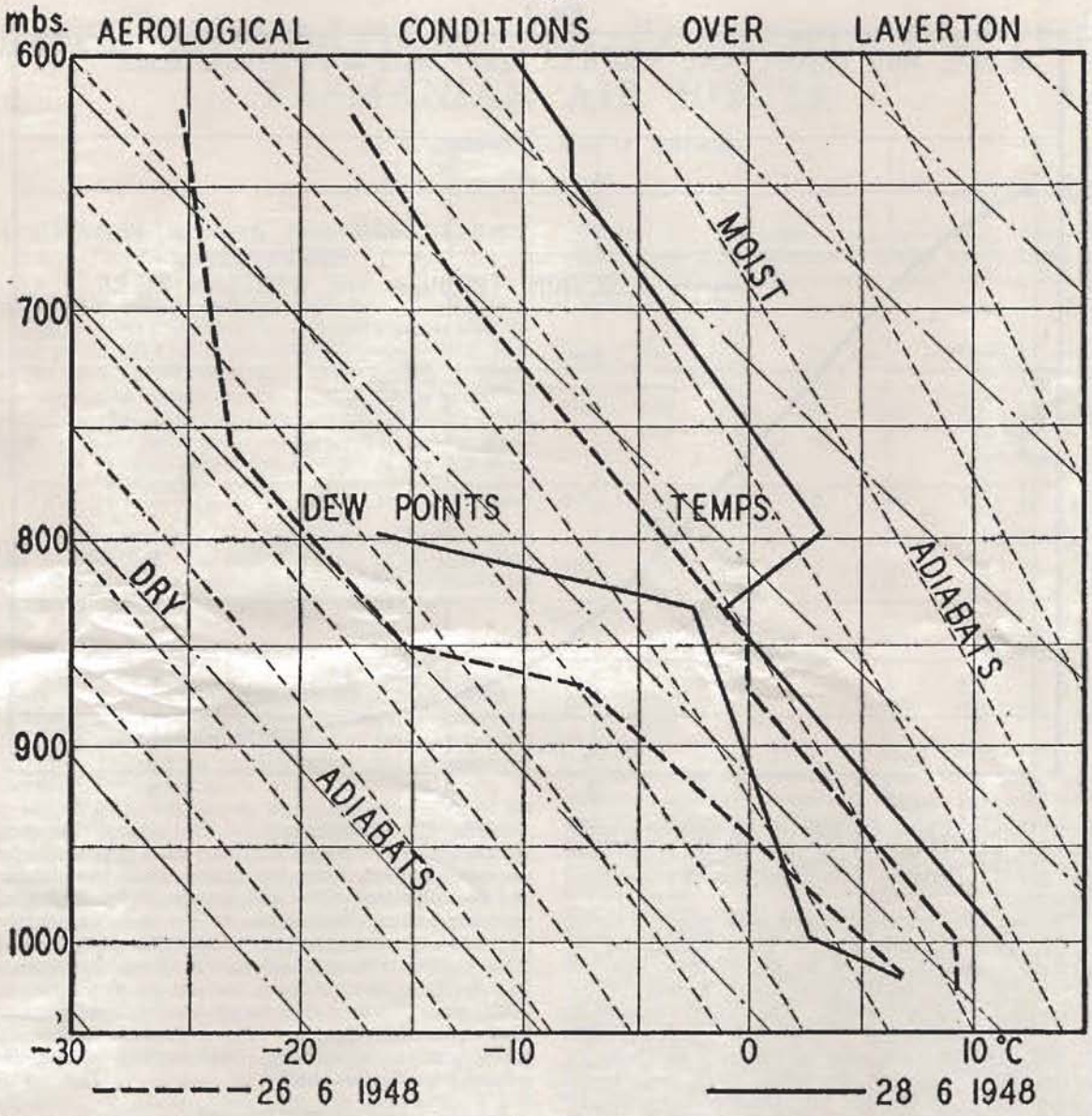
While the disturbance in the region between Tunbridge and Western Junction thus appears to be the combined effect of an inversion above the plateau and the adjacent valley and a ridge in the region of the escarpment, the waves in the most northerly position represent a much more difficult problem, in view of their length and distance from the plateau and the lack of significant features in the pressure distribution, at any rate as far as the North coast. No explanation for these waves can at present be given, and more detailed observations would be required to derive one.

CONCLUSIONS

The phenomena which formed the subject of this note thus retains a number of puzzling features which could only be clarified by detailed measurements. These could be most easily obtained by means of an aircraft equipped with instruments for the recording of aerological data and if possible also of the flight conditions, (e.g. I.A.S.). With this aircraft systematic cross-sections would have to be flown at different altitudes and both parallel and at right angles to the escarpment in the regions where disturbances have been reported. In view of the serious effects on commercial aircraft reported in section 2 of this note, further investigations seem a matter of some importance.

(*From Commonwealth of Australia 'Weather Development and Research Bulletin.'*

FIG. 2



(*Continued from page* 77)

but we are not writing to interest the mass-production merchant. The ends can be filled with a simple detachable panel, or where time and trouble do not count so much, with twin hinged doors, but remember these call for many hinges and much fitting.

The oversize sheets of hardboard may not be obtainable except by special bulk arrangements at the mill and you may have to put in a joint down the centre line. The hardboard is satisfactory only if kept well painted. Although it would not disintegrate if wet, it allows moisture to creep along its fibres and cause swelling. So it must be well protected. Millionaires might consider using aluminium but the insulating properties in the sunlight will be better with the hardboard.

Subject to present high demands and shortages Rice Trailers of Leicester can supply suitable undergear, towbars and couplings, provided the requirements are of a standard nature.

The cost of such components is today about £35, but they form the major part of the trailer cost. If any club or syndicate can obviate the expensive labour and overheads that go into the final cost of a factory-built trailer they will save well over one hundred pounds. The 'Olympia' trailer on the lines illustrated cost £155 in 1947, but today costs nearly £200 and there is no apparent ceiling.

Finally, look what fun it could be to design a trailer with folding bunks, a galley and everything for the tired retriever.

THE IZARRA CUP

Goal Flight Paris - Bayonne - Biarritz

THE Distillerie de la Côte Basque, makers of the famous liqueur, Izarra, have offered a cup this year to the first glider pilot to make a goal flight from Paris to the Bayonne Biarritz airfield. There are also prizes of 25,000 francs for the first pilot to cross the Loire, 50,000 francs for the first to cross the Garonne, and 100,000 francs for the first to reach the aerodrome. The start must be made at less than fifty kilometres from Paris. If the airfield is reached in one hop before the other two prizes are claimed, the pilot will receive the whole 175,000 francs, but if the Loire prize is to be won the contestant must have flown at least 100 km. The rules are drawn up by the Commission Sportif de l'Aero Club de France, and the competition lasts throughout the year 1951.

The Izarra Cup is international and run under the patronage of the French newspaper "Les Ailes" and the club "Les Ailes Basques." Entry forms may be obtained from the Aero Club de France, 6, Rue Galilée, Paris 16e, or from "Ailes," 77, Boulevarde Malesherbes, Paris 8e, and entry forms from foreign pilots (who must hold an F.A.I. licence in their own country) must be sent in to the Aero Club through the intermediary of their own national aeroclubs. These entry forms are only valid for 30 days and must be renewed if time expired.

The start must be controlled and the barograph examined and sealed by an official of the Aero Club de France, who will ascertain the name of the pilot, type of machine, etc. The start may be made by any method, but when by aerotow the sailplane must release below 500 metres and after release must pass in free flight above the airfield boundary. On landing, the pilot will be again questioned by the officials—if short of Bayonne, by the Mayor or the police of the district, and if at the aerodrome by the Commandant or by an official of the Aero Club de France.

Within eight days (inclusive of the day of the flight) a complete dossier must be sent in, to include the departure details, duly signed, the sealed barograph, landing details, and a report on the flight. This dossier will be examined by the Aero Club officials and the award will be made within the month following.

The Distillerie accepts no responsibility for any accident or any damages sustained either by competing pilots or third parties, and pilots are themselves responsible for keeping on the right side of the law.

"Les Ailes" add that they expect heavy competition from the Swiss and the Swedes. What about the English???

V.P.

Brevities

LIONEL ALEXANDER, *Sailplane's* Editor, for the later part of 1950, and member of the Cambridge University Club, was presented with the Brunt Trophy, at the coming-of-age party of the Imperial College Gliding Club on March 3.

THE BRITANNIA TROPHY for 1950, announces the Royal Aero Club, has been awarded to P. Wills, C.B.E., in recognition of his achievement in winning the British National Gliding Championships for the fourth time. The presentation was made at the Club on March 28. In his reply Mr. Wills paid great tribute to his wife Kitty—she was the only woman present.

A NEW type of pulse-jet has been developed by SNECMA and test flown on an 'Emouchet' glider in France.

DATES for this year's Summer Camps to be arranged by the Midland Gliding Club are as follows: May 12—20; June 30—July 8; August 4—12; September 1—9.

THE date of the Festival of Britain National Model Flying Championships has been advanced to Saturday, July 14. The venue will be the Empire Stadium, Wembley.

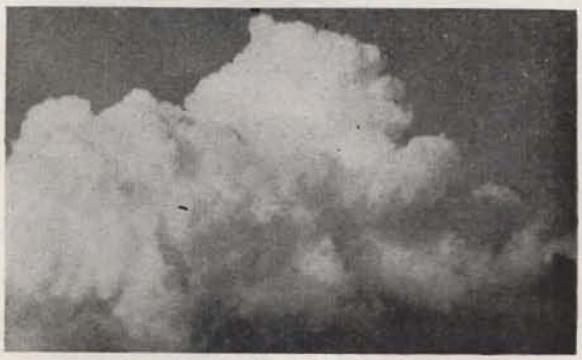
CAMPHILL OR ELMIRA?

IT is understood that preliminary enquiries are being made with a view to holding the 1952 International Gliding Competitions at the Derbyshire and Lancashire Gliding Club.

We also hear from U.S.A. that discussions are going on with a view to holding the competitions at Elmira. In this case competitors may be asked to restrict their entries to one from each country as our generous American friends are discussing the possibility of footing the entire bill for us.

HELI R. LASCH, the great South African Gold 'C' and Diamond crashed recently in the 'Air 100' whilst landing. The sailplane was very badly damaged but by a miracle Heli escaped with nothing more than two sprained ankles.

He is at present on his way to Europe.



A remarkable 'Evening Thermal' at the London Gliding Club at 7 p.m. in July.

THE UTAH SOARING ASSOCIATION

By

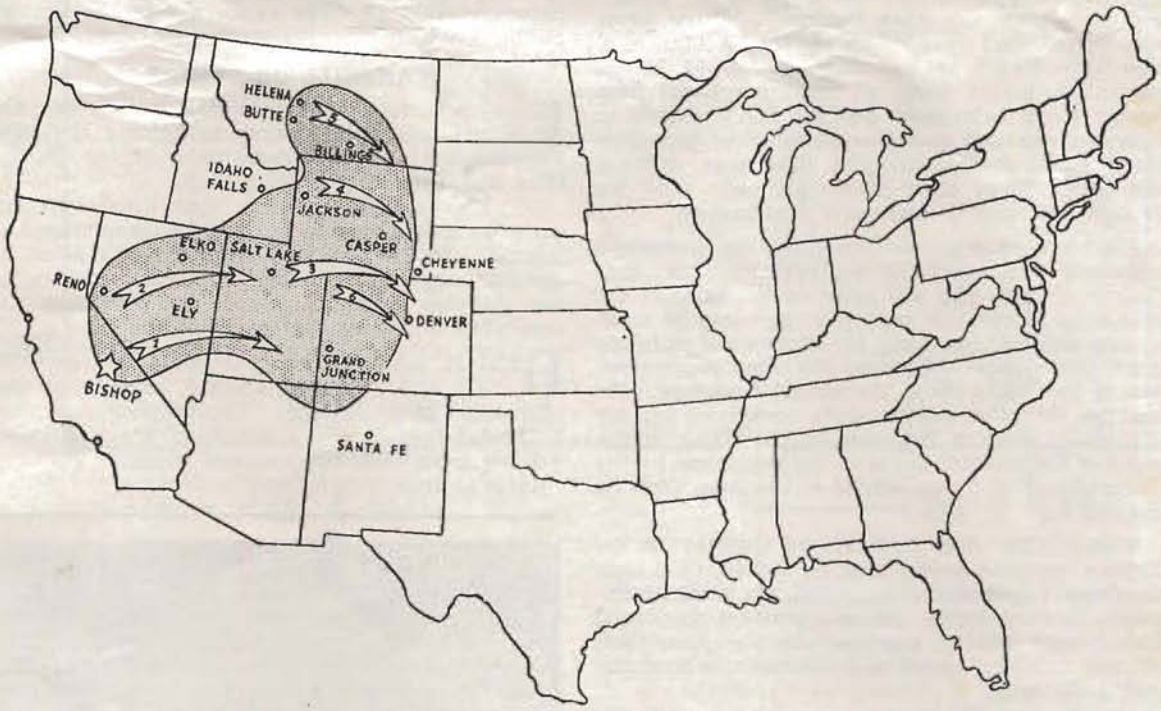
ROBERT B. MEAKIN

SOARING activity in Utah centres in Salt Lake City, where the Utah Soaring Association has its headquarters. At the present time groups there fly a 'Pratt-Read,' 'Schweizer TG-3,' and an 'Albatross Stearman,' tow planes are used for the two-place ships.

All the types of soaring conditions are found to exist in and around the Salt Lake Valley. For over twenty-five years now, ridge soaring has been carried on at our old standby site twenty miles south of a town called the 'Point-of-the-Mountain.' With a fine runway over a mile long, right at the base of the Wasatch Mountains, glider pilots take to the air on ridge currents in great style. The tow planes are landed right on this sandy but firm landing strip. Of course auto tow has, and still is, used for launching smaller ships.

After a tow up to 800 feet from the 'Point' the pilot turns in close to the big hill and rises to 3,000 feet above take-off, and then strikes northward to soar up and over the lofty peaks 10,000 to 12,000 feet high. Thermals and ridge currents lift the glider up this Wasatch Range, whose higher peaks are capped with snow most of the year. Also, the

LENTICULAR CLOUD REGIONS, Western United States. Approximately 1,500 miles long and 800 miles wide. Mountain ranges are numerous, and generally parallel a north-south direction, and are at right angles to the prevailing west winds aloft above 15,000 feet.



REGION 1. Bishop, California, east 700 miles across desert regions in Nevada, Utah, and Colorado. Valley elevations 3,000 ft. to 5,000 ft. Mtn. Peaks to 12,000 ASL.

REGION 2. Reno, Nevada, east 500 miles to Salt Lake City, Utah, across mountainous desert regions. Valley elevations 3,000 ft. to 4,200 ft. Mtn. Peaks to 11,500 ft. ASL.

REGION 3. Salt Lake City, Utah, east 600 miles across mountainous desert regions, to Cheyenne, Wyoming. Valley elevations 4,000 ft. to 5,900 ft. Mtn. Peaks to 13,000 ft. Very high west winds aloft.

REGION 4. Jackson Hole (National Park), Wyoming, south-east 400 miles to Denver, Colorado, across semi-desert regions. Very mountainous. Peaks to 13,000 ft., ASL. High winds.

REGION 5. Butte-Helena, Montana, south-east past Billings, Casper, to Denver, Colorado, across semi-desert regions. Valley elevations 3,500 average. Peaks to 12,000 ft.

REGION 6. Rocky Mountain area, east from Utah to Pikes Peak. (14,000 ft.). High winter winds.

Lenticular cloud formations have been observed in all these regions at various times through the year. U.S. Weather Bureau survey to be started soon over year's period on Lennies.

range directly across the valley to the West some 15 miles, offers nearly equal beauty and soaring conditions. It is also along the latter range that we soar over the great open-pit copper mines at Bingham, Utah. Some mighty interesting thermals pop up out of Bingham Canyon, old 'Copper Canyon' itself.

Another type of soaring found in the valley is just regular flat-land thermal flying. Here we use an abandoned airport right in the centre of surrounding wheat lands. Flights from auto tow right up to the cloud bases are not uncommon—ten to fifteen thousand.

Finally, for diversion, the gang sometimes travels out to the famed Bonneville Salt Flats for desert soaring. We have found conditions on the flats similar to the California desert sites. Best lift is found along the edges of the vast salt desert.

Since hearing so much about the Lenticular soaring condition at Bishop, we pilots in Utah have naturally started to study them, and cast anxious glances at our own skies. The 'Lennies' are there all right. The writer has observed lenticular formations from the Nevada line, east to Salt Lake City, on to Cheyenne, Wyoming, and north at Jackson Hole, Wyoming, and Yellowstone Park. The trail seems plainly evident now, from Bishop to Cheyenne. Those ground speeds through Wyoming will sure push a sailplane along towards the East too!

Scuttlebutt Department: I hear that Les Stanhilber will be checking in at an early S.C.S.A. meeting. She will be based in Los Angeles with Western Air Lines, so the story goes. Now there is a gal who is really eager to glide. The Salt Lake gang didn't dare suggest staying home on a week-end with Les about. 'Look at all those thermals going to waste. What time should I be ready in the morning?' We need plenty more glider pilots like Les!

Frank Kelsey is recovering his 'TG-5' this winter. I believe he is planning to be ready for the lenticular season in Salt Lake this year. When any of you pilots fly or drive through Salt Lake drop in and see brother Kelsey. He will be found at the Municipal Airport, making money hand over fist under the banner of Kemp & Kelsey Airservice. Frank has been active in gliding for so long it hurts—about 25 years!

The writer viewed this year's National Contest at Grand Prairie, and was certainly impressed. Mr. Stiglemeier of the S.C.S.A. did a fine job of conducting those Sunday shows which really gave the crowd some thrills. Too bad Herman received such a small 'gold beer cup,' and such a large 'doggie-sitters' ten-gallon hat as a reward for services rendered. The T.S.A. should have seen to it that the award was at least the other way around . . . ten-gallon gold beer cup!

I had the pleasure of crewing for Capt. Shelley Charles at the meet. The beautiful 'Weihe' sailplane goes a long way toward perfection in design and performance. Shelley says the correct pronunciation for this ship is 'Vi-hee.' I didn't argue with him. Incidently, that huge trailer for this sailplane would rent 'unfurnished' for fifty bucks a month here in Los Angeles. It is fully covered with plywood sides and rounded top, and has permanent mounting devices on the inside to secure the glider for any type of transportation. And on the road it trails like an 'opium-smoker's dream.' Amen!

Kim Scribner's glider-acrobatic display was spectacular indeed. His flight around the perimeter of the airport at about three hundred feet, inverted-on-tow, left the crowd gasping. Kim also flew through some nifty outside loops, rolls, chandelles etc. The man next to me with the seeing eye dog had a satisfied grin on his face as Kim put on his show. I don't know yet which one was blind, the man or his dog, but between them they sure knew what was going on up there. Man, that Kim sure flew low alright!

Here is an angle on how Kim did it. All this coverting through space took place *after* Kim had *kissed* the First Lady in Waiting, adjusted and . . . did it all over again because one of the cameramen forgot to load his camera. Also (whew!), the gals were clad very nicely in what could be called 'bathing suits,' into which they had been poured only minutes before. All this comes under the heading of acrobatics! Oh me, what a display; er, I mean contest!

—From "*The Thermal.*"

S/Ldr. J. C. C. Taylor, R.A.F.V.R., Aviation Manager of Shell Mex and B.P. Ltd., and District Gliding Officer, 61 Group Home Command, leaving Buckingham Palace after receiving the M.B.E. He is accompanied by his daughter, Miss Anne Taylor, on his right, and Mrs. Taylor.

No. 3

WOMEN BEHIND GLIDING

SCOTLAND

BY some expressive act such as the retrieval of the Stone of Scone from Westminster Abbey, or by its many issues of varied hue banknotes which no good English shopkeeper will accept, Scotland attempts to assert its claim to being a separate nation from England, and the rest of them. And despite the three hundred years of peace and brotherly love that have passed since we became a minor part of Great Britain, several sociological differences still stand out to back this claim : the most important of these, from the point of view of this subject, being that of the Subjugation of Women. Relative, that is, to England. It is one of the more startling features of life here that women are apparently quite happy to accept a subordinate, often domestic, role. As a small example, it can be pointed out that it simply is not done to take a lady or even a woman into a pub. An expensive hotel lounge, of course, but never a pub. Nor does a Scotsman dream of accomplishing such humdrum chores as the washing up. It is not a lack of chivalry, but rather a lack of tradition in these things. As a result Scottish wives do not think twice of losing their menfolk weekend after weekend to the mists of Balado and the mysteries of flight. Scotswomen as a whole are not interested in gliding ; they have accepted, without a struggle, that gliding is a man's world. And more's the pity, because there is much to be done in the cookhouse and in our draughty hut on Bishophill, not to mention the opportunities for flying.

It will be appreciated, then, that we have no great number of women members, but those we have make up in colour for their lack of quantity. Lyda Korda, for example, from the United States out of Budapest, dark haired and swarthy with a dozen medallions jingling from her inevitable black beret. We are not quite sure at what stage her flying is, but we know she is a fixture, a weekend regular who contributes a great deal to the Club and gets an enormous kick out of doing so. Generally she stays the night at Balado, where the night frost creeps down from the Ochils, and the blankets stiffen with rime or become invisible under fine snow. Only women of an Amazon breed could stand up to these rigours.

Claire Russell, characteristically one who writes with blood-red ink, has stylistic fashions which are an acknowledged morale booster in our world of tattered clothes and muddy boots. But her ability is not merely confined to glamour—she is indispensable to our engineering maintenance.

Then there is Marjorie Brodie who has received more publicity than any other member of the Club. For Marjorie can justly claim to be the only Air Ranger in the country who has a ' B ' certificate, and as such is the especial pet of the Air Ministry and the *Daily Mail*, not to speak of less well known public institutions.

There are others who come occasionally and whom we are always glad to see. Girls such as Hilary Knight, who achieved fame and fortune by landing the ' Tutor ' in the middle of one of our scrap heaps, and didn't even scratch the paint. Pip Barrington, who, once upon a time, came to rest her ' S.G. ' on the top of a wall ; Marrianne Smith, now at Redhill, Innes Ritchie and Helen Menzies, who does part-time work in order to finance her gliding.

DOROTHY LAWSON

But closest to our hearts is, without doubt, Dorothy Lawson. She has been the Feminine Influence at the club for as long as we can remember, which means for the post war years.

Whether it was due to the fact that she spent her formative years in the U.S. or whether it was that she was encouraged to join by husband Bill, we do not know. But join she did, and while Bill became one of the steadiest and most vituperative pioneers of the actual gliding and maintenance, Dorothy, with suitable support, proceeded to humanise and homeify the Clubhouse and airfield. With tact and dangling cigarette she spreads peace and goodwill. But the best of all is to see her sitting in the sunshine

(*Continued on next page*)

SWISS AERO CLUB'S HALF-CENTENARY

THE Aero-Club of Switzerland celebrated its Jubilee on March 31. Founded at Berne in 1901, it started life with a membership of 72 whose activities, under the chairmanship of Colonel Schaeck, were mainly concerned with ballooning.

At the inauguration of the F.A.I. in Paris in 1905, Switzerland was represented by the AeCS. As time passed and the Club's eventful history unfolded, the balloonists were joined by the powered aircraft and gliding enthusiasts and by the model aircraft constructors, with the result that the Club today has 33 branches with a total of some 5,800 members.

The development of flying in Switzerland is largely bound up with the history of the Club. The balloonists twice won the Gordon Bennett Race, which contest was thrice held in Switzerland. It has been a long journey from the first attempts at flying with power-driven aircraft and the flight over the Alps by Oskar Bider, via the four International Air Meetings at Dübendorf, to amateur touring aviation as we know it today. Swiss gliders have demonstrated a high degree of skill, and Samedan, as a centre of Alpine gliding, enjoys an international reputation. The model aircraft flyers have scored outstanding successes abroad in a great variety of contests.

To commemorate its half-centenary, the AeCS held an official celebration at Berne on March 31. In addition to the Spring Congress at Lucerne on May 26 and the local flying meetings, it is intended that the International Round-Switzerland Flight (August 12—16) and the Flying Week at Saanen-Gstaad (August 12—18) shall play a conspicuous part in spreading the gospel of flying and promoting contacts in a spirit of good fellowship.

(*Continued from previous page*)

of a summer's day, with blue eyes atwinkle, handkerchief on golden hair and with perhaps a time-keeper's sheet in hand.

Dorothy collected her 'A' and 'B' certificates quickly, but, as can sometimes happen at the S.G.U., she had a long and weary wait for her 'C'. Eventually last summer, opportunity knocked, and she soared from Bishophill giving a performance that radiated that 'how-I-have-waited-for-this-day' feeling.

Apart from gliding Dorothy has much to do. The catering is largely her department, in conjunction with those kindly souls, Robert Parker and George Whyte. Furthermore, she is one of the joint secretaries of our summer courses, and has much to do with their great success. Last but not least, she produces her patent-applied-for Thermal Hat, which now decorate not a few thinning heads of hair.

Our lament is that we have not more women members; their grace and charm and femininity does much to make the Club atmosphere something that is pleasant for all who enter it. It is a pity that their role seems to be confined to this in most of the Clubs of the country, but perhaps the happy day will dawn when all this will be changed. When they can add to flying what they have so successfully added to club life.

THE BRITISH GLIDING ASSOCIATION

Points from the Chairman's Report, 1950.

Membership

Full Members: thirteen, and eighteen Associate Members. New Full Members: the Royal Naval Gliding and Soaring Association, the Royal Air Force Gliding and Soaring Association and the Air Training Corps. New Associate Members: Hereford Gliding Club and the Blackpool and Fylde Gliding Club. Ceased Membership: Shoreditch and No. 12 Group. Seven Private Owner Members and sixteen Individual Associate Members, none of whom are represented on the Committee.

Council and Committees

The following Committees and Chairmen were set up during the year:

Committee of Management and Finance, P. A. Wills, C.B.E.; Flying Committee, E. J. Furlong, M.B.E.; Instructors Panel, Mrs. A. C. Douglas; Accident Analysis Panel, Group Capt. Paul, D.F.C.; International Contests Committee, P. A. Wills, C.B.E.; Research Committee, J. W. S. Pringle, M.B.E.; Airworthiness Committee, C. L. Faulkner; Technical Committee, Professor A. A. Hall, M.A.; High Performance Two-Seater Progress Committee, P. A. Wills, C.B.E.; 1952 World Championship Preliminary Committee, P. A. Wills, C.B.E.; The A.T.C. Scholarships Committee, Mrs. A. C. Douglas.

Accident Analysis Panel and Instructors Panel

Evidence begins to show that many Clubs have made progress in the tightening up of technical and operational control in the campaign towards a reduction of accident rates. The Accident Analysis Panel have not drawn up a separate report, because their work is reported quarterly.

Operations

During the past year Member Clubs have flown a total of 7,025 hours with 42,232 launches. Adding the flying done at the National Contests, the total hours are 7,560 and the total launches 42,518. These figures do not include the B.A.F.O. Clubs, the A.T.C., and the R.A.F. Gliding and Soaring Association.

The Association has issued during the year (previous year's figures in brackets, 1,604 'A' Certificates (1,764); 644 'B' Certificates (493); 242 'C' Certificates (331); 47 Silver 'C' (67); 2 Gold 'C' (3).

Finance

The Administration Accounts for 1950, showing a reduction in costs and an increase in most of the principal items of revenue, have provided a surplus. The revenue from Certificates only exceeded the Budget estimate by a very narrow margin and unfortunately the *downward trend* seems to persist. Issues of 'A', 'B' and 'C' Certificates in 1950 were 4% less than the previous year and Silver 'C's' were twenty less. The sale of publications

becomes an increasingly important source of revenue, but the Individual Associate and Private/Group Owner Membership classes have not come up to numerical expectations. A very helpful and much appreciated donation of £50, in addition to a contribution towards office expenses, was made by the Derbyshire and Lancashire Gliding Club from the profits derived from the National Gliding Championships.

The Royal Aero Club loan was reduced to £200 during the year and since the end of the year a further £100 has been paid off. We are able to do this while still leaving a balance in our accounts sufficient to meet routine expenses and allow a margin for contingencies. We are deeply grateful to our friends at the Royal Aero Club for their valuable help and their forbearance.

The Kemsley Flying Trust

The Kemsley Flying Trust continues its invaluable support to the movement. A total of fifteen Clubs have been granted loans totalling £15,030, and it is extremely gratifying to note that repayment to date totals £2,395. Further application for loans totalling £6,000 are currently being considered.

In the field of Airworthiness the Trustees have agreed to underwrite the scheme for an examiner of B.G.A. Approved Inspectors which is more fully described in the Technical Committee Report.

In the high performance field, the Trust enlisted Ministry of Supply support and jointly contributed a sum of £8,500 for the design and construction of three prototype high performance two-seater sailplanes based on the winning design in the 1946 B.G.A., Duke of Sutherland's Design Contest. It is hoped that this sum will be repaid from royalties and the sale of the prototypes.

Additionally the Trust underwrote the finances of the National Contests and British participation in the year's World Championships. Once again prizes totalling one hundred guineas have been given for the Kemsley Winter Cross-Country Competition, and donations to the prize fund of the year's National Contests were made.

Lastly, Lord Kemsley has presented a magnificent Cup to be awarded to the Champion Club Team at future National Championships.

Work of the Council during the Year

An almost equally difficult matter handled by the Council was in connection with the 1950 World Championships. *We did badly*, but arising from that and from the general results achieved, I believe we can feel that measures since taken will produce better results in the future. A task which has been nearly carried to a conclusion has been the development of our own C. of A. Scheme. It is possible that the original scale of fees laid down may prove inadequate to meet the expenses, and some increase may be essential.

Additional work done during the year included the handling on behalf of all affiliated Clubs of the Petrol Tax rebate; the obtaining from the M.C.A. of important concessions regarding the counting of gliding hours towards Power Licenses; and the initiation and control of the National Contests—again held by the Derbyshire and Lancashire Gliding Club.

P. A. WILLS.

Report of the International Contests Committee, 1950

This Committee consisted of P. A. Wills, C.B.E., (Chairman), Mrs. A. C. Douglas, and Group Captain G. J. C. Paul, D.F.C. Its task was an exceedingly difficult and thankless one, but out of it all we may have reached a turning point for a better future.

Much has already been written on the 1950 World Championships and our part in them, and it is not desired to go over the ground again.

Team selection proved a difficult and invidious problem as no generally accepted method of assessing the relative skill of our top-line pilots existed. Steps since taken are well calculated to simplify this problem in 1952. A system of week-end matches has been devised, and the form of the 1951 National Contests basically altered. Both these changes are calculated to show up more clearly who are our best Contest pilots.

Finance

From the money donated towards the 1948 International British Entry at Samedan, a sum of £181. 1s. 3d., remained unspent. The Council decided that this sum be made available towards our 1950 Entry, but in the event only £115. 8s. 2d., was spent. The balance remaining £65. 19s. 1d., is available for our 1952 effort.

It may be of interest to append the cost per team of the year's entry.

	£	s.	d.
Team No. 1—P. A. Wills	94	19	9
,, No. 2—L. Welch	119	14	7
,, No. 3—J. Forbes	111	9	7
,, No. 4—P. Mallett	143	8	11
General Expenses	15	14	8
	485	7	6

It will be seen that the participating personnel and their supporters contributed no less than £369. 19s. 4d.

However, our poor showing was partly due to the necessity of economy: we could not afford to go to Sweden for a week or a fortnight's preliminary practice, and some of our retrieving equipment was inadequate. We must not again be handicapped in this way.

Recommendations

On our return from Orebro the following recommendations were made for the future:

i. Standards for the selection of the next International Team should be laid down and promulgated by the end of the year.
ii. Development of the air/car radio should be actively pursued.
iii. Future National Contests should (a) last a fortnight (b) include an Individual Class in which all candidates for the International Team should enter (c) consist of task flying, the different contests to include: unrestricted

distance flying (with altitude). Goal Flying (preferably with altitude); goal races, and if possible, out-and-return races (d) If possible take place at an airfield with aero towing.

iv. Our next team should get in more practice before the Contest, including a week or preferably a fortnight, of intensive flying in the actual holding country immediately before the Contests.

v. The development of the new 18 metre single-seater and the high-performance two-seater must be actively pursued.

vi. It appears inescapable that, arising from the above, more outside financial and material support than was available this time will be required.

vii. Early consideration should be given as to whether we (a) wish, and (b) could offer, to hold the 1952 World Championships in this country.

It will be seen to what degree steps have now been taken or are being taken to implement these recommendations, and our future prospects may be regarded with a tempered optimism.

PHILIP WILLS,
Chairman.

Research Committee

The Committee has held two Meetings during the year. Its main concern at these Meetings has been to decide the best use to be made of the money standing to its credit in the Research Account. It was decided to recommend an annual prize, to be awarded to the individual or organization which was held to have made the greatest Technical contribution to British Gliding during the year. This recommendation was accepted by the Council and details are now being worked out.

Addition to Library—Vg Recording.

Among other interesting books and pamphlets added to the library is a report on work carried out at No. 1 Test Flight Group. This is summarised as follows :—

" A Vg recorder reading from 0—150 m.p.h. and from +6 to —4 g was installed in a standard ' Olympia ' glider.

The loads experienced in normal club flying and soaring were low, while those found during aerobatics reached a maximum of 4.9 g at 100 m.p.h. and a minimum of —0.8 at 75 m.p.h. This result was the only one which was slightly outside the flight envelope, all the others being inside the flight envelope of the ' semi-aerobatic ' category."

J. W. S. Pringle, M.B.E.,
Chairman.

Flying Committee

The U.K. Local Goal Out-and-Return Record was broken twice :—

16.4.50 by G. H. Stephenson—126.5 miles.

14.7.50 by J. A. C. Karran—141 miles.

On the 8th September, 1950, Flight Lieutenant Bedford, A.F.C., did his Gold ' C ' Height and Distance and broke four Height Records in one very excellent flight :

British National Absolute Altitude Record; U.K. Local Absolute Altitude Record, 21,340 feet.

British National Gain of Height Record; U.K. Local Gain of Height Record, 19,120 feet.

E. J. FURLONG, M.B.E., D.F.C.,
Chairman.

Technical Committee

It will be recalled that last year, the Airworthiness Committee was appointed, and performed some of the functions of the Technical Committee until May, 1950. The Technical Committee was then reconstituted, its terms of reference being :—

a. Supervision of the issue of Certificates of Airworthiness. b. Supervision of the approval of inspectors. c. Consideration af all technical problems.

The Committee now continues the work of the Airworthiness Committee and includes C. Faulkner and G. O. Smith, founders of the scheme. A revised C. of A. form has been drawn up and is now being issued.

It has initiated a scheme for the appointment of an examiner of Approved Inspectors who will ensure, by visiting the Association's Inspectors, that the standards of glider airworthiness are maintained at a high level. The Committee is at present considering the procedure for the issue of C.'s of A. for privately designed and constructed gliders, and requirements for the approval of Test Group pilots.

To date, 85 C's. of A. have been issued and 33 individuals and 11 firms have received B.G.A. approval.

Professor A. A. HALL, M.A., F.R.Ae.S.,
Chairman.

Instructors Panel.

This year 12 B1; 21 B2; 2 A Categories have been granted.

At the present time seven civilian clubs have instructors with categories, and nine active civilian clubs have not. Several of the latter have not approached the B.G.A.

Mrs. A. C. DOUGLAS,
Chairman.

SOARING IN FRANCE—(*Continued from page* 79)

2,503 men have been trained and 508 among them have earned a badge.

During winter, three S.A.L.S. Centres : Challes les Eaux, Saint Yan, and Etampes, have received numerous military pupils to train in light planes, and it was surprising to see how Challes les Eaux, the Mecca of noiseless sailplanes, had become under the same organization, an active Centre for motor planes.

These signs prove the new orientation of Soaring in France, more and more directed towards military purposes with the creation of the Atlantic Armée, and reorganization of the Air Army. By this indirect step French soaring plays its own part to European Defence, but we hope that in the Free European sky, sailplane pilots will always be able to execute their peaceful performances.

GUY BORGÉ

ULTRA LIGHT AIRCRAFT

Extracts from February Bulletin

DESIGN SUPPLEMENT

by Mr. Alan Stratford, B.Sc. (Eng.), A.F.R.Ae.S., Chairman, Design Sub-Committee.

Chilton Aircraft Redesign.—Students of the College of Aeronautical Engineering at Redhill Aerodrome, Surrey, are at present engaged in the redesign of the famous ' Chilton ' Ultra Light aircraft to take the new ' Coventry Victor ' flat four aero engine which it is hoped will have completed its development flying during the Summer. Mr. J. R. Barnett, Chief Engineer, has sent us a progress report and considerable advance seems to have been made in the past few months.

To date drawings have been completed of all outer wing details including ribs, front and rear spars, ailerons, outer flaps, wing tip skinning of aileron controls. These drawings are now ready for issue to the shops. The undercarriage has been redesigned and is at present in the detail design stage. A fresh CQ estimation has been computed and it is stated that it may be necessary to move the pilot and luggage compartment aft.

Propellers for U.L.A.—Until such time as an ultra light jet engine, such as the ' Turbomeca Pimene ' is available in Great Britain, the supply of propellers for ultra light aircraft must be a matter of prime importance.

In order to assure an adequate supply for amateur constructors and owners, we have approached the most experienced manufacturers in this country who have offered every assistance in the way of advice and favourable terms of supply. It is hoped therefore that at an early date it may be possible to announce a very favourable price for a standard propeller of simple design and construction that could be made available at 2-3 weeks' notice.

At the present time it is a requirement of the Air Registration Board that 50 hours' endurance running must be completed before type approval of a new propeller design. Since few of us possess a spinning tower or are prepared to do airfield circuits for 50 hours to obtain the necessary approval, this development is best left in the hands of the industry which is fortunately public spirited enough to perform the job at little more than cost price.

One member of the Association, however, Mr. Colbourne of South Farnborough, Hants, has designed his own wooden propeller and the Design Sub-Committee have undertaken to render what assistance they can in gaining the necessary approval from the A.R.B.

The Coventry Victor ' Neptune ' Engine.—Good progress is being made in the development of this new engine upon which so many hopes are now pinned. It is hoped to develop over 40 b.h.p. at 3,000 r.p.m. in the prototype version for a weight of about 190 lb. The early Spring is the time it is expected to commence development flying with this engine installed in the ' Kitten Airframe ' manufactured by the Dart Aircraft Co., and arrangements are already being made for a mock engine to be sent to Dunstable as an aid in the final power plant installation design. The Kemsley Flying Trust have sponsored the flight development programme—which will be undertaken by the Association in accordance with the requirements of the A.R.B.

The smoother running of a flat four and the reliability of an engine which has already operated in large numbers over a long period are in themselves a promise of the popularity of the future flying ' Neptune.'

FLIGHT ASSESSMENTS OF U.L.A.

By John Fricker, Public Relations and Test Pilot, U.L.A.A.

In this series it is hoped to review the handling characteristics of all the ultra-light types flying regularly today. The aircraft will be assessed partly on the basis of the A.R.B., flight test schedule for ultra-light aircraft, and partly from a more general aspect of interest to actual or potential operators of the types.

No. 1 The ' Dart Kitten '—Perhaps it is only natural to start this series with a type on which much of the future of the Association depends. It is likely that the ' Kitten ' will be the mainstay of the forthcoming home construction scheme, being, in the first place, the most advanced general-purpose single-seater in the scheme, although of the simplest possible conception. In addition, it has a remarkable performance, while its structional strength at normal weight is in the A.R.B. semi-aerobatic category.

The ' Kitten ' was designed in 1937 by Mr. A. R. Weyl, A.F.R.Ae.S., who is at present Chairman of the Research Sub-Committee of the Association, and who takes an active interest in design and constructional problems of ultra-lights. At present, there are two ' Kittens ' flying. The aircraft tested, ' G-AEXT,' actually flew for between 4-500 hours before the War, during which an engine change was made after damage through loss of oil pressure over the Irish Sea during the Isle of Man air race. It was stored during the War, but its wings and tail were destroyed by fire. The other ' Kitten ' is ' G-AERP,' owned by Mr. W. S. Ogilvie, and flown from Broxbourne. A further ' Kitten ' is being constructed as a test-bed for the new 50 b.h.p. Coventry Victor ' Neptune ' engine.

Construction of the ' Kitten ' is of wood and fabric throughout. The cantilever wings have detachable outer panels, with a plywood-covered leading edge forward of the main spar, and a rear spar to which the ailerons are attached.

Normal primary instruments are fitted in the cockpit, which is large and comfortable. Below the throttle lever, on the port side of the cockpit, is a longitudinal trim lever, which operates in the logical sense in a ' cheese-cutter ' quadrant, and applies a spring bias to the elevator controls. Static friction of all controls is small, but is to be decreased by a

more satisfactory control hinge design, together with binding friction under load. None of the control surfaces, except the rudder, are aerodynamically balanced.

The undercarriage comprises two cantilever legs fitted outboard of the centre section, with shock-absorption by simple rubber blocks in compression. The present wheels, being too narrow and with smaller tyres than the previous light alloy wheels, as well as being slightly toed in, give excessive ground friction, which with the fixed tail skid necessitate high revs. to get the aircraft moving on grass. But this has the advantage of giving good rudder control on the ground, and taxy-ing is straightforward if done with care. To prevent the tailskid from digging in and restricting turns on the ground, the stick is best held central while taxy-ing. There is no danger of nosing over—there is a 5½ lb. ballast weight in the tail.

At the time of testing, with a gross weight of between 775-800 lb., the ' Kitten ' had its C.G. position 18.7 ins. aft of the centre-section leading-edge.

With trim central, the ' Kitten ' gets away very quickly on take-off, the controls becoming effective at a very low airspeed. With a full load, in no wind, the take-off was measured in 1937 at 90 yds., but it is now about 140 yds., on coarse grass. There is no noticeable trim change after take-off, or indeed, under most conditions of flight, and the ' Kitten ' may be climbed away at 60 m.p.h. I.A.S. Because of the present unsatisfactory engine/airscrew combination and increased weight, the initial rate of climb is moderate at 450 ft./min.

During the climb, stability is positive, as it is while cruising, and stick forces at all times retain the lack of magnitude that is one of the most endearing features of the ultra-light. At 2,200 r.p.m., the cruising revs., when the engine is delivering 24 h.p. (66.7% power), the continuous speed is 83 m.p.h. I.A.S. Normal Position Error Correction is about plus 3 m.p.h., but has yet to be accurately determined. Consumption at normal cruising speed is about 3 gals./hr.

Despite its low wing loading, it handles more steadily in gusts than many other ultra-lights. The plain ailerons, without aerodynamic or mechanical differential, are the least effective controls in cruising flight and the rudder appears a little over-sensitive. Control harmony appears to improve in turns, and stick free, the aircraft will fly itself round without slipping or skidding. Turning to port is slightly easier than turning to starboard, but there is no difficulty in changing direction in turns.

At full throttle, 2,400 r.p.m., the maximum speed appears to be about 90 m.p.h. T.A.S. Speed limit is at present 120 m.p.h., because of the A.S.I., limitations, but the aircraft behaves normally in straight flight and steep turns at that speed. No aeroelastic phenomena is observed, and the longitudinal stability shows itself positively, stick free, with very well-damped oscillations.

Trimmed power-off at 60 m.p.h. It has a flat angle of glide, but remarkably enough for a low-wing monoplane sideslips very comfortably. Approaching the stall, slight tail buffeting is noticeable—a useful feature attributed to the lack of wing-root fillet. Pulling the stick further back will give a high rate of sink on even keel, and eventually either wing slowly drops. This is caused by the inequality of lift from the unstalled tips, which have a pronounced change of aerofoil section in their design.

The dropped wing may be picked up by aileron, lateral control remaining throughout, but this will fully stall the wing, and the nose of the aircraft will drop following the change of downwash over the tail. Flying speed is recovered in about 100 ft.

No spins were tried as the ' Kitten ' is not yet cleared for aerobatics, but Mr. Weyl is of the opinion that the machine cannot be made to spin under other than aerobatic conditions.

For landing, the elevator is effective at checking the descent and gets the tail down firmly during the short float. Because of the low landing speed, the run is short ; there is no tendency to bounce and no difficulty in keeping the aircraft straight.

PERFORMANCE WITH ECONOMY

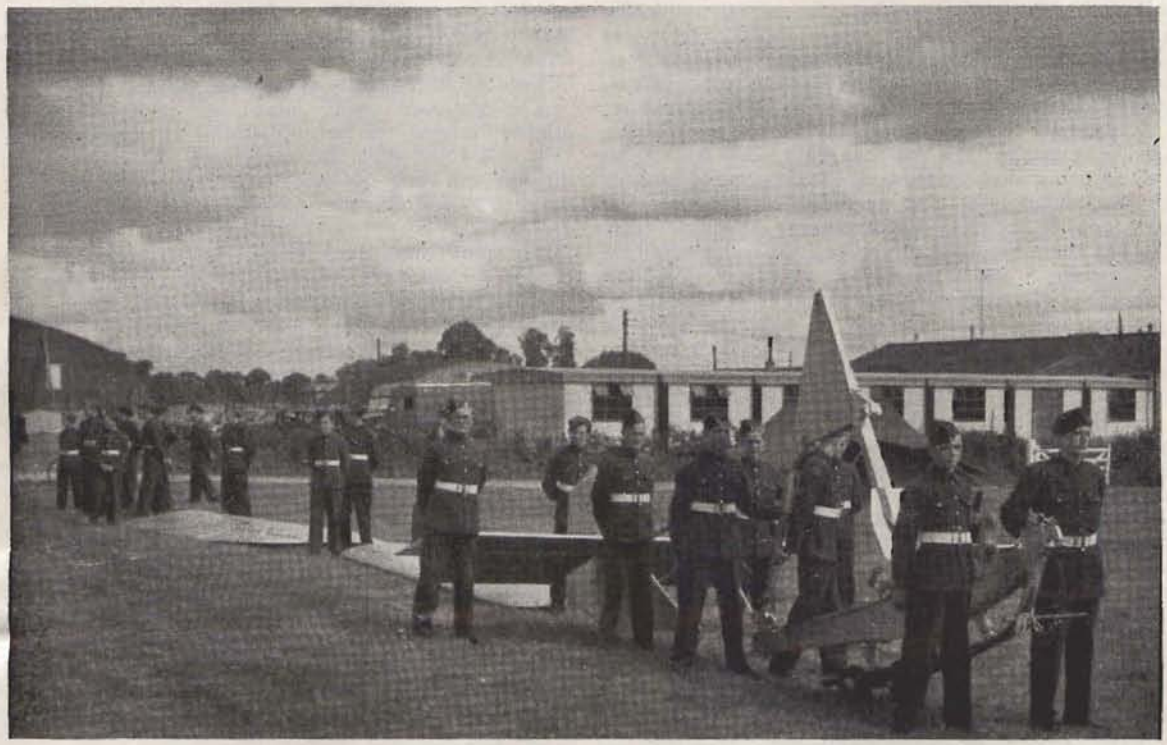
Taken all round, therefore, the ' Kitten ' couples performance with economy and good handling qualities, which makes it suitable for the student pilot to qualify for his licence with the minimum cost, or for sporting or touring flying. As soon as the Type C. of A. has been obtained, the ' Kitten ' will be offered in kits of parts comprising all metal fittings and a complete set of wing ribs for roughly £235, less engine and airscrew, which would cost about £60 and £18 respectively.

PROFICIENCY BADGES

The Association has now decided on the conditions to govern the issue of its proficiency badges. A bronze wings badge may be given if members can produce evidence of having completed a minimum of five hours' solo on recognised ultra-lights ; they must also undergo a practical test of flying skill and technical examination. A blue enamel wings badge may be obtainable by members who have completed a minimum of 50 hours' on ultra-lights and who hold a Private Pilot's Licence. A silver wings badge will be awarded to those who have completed 100 hours' of flying exclusively on ultra-lights ; of this total, however, 50 hours may have been flown in gliders of not more than 1,200 lb. a.u.w. Aspirants to silver wings rank must also produce a certificate of ' competency to perform aerobatics ' in suitable ultra-light aircraft, and must prove their ability to carry out routine instructions and minor repairs in accordance with manufacturer's manuals.

The Association's highest award, a gold wings badge, will be given for flights which, in the opinion of the executive committees, are of outstanding merit. The first of these distinctions is being awarded to Mr. Peter Gooch for his flight in an ' Aeronca ' in July, 1949, during the Spanish Rally. The honour of holding the first silver badge is to go to Group Captain E. L. Mole, whose experience and flying time on numerous ultra-lights qualifies him for this award.

OVER 100,000 A.T.C. GLIDER FLIGHTS DURING 1950



A.T.C. GLIDING IN 1950

Although severely handicapped by the bad weather, A.T.C. Gliding Schools carried out a total of 105,614 launches and trained 1,474 cadets to the international 'A' certificate standard during 1950. Of these cadets, 252 received additional training and qualified for the 'B' certificate, and 3 cadets qualified for the 'C' certificate.

The 'B' certificate is presented to the cadet who manages 2 circuits, one right and one left, each of not less than one minute's duration, and the 'C' certificate is presented for a soaring flight of not less than 5 minutes from the point of release.

A.T.C. Gliding in 1950 was marked by the introduction of new equipment, including a Sedbergh 'TX Mk 1' two-seater glider in each school, which made possible the more advanced training of cadets, new replacement winches and retrieving vehicles, the introduction of instructors' courses at an R.A.F. operated instructors' school at R.A.F. Detling, and A.T.C. participation for the first time in the British National Gliding Contests.

During the year the Instructor School carried out 5,682 launches, flew a total of 673 hours 31 minutes, and passed out 304 students. The best results from an A.T.C. school was 72 'A' certificates and 15 'B' certificates for 5,307 launches, carried out by No. 89 Gliding School at Christchurch, Hants.

Picture shows a team of cadets awaiting the word of command to erect and launch an 'Eon' primary glider on the airfield at White Waltham, near Maidenhead.

GENTLEMEN,

Briefly, the club I'm connected with, the Glider Club of the Aeronautical Engineering Society, Massachusetts Institute of Technology, is the only active group in all of the 5 New England States.

We have all of the airworthy equipment in this corner of the country too, all 'Schweizers'. A '1-7,' '1-19'' and '2-22.' These with our two winches give us a strong nucleus, but weather and school exams. have slowed our operations. In the lull we're forging ahead trying to acquire a piece of land we can call our own, and a towplane, also to be a special tug. The plane I have in mind is a forerunner to the 'Helioplane' (I work for Helio, Inc), an experiment in silencing the lightplane. It has a 105 h.p. 'Lycoming' in a standard 'J-3 Cub,' driving a 4-bladed prop. by a V-belt reduction. It has fighter take-off and climb but can't do over 60 m.p.h., economical on fuel as compared to the standard Stearman 'PT's' and 'BT's' used about the States. But we're poor of course and can only obtain such improvements with outside aid which we're working on.

We have 50 members which give the two-place a real workout, over 600 flights since school started last fall with many bad-weather weekends. More solo students should get the other ships in the air more as we develop.

So we'll look forward to your newsy and *consistent* (of course no dig at 'Soaring') publication.

Sincerely, LLOYD M. LICHER,
Boston, 15, Mass., U.S.A.

CORRESPONDENCE

DEAR SIR,

A letter in your correspondence column by a reader signing himself 'Your Correspondent,' who could simply have used the initials L. A. instead, deplores the existence of the landing wheel on the latest Slingsby high performance sailplane. I must say I heartily agree with him. Years ago I fought against such an excrescence, but the customer will have his way.

I think the arrival of Philip Will's 'Minimoa' in pre-war days, and the fact that my overseas customers insisted on a landing wheel, made me give up the fight. Now the pendulum swings the other way. The atmosphere must be getting thicker!

I have so arranged matters, that a customer can purchase a 'Sky' with or without a landing wheel; everybody is catered for.

The original 'Gull IV' type of canopy was used on the prototype 'T 34', but supply became too difficult. We therefore developed a method of making our own canopies at Kirbymoorside and the easiest method gave us a shape similar to that shown on the model which started this correspondence. By the way, if the shape resembles any feature of any person, or creature, or thing already in existence, or in imagination, it is purely coincidental.

I myself prefer a canopy built up out of panels fixed to a light metal frame. This is easily repaired in an emergency, and is not expensive. In fact, if the supply of thermo-plastic transparent sheet does not improve, this type of canopy will have to be used.

Whilst on the subject of excrescences, why do many high performance pilots in competition tolerate the use of the tail trim tab when every little means so much? A few wise old birds have thought of it I believe.

Your correspondence refers to my machine as the '9/34.' This is no longer running; the name is from the initial letters of Slingsby, Kirbymoorside, Yorks.

Yours sincerely,
F. N. SLINGSBY,
Managing Director,
Slingsby Sailplanes Limited.

('9/34' *was a printer's error for 'T/34.' The blame is on 'Your Correspondent's' bad writing and our bad proof reading—Ed.*)

DEAR SIR,

Many thanks for your letter of February 26th. For information regarding French Gliding Courses, candidates must write to:

Service de l'Aviation Légère et Sportive, 24, Boulevard Victor, Paris (15).

They may mention in their letters my name and *Sailplane and Glider.*

Yours sincerely,
GUY BORGÉ.

MY DEAR EDITOR,

I have just received the February copy of your magazine and you expressed in your editorial feelings and thoughts which are similar to those, many of us have out here in the gliding movement, and I thought that I would let you know that if the wisdom you have preached could be put into practice, gliding will go from strength to strength.

With best wishes,
Yours,
H. R. LASCH.
Johannesburg.

NEWS FROM THE CLUBS

BRISTOL GLIDING CLUB

After the usual doldrums experienced towards the end of the year the longer hours of daylight and an occasional sunny day has brought renewed keenness. Early morning parties are once again in fashion, and one Saturday morning recently, flying started at Lulsgate at 07.50 hrs.

Fifty to sixty launches a day are usual when the weather co-operates and some strong winds have made launches up to 1,800 feet possible. R. W. Avery is the year's first soloist and a number of others will soon follow. Soloing is now done on the ' Tutor ', as the ' Cadet ' has been laid up until the summer courses start.

At Roundway soaring has been possible on a few days and J. D. Jones made an interesting half-hour flight late one evening when the surface wind had fallen practically calm.

The winter maintenance programme is now in full swing and the ' Olympia ' is nearly ready for its test flight.

Work at Roundway has been mainly on the cottage interiors. The bar is now nearly operational and the electric light has been extended to the second cottage. A number of weekly camps have been planned during the summer besides the usual long weekends at Easter, Whitsun and August Bank Holiday.

During 1950 we made 4,807 launches with 355 hour's flying. Cross-country mileage totalled 576, and including courses we obtained 67 ' A ' certificates ; 42 ' B 's' ; 11 ' C 's' ; 7 Silver ' C ' legs and two Silver ' C 's' completed.

SOARING ASSOCIATION OF CANADA

The Annual Meeting of the Soaring Association of Canada, sponsored this year by the Toronto Gliding Club was held on February 17 at the Chez Paree Restaurant, Toronto.

From as far away as Calgary in the West and Summerside (PEI) in the East, members gathered for glider talk, reports of committees and election of officers.

Over 50 members occupied the banquet hall as President A. N. LeCheminant brought the meeting to order.

Les Baranowski, Chairman of the Contest Committee, announced that the winner of the Roden Trophy—awarded the club making the most efficient use of its equipment during the year—had been won again in 1950 by the Montreal Soaring Council. The Council had a score of 136.8 points closely followed by the Tenardee Club, Calgary, with 120.8 points.

Following are the scores of the 7 other Canadian clubs :

Soaring Club of B.C. 104.8 ; Trenton (R.C.A.F.) Gliding Wing 104.3 ; Gatineau Gliding Club 102.0 ; Toronto Gliding Club 89.7 ; St. Michael's Gliding Club 71.8 ; Queen's U. Gliding Club 53.8 ; Gull Gliding Club 32.0.

The B.A.I.C. Trophy, donated through the generosity of the British Aviation Insurance Co., was won by Frank Brame of Toronto Gliding Club for his 118 miles' cross-country flight from Oshawa to Kingston on June 4 last, in the Canadian designed and built ' Loudon ' sailplane. Brame was awarded the National Championship for the 3 best flights of the year, which netted him 169 points, all made in the ' Loudon ,' viz :

118 miles Oshawa-Kingston ; 3,200 ft. climb, Ste Eugene Meet, 3 hours' duration, Ste Eugene Meet.

Brame, now attending Cranfield College of Aeronautics, England, will receive a miniature of the B.A.I.C. Trophy by mail ; no trophy has yet been secured for the National Championship. Johnnie Dure, Toronto, was runner-up with 118.7 points.

Frank Woodward, S.A.C. statistical expert said that reports from eleven clubs in Canada revealed that a total of 23 active gliders in Canada put in a total time of 558½ hours, with 4,026 flights. The highest average time per flight was gained by the Gatineau Club's ' Olympia ' with .574 hours. Montreal Soaring Council's ' Pratt-Read ' put in the most time with 81 hours, followed by the Gatineau Club's ' GB,' with 62 hours. The majority of F.A.I. certificates during the year went to the Tenardee Gliding Club, Calgary.

Accurate figures on the Ste Eugene Meet were also given—104 hours, 57 minutes gliding time was put in, with 348 flights and an average duration of .301 hours.

Election of officers for 1951—J. W. Ames of Toronto, President ; Norman Bruce, Calgary, V-President ; Barrie Jeffery, A. N. LeCheminant and D. A. Shenstone, Directors. Jim Kane and Johnnie Dure of Toronto were appointed Treasurer and Secretary respectively.

Considerable discussion took place regarding the meaning of the National Championship. Les Baranowski announced that regulations as laid down involved territorial restrictions only, in that it was necessary that all flights commence on Canadian soil.

Ralph Crandell, ex-Edmonton Soaring Club, and now of Waterloo, Ont., introduced Garth Massey, Instructor-Manager of the Kitchener-Waterloo Flying Club, a group interested in combining light plane flying with gliding. Mr. Massey offered the facilities of his club for the 1951 Glider Meet and, when put to the vote, his proposals received overwhelming approval. It is officially announced therefore, that the Meet this year will be held at the Kitchener-Waterloo Flying Club, with Albie Pow, London, as Chairman of the Meet Committee. The date will probably be the first week of August.

In a surprise move the Executive produced four Certificates of Honour suitably inscribed, which were presented to members whose work has been of the greatest value to the gliding movement in Canada ; spontaneous and vociferous approval of the assembly greeted the presentations, which were as under :

Professor T. R. Loudon, University of Toronto, for his valuable aid and sponsorship of the 'Loudon' sailplane ;

Mr. W. Czerwinski, for his outstanding work in the design of the ' Wren,' ' Robin,' ' Sparrow,' ' Loudon ' and ' Harbinger ' ;

Albie Pow for his achievement as the first National Champion ; in addition Albie received his Silver 'C' badge ;

Vernon Pope, as the Chief Instructor of the club winning the Roden Trophy—Montreal Soaring Council.

During the meeting a wire was received from the Soaring Club of B.C. requesting sponsorship of a West Coast Gliding Meet this summer and offering the services of Fred Simpson, well known B.C. soaring enthusiast, as S.A.C. representative. The 1951 Executive agreed whole-heartedly to both proposals and earmarked a fair sum for the meet, besides appointing Fred Simpson as B.C. Zone Representative.

Winnipeg, Man.

Dick Noonan, long-time S.A.C. member and gliding enthusiast from 'way back has announced that he is building the first 'Schweizer 1-23' to be seen in Canada. He expects to have it completed by mid-summer.

THE ROYAL NAVAL GLIDING AND SOARING ASSOCIATION

At the Annual Meeting of the Royal Naval Gliding and Soaring Association, held at Lee-on-Solent on 15th March, the Chairman, Captain D. McI. Russell, R.N., announced that since the last meeting, the Admiralty had agreed to accord official recognition to the Association's activities, which was a great step forward in the encouragement of the sport of gliding and soaring in the Navy.

He said that two of the Association's branch clubs had doubled their number of flights in 1950 compared with 1949 :—

	1949	1950
Portsmouth Naval Gliding Club ..	950	2,200
Fulmar Gliding Club (R.N. Air Stn. Lossiemouth	550	1,100

The clubs at Eglinton (Gannet Gliding Club) and Arbroath (Condor Gliding Club) had managed 200 and 150 flights respectively, while the club at Stretton (Blackcap Gliding Club) had unfortunately been unable to start activities at all for lack of an instructor, although it had winches, gliders and plenty of members.

The Chairman went on to say that the Association had entered a team (Lieutenant Commander A. Goodhart and Lieutenant Commander (E) N. Goodhart) to represent the Navy at last year's National Gliding Contests. The team had flown the 'Mu 13a' Sailplane (loaned by the Admiralty) into 2nd place out of 29 entries, and as a result, the Association was now the Champion Gliding Club of the country.

He also announced that, in company with the Gliding Associations of the Army and R.A.F., the Association had received a most welcome grant of £1,000 from the Nuffield Trust for the forces of the Crown ; and that the Naval Sports Control Board had been pleased to allot £200 to help with insurance, that very heavy millstone round the necks of all Gliding Clubs.

It was decided that the Association would buy two of the new 'T31' dual training gliders from Slingsby Sailplanes Limited and that they would be allocated, this year, to the Condor and Fulmar Clubs as it was considered that they would be able to make the most use of them, the Portsmouth Naval Club having already obtained last year, a Slingsby 'T21' two-seater with the help of the Kemsley Flying Trust.

In order to encourage branch clubs to accept the Association's gliders on hire it was decided to subsidise insurance of these gliders, and of gliders owned by the clubs, to the extent of ½ of the premiums ; and it was earnestly hoped that the clubs would be in a position at the end of the year, to return to the Association ½ of the no-claim bonuses it was hoped they would receive.

In order to improve the standard of instruction at branch clubs as early as possible it was decided to assist them, financially, to send their instructors to the B.G.A. Instructor's Course which it was understood would be held in April. The Association's Chief Flying Instructor agreed to advise, on instructional methods, any club which was unable to take advantage of the course.

It was agreed that the Association should enter a team this year to defend its title at the National Championships and that efforts should be made to obtain from the Admiralty the loan of more than one sailplane with which to compete.

The Association decided to invite Vice-Admiral C. E. Lambe, C.B., C.V.O., the New Flag Officer Air (Home) to become its President in succession to Admiral Portal, who had resigned on leaving the Home Air Command.

At the end of the Meeting the Chairman said that he hoped the much improved state of the Association's finances and the help that it had accordingly been possible to give to the branch clubs, would be reflected in an all round increase in the sport of gliding at the Naval Air Stations where clubs existed.

THE ARMY GLIDING CLUB

The preparatory work for the coming months continued at Lashan during February.

On Sunday, March 4, we had a warm sunny day, and flew our introductory circuits with our new Resident Instructor, John Free, in the 'T 21 B.' He did not end the day by shooting himself, so perhaps we're not *too* bad.

Over the next week-end, the weather grounded us, and difficulty was experienced in finding the Clubhouse in the fog, let alone flying. A considerable amount of very useful maintenance was the direct result.

The auto-tow car burst into life and produced most encouraging results in acceleration tests, tearing down the runways with its authentic load replaced by ten able, if terrified enthusiasts clinging to what little remains of the original bodywork.

We assure all purists that the tradition of Gliding Club Vehicles (Resident) is fully maintained. It is an unbelievably ugly car, gives promise of many rattles, and makes an appalling noise.

A blue and silver 'Cadet' is now sitting shyly in the far corner of the hangar, proud of its C. of A. and satisfactory initiation to a Lasham launch. Its acquisition completes the sequence of machines through which we hope many new members will graduate this year.

We are running a series of nine courses during the summer, and bookings for some of these have already started to arrive.

(*Continued on next page*)

ROYAL AERO CLUB GLIDING CERTIFICATES

(Issued under delegation, by the B.G.A.) FEBRUARY, 1951

CERTIFICATES - 'A' .. 81 (12891 to 12971 inc.)
'B' .. 30
'C' .. 8
Silver 'C' —
Gold 'C' —

'B' CERTIFICATES

No.	Name	A.T.C. School or Gliding Club	Date taken
7634	Anthony G. Harris	R.A.F. Coll. Lincs.	15.10.50
8852	Brian Huxley	R.A.F. Coll. Lincs.	25.10.50
9864	Ivar A. G. Svensson	R.A.F. Coll. G.C.	14.10.50
11032	John L. Hignett	No. 186 G.S.	24. 4.51
11747	David W. Baker	No. 104 G.S.	3.12.50
12834	Thomas D. M. Brown	No. 183 G.S.	21. 1.51
12931	William F. Maidment	Handley Page G.C.	28. 1.51
12900	William H. P. Wood	No. 23 G.S.	18. 8.50
12903	Geoffrey R. Bryant	No. 123 G.S.	28. 1.51
12904	John A. Jefferis	No. 123 G.S.	28. 1.51
12906	Osmond J. G. Alger	H.M.S. Conoor	15.12.47
12909	Laurence G. Holmes	No. 31 G.S.	26. 9.50
12912	Thomas H. Williams	No. 42 G.S.	21. 1.51
12913	Trevor R. Bainbridge	No. 168 G.S.	30. 9.50
12914	Thomas McConnell	No. 203 G.S.	17. 5.50
12922	George N. Rignall	No. 22 G.S.	11. 2.51
12929	John N. C. Jones	No. 84 G.C.	20. 8.47
12937	Anthony George Oram	Imperial Coll. G.C.	28. 7.49
12942	William T. L. Reed	R.A.F. Passberg	7. 2.51
12943	Ronald E. Travell	London G.C.	15 10 50
12946	Derek L. Eley	R.A.F. Coll. G.C.	28. 1.51
12947	Seymour Evans	R.A.F. Coll. G.C.	21. 1.51
12948	John D. E. Renshaw	R.A.F. Coll. G.C.	28. 1.51
12949	James S. R. Salmond	R.A.F. Coll. G.C.	27. 1.51
12951	William S. Askey	Derby & Lancs. G.C.	10. 2.51
12952	Arthur P. Tuxford	No. 41 G.S.	1. 8.50
12959	Stuart G. Leat	No. 92 G.S.	29.10.50
12965	Albert R. Wilde	Army Flying Club	23. 1.51
12967	Arthur F. Hickson	Bristol G.C.	24. 2.51
12971	Desmond M. Brown	Perak Flying Club	26. 2.50

'C' CERTIFICATES

4059	John Creldson	East Africa	20. 5.49
9621	William N. Herd	No. 5 G.S.	27. 7.50
9933	James Anderson	Scottish Gliding	6. 8.50
12286	J. H. Stephens	Newcastle G.C.	21. 1.51
12929	John N. C. Jones	No. 84 G.C.	16.11.47
12937	Anthony G. Oram	Imperial Coll. G.C.	26. 8.50
12943	Ronald E. Travell	London G.C.	12.11.50
12971	Desmond M. Brown	Perak Flying Club	30. 7.50

(Continued from previous page)

Although we are an Army Club, we wish to be identified in full with the British Gliding Movement, and hasten to assure any visitors that if they come to us, whether to fly, criticize or just gape, they will NOT be told to 'get fell in.' Nor will day members, private owners, or ambassadors from other Clubs find themselves in the clutches of the Recruiting Sergeant.

During the summer we hope to have some task flying matches with other clubs, and would be pleased to accept the first challenge on our Home ground. R.I.P.

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