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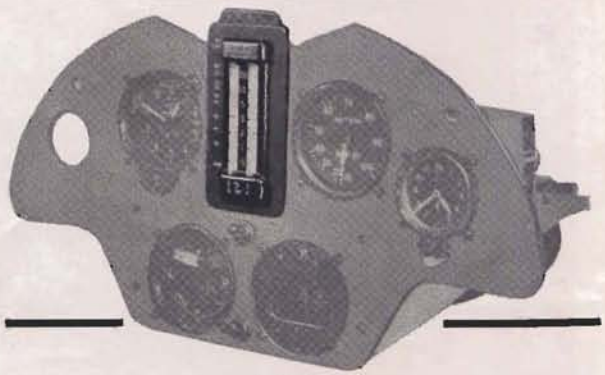

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THE FIRST JOURNAL DEVOTED TO SOARING AND GLIDING

JANUARY 1951 ★ Vol XIX No 1

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CONTENTS

COVER PHOTO:
Victorian Motorless Flight Group's "COOGEE" taking off on winch launch at Berwick, Victoria. (Speed 1/500 sec. F.4.5. Film, Kodak Super xx Yellow filter. Agfa camera).

Editorial

THE PROSPECT BEFORE US

PUCK—or was it Ariel—having graced the Editorial chair for some two months now, has departed and left behind him a fragrance (that wasn't Shakespeare's word) of goodwill. So it behoves the permanent occupant of the editorial siege to take stock of the position. Our earlier Editorials in which we asked several pertinent questions (which have remained unanswered by those to whom they were addressed) have apparently been answered by default. No one has come forward to deny our charges and implications, but there have been those who have excused the culpability we complained of, by remarking that if we are alone in thinking that moral turpitude is wrong, our attitude is therefore wrong. A very August Person indeed, has said that he deplores our attacks on the B.G.A. and its personnel as having a bad effect abroad. To both of these rejoinders we make the same reply :—that we cannot compromise on principles and that our readers abroad who are aware of the facts, would fitly despise us were we not to raise our voice in protest at faults. Furthermore, it is the function of a free Press always to expose irregularities or even near-irregularities wherever they may be found. Those who aspire to govern any Movement must beware lest there be the slightest vestige of self-interest in their conduct or motives. If there is, the whole business will lose whatever scintilla of Authority it may possess and in the end do more harm than good by bowing to the expediencies of the moment. In both public and private life, there is no substitute for Principle, a lesson we have ourselves most painfully learned, and one which, from our second half century of years, we feel bound to pass on to those who are following after.

Of one thing we are sure, and this from experience, that the stand we have made for uprightness in those who conduct our affairs and in how they do so, will not go unremarked among the large majority of sensitive gliding people the world over. We are also sure that even in Great Britain, there will be a feeling that these things have got to alter, and will be altered. We have no vote in the B.G.A. and we can do no more than relentlessly expose any vestige of self-interest in the appointments and conduct of the B.G.A., and this we shall do, meanwhile waiting for the Law of Libel to be changed in the coming Session of Parliament so that we can freely express our mind.

We have been criticised for not being constructive. We modestly pass over our part in the introduction of the "Olympia" to Great Britain, over the years we have spent in spreading the gospel of Soaring throughout the world, and our 53 country circulation and venture to put forward some constructive suggestions, both for the betterment of the B.G.A. and of Gliding and Soaring in Great Britain.

Firstly we suggest that the B.G.A. be democratised from top to bottom. All appointments to the Council should be by ballot in full Club meeting, that those elected be present at the meeting and have flown not less than 12 times a year at the site of the club they represent. "Carpet baggers" are a thing of the past in all our present democratic institutions. The officers, except stipendiaries, should be voted for at Club Meetings, not at Council Meetings, e.g. nominations for the Chairmanship should be made some three months before the election, which should be by secret ballot on an Election Day in all Clubs. The Hon. Secretaryship should similarly be the subject of an open yet secret ballot. (It is secret now —the great mass of members are not consulted—the appointment has for years now been made by default of any other nomination in the "closed shop" of the B.G.A. Council).

A scheme should be evolved by which all members of Clubs are automatically Associate Members of the Royal Aero Club and benefit under its Insurance Policy. This would mean an increased subscription but the benefits received, including the use of Londonderry House and its amenities, would be well worth it.

A good deal of progress has been made with two-seater training syllabuses, and this should be made the basis of a great drive to get in more beginners. The policy should move away from High Performance gliders and "Aces", for this has acted as a brake on the progress of the Movement and brought it into its present disrepute, since it has led to its being in the hands of those whose interests are primarily in High Performance Soaring for which we have neither the machines nor the terrain.

The possibilities of such a Policy are immense, since it would bring new blood into the Movement, which needs them and their energies and pennies.

We end by remarking that if we can look forward to our advice being followed, the B.G.A. and all soaring devotees will have a Happy New Year.

FRANCE

FRENCH ACHIEVEMENT

NEW STRATOSPHERIC SAILPLANE

by GUY BORGÉ *(Gold "C" with Diamond)*

THE present high performance sailplanes are splendid machines of which the range of speed, the excellent soaring qualities, and the handling, appear astonishing. But they are only convenient to operate at medium altitudes, under 25,000/30,000 feet. At higher levels their performances decrease and their equipment becomes badly insufficient in matters of heating and oxygen supply.

However, observations by numerous pilots, soaring at good sites in Germany, Austria, U.S.A., and France have shown that wave ascending currents exist to very high levels without knowing their upper border for lack of special machines.

Therefore, M. Raymond Jarlaud, the well known sailplane engineer, started two years ago to design a special sailplane to be operated at great heights, about 16,000 metres (52,500 feet). All its characteristics and performances were calculated for soaring at this altitude, and it is interesting to give an abridged report of Jarlaud's method in projecting this stratospheric machine, so far without a name. His calculations are based upon the requirement of a lift of 7 feet/second and of a 60 miles an hour wind at 52,000 feet, during the most favourable, atmospheric wave conditions.

(1) Study of the necessary performances.

Maintaining a height of 52,500 feet in these currents requires good handling, and the special sailplane must have a horizontal speed above 80 miles per hour at the maximum gliding ratio angle, and, for climbing, a minimum vertical speed of 5 feet/second. These figures extended to the ground level correspond to a minimum vertical speed of 180 feet/second and a speed of 47 m.p.h., thus beginning to show an appearance of the polar curve at sea-level.

(2) Study of the necessary strength.

The all-wood sailplane will perhaps be towed to great altitudes, and since no right plane, climbing high and at reduced speed, exists, a fast tow-plane will be used. The sailplane must endure the loads caused by tow-speeds over 125 m.p.h., and its structure will be calculated at sufficient co-efficients. Also for the fact that in case of a breakdown of the pressurization, the machine may have to be dived at a great speed.

To give this strength, the wing will not have a too great aspect ratio, less than 15. To maintain the necessary performance, especially the condition of the minimum vertical speed, the wing loading will be low, below 3.3 lb/sq. ft.

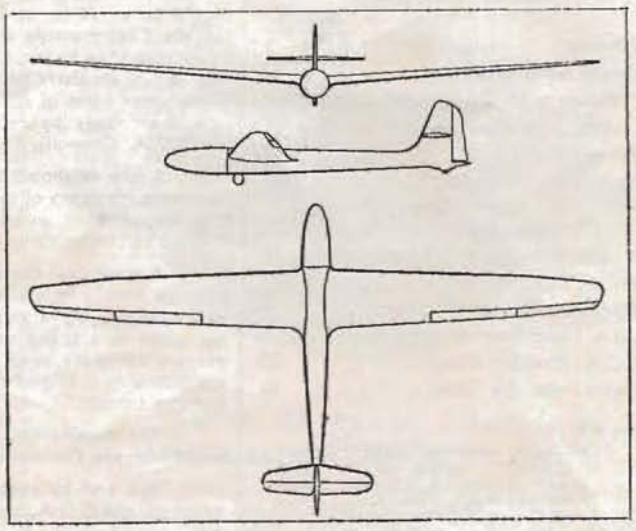
(3) Necessary pressure equipment.

Oxygen masks are insufficient at great heights, and special equipment must be devised with two possible solutions : either the actual pressure cabin (very heavy for a sailplane), or the pressure suit (very uncomfortable for the pilot). M. Jarlaud has adopted an intermediate solution : a nose pressure cabin inside which pressure is maintained to correspond to a height of 26,250 feet, (8,000 metres), and an oxygen apparatus with mask. Differences of pressure between the cabin and atmosphere become less important, a great advantage in designing the cabin. Its total weight, with the pilot and all equipment, is estimated to 770 lb.

The fuselage will have a large frontal area, a circle of about 3.60 feet in diameter, the pilot being supported in a prone position as in the " D.F.S. 228 " and a special " Emouchet " already devised by M. Jarlaud. Passive drag increases, and the performances required demand a great wing area of special sections, like the laminar airfoil sections.

(4) Calculation of dimensions and performances.

Estimation of the over all weight gives 770 lb. for the pilot and the complete pressure cabin, 660 lb. for the rest of the machine, or a total of 1,430 lb. The wing area must measure 430 sq. feet, and the wing span 75 ft. 5 ins., with an aspect ratio of 13.2. Wing-loading of 3.32 lb./sq. feet. Total length of 41 feet.



At sea-level, the minimum vertical speed of 1.80 ft./second, and maximum gliding ratio of 36 at 47 m.p.h.

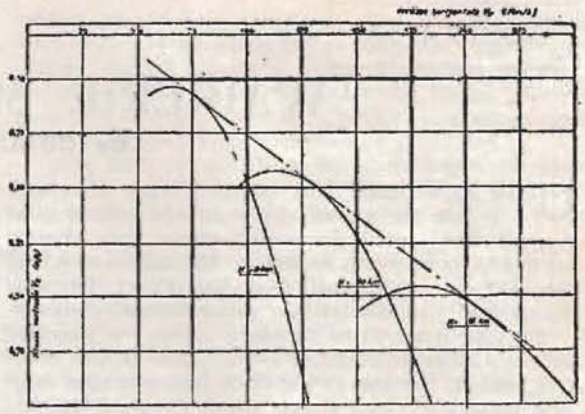
At 52,500 ft., a minimum vertical speed of 4.75 ft./second is calculated, and theoretical maximum gliding ratio of 36 at 127 m.p.h. But M. Jarlaud thinks that the value of this maximum gliding ratio will decrease at altitude for reasons of viscosity, and he foresees a practical value of 30 at 52,500 ft., instead of 36.

(5) Heating.

Electrical heating would be best, but the weight of the batteries constitutes a big problem. M. Jarlaud has studied chemical heating by thermite diluted with corindon in the proportion of one to two. Seven lb. of the mixture would suffice during a five hours flight to give inside the cabin a temperature of about OC. (32 degrees F.). For giving the better insulation, space between the internal and external skins is lined with 4 aluminium foils, separated by air. The sliding transparent nose, for entry, is also built of several sheets of plexiglass separated by air, the external one strong enough to withstand the air pressure.

Numerous other points have been studied in detail, for instance passages of the controls in bellows to prevent losses in pressure and temperature, the bearings of the controls made in special steel, ventilation of the cabin, absorption of CO2 and of the excess of moisture in the cabin, and so on.

Such a special sailplane needs an immense labour of design since it enters a new field of research. Apart from the realizations of German D.F.S., no other project of this importance had yet been undertaken. The work of M. Jarlaud and his team of engineers, especially Messrs. Henri Mangeot and Stanislas Schneider, appears so much more the deserving, and we wish them great success.



Polaire des vitesses du planeur stratosphérique estimées pour les altitudes de 0,10 et 16 kilomètres.

Their stratospheric sailplane, nearing completion at the Minié Factory near Paris, constitutes a new step in the progress of Soaring, and its experience will add keen insight about the nature and the limits of the mysterious Wave currents.

Preparing the Barograph during a Regional Competition. (*Photo: Borgé*)

AUSTRALIA

"WAIKERIE MEANS WINGS"

By GRACE ROBERTS

UNDER a dank and lowering sky, Ron and I left Melbourne early on the morning of August 21st—winter-time still, please note—bound for Waikerie in South Australia, 550 miles away. By ten o'clock, we'd gone over the Great Dividing Range and had entered the great thermal preserve.

For the next three hundred miles we travelled beneath a fantastic sky of 4/8 cu., base around 5,000 feet, which, towards two o'clock had arranged itself in a pattern of cloud streets which streched fore and aft as far as we could see.

We camped that night at Mildura and next morning at half-past nine, the cu. were popping once more. We drove the last hundred-and-fifty miles in the afternoon, passing the paddock at Lake Cullulleraine where Les Brown landed after his 104-mile flight in the " Kite II " last year.

It was grand to reach Waikerie and those large Waikerie smiles. We'd travelled over a fair stretch of country but here we were, home again.

Waikerie is situated on the River Murray, a hundred-and-seven miles inland from Adelaide. Its industry is the growing, packing and drying of oranges, lemons, grapefruit, grapes, apricots, nectarines, peaches. All thirty-five members of the club are either orchardists or rural workers.

One result of this is that, unlike City clubs, Waikerie has suffered under the very real handicap of counting among its members, no aircraft workers, woodworkers, engineers, welders or the like. To advance to their present position as one of Australia's largest and most active clubs, they've had to improvise and compromise all the way.

The club was founded in 1937 by Jock Barratt and the late Ken Riebe. It was during the depression—oranges were rotting on the ground while down in the cities children were dying of malnutrition. Jock and Ken had heard of a primary down in Adelaide, for sale at £25. So they called a public meeting and enrolled twelve members. The primary was purchased ; the wings had to be re-covered and finished off. The new club was given the use of the old pumping-house by the river at Holder, a few miles upstream.

To keep enthusiasm high while the work was proceeding, the boys procured an old monoplane, removed the engine and fitted motor-bike wheels. With the tow-car flat out, they were barely able to get aileron control, but it gave them a taste of gliding.

To mark the Waikerie Gliding Club's opening day, a pageant was arranged, with the South Australian Aero Club sending up eight planes. One of the things they still chuckle about at Waikerie, is the fact that, due to a printer's error, the pylon race appeared on the programme as a pillion race, much to the astonishment of the aero club pilots.

The ninth event was to have been an auto-tow with the primary, but owing to dead calm conditions, she couldn't be coaxed off the ground. After the

Top. Les Brown.
Centre. Bob Rowe in club-owned "Olympia."
Bottom. George Donaldson and Winch.

crowd had gone, of course, a 20-mile an hour breeze sprang up, and the primary was towed off to 300 feet.

I wish you could hear Jock telling about the big event of the day. The old monoplane was converted back to " power " for the occasion with a motor-bike engine. Wearing bowyangs and an old bag for a

parachute, Fred Smith took the part of the pilot, while Jock, wearing short pants, acted as his mechanic. Before the horrified, hysterical or bovine gaze of the spectators—according to their knowledge, or lack of it, of aeronautics—Jock, putting his foot nonchalantly through the wing, " re-fueled " with a bucket of water, spilling most of it over the monoplane. Then the machine set off down the aerodrome, flat out at 15 m.p.h., followed by a flight of " Tigers." A slight hump in the middle of the 'drome then hid it from the spectators' sight. It was the big hit of the day and, to hear the boys talk about it, there never was such a pageant. Incidentally, the club cleared £30.

Later, another pageant was put on at Loxton, but a terrific dust storm disorganised it to such an extent that takings were reduced to a couple of pounds.

A year later, Waikerie had 60 active flying members ; 20 of these came from Barmera, 32 miles away and 24 from Renmark, 55 miles. Later, branches were started at the two towns to save members doing the long, dusty trip each week-end. To celebrate the opening of the Barmera branch, the aero club again co-operated in a pageant. Jock participated successfully in the balloon-bursting when he collared several on his way up on tow.

About this time, the Government subsidy began, and, with the first payment, the club purchased their first sailplane, a 60-feet span " Wien," which had been built from photographs by a member of the old South Australian Gliding Club. It had been flown very little and was purchased for £50.

For one reason and another, the " Wien " was not flown a great deal and her best flight was 6 minutes from 600 feet.

By Christmas, 1949, the club had acquired a " P.J. Pratt Utility " and turned out an attractive pamphlet advertising a Christmas Training Camp.

Out of ten applications, six people turned up, one of whom was Doctor Thiertsch, a Government pathologist, now doing cancer research in the U.S.A.

For £45, the club purchased an all-steel, 75 feet × 16 feet building from the Electricity Company.

Footnote.—Three years later, the Company had to build themselves a wooden building to replace it, cost—£500.

Meanwhile, Doctor Thiertsch had purchased from Doctor Heydon, in New South Wales, the Martin Warner-designed " Kite I." When war broke out, Doctor Thiertsch offered the " Kite " to Waikerie for £120, including trailer, a sum of money, incidentally, which to date he has flatly refused to collect.

The " Wien " had been flown fifty or sixty times but had now developed serious aileron trouble. It was grounded after it got a pilot into trouble in a turn near the ground, although without damage to " Wien " or pilot.

Now the club entered on its policy of two-seater training. A " P. J. Pratt " two-seater was purchased and this machine, with numerous additions, has now become the current " Pelican " two-seater. Its wings are composed of the " Wien " wings, minus 7 feet 6 inches at each tip, the fuselage is part " Pratt " and part new—I think !

At the outbreak of war, the club had made good, steady progress and was operating primary, two-seater, utility and sailplane. But by 1944, there were only five members left in the club.

The original secretary, Ralph Pope, was killed in action with the Royal Australian Air Force. Fifteen members serving in the R.A.A.F., twelve as air crew and another six were members of the A.I.F.

Jock Barratt and Ken Riebe arranged exercises with the local Voluntary Defence Corps in mock gliding attacks and worked long hours in their orange groves.

From May, 1937, to the end of 1943, 2,245 flights had been carried out without mishap. " Kite I " had made 330 launches for a total of 54 hours' flying time. In October, 1944, the club was dealt a most grievous blow in the loss of Ken Riebe and " Kite I." (This was fully reported in *Sailplane and Glider*, February, 1945).

A fortnight later, the primary was completely written off by a pupil, fortunately without injury to himself.

In spite of the tragic setbacks of 1944, it was in this year that the club began to build up again. Two-seater training had been carried on in conjunction with primary for three years, but now the club converted fully to dual and has not returned to primaries since.

By 1947, the club had replaced " Kite I " with " Kite II," purchased from Sydney. In 1949, having performed sterling work for ten years, the " Pratt Utility " was wrecked, due to pilot error, again happily without injury to the pilot.

In April, 1950, with a tremendous financial effort, the club purchased the famous " Yellow Witch Olympia " from Arthur Hardinge. This was entirely in keeping with the club's policy of providing progressively better machines for its members. Waikerie fleet now consists of the " Pelican " two-seater, " Kite II," " Yellow Witch " and " Colombus," an " Olympia " owned by John Wotherspoon.

An interesting point is that all Waikerie machines are fully enclosed, including the front cockpit of the " Pelican." Also, all South Australian records are held by the club.

Since the end of the war, membership has risen to 35. For the year ended 30th June, 1950, the club made between 800 and 900 launches, for a total time in the air of 138 hours 57 minutes. (All pure thermal soaring). This time was put up mainly by the " Kite II " and the " Pelican," as the " Utility " had only 13 flights that year before being written off, and the " Olympia " was flown only a few times.

I find the club's flights charges positively inspiring, too. The entrance fee is 10s. 6d.—though now they have an " Olympia " to offer, they're seriously thinking of raising it to £1. 1s. 0d.! Annual flying sub. is £3. 10s. 0d. For two-seater training, irrespective of time in the air, a flat charge of 2s. is made. For other machines, for the first 15 minutes, 2s. 6d., thereafter 9s. per hour. To encourage soaring flights, a scheme is now being brought in to make a maximum charge for any flight of £1. A proposal favoured by the Committee is that any record flights should be free of charge.

For cross-country flights, there is a dismantling fee of 7s. 6d. and retrieving arrangements are fixed up between members. Waikerie pilots don't do a

great many cross-countries, preferring out-and-return. To the orchardists, time is money, and they cannot afford the probable full day—at least—to retrieve from a long cross-country. The other reason is obvious from the air. Eight miles to the north, there is tiger country that would scare even tigers. Mallee scrub, mallee gums, spinifex and salt bush—stretches unbroken to the horizon and for a couple of hundred miles. There's thought to be one spot where a landing could be made, but NOT a take-off. In all this distance there is one homestead. No water, no roads, no communication. Anyone landing there has remarkably little chance of getting out alive.

Southwards, the country is fairly rough, but there are reasonable landing places; however, tracks for retrieving are utterly hopeless. South-west and west the country is O.K. for about 150 miles, and eastwards it's fine for 800 to 900 miles—the catch being of course, that conditions are rarely right to go that way.

To return to flight charges, though. Every member who reaches solo stage is asked to loan £10 to the club, interest free, repayable when he leaves the club. This rule, however, is purely voluntary, and not enforced. There is also a charge of £5 for a crash fund, also repayable on leaving.

The first cross-country flight was made in 1943, by Rex Coates in "Kite I." His twenty-three miles from Waikerie to Marook was a South Australian record for some years. Jock Barratt and Les Brown have recently made flights of 18 miles out and back again, while Bob Rowe in "Kite II" a while ago flew from Waikerie to Kingston—21 miles—and back again.

Les Brown holds the State duration record of 3¾ hours, thermal soaring in "Kite II."

Two outstanding flights have been John Wotherspoon's in his "Olympia," Waikeire to Renmark, 48 miles, attaining a height of 13,500 feet from a winch launch to 900 feet. This would have been an Australian record for altitude had John carried a barograph.

The other flight—and I've heard it spoken of as one of the most outstanding ever done in Australia, an opinion with which I heartily agree—was Les Brown's 104 miles from Waikerie to Lake Cullulleraine, winch-launched to 1,300 feet in "Kite II," max. height 7,800 feet. While "Kite II" will outclimb the "Olympias" (sorry, John !) in a thermal, it has very poor penetration and yet much of Les's flight was accomplished by going up wind !

Financially, the club hasn't looked back since it turned to two-seater training. The time saved in repairs has enabled the club to make and procure better machines. And in case any Hon. Treasurers are still gasping about flight charges, may I point out that this is the only club in Australia which possesses an "Olympia ? By club, I mean a regular club carrying on training of *ab initios*.

Soaring conditions at Waikerie have to be seen to be believed; likewise, they can be so rough that they have to be experienced to be believed. Turbulence near the ground, on the three days that we flew there, was astonishing, if not downright alarming. Waikerie pilots have had experiences which indicated that

"Kite II"

conditions, out of cloud, could be such as to break up a machine.

Rain is rare; the orchards thrive through the miracle of irrigation from the River Murray. From the air, the area of cultivated and bearing earth is small. The groves and vineyards are patchworked neatly along the river for a few miles, then the country is given over to mile upon mile of red sand and mallee scrub, stretching flatly to the horizons. Yet, give this red earth water, and you can grow anything, as the rich and fertile townships along the river give ample proof.

On the first week-end we were at Waikerie, Ron had 2 hours 20 minutes in "Kite II," winch-launched to 800 feet, best height, 4,350 feet. In the "Yellow Witch," Jock Barratt went to 3,800 feet from 500 feet, for 2 hours 25 minutes. (All launches were by winch). Next day, Les Brown in "Yellow Witch," 1 hour 50 minutes, 650 feet to 4,200 feet. In "Kite II," I had 35 minutes, 800 feet to 3,300 feet. I'm not ashamed to admit that, flying as I was in an unfamiliar pod-and-boom type machine, without a parachute, I was worried by the screaming viciousness of the green air. There was a 15-20 m.p.h. wind blowing, clouds 7/8th, base around 3,500 feet. I had considerable difficulty keeping out of cloud. In six-and-a-half years of soaring, I've struck plenty of turbulent conditions, but never anything quite as malevolent as Waikerie turned on for me. I managed to find a small patch of red air after 20 minutes and did some smart thermal soaring in reverse. It was some consolation to one's pride to be assured by Jock that I wasn't the first pilot to be frightened by conditions there, nor, he added, would I be the last !

On my second flight, I had settled down and thoroughly enjoyed the 20 minutes from 800 feet to 2,200 feet. Even so, I took care to leave the strong lift, well clear of the clouds. Annoyingly enough, now that I wanted to stay up, I couldn't. Later, in "Yellow Witch," Jock Barratt had 35 minutes, to 3,800 feet.

By next week-end, having dodged the 'flu epidemic raging in Melbourne, I'd managed to catch up with it in Waikerie, and this rather disorganised our last week-end. On Sunday, however, we had the very

great pleasure of seeing all of Waikerie's machines circling together.

Conditions were delightful; almost flat calm and a clear sky. Colin Buckley, in "Kite II," had 2¾ hours, from 1,000 feet to 4,500 feet, making a voluntary landing. In "Yellow Witch," Bob Rowe, 3¼ hours, 850 feet to 4,300 feet; while John Wotherspoon soared his "Olympia" for 2 hours, 800 feet to 4,500 feet. Les Brown and Romilly Barratt joined them for an hour in the "Pelican," climbing from 800 feet to 3,700 feet. Romilly, 14 years old, is one of Waikerie's most enthusiastic members and does great work driving the retrieving car. He is Jock's eldest son and is well advanced with his two-seater training.

At the time when the four sailplanes were circling above the corner of the aerodrome, we two Victorians were frantically wondering if there wasn't something in the hangar we'd overlooked. I swear we could have soared dual on an old primary.

This, I remind you, was winter time at Waikerie. And, by the way, I find it rather remarkable that the aboriginal meaning of the word "Waikerie," is "wings."

In addition to the four machines mentioned, Waikerie has a "Grunau Baby" and a locally-designed, side-by-side, two-seater of the pod-and-boom type, nearing completion. Here is a club that is not content to rest on its laurels. Nor would I be surprised if these pilots do more consistent soaring than any other club in Australia.

They modestly tell you that "the conditions are here." Well, that's true, of course. But there's something else there, too, and that's guts and initiative.

Long may you spread your wings over Waikerie, W.G.C.! It'll be a long time before we forget a fortnight spent with the good friends and fine pilots of the Waikerie Gliding Club.

"LINES FROM THE LOG" or—(Confessions of a Glider Pilot).

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5	Dagling	RA 123	-	W	SW 10	L.H.	Broken Landing Wires.*
6	[illegible]	RA 123	-	[illegible]	[illegible]	[illegible]	[illegible]

QUITE an innocent looking line, except perhaps for the note in the remarks column.

Since the Serial No. of the flight is "5" it will be appreciated that my practical experience was not too comprehensive (although I was beginning to give unofficial advice, condescendingly, to other members of the course who had not yet been "strapped in"). However, my theory was "word perfect" and as I had found "keeping the wings level" just too easy on my previous "slide," I noted with pride some whispered conversation between my instructor and the winch driver, one word of which drifted down to me on the wind—"faster."

Here was the big chance to show my superiority over the other types with their scant knowledge of "theory of flight." I also figured that the instructor would be delighted if I disobeyed him and managed to get airborne, which would prove that "ground slides" were a waste of time on a "gen" theory pupil.

At the downwind end with cable attached I suggested to the winded wingtip slaves that it would pay them to watch this one closely; their chance would come later in the day. So as the "all-out" was given I gave them a confident wave and with a final professional stir of the stick I was trundling away. Sure enough it was faster, at first a bit frightening but I kept my head and as we were now almost halfway it was time to do IT. Now the book said—"stick back, elevators up, machine climbs—so first a big gulp and now "stick back." Well granted, the stick was on its back stop but the elevators just hadn't had time to go up, let alone the "machine to climb." All that now met my astonished gaze was the sight of my feet wedged firmly on the rudder, surrounded by a vast sea of blue; instructor, winch, earth, everything, had completely vanished.

This could not be allowed to continue, and it suddenly occurred to me "I must be climbing" and almost as suddenly I thought of the antidote—"stick forward, elevators down, descend"—(page 3, para. 4), I also wondered what the "clueless clots" below would do in a situation like this. It was rather difficult to breathe, but somehow I managed to get the stick forward. What I had been through was nothing to this; We were at a tremendous altitude (later verified 10 feet) the sky had gone and the grass was now coming up at me with alarming rapidity. To hell with the book! Self preservation now took charge and I yanked the stick back into my belt and hung on to it for dear life. Once again we were rocketing skyward but as this must be the end I just held on, grimly.

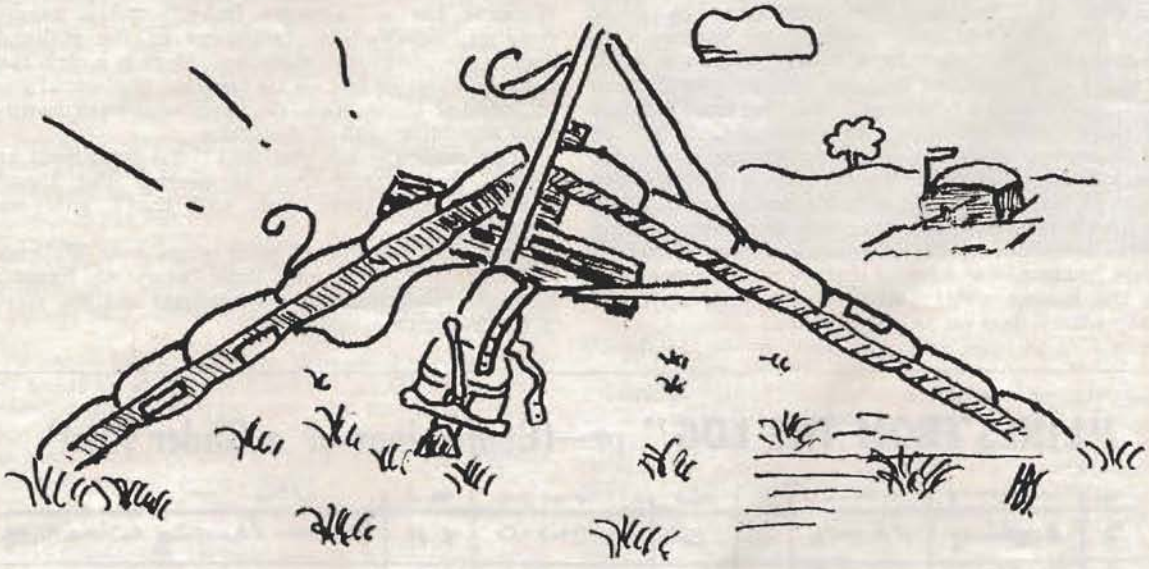
The next is a bit vague, but I remember first, the roaring breath taking wind was dying down and next, the horizon, winch and finally the grass appeared once again and instead of a sprightly flying machine, I was strapped to a huge hunk of wood which was dropping to earth like a stone. I don't recall the actual "landing" but I was still alive, right way up and in one piece; also the instructor instead of running, was walking, unhurried, towards us. Maybe things weren't so bad after all!

As the old Dago was leaning—"there is no Red Port Left"—(page 10, para 1), to port—I looked anxiously round in this direction and to my intense relief noted that the wing tip was resting normally on the grass without apparant damage and also the tail was still on and intact. Well maybe I had been in a bit of a flap, but I had shown them after all, so

I just sat back and waited for the instructor's amazed congratulations. He was still sauntering towards us ; surely that was a proud smile I detected on his usually sombre face? This was grand, I thought " I hope those clots have been paying attention. I've been up alone, no need for further instructions! When he gets a bit closer I'll shout " shall I do another " ?

Meantime the retrieving crew were coming up behind, talking excitedly. Full of admiration, no doubt ! So putting on my most dignified smile I turned my head to starboard expectantly. Then I saw IT. ITS tip was also resting on the ground ?

On he came, relentlessly nearer, his face contorted with a terrible vengeance. I fell gibbering at his feet.



I would work all night, all week if needs be ! But he just patted me and smiled.

Within half-an-hour she was again ploughing up and down the field with a rather superior bunch of u/t. pilots instructing me on the correct way to run with the wing tip.

H.B.S.

WAVE SOARING

By Prof. Dr. W. GEORGII. **Translated by Sigfrid Neumann.**

SEVENTEEN years have now elapsed since in March, 1933, the news reached us from Grunau that Wolf Hirth had soared a wave for the first time. The striking fact that there are wide lift areas within the Föhn-wind which is characterized by its down-currents was bound to attract the attention, not only of the glider pilot but also of the scientist to a large extent.

In the meantime our theoretical and practical knowledge of this phenomenon has broadened considerably. Above all, the wave-formula by G. Lyra, Göttingen, may be regarded as a general theoretical solution of the wave-problem, especially as the results have so far been in agreement with those obtained in flights. Lyra starts from the fact that a uniform air-stream is disturbed on passing over the ground by a mountain range perhaps. This results in surface waves which are stirred up by continuous impulses originating from the interference by the ground, and which produce oscillations in the whole mass of air. Variations or inversions in temperature are not necessary for the rise of a wave. Contrary to thermal conditions, the atmosphere must be stable. Neglecting friction, rotation of the earth, exchange of heat and humidity, the five quantities describing the atmosphere (density, temperature, pressure, the horizontal and vertical components of two-dimensional currents) can be combined by five equations. After simplification these five equations enable the vertical velocity in these wave systems to be derived for various altitudes. The wave lengths increase with the wind strength and increasing temperature gradient, and range between 3 and 6 miles with a wind-strength of 22 to 45 miles per hour. Diagram 1 shows the distribution of the vertical velocities in lee-waves above an obstacle the width of which equals half the wave length (= 3 miles), i.e., the obstacle is only a very small one. By means of those equations the waves for several mountain ranges have been determined.

So in the case of the Argentine Andes wave-lift of more than 33 ft./sec. at the boundary between troposphere and stratosphere (about 40,000 feet height) with a wind strength of 45 miles per hour has been calculated. G. Lyra has also determined the pressure disturbance caused near the ground by waves. This disturbance entails such a strong drop in pressure, particularly under the first wave, that the case of Lyra's diagram. Taking a wind strength of 22 miles per hour, a wave length L. of 4 miles and a width of the obstacle of 1¼ miles, we arrive at the wave diagram 2 as calculated by P. Queney. Strictly speaking the two diagrams cannot be compared. The first one shows the areas of vertical velocities, while the second one gives the streamlines of the air. So in the latter case the maxima do not represent

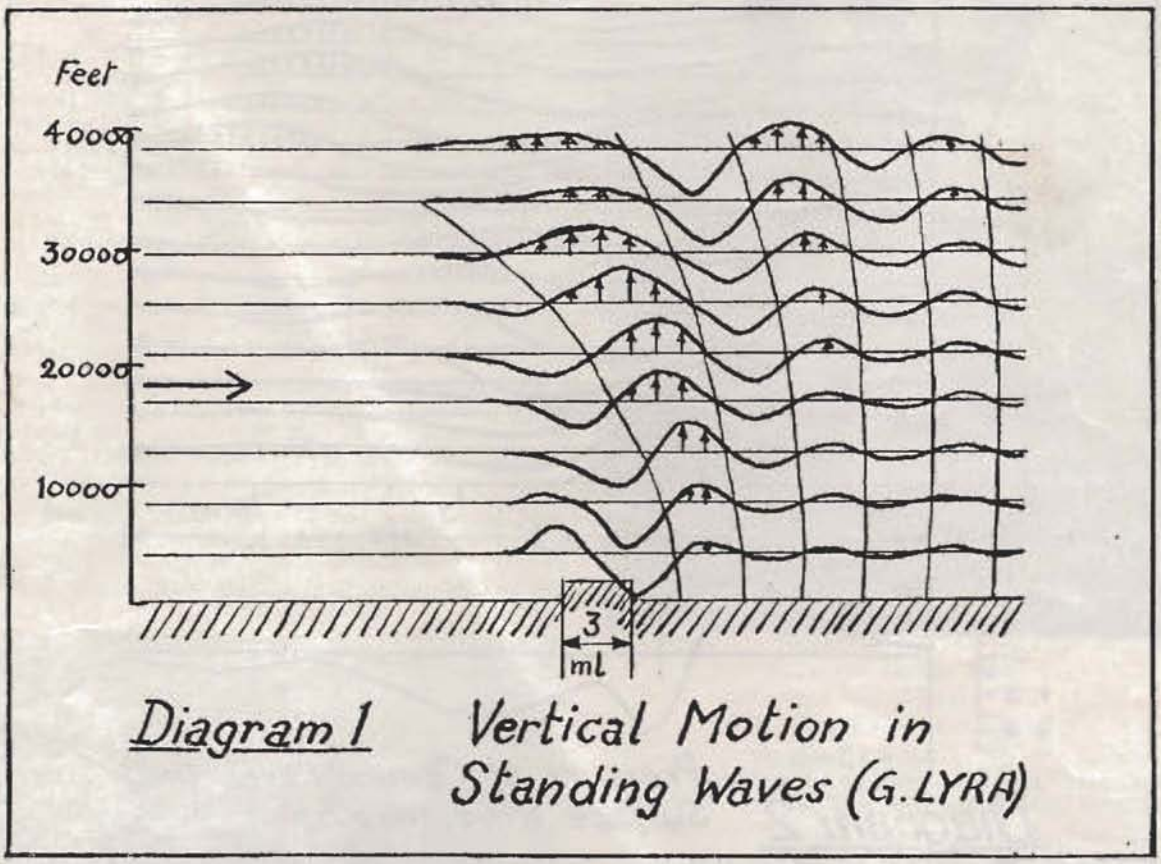


Diagram 1 Vertical Motion in Standing Waves (G. LYRA)

a counter-current in the lower layers may become an up-current which develops stationary eddies or a " rotor," as confirmed by numerous observations and flights. This rotor forms the completely regular roll cloud which is often several miles long and has frequently been observed in the lee of mountain ranges with a Föhn-wind.

Apart from G. Lyra, P. Queney, Paris, has made valuable theoretical investigations into wave currents which are less well-known. P. Queney has dealt with the wave problem even more comprehensively than G. Lyra. Queney's calculations do not only apply to obstacles of small dimensions, but have been extended for a width up to 1,250 miles. Here the rotation of the earth must be taken into account as an important factor which causes considerable modifications of the wave system.

Let us now assume certain conditions as we did in the greatest vertical velocities, but the points where vertical motion is zero. Both ways of representation provide useful hints for the practice of wave soaring.

The simplest way of getting into a wave system is, of course, an aero-tow to the first wave. After a launch into hill-lift, however, an area of down-draught will have to be penetrated. Although this method is the more difficult, it is the nobler to the soaring pilot since success has to be gained here by his own skill. Queney's diagram shows very clearly that, with increasing height, one has to penetrate further and further towards the crest of the obstacle in order to remain in lift. This may turn out to be rather difficult in a wind of 30 to 45 miles per hour !

Diagram 2 also shows the pressure curve which is produced by the wave motion near the ground. We can see that there are two distinct pressure minima,

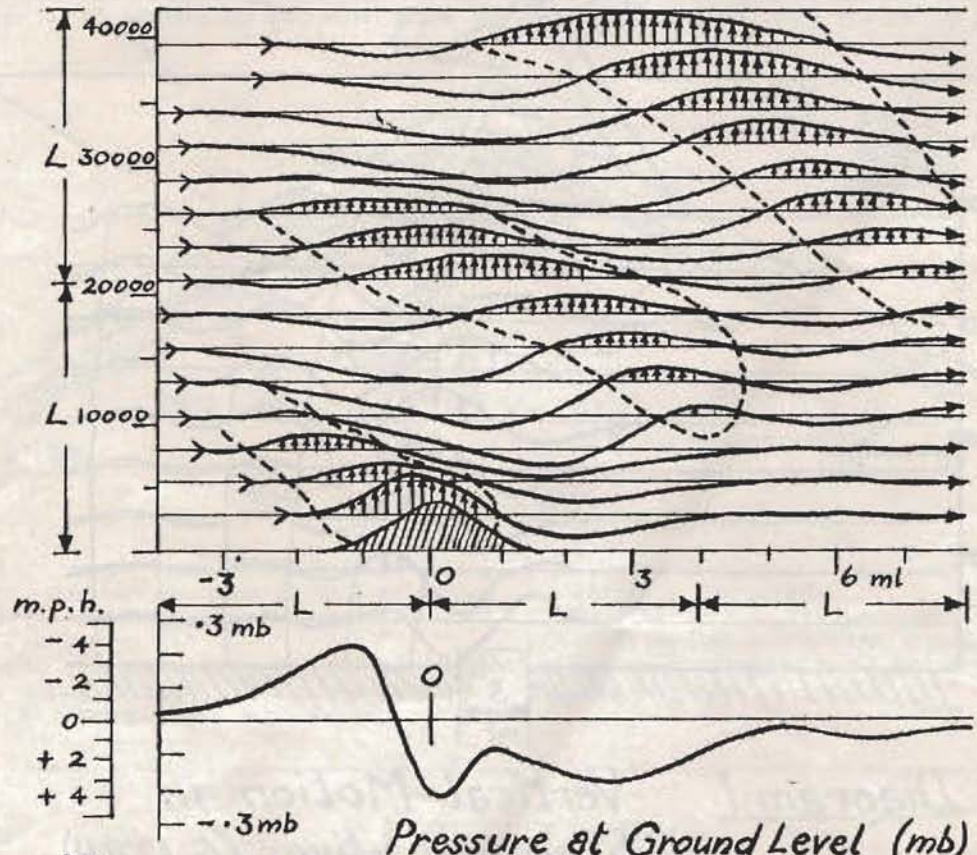


Diagram 2

Streamlines in Waves (P. Queney)

one over the obstacle, and the other one at some distance leeward to the obstacle. These minima can reverse the surface airflow and thus create the lower, very turbulent rotors.

The progress of Queney's work mainly consists in the fact, that his calculations can be applied to mountain ranges of any width.

According to Queney, lee waves already disappear with a symmetrical, sinoidal obstacle of 13 miles' width. In this case there is a wave in the vertical over the crest of the obstacle only, with a regular succession of lift and down-currents of altitudes corresponding to the wave length. Soaring flight would therefore be restricted to definite levels without the chance of penetrating to a lighter layer. In practice, however, this case is far less troublesome, because all mountain ranges are broken up to a large extent, and each sub-division into different ridges provides fresh impulses for the formation of near lee waves. An important point about Queney's theory is that with these obstacles of greater width there is a pressure minimum of considerable extent leeward to the mountain range. An obstacle which is 13 miles wide gives rise to a pressure wave 38 miles wide. In a discussion of wave soaring over flat country this fact will have to be remembered.

Translation from *Thermik*, Göttingen, June, 1949.

PORTUGAL

NEWS FROM PORTUGAL

RUY GRANCHA says that a good deal in the way of Soaring is going on in Portugal. Their Soaring site at Santa Iria de Azoia Hiil, 10 kms. north of Lisbon, is well served by road and rail and has a hill 2 kms. long and 120 metres high. " We get normal heights of 300 metres on the slope with N.W. winds," he writes, " and the landing ground on top of the hill is 220 × 400 metres, enough to land on and leaving some for overshoot practice."

They fly the slope from June to August at the appearance of a N.W. wind, but in the remaining part of the year they fly at Alverca, home of the Portuguese Air Force factory airfield.

An " Auster," with a Gipsy 130 h.p. engine is being used for towing purposes, and all the dual instruction is being done on a " T.21 B." In addition there are many " Grunau Baby's," " Kranichs," " Weihes " and " Olympias " available.

" Recently," says Ruy, " I had a visit from Helli Lasch, the great South African Gold ' C ' with a diamond. He flew with us in Lisbon on his way to South Africa from Orebro, and at all the French schools, Samedan and at Huesca in Spain." He adds, " Lasch is a very kind gentleman and lives for soaring."

SAILPLANE LOVERS TRIO.
Left—Gaça Reis, Director
Right—Ruy Grancha with a friend.

A French-built " Baby."

Ruy, who incidentally has been reading *Sailplane* since its first issue is operations officer for T.A.P., the Portuguese state-owned airlines. He took his civil pilot's certificate ten years ago and has been flying ever since. Four years ago he took his " A " and " B " gliding certificates and a year later qualified for his " C " (Nr.9). Last year he gained his altitude leg for Silver " C " at Huesca.

GOOD RESPONSE TO MIGRANT SCHEME

READERS of our March, '49 issue, will remember the letter we published from Nial M. Hart, Hon. Secretary of Toowoomba Soaring Club, inviting migrants with sailplane experience to settle in the district.

In a recent letter Nial writes that there has been a good response from England and Europe. But apparantly a delay in the scheme has arisen. This has been caused by the crash of their " Falcon " two-seater in which their President, E. J. Pascoe, was killed, and migrant passenger Josef Jaskierski, late of Poland and France, was injured. The sailplane, he says, was completely destroyed, having crashed on the approach leg of a circuit.

Just how this accident is going to affect the position of bringing migrants out is not yet known but Nial is going to advise us later when the inquest has taken place. The accident occurred on August 13th.

LONDON CLUB—Two Pictures from Dunstable.

Top : The Bowl, with Dunstable Town beyond. Bottom : Dan Smith, C.F.I., at Dunstable and member of B.G.A. Instructors' Panel, off to chastise a pilot who made his final turn at less than 100 *feet?*

WINTER SPORTS

GLIDING IN THE JUNGFRAUJOCH

SONG OF THE GLIDER PILOT

Sung to the tune, verse and chorus of "Rule Britannia."
by Bill Gotch, Bristol Gliding Club.

Now once there was a fellow,
Who had an ambition to fly,
So he did decide
He'd learn to glide
And get into the sky;
But when he made enquiries
Where gliders could be found,
They said they've got 'em
At Lulsgate Bottom,
But mostly on the ground.

Chorus:
Singing rule Britannia,
Britannia rules the sky,
And Britains never, never, never shall be,
Marr-i-ed to the Angels if they
Never, never learn to fly.

So off he went to Lulsgate,
To see what he could do,
And there he met
The "gliding set"
A very motley crew.
He asked them could they help him
To get into the sky,
And they all replied
"If you want to glide
You must see the C.F.I."

Then from a nearby hangar,
They dragged a funny thing,
On a wheel it stood,
Some bits of wood,
Surmounted by a wing.
On a perilous perch they put him,
And said "Now do or die,"
With a vigorous shout
They cried "All out!"
And shot him into the sky.

He very soon discovered,
And quickly got the knack,
Its all a trick,
What you do with the stick,
And how you pull it back.
But if you push it forward,
Then down you go like a diver,
With a rending sound
You hit the ground,
And it only costs you a "fiver."

So off he went to Roundway,
For soaring on the slope,
With visions he,
Of a "Silver C,"
His heart was full of hope.
But all he found at Roundway,
Was tears and sweat and blood,
And piles of muck,
And the vehicles stuck,
In an endless sea of mud.

And now he is proficient,
A soaring pilot wise,
The soaring kind
With a sore behind
He sails the summer skies.
And when it comes to boasting,
Why, he can tell the tale,
Of a big cu-nim
That swallowed him,
Like Jonah and the whale.

THE 9th WEST COAST SOARING CHAMPIONSHIP

Dave Johnson made 614 points flying his " Schweizer TG-2 " two-place sailplane to win first place in one of the most performance-crazy soaring contests ever held anywhere. El Mirage Field was loaded with up currents as 36 pilots and 23 gliders competed for the West Coast Championships over the first four days last July. Per Muelengracht got 600 points to take 2nd place, John Robinson took 3rd, Lyle Maxey 4th, and Bill Ivans 5th.

Here is what was accomplished :

1. Multiplace Goal, U.S. Record applied for July 3rd, 1950—Dave Johnson, Bob Fronius. El Mirage to Overton, Nevada, 221½ miles—" TG-2." (Previous record : Yerian & Ordway, 207 miles).

2. Single Place Women's U.S. Distance Record applied for July 4th, 1950—Betty Loufek, El Mirage to Valley Wells, Calif., about 123 miles—" LK." (Previous record 94 miles).

3. Third Diamond to Johnny Robinson (believed to be the World's first 3 Diamond Pin) as a result of a goal flight to Overton, Nevada, July 1st, 1950.

4. Two Diamond " C " legs completed :
   Lyle Maxey's goal to Bishop, Calif., 191 miles.
   Bill Ivans goal to Overton, Nevada, 221 miles.

5. Four Golden " C's " made, **complete** (more than 187 miles and 10,000 feet gained) :
   Dave Boone
   Bill Ivans
   Gus Briegleb
   Per Meulengracht

6. Two Danish distance records : 199 miles single place ; 183 miles, two place were made by Per Meulengracht.

7. Two Golden " C " Altitude legs were made :
   Wally Loewen
   Emil Kissel.

8. Five Silver " C " legs were made (more than 3,280 feet or 32 miles distance) :

George Congdon	(altitude)
Vic Saudek	(distance)
Wally Loewen	(distance)
Irving Gere	(altitude)
Dean McMillen	(distance)

9. Total Contest Flights : 92.

10. Total distance on 37 XC flights : 3,481 miles for an average of 94.2 miles per XC flight.

11. Total Altitude Gained : 518,435 feet for an average of 5,640 feet gained per flight.

12. Total duration : 153½ hours, for an average of 1.67 hours per flight.

13. Total circuit flights completed : 16.

14. Maximum performances :
   Distance : 221 miles (three goal flights, 1 distance).
   Altitude : 19,600 feet, A.S.L.—Lyle Maxey.
   Duration : 6 hours, 50 minutes—Dave Johnson.
   Maximum Rate of Climb for 3 minutes was experienced by Lyle Maxey : 3,000 feet/min.

The heroes of the meet (they put it on), were Bill Bowmar, Gus Briegleb, Tom Shannon, Betsy Woodward, John Keel, Caroline Bowmar, Jim Carr, Dick Eldredge, John Graves, Anne Briegleb, Stan. Hall, George Cook, Irv Prue, John Robinson and Chester Horrocks. The tow pilots, Gus, Betsy, Tom Shannon, John Keel and Stan Hall deserve special mention. Theirs was a hard, hot job under difficult conditions. Shannon rented the " Stearman " with money out of his own pocket from Perron's Flying Service just to help out. Betsy never had a chance to compete (not even one glider flight !), Gus had one glider flight (205 miles).

For the record : 1949 winner, Ralph Salisbury did not compete. Rumour has it that their car boiled over under the conditions hauling a " TG-3 " up-hill and down-wind at 105 degrees F. in the shade (no shade !), so they gave up the trip from San Francisco to El Mirage.

Betty Loufek always makes her records under handicaps : Her 21,000 foot flight in 1947 was made at Bishop without oxygen, her two place distance and duration in 1949 were made with the rear hatch off, and this year (she didn't know it until after she landed) she was dragging Bill Ivan's 300 foot tow line behind her for all of those 123 miles. Fortunately the cactus that it caught onto as she landed was pulled out by the roots—but not without a struggle.

The heat was terrible on the machinery. Bill Ivans set his sailplane up at night because the all-metal " 1-23 " was too hot to handle during the day. Everyone's car boiled over, and the long retrieves over mountains with loaded trailers were brutal. Devices to spray water from a tank on to a car's radiator were found to work very well. Those not able to swim at Gus' or at Albrights' pools were in poor shape. It is not possible to put on a bone-crushing meet like that in the Mohave Desert without swimming pools.

The usual quota of yarns were spun, both by the pilots going cross-country and by their crews who did it the hard way. There was the usual perplexed G.I. who wouldn't believe (1) that a glider had landed at his Air Force Base and (2) if it had, it didn't cross all those mountains—not without a motor ! Bill Bueby suffered the only sailplane damage of the meet when he hit a fence post as he landed near Victorville. His sailplane was repaired too late to get back into the competition. It tore the fabric and fairing of his fuselage near the landing wheel.

We are indebted to our director, Dwight Whiting, who put up $50.00 as a retrieve fund and to the following donors of prizes :

1. Mr. Paul Helms, donor of the Helms California State Championship Trophy. To Dave Johnson.

2. Air Parts, of Glendale, who gave a $15 merchandise prize to Dave Johnson for best two place goal.

3. Sky Store at Vail Field whose sunglasses prize went also to Dave Johnson for his new goal record.

4. Signal Pyrotechnics Co., of L.A. (S.C.S.A. member, Charlie Schneider) gave a signal gun to each of the first three in contest points (Johnson, Meulengracht, Robinson), and a box of highway flares to each of the first 20 places in the meet.

5. Ray Pignet of Clover Field at Santa Monica donated 2 hours flying time in a " Cessna " to Per Meulengracht for winning second place and setting two Danish records, getting his Golden " C " and making the 85 mile Barstow-Victorville circuit.

6. Pacific Airmotive of Burbank, Calif., donated a $15 merchandise prize to John Robinson for making the first goal flight to Overton, Nevada.

7. Charles Gress of Clover Field at Santa Monica gave 3 hours of Link Trainer time to Johnny Robinson for attaining the 3 Diamond Rating, the first in the world !

8. Palley Supply Company of Glendale, Calif., presented a rate of climb indicator to Lyle Maxey for making a goal flight to Bishop, Calif., and to Las Vegas, Nevada, a distance flight of 182 miles.

9. Air Parts Inc., of Glendale, gave a $10 merchandise award to Bill Ivans for his goal flight to Overton, Nevada.

10. The Mack Co. of 1,800 Victory Blvd. donated a $5.00 merchandise prize to Bill Ivans for his Diamond " C " goal to Overton, Nevada.

11. Korey Supply Co. of Santa Monica Blvd., Santa Monica, Calif., donated a Sherrill Compass to Betty Loufek for her U.S. Women's distance Record.

From " *The Thermal.*"

News in Brief

WE hear that the trustees of the Kemsley Fund are now prepared to consider loans to approved private groups for the purchase of machines.

TWO hundred pigeons and two gliders started the Air Rally organised by the Pretoria Flying Club and the Women's Aviation Association, Pretoria Branch, at Wonderboom recently. After the Mayor of Pretoria had declared the rally open, 200 pigeons were released by the Pretoria Pigeon Homing Union, then two gliders were launched and started the programme with an exhibition of climbing, turning and somersaulting.

18th NATIONAL SOARING CONTEST. Word has been received that the Directors of the Soaring Society of America have selected Elmira as the site of this year's National Soaring Contest.

NO GLIDING FOR SCOUTS—

H.Q's Emphatic " No "

SASKATOON, Recently : Word comes from Ted Milla who, when we last heard was organising the Boy Scouts in his locality into a glider group. Unfortunately his plans have fallen through due to an emphatic but somewhat puzzling " No " from Scout H.Q. in Ottawa. " It would appear," he says, that Scout H.Q. needs a little educating in the matters of air-mindedness."

£27,500 FOR SERVICES. Recognition of pioneer work in the provision of equipment for our first paratroops has been made by the Ministry of Supply by means of a tax-free award to Raymond Quilter, Chairman and Managing Director of the G.Q. Parachute Co., Ltd. The award, " for exceptional services rendered," in particular recognises the great help the Company was able to give in providing parachutes at extremely short notice.

ONE dollar entry fees will be used for a cash prize for the winner of the Northern Californian Soaring Association's first contest being held at Warm Springs Airport, during the first three weeks of this month. The organisers announce that other prizes and trophies may be added. The contests committee is keeping a wall chart of all noteworthy flights made in the Northern California area.

ANOTHER Slingsby machine coming into prominence, though not quite so new, is the tandem two-seater version of the " Tutor," known as " T-31." It is a development from the single-seater " Tutor."

The Derby and Lancs. Gliding Club have been using one of these machines for instruction over a year now, and Gerry Smith, chief instructor, recommends it highly, as the pupil can make his first solo flight in an ordinary " Tutor " and hardly notice the change.

AS reported in News in Brief last month the Pakistan Air Scout and Glider Corps is becoming a very flourishing movement so much so that last month there arrived at our offices copies of their own journal—the only one devoted to Gliding ever to be published in an Eastern country. Considering the limited printing resources in Pakistan and the numerous other difficulties, this first issue is a grand achievement and *Sailplane* offers its congratulations.

GERMANS WAIT. In a recent letter to the Editor Wolf Hirth, well-known German gliding personality the world over, writes : " Germany is still waiting, as the years go on, to get permission again to play with the clouds and to adventure in the sky above their country."

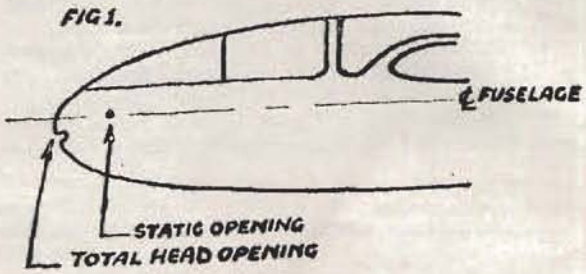
INCOME TAXES. The Commissioner of Internal Revenue has granted the TSA exemption from income taxes which means that any donations given to TSA are deductable from personal income taxes by the donors.—TSA (Texas Soaring Association).

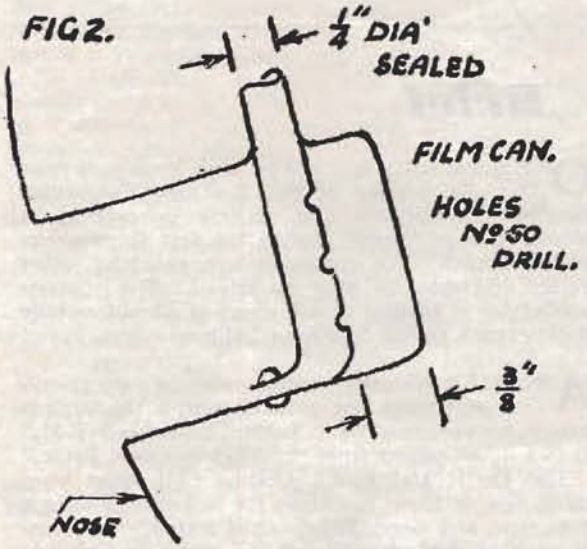
A FLUSH PITOT-STATIC TUBE INSTALLATION

By J. D. GRAVES

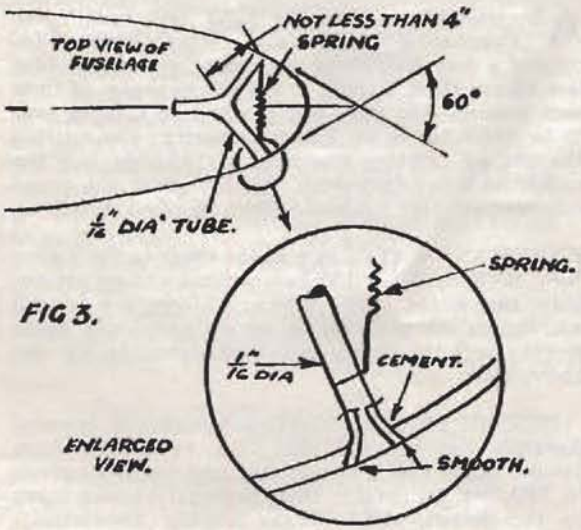
THE usual and, it seems, traditional airspeed mast on a sailplane is one of the drag-producing protuberances which can be easily and successfully eliminated. During my recent visit to Starkville, I obtained from Dr. August Raspet the latest configuration used by the Mississippi group.

The general arrangement is shown across in Figure 1 :





a. The total head arrangements is as shown in Figure 2.



The film cartridge can (Leica 35mm. film cans are particularly good) should be installed such that when the sailplane is resting on its landing wheel and tail skid the can is inclined slightly downward to prevent collection of moisture. The ¼-inch diameter tube has 3/50 drill holes on the aft side of it for measurement of the pressure. These holes are located in this position to protect them against the danger of icing. The tube should be sealed where it passes through the can.

b. The static pressure arrangement is as shown in Figure 3.

There are two static openings (one on each side of the fuselage) located as shown in Figures 1 and 3. There are several methods of securing these tubes in place, one of which is shown in Figure 3. This method consists of flaring the ends of the tubes, cementing them in place and then connecting the light spring between the two tubes. Note that the distance from the tube opening to the " Y " should not be less than 4 inches.

Acknowledgments to *The Thermal*.

PILOT'S CALCULATOR

SHELL-MEX and B.P. Ltd., have prepared a new Pilot's Calculator which will be on sale in the New Year, price 10s. each.

A specimen has been received at this office, and we are told that it is intended merely as an aid to the private pilot flying under V.F.R. conditions, and is not a C.D.C. or precision instrument. Its main function is in providing a ready reference for courses and distances to almost all civil airfields in the country likely to be used, a ready Course Line from and to the base aerodrome to assist in lining up the start and finish of a flight, a proportion calculator to give indications of ground speed and for other calculations and the usual British metric conversion scales.

This calculator has been used by the company's own pilots for a number of years and has proved so useful that it was felt it would be serving a useful purpose if made available to other users of private aircraft. Although intended for the private power pilot it could be used to advantage by gliding pilots planning cross-country flights.

BRISTOL "AT HOME"

LULSGATE, home of British Gliding in the West Country was the venue of the Bristol Gliding Club's annual " At Home " held during the week-end before Christmas.

An ice-cold wind and several inches of snow did not freeze the enthusiasm of over half the membership who began arriving early on the Saturday morning to make preparation.

When the be-knighted Editor of this journal and I drove up to the club buildings in the Ford, shortly after lunch, the scene was one of great activity. Armed with sticks (damp), paper (wet), and bottles of oil and petrol, several members were finding it rather difficult to get the many stoves and fires burning. Everywhere it was very cold and the warmest spot must have been the instructors' room where members of the B.G.A. Instructors' Panel were in committee, whilst others helped with the Christmas decorations and cleaning up.

At about seven o'clock things were well under way. The Bar was packed and the good spirit of gliding people that always prevails on such occasions was very evident. The passing year was discussed and ambitions and hopes for the coming year were talked over with great enthusiasm.

It was nice to see so many visitors from clubs afar who had braved the weather. Clubs represented included the Midland Gliding Club, Derbyshire and Lancs, Surrey, Southdown, London, R.A.F. Gliding and Soaring Association and the Army and Navy Gliding Clubs.

At eight o'clock the lights were extinguished and the Bar became a cinema when the Ed' and I showed a 16mm. sound copy of the film " Wings For Pauline." Everyone was amused with the film and perhaps some learned something.

Later in the evening there was some amusing sketches given by members of the club and several gliding songs were sung by Bill Gotch. (See page 13).

Rex Young, popular club chairman, told me that the club just had to run this type of social event in order to fly. It was one of the only sources of income, as unlike some other clubs the Bar was not patronised to the extent of bringing in large profits.

Like every other club in this country, Bristol is finding the going very tough. Insurances, rent and rates absorb about £20 per week, which is enormous considering the membership—approximately 120.

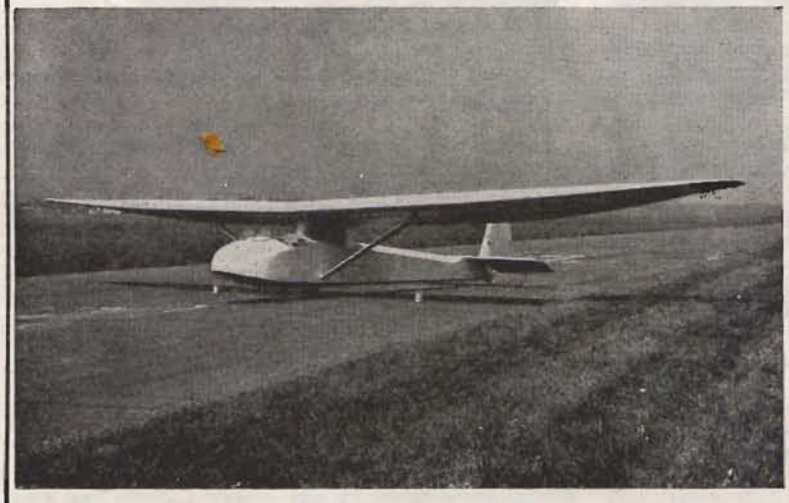
Prominent member of the club, red-haired Cochrane must be mentioned for his untiring efforts to keep things going with a swing and thanks to the many others too numerous to mention.

The party ended shortly after 1 a.m. and when I arrived at the site on Sunday morning members were preparing a tasty looking breakfast of bacon, beans and fried bread. An attempt was made to get some flying but things had not got underway when the Editor and I took our departure shortly after mid-day.

Perhaps one day gliding in this country is going to be made a lot easier for everyone. Perhaps the sport will receive National support as it does in many countries abroad, and perhaps everyone who wants to glide will be able to without having to give up so much to enjoy this wonderful sport. But for the present we must all make the most of a bad job and take our example from the people at Bristol. They're a grand lot and we hope to be meeting them again soon.

R.G.B.

On Service—for The Service



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

Slingsby Sailplanes Ltd., Kirbymoorside, Yorks.

MORE FLYING HOURS FOR CLUBS

ADVANCED TRAINER "LOUDON"

by W. CZERWINSKI

THE scheme of designing an advanced training glider by the 4th year U. of T. students as initiated by Professor T. R. Loudon, head of the Aeronautical Dept. and B.S. Shenstone, past president of the S.A.C., resulted finally in completing a glider which was flown very successfully last year in Oshawa. As an acknowledgment of Professor Loudon's organization of this venture at the U. of T. the students gave his name to the prototype.

The "Loudon" is a high wing sailplane with cantilever wing, having a moderate aspect-ratio and airfoil thickness. The main characteristic data is as follows :

Weight empty	362 lb.
Pilot and chute	200 lb.
A. V. weight	562 lb.
Wing area	175 sq. ft.
Wing loading	3.21 p.s.f.
Aspect ratio	11.6
Min. sinking speed	2.3 f.p.s.
Best glide	22.1

The glider is built mostly of wood, using birch, spruce, basswood and birch-plywood as standard material. A more complete technical description is intended to be published in the near future in the aviation press, and we hope to publish pictures next month in "Sailplane."

When the project was commenced a few years ago, the intention of the designers was to create a training type of glider which would fill the gap between more primary types such as the "Sparrow," "Robin" or "Schweizer 222" and high performance sailplanes. However, as suggested later by some potential users, several additional arrangements were incorporated, such as airbrakes and a detachable canopy top. The designers intended from the very beginning to produce a type which should be in demand in gliding clubs throughout the country because of its serviceability and simplicity in design and construction.

Its good flying characteristics, especially low sink and excellent manoeuverability will enable the pilot to stay in the air and soar under considerably poorer soaring conditions than is possible with existing equipment. Thus the number of soaring days will be increased and clubs which possess a "Loudon" will be able to put in more flying hours.

Its simple construction and inexpensive materials will enable a greater number of gliding enthusiasts to buy it or build it themselves.

The glider has undergone an extensive flight test programme carried out by the Toronto Gliding Club with the collaboration of the Toronto Branch of D.O.T. During the first experimental few flights the glider showed a little lower sinking speed than calculated (i.e. 2.1—2.2 f.p.s., as estimated by the test pilots), as well as very good manoeuverability and good general flight characteristics. Further test flying demonstrated easy lateral control, a rather mild stall, almost spin proof properties and normal airbrake response.

The test flying is progressing according to schedule and a complete type record, which will include all aerodynamic and stress calculations necessary to obtain the final type approval, is being edited for presentation to D.O.T. In several cases, static tests were made to corroborate the applied methods and theories of stressing. Professor Loudon's intention is to prepare a complete set of production drawings as well as calculations which will be available at the University of Toronto to all those interested in building the glider themselves or wishing to use the drawings and calculations for study or reference. It is worth mentioning that the drawings have already been verified by the shop during construction of the first prototype.

It is hoped that the "Loudon," as a popular type of trainer will serve gliding clubs in Canada as did the well known "Grunau Baby" in Germany before the war.

For all those interested in obtaining photographs of technical details of the "Loudon" sailplane, a set of 25 selected prints, 5 ins. by 7 ins. taken during different stages of production, is available for $3.00. Address : Mr. W. Czerwinski, 65 Lascelles Blvd., Toronto.

ULTRA LIGHT AIRCRAFT ASSOCIATION

EXTRACTS FROM DECEMBER BULLETIN

SWEET REASON

It always gives us pleasure when we are able to announce that the authorities that control the destinies of private flying, in particular ultra light flying, have loosened our bonds a little and thus given us greater freedom of the air. We have always been quick to criticise and we must, therefore, be punctilious with our praise.

As our members already know the Association in conjunction with the Kemsley Flying Trust had planned an investigation into the economics and suitability of ultra light aircraft for club flying.

It was arranged, therefore, that the Dart " Kitten " and the Slingsby " Motor Tutor " should be operated by the Southend Municipal Flying Club for a period of six months on exactly the same basis as their other aircraft; the machines were to be flown as intensively as possible and a careful record kept of all snags and criticisms with full details of all operational and maintenance costs. This data would provide an extremely valuable basis for comparison of ultra light aircraft with the normal light aircraft in use by most flying clubs today, besides giving the Association much needed information on the operation and maintenance of our aircraft.

However, at the first official approach of Southend Corporation to M.C.A. in connection with the scheme the Ministry refused to allow the two aircraft concerned to be hired by the club to its members. The Ministry pointed out, and quite rightly too, that the Dart " Kitten " was operating on a Permit-to-Fly and had no C. of A., whilst the Motor Tutor C. of A. was in the " Ultra Light Category " which is, of course, confined by A.R.B. requirements to private flying only. The Ministry, whilst clearly sympathetic, were tied by their own regulations, as laid down, and permission for hiring out the two aircraft to the Club's members was therefore refused.

We, thereupon, took the matter up with the Ministry and requested a special concession to allow the scheme to go ahead in order to provide technical data urgently required both by ourselves and the A.R.B. We pointed out that the operation of the aircraft was to be supervised personally by Mr. Bernard Collins, the Manager of Southend Airport, and that their maintenance would be directly controlled by the Chief Engineer. Further, there was no question as to the safety of the two aircraft. The " Kitten " had been designed and built by an A.R.B. approved designer, and was actually in the process of obtaining its formal C. of A. The " Motor Tutor's " Ultra Light C. of A. was only confined to " Private Flying " pending further experience by A.R.B. of the operation of ultra light aircraft; the scheme proposed would therefore serve to give them some of the experience required.

Following upon these representations we are happy to announce that sweet reason has once again prevailed. After high level discussions between M.C.A. and A.R.B., the Ministry have given their permission for the scheme to be operated subject to the restrictions that the aircraft are to be flown by licensed pilots only and that the pilots concerned are to be informed in writing that the aircraft concerned do not possess a normal category C. of A.

This concession by the Ministry is a very big step in the right direction and gives us a great deal of encouragement in the belief that not only are the authorities sympathetic with the cause of cheap flying, but are prepared to take active steps to support it.

The Dart " Kitten " and the " Motor Tutor " will, therefore, arrive at Southend Flying Club very shortly, where they will be available for flying by all licensed pilots at the rate of 30s. per hour. Mr. Bernard Collins will welcome visitors who are interested in trying out these two machines.

We earnestly hope that as many as possible of our members will avail themselves of this unique opportunity afforded by the Southend Club and the Ministerial concessions, and thus show their appreciation of the Association by " having a go " and so gain for themselves experience in flying these two totally different but delightful ultra light types.

We wonder how many of our pilot members have yet to fly an ultra light. This is their chance.

EXECUTIVE COMMITTEE NOTICES

Chairman, Operations Sub-Committee.—We regret to announce the resignation of Mr. C. A. Nepean Bishop from the post of Chairman, Operations Sub-Committee. Since he took over last summer he has suffered a period of sickness, and pressure of his affairs has prevented him giving the time to the duties that he would have liked to have done. " Bish," however, wishes to remain a member of the Association, and has promised to support our rallies with his well-known aerobatic and crazy flying displays. We hear, by the way, that he is planning a major mod. in his life by changing over to dual control, and we would like to offer him our heartiest congratulations.

We are pleased to state that Captain E. S. Davis has been elected Chairman, Operations Sub-Committee. Captain Davis is a member of the Committee of the London Aeroplane Club to which Club he has belonged since 1927. He is also a member of the Private Air Touring Committee of the Royal Aero Club. He is the owner of an extremely smart " Proctor V " and is a great enthusiast for all branches of the sport of flying; he has recently been delighted with the joys of flying ultra lights.

Captain Davis had previously been co-opted on to the Executive Committee as an independent judge for the award of the Masefield Trophy, presented by our President for award annually to the most efficient of our affiliated Groups. In the course of this task, he has already visited all those Groups who are competing for the Trophy, and we feel that his keenness, experience and energy will greatly strengthen the operational side of the Association's efforts.

The Rt.-Hon. Lord Semphill.—We are proud to welcome Lord Semphill as a new member of the Association. Lord Semphill has had an unusually wide and varied experience in aviation, and has helped to pioneer many new projects. In the ultra light field, he will be remembered for an outstanding flight in 1936 from London to Berlin (570 miles straight line distance) in 11 hours non-stop, flying a B.A.C. " Drone " with a Sprite engine of only 750 c.c. (a conversion of the Douglas motor-cycle engine). Only 14 gallons of petrol was consumed. The return flight was also made non-stop, and we feel that these two flights must surely give our post-war ultra light enthusiasts something to think about and, we trust, to emulate.

Robert Kronfeld Memorial Fund.—We have heard from the Committee of the Robert Kronfeld Memorial that they have so far raised the sum of £227 13s. 6d., which is just £8 short of the figure required for the proposed Trophy consisting of five high altitude barographs to be presented to the B.G.A.

It is felt that some of our members may bear a considerable regard for the late Robert Kronfeld who, besides his famous sailplane activities, was a keen member of the U.L.AA.. and also pioneered the development of the pre-war " Drone "—one of the most interesting ultra lights ever produced. We would welcome any contributions to this Fund, however small, which we will be pleased to forward on to the Memorial Committee.

OPERATIONS SUPPLEMENT

F.A.I. World Records.—Congratulations to Mr. E. O. Tips, designer and constructor of the attractive " Tipsy Belfair " ultra light two-seater, which has recently obtained the " distance in a straight line " world record in Class C.1a (under 500 kgm. (1103 lb.) aircraft weight). Air Marshal Albert van Cotthem, " le doyen " of the Belgian Air Force, flew this little machine on 21st of August last from Brussels to Biarritz non-stop, a distance of 945.03 ms. (588 miles).

Knowing the capabilities of the little " Belfair," we calculate that by substituting the passenger and luggage weight entirely for additional fuel, a distance of at least 2,000 km. is easily within reach. Given a suitable course with a strong following wind, a considerably greater distance could be achieved. We are, therefore, expecting to see further activity in this direction by " Avions Tipsy " next season ;

Whilst on the subject of world records, members may be interested to know what other records are confirmed by the F.A.I. in Class C.1a (the ultra light class). These are as follows :—

Altitude—held by Rene Leduc flying a " Leduc " aircraft (52 h.p. Zundapp engine) at Nantes on 13th June, 1949 : 7,788 metres (25,600 feet).

Aircraft weight was 348.06 kgm. (766 lb.).

Speed over 100 *kms.*—held by Mr. A. L. Cole flying his " Comper Swift " (75 h.p. Pobjoy R.) over the King's Cup circuit on the 17th June, 1950 : 203.137 km.p.h. (126 m.p.h.). Aircraft weight was 409 kgm. (900 lb.).

Two other records are acknowledged, e.g., speed over 1,000 kms. and over 2,000 kms., but neither of these have so far been set up.

Come on U.L.A.A. enthusiasts. Have a go.

Starting up Light Aircraft.—The following warning contained in M.C.A. Information Circular No. 96/1950 is reported for the benefit of all members.

1. Since June, 1948, three accidents to light civil aircraft have been caused by lack of care on the part of the pilot when starting up. The following features are common to all three accidents :—

(a) The engine was started by hand swinging of the propeller.
(b) The cockpit was unattended.
(c) The wheels were not chocked.

In addition, two of the aircraft were not fitted with a parking brake, and in the third the parking brake failed. On each occasion the aircraft could not be prevented from moving forward when the engine started, with the result that the aircraft was extensively damaged.

2. In the most recent case the pilot was convicted for operating his aircraft in a negligent manner in contravention of Rule 10 of Schedule 11 to the Air Navigation Order, 1949, and was fined £10.

3. Having regard to these facts pilots are reminded that, other than in exceptional circumstances, aircraft engines should not be started unless the cockpit is occupied by someone capable of stopping the engine in an emergency. At all times during starting operations the wheels of aircraft not fitted with a parking brake should be suitably chocked, and on other aircraft the parking brake should be used with addition of chocks where possible.

4. Although these measures are particularly important when starting an engine by hand swinging of the propeller, the use of chocks and parking brake is equally desirable when starting aircraft engines from inside the cockpit.

Solo-Training Considerations.—The question of the practicability of solo-training has aroused considerable controversy both within and outside the Association. Enthusiasts for it claim that the development of solo-training would greatly cheapen the cost of learning to fly, although it is generally admitted that it would take longer. This view is, however, heresy to flying instructors of the orthodox school who consider that not only would the standard of training be poor, but the " crash rate " would be high, involving expensive repair bills.

The Association's official attitude in this controversy is, however, one of strict impartiality. Provided that a suitable solo-training aircraft is developed, we are prepared to investigate carefully the practicability of solo-training either as a means in itself, or in conjunction with a limited amount of dual instruction as a preliminary to solo-training exercises in the single-seater.

We have in the past published several articles by those in favour of solo-training, and to maintain a balance of opinion we welcome the following article by Mr. Lorne Welsh, the well-known glider pilot, who has had considerable practical experience in the subject. We should be pleased to receive further views on this controversial subject.

CONSTRUCTION SUPPLEMENT

Permit Applications in Hand.—The responsibility for certifying the following aircraft for the issue or renewal of Permits-to-Fly by M.C.A. has been accepted by the Association's Design Team and Inspection Organisation :—

Chilton G-AFGI—34 h.p. Carden Ford engine. Re-constructed by its owner, Lt.-Cdr. J. S. Sproule, R.N., and fitted with a neat sliding hood modification to his own design.

Heath Parasol G-AFZE—New aircraft built by Mr. R. H. Parker, of Esher, Surrey. It obtained a Permit for a test flight but proved under-powered with its original 26 h.p. Tomtit engine. Mr. Parker has decided to re-engine the machine with one of our 36 h.p. JAP's.

Luton Minor G-AHMO—New aircraft being built by Mr. R. S. Finch of Darwen, Lancs. Although owning an Anzani engine as originally fitted to this type of aircraft, Mr. Finch is considering instead the installation of one of our 36 h.p. JAP'S.

Luton Minor G-AFIR—36h.p. JAP. Pre-war aircraft reconstructed by Mr. A. W. Ord-Hume of Pinner, Middlesex, and to be powered by one of our JAP's.

Luton Minor G-AGEP—36 h.p. JAP. New aircraft being built by Mr. L. R. Miller of Seaton, Devon. Awaiting only the engine installation.

Luton Minor (unregistered)—New aircraft being built by Mr. W. Petrie of St. Margaret's Hope, Orkney. A 36 h.p. JAP is to be installed.

Luton Minor (unregistered)—34 h.p. Scott engine. New aircraft built by Mr. D. E. Felce, of Hinckley, Leics. M.C.A. have agreed to a special concession to allow Mr. Felce to prove the suitability of the Scott engine by means of a series of controlled tests under U.L.A.A. supervision.

Drone G-AEKV—34 h.p. Carden Ford. Pre-war aircraft completely re-built by the ground staff of R.A.F. Station, Upper Heyford.

Flittermouse G-AELZ—(A.B.C. Scorpion engine). A pusher, nacelled type of primary ultra light aircraft produced pre-war as a prototype by Dart Aircraft Ltd., but not yet fully developed. The original machine is being re-built and re-engined by the Aerotech Club under the enthusiastic leadership of Mr. G. A. Chamberlain of Hayes, Middlesex.

Mr. Waterhouse's Drone.—We have heard from Mr. A. C. Waterhouse that his home re-constructed "Drone" (Cherub III engine) has at long last obtained its Permit-to-Fly from the M.C.A. He expresses his appreciation of the useful work done by the Association on his behalf, and adds that it will be quite an experience to fly legally instead of as a "pirate." We are more than glad that our two years negotiation with the M.C.A. on this matter has led to such a satisfactory and realistic conclusion.

Operating Notes for Bristol Cherub III Engine. Mr. Waterhouse has been kind enough to send us a copy of the above notes, which we shall be pleased to lend any member on application to the Hon. Secretary.

Operating Notes for the 36h.p. Aeronca Jap Engine. The above notes have now been prepared by the Association from the basis of the maker's original handbook. They are available on application, price 2s. 6d., post free. Purchasers of our Aeronca JAP engines, will, of course, be entitled to a free copy.

Another Aeronca Re-Construction.—Aeronca G-AGWU, used by Peter Gooch on the occasion of his outstanding flight in the 1949 Spanish Air Rally, has been purchased for the remarkably low price of £75 by one of our members, Mr. P. J. Colbourne, of Farnborough, Hants. Mr. Colbourne writes to say that in view of finding a certain amount of corrosion and moisture condensation in the fuselage, he has decided to strip the machine and give it a complete overhaul. For this work he is fortunate in having at his disposal the facilities of the R.A.E. Aero Club.

Mr. Colbourne has taken over from Mr. Simpson the experimental set of Lodge N14-1 sparking plugs which were undergoing a 50 hours flight test to gain A.R.B. approval in the JAP engine. He will complete the running time required for these.

Overhaul of the Aeronca Jap Engine—J.99.—*Note* :—Authentic information regarding the idiosyncrasies of the JAP engine is scanty, and we therefore believe that the following notes of the actual experience of our member, Mr. A. W. Harrison of High Wycombe, Bucks., will be of interest and value to present and prospective users of this engine.

Perhaps I should state at the outset the position, as far as I understand it, regarding the overhaul of ultra light aircraft engines by amateurs. In my own particular case, the aircraft in question has a Permit-to-Fly, but no C. of A.

I am familiar with i/c engines, as they happen to be my line of business, but I do not possess any Ground Engineers Licenses. My own J.99 engine, after I had overhauled it, was tested and passed under the supervision of a licensed engineer, and the aircraft was subsequently given a current Permit-to-Fly. I believe, however, that engines which are to be fitted to ultra-lights requiring a C. of A. may still be overhauled or prepared for use by uncertificated mechanics, provided that the work is supervised, and the unit finally tested and passed, by a suitably licensed ground engineer. This obviously implies that the work must be done by competent persons, as no ground engineer is likely to sign out an engine which to him is an unknown qunatity as regards workmanship. It will be generally agreed that there would be little object in anyone undertaking an engine assembly or overhaul unless he already possessed a sound working knowledge of i/c engines (but not necessarily of those connected with aircraft) and elementary workshop practice.

The J.99 engine is essentially of simple and straightforward design and construction, but it can present one or two problems for which it is advisable to be prepared. In the first place, I strongly recommend the construction of an engine stand with a firm base, designed to hold the engine by the bearer bolts in approximate flying position. A rough copy of the normal engine mounting, adapted to a base, is all that is required. I welded one up out of light angle steel which proved quite satisfactory.

In dismantling the engine, procedure is orthodox and requires no special tools until it becomes necessary to remove the airscrew hub. For this I found it necessary, after trying a succession of comparatively small claw-type pullers, to make a special extractor screwed internally to fit the existing thread on the hub boss, together with two long spanners (3 feet or thereabouts) ; one of the "C" type for turning the extractor body, and the other designed for holding the airscrew hub by means of studs fitting into the flange holes. Most engines to be dealt with are likely to be those which has been in store for years, and as a result will have developed a certain amount of corrosion between the shaft and hub tapers. Mine certainly needed all 3 feet of the yard-long spanners, and ultimately yielded with a healthy bang ; the mating surfaces showed fairly extensive signs of picking up, and were lapped together with metal polish before reassembly. Some such form of

adequate extractor is a real necessity—any attempts to withdraw the hub by hammering it or jarring the end of the crankshaft will only result in bruised metal and probably irreparable damage. Even if copper drifts are used, it is still possible to upset or swell the steel of the crankshaft-end, if the taper is obstinate enough—and believe me, tapers of this size can certainly be stubborn.

A timing disc, preferably marked with 360 degrees (ideally from 0 degrees representing T.D.C. to 180 degrees clockwise and similarly from the same zero through the remaining 180 degrees counter-clockwise) will be needed for accurately setting the valve and ignition timing. I made mine to bolt to the airscrew hub flange so that the zero automatically registered with the chosen datum (such as a sheet metal pointer attached to the engine) at top dead centres. A completely divided circle of degrees is, however, not really essential; the appropriate crank angles for the ignition and valve opening and closing points could be laid off alone on the disc. Incidentally, valve timing marks are provided on the camshaft drive gears, and both pinions are registered by keys; but even so it is advisable to check the timing after assembly.

With regard to ignition timing, a battery and twin-bulb timing device will prove useful for synchronising the magnetos. I was unable to obtain one when required, so manufactured a makeshift which served the purpose. Nevertheless, after synchronising the mags. with great care and devotion, I found that it was necessary, after the first run on the test bed, to advance one mag. slightly to get within the rev-drop limit, which no doubt all goes to show something or other; in actual fact, I found it impossible to obtain perfect synchronisation. Owing to inaccuracies in the magneto contact breaker cam-rings, it was found that if one adjusted the vernier couplings so that the plugs of one cylinder fired simultaneously, a difference of about 3° of crankshaft movement resulted between the plugs of the other cylinder. The answer in this case was to split the difference, but no two engines are likely to prove alike in this respect, either as to magnetos or valve cams. The valve periods of my own engine were appreciably different, given the same tappet clearances, from those on a type-test data sheet for another engine.

Cylinder heads. It should not be necessary to remove these from the barrels in a new engine. They are a shrink fit on the barrel spigots, and must be heated to, or possibly somewhat above, operating temperature before they can be easily tapped off, a thick billet of wood being passed up the open end of the barrel and struck squarely with a mallet. The ring of holding nuts are of course removed first from their studs, and the heads should be again heated before replacement and pulled down on to their copper gaskets before they are cold. Decarbonising and work on valve seats, ports and guides cannot be effectively carried out unless the cylinder heads are removed from their barrels.

The lubrication system is simple and orthodox, with double gear type delivery and scavenge pumps; but in one respect the engine of G-AEXT differs from others. The thimble valve in the pressure adjustment by-pass is made of stainless steel, instead of light alloy. This modification was carried out during a previous ownership, and has proved more reliable than the original light alloy valve which tended to stick and cause a drop in oil pressure.

Carburation. All those who have had experience of J.99 engines seem to have enjoyed plenty of good, clean fun with carburation and mixture problems. Very little data, apart from the maker's recommended jet settings, is now available for the Amal carburetter; and with G-AEXT we found that, although the jet settings were correct, the mixture proved to be too rich at full throttle. Also, the float chamber tended to flood as a result of taxying bumps, with resultant surging and rough running, which ceased as soon as the machine became airborne. After much adjustment and experimenting, we finally corrected the full throttle mixture by lowering the petrol level in the float-chamber.

After final adjustments, all vital nuts, attachments and unions should be locked with wire or split pins in the approved manner.

A. W. HARRISON.

NEWS FROM THE GROUPS

Cardiff Ultra Light Aeroplane Club

Wanted.—Small section of dry climate for use in South Wales during the winter months. Must be at least as large as an average aerodrome and preferably 10-20 miles in diameter. Without the above, the Cardiff Group are unable to complete more than 11.39 hours flying per month—as proved by their total for the month of November.

Four hours of the above total consisted of a formation cross-country by their two " Tipsies," during a visit to the Montgomeryshire U.L.F.C. at Hereford, and one hour of this consisted of almost blind flying when the weather deteriorated on the return journey to Cardiff.

Captain E. S. Davis visited the Group in connection with the award of the Masefield Trophy and was accompanied by Group-Captain E. L. Mole and Miss Joan Bowen. Captain Davis flew " Tipsy FSC " for 20 minutes with " Tipsy FJS " formating for part of the time.

The Group expanded their Clubroom premises on November 30th, by taking possession of the large room adjoining their previous Clubroom. They hope to develop their social side with billiards, darts, table tennis, etc., in this large room, using the smaller room as a Committee Room and workshop.

Their third Film Lecture was held on November 26th, and consisted of sound films of 1, " How an Engine Works "—with cartoon illustrations. 2, " Malta Convoy "—scenes of war-time sea-convoys. 3, " Mosquitoes in the Making "—how Mosquitoes are built, and two ten-minute cartoons.

THE B.G.A. 21st BIRTHDAY PARTY

IT is believed that the official celebration of the B.G.A.'s 21st birthday, on Monday, December 5th, was a great success. It took the form of a cocktail party, given by Lord and Lady Kemsley, and attended by other gliding notabilities, but not by *Sailplane's* correspondent, who had a regrettable incident with a snowdrift on the way, or by the unfortunate Mr. Slingsby, whose car was stolen outside the very gates of Londonderry House.

It is, however, possible, to vouch for the party which followed. The décor bordered on the magnificent. The entrance hall was overshadowed by a lovely and majestically optimistic model of the " T-34," and was flanked by the permanent marble inhabitants of Londonderry House clad in thermal hats and " A "s, " B "s, " C "s, and Silver " C "s. Within, there was dancing, drinking, talking, and a speech by the Chairman of B.G.A., Phillip Wills, which consisted of an enumeration of the qualities the ideal gliding girl friend should possess, what time his wife—not, one is glad to say, looking in the least like Mr Wills' rather terrifying picture—blushed demurely in a corner. Later, Mrs. Wills cut the cake with an instrument which one can only assume was the guillotine from the Wills' family winch.

There followed a cabaret show. To those who were not at the National Competitions in June, or any of the gliding parties of 1950, it was doubtless new and rather bewildering. To most, however, it had the ever-present freshness of the familiar but not contemptible. True, this cabaret lost a little by having been rehearsed, but only very little. Doc. Slater sang a new song in the old manner ; Cambridge wrote a sketch for the occasion, but one felt that, " plus ça change, plus c'est la même chose." Fred Harris and Bungy Baker sang " Fairy Lift and Fairy Sink," and Surrey, as usual, produced something mildly bawdy and yet respectable. In fact, apart from the odd dinner jacket, this was just another good gliding party, which, after all, is as it should be. It continued just into the small hours, and eventually broke up with sandwiches and soup, some of which inevitably got spilt from a hand a little unsteady from conviviality. Finally, everyone went home, Mr. Wills to brood about a Jubilee, Mr. Slingsby to the police station, and *Sailplane's* correspondent to his snowdrift.

NEWS FROM THE CLUBS

SOARING SOCIETY OF CANADA

St. Michael's Gliding Club.

Brother Hormisdas reports great doings at Buckingham recently when the Gatineau Club's " GB " and " Olympia " took part in a show near the town. Announcements had been made some three weeks ahead and on the day of the show the Brother circulated throughout the town with a P.A., system heralding the imminent approach of the " Olympia " from Pendleton. It appeared on schedule and the tow plane dived over the town spreading leaflets.

Afterwards the " G.B." showed up with Guy Joyce and skimmed over the town for a long flight between 1,500 and 3,000. Later Boudreault put on an aerobatic show and ended up by buzzing the town in the " Olympia." Buckingham is reckoned to be one of the most air minded towns in the country, due mostly to the efforts of the Brother and his gliding friends.

Tenarde Gliding Club, Calgary. Nothing to report yet on Norm Bruce's findings in his investigation of the famed Chinook.

Gatineau Gliding Club. Twenty-five members gathered recently at Beamishill Chalet for the Club's annual dinner. Piece de resistance of the evening was the presentation by " Chips " Smallwood of five Silver " C " badges to—Shorty Boudreault, Barrie Jeffrey, Johnnie Dure, Bill Curran and Herb Henshaw, with an entertaining anecdotal word for each. There were several other presentations and the St. Eugene films were shown together with some interesting slides.

Active gliding came to an end for the winter with the towing of the " Grunau " to Carp Airport where it is being prepared for installation of a wheel. This is a project which has been in mind for a long time and will greatly simplify ground handling of the aircraft.

Toronto Gliding Club. Jack Ames reports that Ron Claudi, now in Toronto, is out with the " T.G.C. " and asking for news of the Montreal " MU-13." John Agnew please note : Johnnie Dure is also out with the " T.G.C." and E. G. (Bud) Hay, one time Pres. of the de Hav. Club has returned to the sport after several years absence. Jack is starting a series of lectures to SO-ED groups during the winter months, on gliding, of course, using Charlie Miller's slides. This may well be the start of a gliding educational programme which has been a pet project of the S.A.C., for some time, but without much progress made so far.

BRISTOL GLIDING CLUB

We were not last month favoured with the hoped for week-end West wind at Roundway, but a strong Southerly wind enabled us to try out the South slope, which as far as we know has not been soared before. N. D. Batstone, who makes the 100 mile journey up from Torquay most week-ends, kept the " Olympia " over this slope for 50 minutes, a most encouraging performance. The bad weather has, however, resulted in much useful work being done on the site. The second cottage is now almost habitable and a wind sock has been erected.

Our training programme has been rather interrupted by an unfortunate accident when the " Tutor " recently landed into the only obstruction on Lulsgate. This happened to be the two-seater and the result was detrimental to both aircraft. However, the enforced shut-down has enabled us to give our auto-towing Ford a much needed overhaul. This has been done mainly by our new Chief Ground Engineer, J. D. Jones, and our Ground Engineer (Vehicles) S. L. Clarke.

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

GLIDING CERTIFICATES - "A" .. 135 (12627-12762)
"B" .. 51
"C" .. 13
Silver "C" 2
Gold "C" —

"B" GLIDING CERTIFICATES

No.	Name	A.T.C. School or Gliding Club	Date taken
7283	Basil Malcolm Theodore Clark	22 G.S.	8.10.50
7346	Roy Alan Howard	22 G.S.	8.10.50
10238	Peter George Jones	123 G.S.	22.10.50
10625	Roger Aubrey Hugh Johnson	43 G.S.	15.10.50
10788	Wendy Senior Price	R.A.F. Detling	13.10.50
11093	Peter Derek Organ	130 G.S.	2. 7.50
11588	Kenneth John Griffiths	43 G.S.	15.10.50
11749	Maurice William Prior	123 G.S.	22.10.50
11832	Peter Edmund Aston	24 G.S.	22.10.50
11879	Geoffrey Brian Theaker	22 G.S.	8.10.50
11914	Anthony Ian McLeod	166 G.S.	25. 6.50
12185	John Frederick Mercer	89 G.S.	7.10.50
12211	George Morgan	Scottish G.U.	5.11.50
12221	Frank Thomas Coning	24 G.S.	22.10.50
12296	Donald Lawrence Bowtell	142 G.S.	29.10.50
12547	James Rae	Scottish G.U.	29.10.50
12615	Ralph Donald Hunnisett	Southdown G.C.	21.10.50
12630	Arthur Cyril Benson Hunt	Army F.C.	15.10.50
10631	Thomas Le Mesurier Spring-Smyth	R.E.F.C.	1. 8.50
12632	John Leonard Varley	Portsmouth Naval G.C.	21.10.50
12635	Edgar James Meddings	R.A.F. Detling G.C.	9. 6.50
12637	Brian Reginald Wilkey	92 G.S.	29.10.50
12640	Clive Dudley Martin	142 G.S.	29.10.50
12642	Alfred Charles Hennessy	89 G.S.	28.10.50
12643	Roy Howard Johnson	142 G.S.	29.10.50
12654	Stanley William Skelton	Fassburg G.C.	22.10.50
12662	Alfred George Kiddle	London G.C.	15.10.50
12663	Bernard Graham Brown	A.H.Q., B.A.F.O. G.C.	21. 5.50
12664	Eric Stanley Bone	Salisbury G.C.	29. 1.50
12666	John Reginald Gadd	92 G.S.	29.10.50
12680	Peter Edwin Berriman	183 G.S.	29.10.50
12691	Mark Bown	42 G.S.	6. 8.50
12693	Alison Hilda Veronica Murray	Surrey G.C.	1. 8.50
12694	Robert Ward	42 G.S.	15.10.50
12695	Roger John McDonough	Fassburg G.C.	5.11.49
12704	Robert Lendrum Fyfe	92 G.S.	15.10.50
12708	Keith Furnival Bryant	92 G.S.	29.10.50
12709	David Michael Kaye	Derby & Lancs. G.C.	5.11.50
12717	David Stanley Fagg	Handley Page G.C.	11. 6.50
12718	Eric Walter Ilett	Gloucester G.C.	10. 6.50
12726	Terence Page	104 G.S.	13. 8.50
12727	Bryan Cocking	22 G.S.	22.10.50
12728	Kenneth Arthur Percival Moss	22 G.S.	22.10.50
12730	Frederick David Hoskins	R.A.F. College, Cranwell	2. 7.50
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12736	Alan Harcourt Bower	22 G.S.	8.10.50
12737	Leslie Stewart Dale	22 G.S.	22.10.50
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12749	David Derek Fletcher Thomas	68 G.S.	29. 9.50

"C" GLIDING CERTIFICATES

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5735	Herbert Miller-Crook	Midland G.C.	7. 9.50
6023	Frank Howard Farr	43 G.S.	22. 9.50
7124	Eric Miller-Crook	Midland G.C.	7. 9.50
8978	Philip Anthony Folwell	R.A.E. G.C.	10. 8.50
11860	John Alan Fryer	R.A.F. College G.C.	15. 8.50
11930	Roy Hollingsworth	R.A.F. College G.C.	15. 8.50
12605	Peter Alexander William Lea	London G.C.	12.11.50
12635	Edger James Meddings	R.A.F. Detling	9. 6.50
12663	Bernard Graham Brown	A.H.Q., B.A.F.O. G.C.	26. 8.50
12664	Eric Stanley Bone	Salisbury G.C.	20. 8.50
12695	Roger John McDonough	Fassburg G.C.	10. 5.50
12718	Eric Walter Ilett	Gloucester G.C.	2. 9.50

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