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The First Journal devoted to Soaring and Gliding

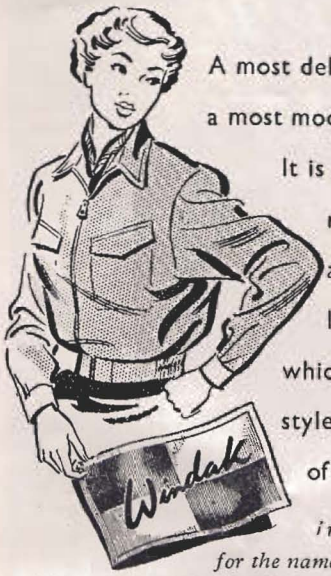


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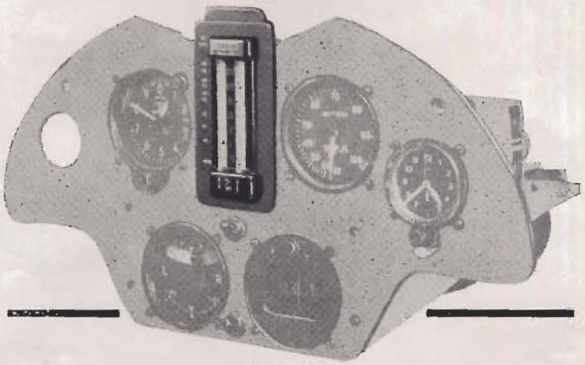
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THE FIRST JOURNAL DEVOTED TO SOARING AND GLIDING

AUGUST 1950 ★ Vol XVIII No 8

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The *Sailplane and Glider* is published on the 5th of every month. Price One Shilling and Sixpence per copy; 19/- per year posted. Advertising Rates on application.

Published for the licencees, Glider Press Ltd., by the Rolls House Publishing Co., Ltd., Breams Buildings, Fetter Lane, E.C.4, and Printed by The Mendip Press Ltd., London and Bath.

CONTENTS

Editorial	169
French Performances	170
Cape Peninsula F. & G. Club	170
International Soaring Contests Orebro, 1950	172
Learning from the Birds	179
Gliding in India	180
Blue Sky Thermals	180
Slack Control Cables	181
Glider-borne Radio	182
U.L.A.A.	182
New Italian 2-seater	187
Club News	188
R.Ae.C. Certificates	191

COVER PHOTO:

A. N. Other, Yolantha Tschudi, Max Schachenmann at Orebro. Kodak 620, 1/25th. F 7.7 (10.0 a.m.).

Editorial

IN the last two months your Editor has journeyed to Elmirs, U.S.A., to Orebro, Sweden, and attended the British National Gliding Contests at Camphill. Since May our Assistant Editor has journeyed the length of the Union of S. Africa and met many gliding personalities, although illness and a period in hospital cut short her activities. In the autumn she is scheduled to visit Australia and New Zealand.

Into *Sailplane* there pours a continual stream of books, journals, and reviews in many languages containing gliding and soaring news from all over the world. Some contain reprints of articles which have appeared in our pages and we are glad to acknowledge the compliment. Consequently we are in a better position than most to attempt an appreciation of the British Gliding Movement today.

In many ways our evaluation is favourable. In practically every country where there is as much gliding as there is in our civilian clubs, gliding is subsidised. It is our belief that we have more active pilots here than there are in U.S.A. France has many more, but we are about on a par with Sweden which has a subsidy. Jugo-Slavia with its 98 clubs and its 30,000 members is probably the leading country outside the Iron Curtain. The design of the "Orao" is certainly a good deal ahead of anything we have seen or heard of elsewhere and they are building better ones profiting by their admitted mistakes. From what we hear the Poles and Czechs have progressed a little from the "Olympia" design but run into other troubles of stability. It is a pity that we could not see the "Sep" at Orebro, and measure our pilots against the famous woman pilot Irena Kempowna.

In the field of design our best machines are on the drawing board. The prize-winning high performance two-seater of Hugh Kandall's is still being developed as it is being built, although in our opinion the Czerwinski-Shenstone design is a good deal more advanced and practical and what is more is in being. The British two-seater will incorporate various plastic features which will be proved by experience, and if the design is successful may cheapen the cost of mass production —but what about the cost of repairs and replacements ? The same arguments apply to the all-metal machines of Paul and Eddie Schweizer. The new "I-23" 14m. span all-metal machine is a beautiful engineering job, a full account of which will appear in next month's *Sailplane*. Slingsby's are reported to have in hand a tried version of the tandem two-seater "Tutor," a high performance two-seater and a similar single-seater, and these may make their appearance next season.

There are various variations of the "Olympia" and "Minimoa" in solo construction in U.S.A., and a "Weihe" and the "Horten IV" have reached there as well. The Swiss have the "Moswey" IV and VI and the "Spyr Va" (two-seater) to show for the efforts of their designers and all are outstanding machines, the "Moswey VI" most nearly approaching the actual performance of the "Orao." Except the "Fi 1," the Swedes have done little but build "Weihe's," the "Fi 1" although fully aerobatic, turned out to be too heavy, yet it did well at Orebro in the hands of a Danish pilot. Dr. Horten's new all wing two-seater in the Argentine appears to have probably the best performance of all but we are waiting for reliable figures which shall be published here.

When we reflect that there are twice as many A.T.C. and R.A.F. gliding clubs as there are civilian clubs in Gt. Britain, although A.T.C. gliding is not thought much of from a quality standpoint, we can truthfully say that a great deal of gliding activity takes place in Gt. Britain, although as events have shown, the standard is not very high. In time we are sure that this will bear fruit and as the standard of instruction improves, our performances in International events will be better. The Clubs can play their part, but it is to the R.A.F. that we must look for real guidance. Jock Forbes has shown the way by his achievements at Orebro. When we have a few dozen instructors of his calibre or better we shall get results. There may be many Billy Nilssons hiding in garages, but without the training of Capt. Alm, of the Swedish Air Force, he might not have done so well. Our pilots were in general, not so clued up as the Swedes or Jugo-Slavs or Paul MacCready in aerodynamics and practical meteorology, whilst their flying seemed so much tidier and intenser than ours. They appeared to be artists alongside the British village piano thumpers, and were indeed pundits who made our team look like fumblers.

In general our Movement seems to be a good deal healthier in the Clubs than in the centre, and we are convinced that little progress will be made as a whole until the whole of the Movement is regenerated and run by new personnel and in a proper manner. The Chairman means well but he lacks the common touch, and he could do with an expert to run his meetings for him. Projects should be referred to Clubs for approval oftener, and there should be more of the spirit of *Noblesse oblige* about the whole set up. Instead there is much bitterness about the clique who run the B.G.A. in an apparently high-handed manner, with an air which makes the memory of "George Nathaniel Curzon—a most superior purzon" only a wraith, a pretension which contrasts strangely with their achievements in International Contests, the impression they create amongst their betters abroad, and the effects of their policy at home.

FRENCH PERFORMANCES

By GUY BORGÉ

THE 1950 weather seems much inferior to that of last year, when French sailplanes enjoyed good weather and plenty of thermals whereas this year good days have so far been rare. There have been frequent storms however, on one occasion resulting in damage to hangars and sailplanes within, which were favourable to altitude flights if not for distance. Up to July only two Gold " C " legs were registered at Pont St. Vincent, by M. de Lassageas (217 miles in an " Air 100 ") and M. Lebeau (190 miles) both landing in Germany.

Numerous interesting height gains were announced. The best was that of M. Fèvre, Instructor at the Est Aero Club at Nancy on June the 16th. He was winch launched in a " Nord 2,000 Olympia " at 12 hrs. 26. At 330 ft. he found a lift of 6-10 feet-second and climbed to 5,200 feet, the base of a cumulus. He entered one cloud with plus 5 feet-second, then plus 13 without turbulence to 8,800 feet. Above this level turbulence increased and the variometer needle showed ups and downs. But the air becoming calm, the variometer registered plus 16, plus 30 and finally plus 40 feet-second and the A.S.I. became iced up at 11,000 feet. At 15,000 feet he decided to leave the cloud and have a look at it from outside. This was reassuring and he entered it again. The variometer registered its top reading of 50 feet-second and the altimeter stuck. Not knowing the actual height M. Fèvre felt the lack of oxygen and although the cloud top was 6,500 feet higher he preferred to open the brakes and immediately to land. After checking, the barograph showed he had climbed to 20,670 feet above the Airfield with a gain of 20,340 feet. He thus got his Gold " C " with one diamond.

There were other climbs near Nancy at the Pont St. Vincent where M. Maxime Lamort, Chief of the Centre climbed to 15,420 feet with the variometer stuck at 50 feet-second in an " Air 100 ". In a similar machine at La Montagne Noire, M. Tardy, Instructor, also acquired his altitude leg.

On May the 8th, Daniel Barbera gained 12,800 feet in cumulus at Fayence.

At Chavenay, near Paris, M. Edouard Nassiet, a member of the " Groupe l'Air " made a climb of the same gain in an " Air 100 " only taking 1 hr. 2 min. He gained his Gold " C " having previously accomplished the distance leg in a flight from Chavenay to Nantes. On the same day another pilot of the " Groupe l'Air ", M. Legrand, got his Gold " C " by climbing to 14,750 feet in the new " Arsenal 4,111 ".

The Groupe l'Air " is an old soaring Club presided over by M. Georges Abrial, which collects all the Air Ministry officials into their private soaring club.

On the same Airfield, between June 17th and 19th, a Regional Soaring Competition was organised for the Paris area Clubs. The first day had bad weather with high wind, and the competitors found it a difficult task to fly along the imposed tracks; Chavenay—Dreux—Chavenay (60 miles) in the performance class and Chavenay—Nantes—Chavenay (31 miles) in the training class. The competition was for speed. Nineteen of twenty-nine competitors completed the circuits. Next day the trials became even more difficult, the tracks were much longer, Chavenay—Dreux—Chartres Chavenay—(87 miles) in the performance classs and Chavenay—Dreux—Chavenay (60 miles) for the training pilots. Only two pilots, Sauvagedt in 5 hours and Menard in 6 hours, succeeded in the first circuit, two noticeable performances in a high wind.

On June 19th the goal was St. Quentin (89 miles) only two competitors reached it. The final result gave the first place to Sauvagedt, a young pilot from the Lognes Inter-Clubs Centre where he acquired all his badges from the " A " to the Gold " C ". The other competitors were pilots from the following Clubs :—Beynes, Chavenay, Meaux, Persan, Etampes and the " Group l'Air ", " Club Aéronautique Universitaire " La Ferte Allais, " Scouts de l'Air ". The sailplanes used were " Air 100's ", " Weihes " and " Nord 2000's " in the performance class and " Grunaus ", " Castel 310's ", " Emouchets " and " Cauldron 811 " in the training class.

CAPE PENINSULA FLYING AND GLIDING CLUB

by

VERONICA PLATT.

Sunday morning and a lovely day—blue sky, little white clouds, a gentle breeze, and a grand road. We left Cape Town proper and struck across the flats in the rough direction of Stellenbosch, past the civil aerodrome where we had landed a few days earlier. After twenty miles we began to get anxious ; no sign of gliding and the local inhabitant apparently had never heard of such a thing. We drifted on for another three miles and suddenly there under a grove of eucalyptus we spotted a " Grunau Baby." Home !

The Cape Peninsula Club is one after my own heart —a real amateur week-end affair where everyone works for the club and expects no reward. They have only just finished building their hangar, having first had to cut down the trees and shape them, and then scrounge something for a roof and find some way of tying it on that would withstand the Cape winter winds. There are only about 40 members all told and each of these have put in four weeks' work before they thought of flying. The field is a rough affair of grass, sloping in all directions and liable to be waterlogged after a little rain, and there is no transport and no comfort whatever. But there is a very real spirit of that old-time enthusiast who just *must* get into the air, and I found it a delightful place.

The Chief Instructor, a Silver C, is von Michaelis. Both he and his assistant, Marais, are pre-war gliders.

Of the pupils there are some complete beginners and some who have already many hours of power flying. They tow by winch and are hoping to be able to arrange aertow very soon. So far their fleet consists of only an " Open Primary ", a " Cadet," and a " Grunau Baby," but they have a " Wolf," another " Primary " and another " Cadet " on the way. Meanwhile training goes on very steadily, and the familiar cry of " Right—take him away " rings down the field telephone over and over again. The best flight so far was one by Michaelis of 1 hour 20 mins., but I watched several pupils and it looked to me as if they will soon be streaking ahead. They were celebrating their first woman "C"—Betty Rowell, and there is another girl training. They hope by the time the real thermals season begins to have a good nucleus of soaring pilots, and there is even a rumour that someone has found a standing wave over the aerodrome and what about height records ? But all that is for the future. For the present the club is cheerfully struggling along, facing all kinds of difficulties and determined to make a do of it. The best of luck to them !

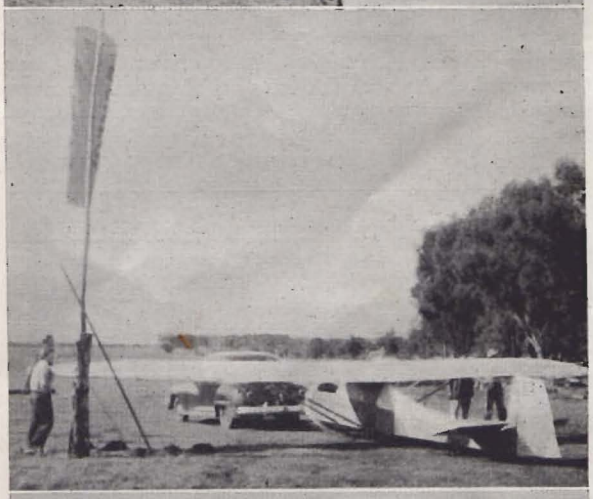
Johannesburg.

There are actually three gliding clubs in the vicinity of Johannesburg—the Pioneer, which is almost dormant, the Defence (Pretoria) which is purely military, and the Rand Flying Club (Gliding Section), which I was able to visit. Unfortunately it was not a flying day, but the Chairman and the Chief Instructor called for me in a vintage Rolls of true Gliding Club ancestry and drove me out first to visit Hans Wirth at Baragwanath and from there to the Rand Flying Club. It was fun seeing Hans again and we exchanged gossip of Bramcote and Samedan. He has settled in South Africa now and is building and repairing gliders. He has a " Kranich " of his own which he has modified to fit the long legs of his South African pupils, and he claims that the performance at speeds in excess of sixty miles an hour has been much improved by the new cabin line. I had hoped to get a flight, but time was too short even for the proffered cup of tea, so we reluctantly had to press on.

The next call was at the Rand Flying Club, a truly magnificent effort in the most palatial style, beautiful Club house, squash courts, swimming bath, tables on the lawn with coloured umbrellas and all the rest. But that is only the facade ; serious gliding is done from another field some miles away. Their system is abinition in the " Schweizer " two-seater and then a solo on the " S 1-19 ". Their instructor, Lewis Kane, claims this as the ideal method. We discussed it over a very good beer with the ' godfather ' of South African gliding, Guy Horrell, of course coming to the inevitable conclusion that we each preferred the method by which we ourselves had learnt. And there, alas, I had to leave, after a very hurried glance round the hangars and a really charming invitation to come again and stay longer.









1. *Douglas Smith, Hans Wirth, Lewis Kane.*
2. *G.C. Cape Peninsula.*
3. *Start of a fine day (Table Mt. in background).*
4. *Marais and Veronica Platt.*

INTERNATIONAL SOARING CONTESTS, 1950

OREBRO, SWEDEN

READERS of *Sailplane* last year will have some acquaintance with Orebro, where this year's International Contests were held, for the Editor attended and reported on the Swedish Competition at the same place. (See *Sailplane*, October, 1949).

From the outset it was plain that this year's Contests were going to be a success. Starting a year ago the Swedes brought their great powers of organisation to bear on the problems, their emissaries visited most countries in Europe and one went to U.S.A., and whatever may have been the individual fortunes of the participants no one could claim that the Swedes left anything undone that they might have done to ensure the comfort and well-being of all present. At Contests they were a model. The aero towing was brilliant, (pilots were launched at the desired minute), as was the weather forecasting, at which for the first time in an International Contest (the Swedes did it last year for themselves) thermal velocity was forecast, and with some accuracy. Results were quickly announced provisionally and as quickly confirmed when barographs had been examined.

Of the announced teams, Poland and Egypt did not put in an appearance. We can guess why the former did not come but we have not yet heard what happened to Kameel Hassan and Marmol who were expected to arrive by aero-tow all the way from Cairo.

COMPETITORS.

Comp. nr.	Pilot	Type of Glider	Nation
1	Jensen, H. W.	Hutter 28	Denmark
2	Rasmussen, K. A.	Fi-1	,,
3	Haltiala, K. Jorma	Weihe	Finland
4	Temmes, K. J.	Weihe	,,
5	Fonteilles, René	Arsenal 4111	France
6	Lambert, Henri	Air 100	,,
7	Lepanse, Paul	Breguet 900	,,
8	Forbes, Robert C.	Weihe	Great Britain
9	Mallett, P. G.	Gull IV	,, ,,
10	Welch, Lorne	Weihe	,, ,,
11	Wills, P. A.	Weihe	,, ,,
12	Kleyn, A. G.	Fokker Olympia	Holland
13	Malotaux, P. C. A.	Fokker Olympia	,,
14	Haydn, C. J.	Olympia	Norway
15	Lasch, H. R.	Air 100	South Africa
16	Alm, Sven E.	Weihe	Sweden
17	Löf, Tage	Weihe	,,
18	Magnusson, S. Arne	Weihe	,,
19	Nilsson, Billy	Weihe	,,
20	Persson, P. A.	Weihe	,,
21	Gehriger, A.	Weihe	Switzerland
22	Legler, Fr. G.	Moswey III	,,
23	Maurer, Siegbert	Moswey VI	,,
24	Ruckstuhl, Karl	Moswey III	,,
25	Schachenmann, Max	Air 100	,,
26	Comte, René	Moswey III	U.S.A.
27	MacCready, Paul B.	Weihe	,,
28	Arbajter, M.	Weihe	Yugoslavia
29	Borisek, M.	Orao II	,,

For a week or two before the Contest, the weather was perfect, and Paul MacCready, who had the use of a new " Weihe " specially built for a Swedish Club, was able to get in some good practice at Alleberg, the Swedish Soaring site. He eventually arrived at Orebro with a 53-mile against wind flight from Vasteras, to which he had flown a day or so before from Alleberg (140 miles). The British team foregathered at Karlstad. Mallet had come from Oslo, the rest from Goteborg. They had a few days' practice in that delightful old town, where Olle and Elizabeth Hakansson came to their rescue with the loan of a flat with a working bathroom (a seeming luxury in Sweden in summer when all the world bathes outside). Then Wills, Welch and Mallett flew to Orebro—110 miles—at 20-minute intervals and arrived in that timing. Mallett made it from a 1,000 feet winch launch. Everyone else arrived by road. Mallett's trailer had been giving trouble and had to be repaired at Karlstad.

First day, Wed. July 5th. After an impressive mustering ceremony where the flags of the competing nations were run up, the Clerk of the Course decided that the weather was suitable for a combined distance and altitude flight. At the Met. briefing the contestants had been furnished with a verbal appreciation of the weather and a forecast. They had also received a sheet of paper on which on one side there were printed the three comparative scales, miles and kilometres, in feet and metres, and Fahrenheit and Centigrade scales. Beneath that was the general outlook for the day and a soaring forecast. The other side of the paper showed a cross section of the weather in graphic form (cloud formation in section) with heights in feet and metres, and thermal speed (in cloud and dry). There were also readings of the winds at various heights (speed, direction and temperature). Here is the Sailflight forecast for the first day :

General outlook, 5th July. The high with the centre west Norway is almost stationary and there will be weak winds between N.E. and E. over Sweden.

Soaring Forecast. When the ground temperature has reached 17-18 C. cumulus base 1300-1500 m. with dry thermals 1-3 m/s. Cloud base will ascend to 1600-1800 m. during the day and the dry thermals will increase to 5 m/s. The cloud tops generally up to 3000 m. but during the afternoon a few tops to 3500-4000 m. From these clouds there will be light showers. Cloud thermals 5-10 m/s. In the southern part of Gotaland (S. of Lat. 57) the cumulus tops will only reach about 2000 m. Moderate to severe icing in cloud 2400-4000 m.

Winds.

500m	40–70	10–20 km.p.h.	plus	12 C°
1000 ,,	40–70	10–20 ,,	,,	8 C°
2000 ,,	20–40	20–25 ,,	,,	2 C°
3000 ,,	350–20	25–30 ,,	minus	1 C°
4000 ,,	350–320	30–35 ,,	,,	10 C°

To the S. of Lat. 57.

200 m	80–100	10–20 km.p.h.

Legler, of the strong Swiss team (Gehriger, Schachenmann, Ruckstuhl) was first away. Some-

where later the British team got away, but the day's results were a fair indication of the British form throughout, as it turned out. In spite of 195 km. by Forbes, 176 km. by Wills, 140 km. by Mallett and 118 km. by Welch, we could gain no more than 12th place (Wills) whose 1970 m. height outweighed Forbes greater distance but 1670 m. height. Alm (Sweden) was first with 284 km. and 3030 m. Paul MacCready gave a foretaste of things to come with 246.5 km. and 2885 m. height.

1ST COMPETITION DAY.

RESULTS

		Distance	Gain of Height	Points
1	Alm	284,5	3030	138,127
2	MacCready	246,5	2885	123,712
3	Nilsson	261,3	2120	113,964
4	Gehriger	213,6	2230	101,330
5	Borisek	178,5	2100	99,308
6	Persson	184,6	2360	98,589
7	Magnusson	226,8	1830	97,915
8	Lepanse	175,9	2360	95,889
9	Fonteilles	155,8	2310	88,763
10	Haltiala	175,9	2420	87,661
11	Schachenmann	154,8	2455	87,427
12	Wills	175,9	1970	84,856
13	Forbes	194,9	1630	84,350
14	Jensen	169,9	2000	83,569
15	Comte	158,1	2110	81,992
16	Mallett	140,0	2370	81,279
17	Legler	133,9	2450	80,896
18	Maurer	175,9	1510	76,254
19	Löf	154,8	1840	75,926
20	Lambert	125,3	2200	73,572
21	Temmes	175,9	1310	72,514
22	Lasch	131,2	1995	71,557
23	Rasmussen	139,9	1840	71,337
24	Arbajter	143,9	1675	69,484
25	Kleyn	122,5	1970	68,409
26	Malotaux	95,0	1820	57,134
27	Welch	120,3	1400	57,072
28	Ruckstuhl	118,6	1330	55,240
29	Haydn	45,5	1240	31,042

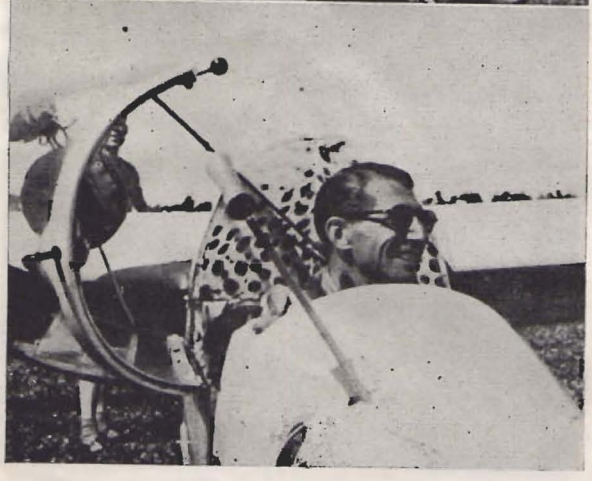
Second day. The high over Norway had moved N. and there were two small fronts with rain in the South. The Contest was for a goal flight. Forbes declared for Varberg on the S.W. coast 293 km., and reached it. The rest of the British team declared for Halmsted 323 km. but none of them got there. Mallett 246 km., Welch 263 km. and Wills 293 km. Mallett had bad luck when his canopy blew off 46 km. before he landed. A new one had to be sent by air from England, but more serious mishap befell Wills. On the way home on the retrieve his car took a bump at speed and the rear of the trailer beat against the ground, resulting in damage to the trailer and



THE GLAMOUR BOYS.
Top. Bengt. Sur C. Bergman and Bertil Florman (Sweden).
Bottom. Siegbert Maurer and Per Axel Persson.







the wings of the " Weihe." This had to be repaired by working through the night into the next day. Both Mallett and Wills were delayed in take-off and missed the best of the conditions on the third day. But at the end of the Second day Forbes was 4th, and British hopes ran high.

2nd COMPETITION DAY 6/7

Distance Flight to Goal predetermined by the pilot.

Total place	Name	Landing place	Goal	Actual	Distance Effect	Todays points	Points to date
1	Nilsson	Varberg	X	293,6	293,6	190,426	304,390
2	Persson	Varberg	X	293,6	293,6	190,426	288,995
3	Fonteilles	Varberg	X	293,6	293,6	190,426	279,189
4	Forbes	Varberg	X	293,6	293,6	190,426	274,776
5	Gehriger	Torslanda	X	263,3	263,3	169,337	270,667
6	MacCready	34 km E Varberg		278,4	272,0	146,160	269,872
7	Borisek	Torslanda	X	263,3	263,3	169,337	268,645
8	Magnusson	Torslanda	X	263,3	263,3	169,337	267,252
9	Lambert	Varberg	X	293,6	293,6	190,426	263,998
10	Haltiala	Torslanda	X	263,3	263,3	169,337	256,998
11	Lepanse	4 km N Varberg		291,7	291,7	157,586	253,475
12	Jensen	Torslanda	X	263,3	263,3	169,337	252,906
13	Comte	Torslanda	X	263,3	263,3	169,337	251,329
14	Alm	1, 8 km NE Alingaas		212,2	212,0	111,360	249,487
15	Maurer	Torslanda	X	263,3	263,3	169,337	245,591
16	Temmes	Torslanda	X	263,3	263,3	169,337	241,851
17	Rasmussen	Torslanda	X	263,3	263,3	169,337	240,674
18	Arbajter	Torslanda	X	263,3	263,3	169,337	238,821
19	Ruckstuhl	Torslanda	X	263,3	263,3	169,337	224,577
20	Legler	8 km N Kungsbacka		262,8	260,9	139,722	220,618
21	Wills	Varberg Airfield		293,6	242,0	128,760	213,616
22	Lasch	Boras	X	221,3	221,3	140,105	211,662
23	Löf	12 km E Kungsbacka		259,8	250,7	133,806	209,732
24	Kleyn	Backamo	X	222,2	222,2	140,731	209,140
25	Mallett	6 km ENE Göteborg		248,3	232,8	123,424	204.703
26	Malotaux	Backamo	X	222,2	222,2	140,731	197,865
27	Welch	8 km WSW Mölndal		263,6	246,1	131,138	188,210
28	Schachenmann	13 km S Ulricehamn		202,1	193,1	100,398	187,825
29	Haydn	4, 5 km WSW Laxa		49,5	49,5	17,110	48,152

Third day, July 7th. The high with centre N.W. of Norway was moving slowly N.E. and causing weak winds from the N.E. to E. over Sweden. Thermals were forecast for as early as 9.0 a.m. and best conditions for about noon. A speed race to Lidkoping was the contest—about 142 kms. Here MacCready was to demonstrate that he well knows how to put into practice the theories he has about best air speeds (but see *Sailplane*, Aug. 1947) and he achieved the phenomenal speed of 85.66 km/hr. Forbes was 12th and Wills due to his missing the best of the

Top. Pirate Gehriger, Frau Gehriger, and Dr. W. B. Klemperer.
Middle. Wolf Hirth.
Bottom. "Leopard" Haile Lasch (*Ph. Olle Hakansson*).

conditions was 27th. Mallett was 28th. The next day was a rest day, as everyone was exhausted, with two 300-mile retrieves on successive nights.

3rd COMPETITION DAY 7/7.

RESULTS

Total place	Name	Speed km/h	Todays Points	Daily place	Points to date
1	Nilsson	69,5621	116,934	6	421,324
2	Persson	74,3656	125,009	3	414,004
3	MacCready	85,6597	143,994	1	413,228
4	Borisek	78,9322	132,685	2	401,330
5	Fonteilles	67,0634	112,734	8	391,923
6	Magnusson	73,1426	122,953	4	390,205
7	Gehriger	65,4588	110,036	12	380,703
8	Haltiala	66,4363	111,679	10	368,677
9	Jensen	66,5141	111,810	9	364,716
10	Maurer	70,1247	117,880	5	363,471
11	Alm	65,1919	109,588	14	359,075
12	Forbes	47,6894	80,166	21	354,942
13	Temmes	67,2484	113,045	7	354,896
14	Lambert	50,8459	85,472	19	349,470
15	Arbajter	65,7956	110,602	11	349,423
16	Comte	52,2373	87,811	18	339,140
17	Rasmussen	55,9693	94,084	17	334,758
18	Ruckstuhl	61,2574	102,974	16	327,551
19	Lasch	61,8797	104,020	15	315,682
20	Malotaux	65,3917	109,923	13	307,788
21	Löf	50,6897	85,209	20	294,941
22	Welch	45,6383	76,718	22	264,928
23	Lepanse	—	6,302	29	259,777
24	Schachenmann	39,6006	66,569	23	253,756
25	Legler	—	24,394	25	244,664
26	Kleyn	—	18,273	26	227,413
27	Wills	—	6,996	28	220,612
28	Mallett	—	12,273	27	216,106
29	Haydn	30,1538	50,689	24	98,841

Fourth day, July 9th. The ridge of high pressure over W. Sweden moved slowly eastwards stabilising the air.

Another speed contest to Norkoping—91 km. (59 miles). The forecast was to the effect that the best thermals would rise after lunch. However, Maurer, Swiss speed merchant who had made two circuits in the speed contests in Switzerland, thinking that perhaps he might repeat that performance, started off at 11.30 a.m. and got there in under 2 hours. The British team all took off about 1.30 p.m. MacCready was last at 2.10 p.m. The result was again phenomenal —MacCready who had moved into second place the day before, was first with 83 km.p.h. and a total of 557 points. Billy Nilsson was 11 points behind with the Jugoslav Borisek in the fabulous " Orao " (see *Sailplane*, June issue) lying third. (N.B.—Note the speed of Borisek and Nilsson flying a " Weihe "). Wills failure was perplexing. He was one of two only who did not reach the goal. The other—Haydn of Norway with only 60 hours soaring had raised everyone's hopes by returning about 3.0 p.m. when it was seen that conditions were improving and the theory got about that he had realised this and was returning for another attempt. He tried again but again did not make the goal. Forbes was 15th, Tage Löf, last year's Swedish Champion, was 4th on the day but 18th in all, Welch 22nd, and Mallett 26th.

4th COMPETITION DAY 9/7

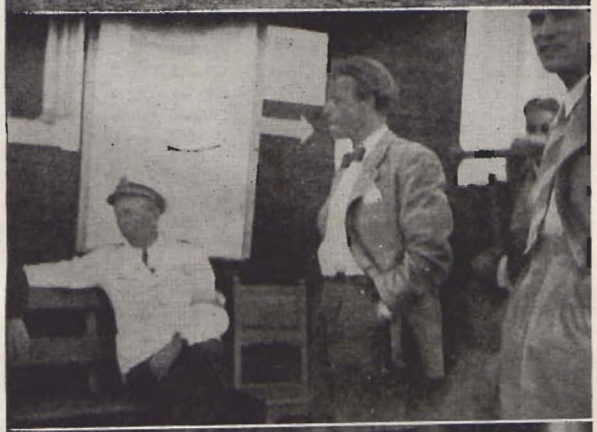
RESULTS

Total place	Name	Speed km/h.	Todays points	Daily place	Points to date
1	MacCready	83,8742	144,012	1	557,240
2	Nilsson	72,6081	124,668	2	545,992
3	Borisek	72,4858	124,458	3	525,788
4	Persson	63,6904	109,356	6	523,360
5	Magnusson	60,5603	103,982	8	494,187
6	Fonteilles	58,7291	100,838	11	492,761
7	Gehriger	55,6310	95,518	14	476,221
8	Haltiala	54,3902	93,388	16	462,065
9	Alm	58,9910	101,288	10	460,863
10	Arbajter	62,1025	106,630	7	456,053
11	Temmes	56,6207	97,218	13	452,114
12	Lambert	59,5427	102,235	9	451,705
13	Maurer	50,2780	86,327	21	449,798
14	Comte	64,0222	109,926	5	449,066
15	Forbes	54,2956	93,226	17	448,168
16	Jensen	47,8033	82,078	23	446,794
17	Rasmussen	48,9605	84,065	22	418,823
18	Löf	71,3869	122,571	4	417,512
19	Ruckstuhl	44,1392	75,787	27	403,338
20	Malotaux	52,2175	89,657	19	397,445
21	Lasch	44,1618	75,826	26	391,508
22	Welch	55,0432	94,509	15	359,437
23	Lepanse	52,7866	90,635	18	350,412
24	Leglet	51,9728	89,237	20	333,901
25	Schachenmann	46,1600	79,257	25	333,013
26	Mallett	58,0745	99,714	12	315,820
27	Kleyn	47,1154	80,897	24	308,310
28	Wills	—	31,772	28	252,384
29	Haydn	—	19,142	29	117,983

The next four days were blank from a soaring point of view, but the rest was welcome.

Fifth day, July 14th. Unstable air with weak and variable easterly winds was the forecast. The aim for the day was distance and height. MacCready was again the winner, this time pursued by Borisek in the " Orao." MacCready flew 326 kms. with height gain of 2520 m. and Borisek flew 297 kms. gaining 2030 m. Nilsson though 4th on the day was still second on the totals only 24 points behind MacCready, and it seemed as if the latter must win. He had established a marked ascendancy over the rest of the competitors and was the target for dozens of photographer and autograph hunters whenever he appeared. So far he had made only one mistake when







Top. National Flags.

Middle. Map at back shows 27 pins in a row denoting goal arrivals at Norkoping.

Bottom. The Glamour Girls (back view), Ann Douglas and Lady Kinloch

Also Swedish Col. Commandant i/c. meeting.

he had mistrusted the official met. forecast and had been forced down short of his goal on the second day and lost 40 valuable points. Third on the day was " Pirate Gehriger " small, ginger haired, slightly bandy legged, wearing his white peaked soaring cap at the " Beatty " angle. Wills was 6th with a flight of 263 kms. and a height gain of 2475 m. but he was still only 28th in the totals. Forbes was 23rd on the day and 16th on the totals, whilst Welch and Mallett were 20th and 18th on the day and 25th and 26th on the totals.

5th COMPETITION DAY 14/7

RESULTS

Total place	Name	Distance	Gain of height	Todays points	Daily place	Points to date
1	MacCready	326,2	2520	134,535	1	691,775
2	Nilsson	287,7	2380	121,036	4	667,028
3	Persson	177,1	2440	90,819	16	614,179
4	Magnusson	276,8	2135	113,239	8	607,426
5	Gehriger	282,8	2460	121,112	3	597,333
6	Fonteilles	188,4	2560	96,297	13	589,058
7	Borisek	297,9	2030	60,616	26	586,404
8	Arbajter	319,3	2180	126,122	2	582,175
9	Haltiala	178,1	2720	96,422	12	558,487
10	Lambert	177,7	2550	93,079	14	544,784
11	Temmes	175,9	2290	87,630	19	539,744
12	Comte	149,1	2715	88,120	17	537,186
13	Löf	266,8	2320	113,924	7	531,436
14	Rasmussen	249,8	2280	108,353	10	527,176
15	Maurer	141,3	1900	70,428	21	520,226
16	Forbes	118,4	2040	66,607	23	514,775
17	Jensen	107,5	1860	60,103	27	506,897
18	Ahn	49,8	1450	35,983	28	496,346
19	Malotaux	175,9	2555	92,665	15	490,110
20	Ruckstuhl	83,7	2575	66,952	22	470,290
21	Lepanse	251,5	2660	116,055	5	466,467
22	Lasch	83,9	2385	63,399	24	454,907
23	Legler	213,4	2845	108,787	9	442,688
24	Schachenmann	240,0	2290	105,770	11	438,783
25	Welch	155,2	2120	78,542	20	437,979
26	Mallett	195,7	2000	87,723	18	403,543
27	Kleyn	86,0	2250	61,428	25	369,738
28	Wills	263,8	2457	116,020	6	366,628
29	Haydn	28,2	890	19,231	29	137,623

Sixth and final day. This was the most interesting day of all, both from the met. point of view and from the results. Here is the Met. forecast in full.

General outlook 15/7

An occlusion front over Denmark in the morning is moving very slowly eastwards and causes cloudy weather with cirrostratus and altocumulus and rather strong south-easterly winds over southern Sweden. Therefore we expect bad soaring weather south of the line Oslo-Jönköping-Visby. The cist-clouds you see in SE direction from Orebro are from the front.

Soaring forecast to the north of the line Oslo-Jonkoping -Visby

The instability of the airmass over Sweden is less than yesterday and decreases northwards. The

soundings show today an inversion between 2400 and 2900 m. The convection will start at the ground temperature of 18 degr. C (at about 10.00 o'clock). Cloudbase about 1200 m. gradually increasing to 1500-1800 m. at ground temperatures over 20 degr. C. The tops of the clouds at 2500-3000 m. At this altitude there are and may be built 3-6/10 alto-cumulus clouds. To the north of lat. 61.5 degr. generally only dry thermals. Dry thermals 2-4 m/s, cloud thermals 3-5 m/s. Moderate icing in clouds over 2300 m.

Winds northwest a line Karlstad-Sundsvall weak from a south-easterly direction.

Winds southeast a line Karlstad-Sundsvall.

500 m.	100-70 degr.	20-30 km/h.	+ 16 degr. C.
1000 ,,	,, ,,	,, ,,	+ 11 ,, ,,
2000 ,,	90-60 ,,	,, ,,	+ 3 ,, ,,
3000 ,,	,, ,,	,, ,,	— 1 ,,
5000	,, ,,	,, ,,	— 14 ,, ,,

The results show two flights of over 400 kms.—250 miles—and four of over 300 kms. whilst there were 15 goal flights of 216 kms. including all the British team. The direction of the flights was Northwards, and it would be charitable to the British team to put down their ultimate positioning to their lack of experience in flying over mountainous country. It will be noticed that six of the first seven places were held by pilots used to this sort of country, the exception being MacCready who was fifth on the day. Per Axel Persson, previous World Champion, put down at Orsa, where the worst of the country might be said to begin. And all the Swedes were in this first eight, the eighth being Persson who with 14 others reached Orsa and tied for 8th place.

Billy Nilsson put out a superb effort to beat MacCready and was first on the day and on the whole competition with a magnificent flight of 427 kms., followed by Borisek in the " Orao " with 412 kms. Tage Löf, last year's Swedish Champion, who had so far not done himself justice was third with 391 kms., Arbajter the other Jugoslav was fourth with 370 kms. and MacCready fifth.

Forbes was the best British performer throughout the competition, and ended up 15th.

The quiet spoken, efficient charming Halle Lasch with the " Air 100 " lined with leopard skin, was 21st, and but for an attack of malaria just before the contest, might have done much better.







Top. Dr. Paul MacCready, the Editor, Yolantha Tschudi, Paul MacCready (Junior).
Middle. Dr. W. B. Klemperer, Paul MacCready.
Bottom. The Moswey 4 (Ph. Olle Hakansson).



Map illustrating 4th and 6th day's flying. Nykoping is S.E. of Orebro. On 6th day MacCready was West of general flight direction which was North.

FINAL DAY AND RESULT

6th COMPETITION DAY 15/7

Distance Flight to Goal predetermined by the pilot.

RESULTS

Total place	Name	Landing place	Goal	Distance Actual	Effect	Todays points	Daily place	Points to date
1	Nilsson	Optand		427,6	427,6	199,724	1	866,756
2	MacCready	Grundsjö		342,1	328,6	151,214	5	842,989
3	Borisek	Hallom		412,0	412,0	192,080	2	778,484
4	Arbajter	Midskogs-bygget		370,2	362,8	167,972	4	750,147
5	Magnusson	NW Ljusdal		298,0	291,8	133,182	7	740,608
6	Persson	Orsa	X	216,6	216,6	115,601	8	729,780
7	Löf	Svenstavik		391,5	391,5	182,035	3	713,471
8	Gehriger	Orsa	X	216,6	216,6	115,601	8	712,934
9	Fonteilles	Orsa	X	216,6	216,6	115,601	8	704,659
10	Lambert	Orsa	X	216,6	216,6	115,601	8	660,385
11	Temmes	Orsa	X	216,6	216,6	115,601	8	655,345
12	Comte	WNW Bollnäs		240,4	238,9	107,261	23	644,447
13	Alm	WSW Sunds-vall		313,4	305,8	140,042	6	636,388
14	Haltiala	Leksand		169,7	169,5	73,255	26	361,742
15	Forbes	Orsa	X	216,6	216,6	115,601	8	630,376
16	Jensen	Orsa	X	216,6	216,6	115,601	8	622,498
17	Malotaux	Orsa	X	216,6	216,6	115,601	8	605,711
18	Rasmussen	Leksand		161,0	160,9	69,041	27	595,217
19	Maurer	NW Falun		174,4	154,4	65,856	28	586,082
20	Ruckstuhl	Orsa	X	216,6	216,6	115,601	8	585,891
21	Lasch	Orsa	X	216,6	216,6	115,601	8	570,508
22	Legler	Orsa	X	216,6	216,6	115,601	8	558,289
23	Schachen-mann	Orsa	X	216,6	216,6	115,601	8	554,384
24	Welch	Orsa		216,6	216,6	93,100	24	531,079
25	Mallett	Orsa	X	216,6	216,6	115,601	8	519,144
26	Kleyn	Orsa	X	216,6	216,6	115,601	8	485,339
27	Wills	Orsa	X	216,6	216,6	115,601	8	482,229
28	Lepanse	—		—	—	—	—	466,467
29	Haydn	Alvdalen		230,7	203,1	89,719	25	227,342

We would like to mention an item of sportsmanship which did not escape us. In the Jugoslav National Contests last year, Arbajter was first with Borisek second. Realising this Arbajter gave Borisek the "Orao," which is the better machine and himself flew the "Weihe." They were placed third and fourth respectively with less than 30 points in 780 between them. We were much impressed with Maurers "Moswey VI," a two-seater with a performance very little inferior if at all, to the "Orao," but circumstances did not permit us to experience a trip in it.

LEARNING FROM THE BIRDS

By FRED OBARR (S. Californian G.A.)

TWELVE noon and we're tired and hungry after five hours of classes. Do We eat? Not while the thermals are popping and the buzzards are soaring! To-day looks good, so off we go to the field where our operation is based. About the time we get the Kite out and ready to go, Dr. Raspet arrives with sandwiches sent by blessed Mabel, who won't let us starve, buzzards or no. To-day we will use Runway 14, so we retrieve the ship to same with Gus's Buick and 300 feet of rope. This method definitely beats walking a tip!

Our field, which we share only with the birds, the bootleggers, and an occasional transient aircraft, has three 5,000 foot paved runways. On the bird operation we use auto-tow launches almost exclusively, getting 800 to 900 feet from 1,000 feet of wire plus 300 feet of rope at the glider end. We have added a refinement to auto-towing that makes it a safer and simpler operation. That is two-way radio. To see how nicely it works, let's get on with to-day's flying.

Dick will make the first tow, so we buckle him in (I really don't know why, because that cockpit is a press-fit for anyone larger than Gus!) and drive out to the end of the wire. Notifying him that we're hooked up, we take-up slack until he gives the word that it is out and he's ready to go. During the tow he speeds us up a few miles an hour and gets just the speed he wants. Dropping the line, he spirals tightly to stay in the zero sink he's found, and soon reports that the horn says half a meter up. Incidentally in this part of the country, one meter up is good, and anything better is a seldom enjoyed pleasant surprise. Meanwhile, Gus and I have been searching the sky for buzzards. Hey! there's one spiralling north of Dick and slightly above him. We send him over to the new thermal, and he gets a meter and a half up, though just as often, it will be two meters down!

Now Dick starts to report. "1,100 feet; 32 m.p.h.; spiralling. He's about 80 feet above me, spiralling". Gus logs this, and I add the time. About six reports and a minute later, Dick says, "1,200 feet; 34 m.p.h.; he's going cross-country. I'm 100 feet behind and 40 feet below." Gus tells him to stick with the bird, which, thoughtlessly, is going downwind and there's a 15 m.p.h. breeze. Now Dick and his buzzard are spiralling again, and Johnson is thankful for having a thermal sniffer (natural type). Once more they go places. In fact they're nearly ten miles out now, and here comes the bad news. "He's flapping!" To which we reply, "Quick, man, give us a bearing." Says Dick, "I can't see a thing but a dirt road and some darned small fields. Have about run out of air——" With that he fades out. Our NBFM sets have a very limited range ground to ground (but, to our annoyance, we can always hear the Long Beach, California, police!).

We quickly hook on to the trailer and take off in the direction Dick was last seen heading. The first time we did this it took several hours of driving over rough country roads to find him—even after we contacted him on the radio. Not liking that, we made a loop, and now locating the glider is only a matter of minutes once we get within the range of the radios.

On the way back, we discuss the flight, and Dick tells us that he got some good pictures. (We have a Leica mounted on the canopy with a gunsight viewfinder, and a 16 mm. G.S.A.P. movie camera shooting one frame per second in the nose which is "fired" by a button on the stick.) By correlating the information gained from the flight data and the pictures we will get clues to the bird's aerodynamics and in particular to the true effects of the tip feathers, which on most land soaring birds spread to produce a slotted effect.

Back at the field now, we reassemble the Kite for tomorrow's flying, and go home to study. Even the buzzards have gone to roost now!

GLIDING IN INDIA

By T. P. BHALLA

Director General of Civil Aviation in India.

THE first practical step to organise gliding in India was taken in 1931 when 41 enthusiasts formed the Indian Gliding Association at Bombay. The venture was entirely private. The gliding instruction and activities were carried on at Aundh and Mr. Kabali was the first instructor. 10 members qualified for elementary gliding licences in the first year. Financial troubles, as there was no State aid, soon followed and though approach was made to the then Government, no help came. The economic depression of 1931 had already set in. Neither State nor private funds were thus available. Many schemes were discussed amongst which was a proposal to invite a German delegation of gliding experts to demonstrate and develop gliding in India. Like others, the proposal broke on the financial rock, as Government were not willing to give any aid nor was the public willing to donate.

In 1938 the late Pt. K. K. Malaviya, M.L.A., assisted by some other enthusiasts and friends tried to vitalise gliding in India and negotiations started with the Aero Club of India, the Indian Gliding Association and the Government of India. The proposal was to set up a central All India Gliding Institute subsidised by the Government. As the war broke out in 1939, the proposal was not pursued in that form.

In 1940 in the second year of the war Government of India felt that it would be an advantage to train 300 glider pilots. They entered into negotiation with the Indian Gliding Association which at the time possessed 7 gliders besides 3 under construction with one Instructor. In 1941 a capital grant of Rs.37,000 and an annual grant of Rs. 20,000 besides a bonus of Rs.250 for each pilot trained up to a maximum of 80 pilots a year was sanctioned. The grant was subject to an agreement between the Govt. of India and the Association whereby the administration and organisation of the Association were to be controlled by Government. Before the scheme had made any progress, the Officer-in-Charge of Training in the Civil Aviation Directorate, Mr. Leete, was involved in a serious accident while flying a glider, which created some trouble for the Association. Meanwhile, the Air Headquarters, India, had decided to organise their training themselves. The proposal, therefore, fell through, though the Association received Rs. 24,800 as capital expenditure and Rs. 10,000 as recurring expenditure to compensate them for the commitments they had already incurred. Besides, a small grant was also sanctioned to allow the Association to maintain its gliders and other property, which it had purchased from Government funds. No further progress took place during the war.

On the termination of the war and with the revival of the activities of the Civil Aviation Department, the question of gliding received due consideration in the Post War Development Plan. It was decided to assist the Indian Gliding Association in the purchase of new gliders and a grant of Rs. 60,000 was made in 1948 apart from a recurring grant and a bonus of Rs 250 for each pilot trained. An agreement was entered into between the Association and the Government of India. The late Sir Homi Mehta as Chairman and his executive created necessary enthusiasm and the membership of the Association rose to 500.

The Instructor of the Association, Mr. F. H. Irani, was sent abroad to purchase new gliders and also undergo a refresher course to be up-to-date in the latest methods. He has come back and the Association is now organising to resume its activities under its new Chairman, Mr. A. C. P. Wadia with effect from the next year. Some primaries and elementaries have already been purchased as also a Sailplane. More are to be purchased. The activities of the Association will principally lie at Poona, though some demonstrations will be made in Bombay as well. The plan is to train instructors first, who can be sent to other centres where they can organise other gliding associations.

As regards the manufacture of gliders, an attempt was made in Baroda two years ago. It has not been successful. It is proposed to develop the manufacture of gliders in the Government Flying School at Allahabad. The Forest Research Institute has promised to assist in the test of local timbers and the Research and Development Section of the Civil Aviation Department is actively assisting.

It is difficult to foretell the future as it is certainly unwise but the beginnings indicate that gliding should start and develop on sound footing. There is sufficient enthusiasm particularly amongst the youth in Universities and Colleges.

BLUE SKY THERMALS

By D. R. Lane

IN Great Britain thermal soaring is automatically linked in the mind with cumuliform cloud, so the following account of a flight by the author might be interesting. It took place in S. Rhodesia in September in a ten-year old " Tutor," which was silently game to the last bump. I should mention that the " Tutor " is ten tropical years old, which in wooden aeroplanes, represents about thirty normal ones. The end of September is pretty warm, and on the day in question was just under 85 degrees at 1 p.m. when the " Tutor " and I were lurched not launched, to 600 feet by a perspiring vintage " Nash " with an " off circular " drum on its back axle. Having pulled the plug and freed ourselves from the devil incarnate, we indulged in a gentle left hand turn with an air of optimism. Several " dust devils " were to be seen over the less vegetated parts of the bush, and with characteristic explosive suddenness, we hit one at 350 feet.

Now these " willies " are rather tricky, being very small in diameter near the ground, and very violent. One can only hope to complete half, at the best, of a circle actually in the lift. To turn concentric with the centre of the " willy " is to be out of its

area of lift normally. I have even tried 60 degrees banked turns, and though I have still continued in the green at this angle, it is too easy to lose them, and steep turns low down in such rough conditions are rather unpleasant (in a ten year old " Tutor ").

After battling half in and half out of the " willy " for the first 1,000 feet, its diameter increased, and though still very rough, we circled just like it says in the book, and were in the green all the time, rising at a steady 20 ft./sec. From 2,000 to 4,000 ft. the lift was very strong, and the green ball was stuck at the top of the tube all the time. I half expected to see it pop out into my lap. By this time I was getting rather chilly, as I was clad only in shorts and the thinnest of shirts, and the " Tutor " didn't have a windscreen (then).

The air was thick with maize stalks and other dried vegetable matter, some bits up to six feet long, which had been hurled aloft by the intense convection. This is a common feature of the Rhodesian sky in the hot season preceeding the rains. Visibility is normally poor, as a result of smoke haze created by extensive bush fires being trapped under an inversion commonly found at about the 12,000 feet level. Our gliding site is at 4,900 feet A.M.S.L. so the " Tutor " and I were at 9,000 feet A.M.S.L. and still going strong. Visibility was very poor and I could only just make out the site still immediately below me.

By now the lift was dropping off, slowly at first, until at 5,500 feet it was down to 5 feet/second; rather depressing after 25, but I was so cold I was almost glad. I could see what looked like a layer of improved visibility above us, and after the lift dropped to a mere 2 feet/second, we struggled up the last 300 feet, and at 12,200 feet A.M.S.L. we broke through the inversion, and rose perhaps 100 feet above it, to look down on its top which reminded me of low flying over the sea, it was so level. I have seen this many times when sitting behind an engine, but never expected to get there without one. After a couple of moments we dropped into the murk again, and returned to warmer regions at the highest speed appropriate to a ten year old " Tutor " with a frozen inmate.

This flight is an example of several that have been made under similar conditions, the most interesting point being that in all cases there has been 8/8ths blue sky. The answer might be that the high temperature at ground level, 5,000 feet, creates an unstable lapse rate up to about 12,000 feet, where temperatures are nearer I.C.A.N. standard. The inversion, which is " built in " during the dry season appears to be due to winds from the northerly quadrant in the higher levels, rather than from anticyclonic subsidence. The lack of cloud is easily explained by a normal dew point of about 25 degrees F.

The flight described represents the best that can be expected from the height point of view, viz. about 6,500 feet gain, under these conditions, but providing the wind isn't strong enough to prevent the " willies " forming, say 10 kts., lift appears to be inevitable between 10 a.m. and 4.30 p.m.—Good show ! Its a bit tricky for ab initio soarers, though, as the going is invariably rough, and the first thousand feet are the worst, due to the small size and violence of the lift. My own motto with respect to his soaring lordship, the whirling willy is " If you can hear it roaring, it's a bit too hostile."

SLACK CONTROL CABLES AND ALTITUDE

By S. A. HALL

IN describing his recent high altitude flight at Bishop, Lyle Maxey mentioned that the controls in the " Prue 160 " became very sloppy due to the cold and caused him considerable alarm, not to mention difficulty with control.

Although military airplane control systems' designers have been combating this very problem for years it appears that only now are sailplane designers becoming faced with it. Airplane manufacturers have spent a great deal of effort in developing cable tension regulators, with a fair degree of success. But none of these devices is simple enough, light enough or inexpensive enough to find ready application to gliders.

Since such is the case it appears that about the only thing which can be done to eliminate sloppy cable systems at alititude is to rig enough load into the cable on the ground so that at altitude the cable will just go slack. Not sag—just go to zero rig load. The amount of load to put into the cable depends on the size and construction of the cable, the structure through which the cable passes and the amount of temperature change. The table below gives a fair idea of the change in rig loads to be expected under given conditions.

CABLE RIG LOAD CHANGE IN LBS. PER DEGREE F. TEMPERATURE CHANGE.

Cable dia.	Wood Structure	Dural Structure	Magnesium Structure	Steel Structure
$\frac{1}{16}$ in.	Tightens .145	Loosens .267	Loosens .328	No change
$\frac{3}{32}$ in.	Tightens .145	Loosens .450	Loosens .552	No change
$\frac{1}{8}$ in.	Tightens .280	Loosens .515	Loosens .652	No change

Example Problem—How high should rig load be adjusted on the ground at 70° F. to cause cables to just go slack at 30,000 ft., using $\frac{3}{32}$ dia. cable in dural structure.

Solution—Rig load will drop .450 lbs. per degree temperature change. Temperature at 30,000 ft. is 48°. Temp. on ground is 70°. Total change is 118°. Rig load drops 118 × .450 = 53 lbs. This ground setting. (Will your pulley brackets handle it ?)

This is for Carbon Steel, Aircraft Cable. (What you probably have).

GLIDER-BORNE RADIO

By STAN HALL

THERE is considerable evidence to indicate that the soaring fraternity has not as yet exploited the use of radio to full advantage. With few exceptions past installations have been bulky, heavy, inefficient and most of all, expensive.

Since the war's end has removed many of the obstacles, both technological and regulatory, which have heretofore hampered the development of economical, efficient radio equipment and operating technique for glider use, perhaps now would be a good time to look anew to the possibilities.

The war caused radio to make great advances. It may be possible at this time to take advantage of some of these developments and apply them to motorless flying.

The development of miniature vacuum tubes and highly efficient transmitting crystals, along with small, long-life dry batteries, miniature variable condensers and other components now makes it possible to design radio equipment for sailplanes that is not only exceedingly compact but light and efficient.

Transmitters measuring no larger than about six inches in each direction, and weighing six pounds or less are available. Such items as miniature wet-cell storage (6 volt) batteries and power supply units are of a size and cost well adaptable to the glider builder's or owner's needs and capabilities.

The operational potentialities of glider-borne radio are also up for review and investigation. For example, the amazing capabilities of the directional loop antenna have yet to be tapped by gliding enthusiasts. This device alone, weighing less than a pound, can reduce cross-country navigation over complicated and unfamiliar terrain to a ridiculously simple and highly accurate process.

The use of radio in receiving weather reports and transmitting position reports to ground crews is rather obvious and has been tested before—but not enough. It is obvious that the more we use radio the greater will be the number of uses we will find for it. We must experiment in order to learn.

Perhaps a good way to start would be to interest radio hobbiests in soaring. Radio is a highly technical field, just as is motorless flight, and each field has its own, powerful attraction to the individual. It is rarely that we find individuals who are proficient in both, hence we should convert a few radio " hams " to our way of thinking, if only temporarily. Where a man is afforded an opportunity to apply what he knows he will apply it. In our case we will gain from the radio hobbiest's extensive knowledge of radio—and he will gain from us. Fair trade.

If radio will help us fly higher, longer and farther, let's do it !

With acknowledgments to " The Thermal."

ULTRA LIGHT AIRCRAFT ASSOCIATION

BULLETIN VOL. 4. No. 2.

EXTRACTS—(*continued*)

Report by Captain Sturton—Chairman, Inspection Sub-Committee.

Once again he had to report that unfortunately there have been but few aircraft to maintain in the strictly ultra light class, although the groups seem to be doing a good job ot work in the maintenance of such aircraft as he had seen in the course of his visits.

It must be remembered, that aircraft intended for a Certificate of Airworthiness, or holding one, must be maintained to a schedule approved by the Air Registration Board if the groups wish to have a " smooth passage " when the time for granting or renewal of C. of A. comes along. The foregoing applies also to aircraft holding " Permits to Fly", since in the very near future no further permits to fly will be granted, and in fact this category of registration will disappear.

He said a few words as to future " home construction " by groups, whether " ab initio " or by means of " kits and parts ". You have heard that facilities for obtaining materials for group and private construction have been vested in the Association, provided the Association is satisfied as to the conditions for construction of aircraft available to the group requiring such assistance. He would strongly recommend groups to re-read the " Notes for Inspections " which were issued to all groups some two years ago, since these Notes contain an outline of the minimum requirements necessary both to the Association and to the Air Registration Board for the construction of aircraft. He knew well that finance is a serious problem to some groups, but quite frankly he has yet to see a

workshop or workshop conditions bearing a resemblance to the minimum conditions outlined in his notes. He would warn any group to give first consideration to a " workshop " before embarking light-heartedly on the construction of an aircraft, since, as pointed out above, such an aircraft will not be allowed to fly in the future without a C. of A. and a C. of A. will not be granted unless the A.R.B. is fully satisfied with the conditions of construction.

Finally, a word about his proposed "common record sheet " for the flying and maintenance of group aircraft. The proposals on the subject have met with a mixed reception from the groups, and although he, personally, holds the view that considerable advantages would accrue from such an arrangement, he would like a vote of the meeting on his proposals, bearing in mind that he thinks he can produce a sheet which will satisfy all the minor alterations by the Groups.

Report by Mr. M. Macdonald—Chairman, Operations Sub-Committee.

From an operational point of view the past year has been a fairly progressive period. Several new groups have been formed (the Hon. Sec. has already spoken of these) and nearly all are operating their own aircraft, or aircraft which have been loaned to them.

At the moment, the Sub-Committee is engaged on the organisation of the 1950 Rally, to be held at Swansea.

Instructor's Panel.

A panel of voluntary instructors was formed in the last month of 1949, in order that groups who did not possess their own could call upon an instructor in order to get their pupils solo. This was announced in the Bulletin for that period : so far three instructors with the necessary qualifications are on the panel, and their services are available on application to the Operations Committee.

Summer Camp, 1950.

This will again be held this year ; probably at Redhill in conjunction with the W.J.A.C. Details will be announced as soon as possible.

Report by Mr. A. R. Weyl, Chairman—Research Sub-Committee and Design Team.

COMPONENTS now available included a cheap and simple wheel of 16 in. diameter with a simple mechanical brake if required ; and propellers for " Aeronca JAP " engines, costing now between £19 and £25. Efforts were being made to obtain cheaper propellers.

Investigation in materials was being done with low-pressure thermosetting plastics on the basis of impregnated asbestos felt.

Plywood of other than birch wood was unfortunately still difficult to obtain in small quantities.

On the Engine side, the possibility of producing the " Zundapp " engine in England had been looked into, but so far the results had been disappointing.

The experiments in solo-training which had been decided upon two years ago, had not yet been undertaken, because of the lack of aircraft and money.

The " Zaunkoenig " was neither practical for this purpose, nor was it designed for it.

The Association was now trying to collect opinions and suggestions on solo training from those who had personal experience.

Most critics overlooked the fact that solo-training required special aircraft. Every effort was being made to have a solo-training aircraft produced, and to experiment with it in order to explore the possibilities seriously and in an unbiased way.

Concerning the Design Team, at present three Type C's of A. were under consideration for the ultra light single-seaters ; two of these would yield building rights, drawings and construction kits for amateur constructors. Relations with M.C.A. and A.R.B., were most happy, and in all approaches on technical matters, sympathetic consideration and active co-operation have been given.

Report by John E. Fricker--Chairman, Public Relations Sub-Committee.

Public Relations work during the past year has been limited because of the difficulties and set-backs experienced with production and operation of true " ultra light " aircraft. With the present active programme of design and construction however, the prospects for the future seem much better, and several publicity schemes are being prepared with the object of acquainting the public with the potentialities of our movement and greatly expanding our membership.

DISCUSSION ON REPORTS.

F/O I. G. Imray raised the point that no mention had been made of Badges for Association Members. At the time of his resignation as Operations Chairman last September, he had prepared all necessary details for their issue.

The Chairman replied that the dies for producing the Badges have been prepared, but before proceeding further he wanted to know members' views as to whether the Badges were yet required. He mentioned that there was to be a plain U.L.A.A. Badge without wings available for 3/6 to any member, and in addition winged Proficiency Badges in three grades—enamel, bronze and silver wings, qualifications for which had been drawn up and published in the Bulletin some time ago. The Chairman replied to a query raised that the tests and minimum flying hours laid down for each proficiency grade were required to be carried out on " ultra light " aircraft.

Mr. G. A. Chamberlain (Aerotech Group) described his Group's plan to use a combined form of training by means of gliders and solo-training on powered aircraft. He wanted to know whether such a system of training would qualify a pupil for issue of a Private Pilot's Licence. The Chairman undertook to discuss this question with the M.C.A.

Mrs. G. Patterson asked whether it would not be advisable to form a Training Sub-Committee. The Chairman replied that the Constitution of the Association allowed for this, but up till now the formation of such a Sub-Committee had not proved necessary and training matters had been covered by the Operations Sub-Committee.

President's Speech.

Mr. Peter Masefield, President of the Association, in a brief and witty speech congratulated the members on their continued keenness in face of frustration, and he was convinced that given the necessary equipment U.L.A.A., would come out of the present doldrums. He raised the Meeting's hopes about the possible development of yet another 50 h.p. engine. He was enthusiastic about the " French Turbomeca " jet engine as now being flown in the " Fouga Cyclone " Sailplane, and he intended to approach the authorities to carry out trials of this engine over here, possibly in conjunction with the U.L.A.A. The advent of the " Coventry Victor " engine and the " Britten-Norman " aircraft should put the Association on its feet. He concluded with a neat epigram in that his motto for the past year had been " the Lord helps those who help themselves" (referring then to Lord Pakenham). He felt he had put his faith in the wrong Lord, having regard to the fact that the Chairman had been invited to state the Association's case at the forthcoming meeting of the Kemsley Flying Trust.

ELECTION OF COMMITTEE MEMBERS.

In the absence of any alternative nominations, the following elections were carried unanimously :—

Hon. Secretary—Mrs. R. W. Lindsay Neale. *Hon. Treasurer*—Mr. L. E. E. Martin. *Inspection* —Captain K. M. Sturton. *General Purposes*— Mr. M. O. Imray. *Operations*—Mr. M. Macdonald. *Construction & Materials (combined)*— Mr. H. L. Pitt.

Motion for Discussion.

The Chairman vacated the chair in order to submit a Motion to the Meeting to define the policy of the Association with regard to those co-ownership Groups which operate aircraft outside the " ultra light " class.

After considerable discussion, it was resolved that as the Association's fundamental aim was to cheapen the cost of flying, it should be done by every means possible ; both by sponsoring the introduction of " ultra light " aircraft and by the formation of co-ownership Groups. Where, however, such Groups operate aircraft outside the " ultra light " category they should realise that the Association's technical facilities may not be fully adequate. It was unanimously agreed that the title of the Association should remain unchanged.

CORRESPONDENCE.

HIGH-PERFORMANCE ULTRA LIGHTS

There seems little doubt that with one exception the light plane firms have little interest in the ultra light movement. The present day trends of light aircraft have been closely followed by the writer, who has drawn these various conclusions. These are listed as follows :—

1. The high performance ultra light sports monoplane e.g., " Tipsy S.1," " Chilton " and " Fairey Junior," appear to exist in very small numbers, thus giving little opportunity to the pilots interested in air racing etc.

2. Practically all of the amateur constructional groups appear to consider an ultra light aircraft to have the following qualities :—ugly appearance, uncowled engines, external bracing and speed range of 60 m.p.h. or less, high wing or parasol layout and of generally having a poor performance.

3. Flying groups and clubs, although continuing to support the ultra-light movement (but using aircraft OUTSIDE this category) do not state what type of aircraft they would favour for cheap flying.

Finally, the writer has discussed ultra light aircraft with several dozen enthusiasts and the types which were given most interest were :—(In order of merit) " Chilton D.W.1." " Junior Tipsy "—2 seater, "Piper Cub" and "Arrow." Firms and amateur constructors should be reminded that the ultra light movement should progress with time and pre-war designs such as the " Luton Minor," " Drone " etc., are of little interest to present day pilots. It is unfortunate that even at the present time "old-timers " still look upon the ultra light as a flying freak, partly due to the hideous record of the "Pou de Ciel " (Flying Flea).

What the ultra light pilot needs is a cheap monoplane of high performance, which is a " must " if small fields are to be used—and he does not like anything " dicey ". Dozens of enthusiasts have expressed preference for training on such types as the " Magister " and bearing the higher subsequent expense so as to convert with ease to the sports type ultra light. A high majority are would-be service pilots who are only interested in flying—as a pastime and they naturally join the service in order to fly at no cost. The view seems to be that after footing perhaps £25 for dual to solo they cannot keep it up on the existing rates. If an ultra light single seater were available the tale would be very different and the service would not have to deal with the " wrong type ".

Coventry. Lewis G. Cooper
(Individual Member—U.L.A.A.)

(The need for a high-performance single-seater is fully realised, and is likely to be met by such as the " Chilton", which is being re-designed by the College of Areonautical Engineering at the request of the Association.—Ed.)

BULLETIN NOTICES.

U.L.A.A. Brochures.

All individual and Group members are requested to bear in mind the Association's need to keep recruiting new members in order to spread interest in the ultra light movement and so assist our cause. We have a printed Brochure available which sets out our aims and objects, achievements and organisation, copies of which will be gladly sent to Groups and individual members for distribution among those interested. Will members and Groups write their requirements for these Brochures to the Hon. Sec., U.L.A.A.

ANNUAL TRAINING CAMP.

There are four definite vacancies for ab initio and refresher training at the combined W.J.A.C./U.L.A.A. training camp to be held at Redhill, Surrey, for the fortnight commencing August 19th.

Dual and solo flying, including cross-countries will be available at about 36/- per hour on " Piper Cubs" and " Moth Minors ", and members are expected to complete at least ten hours' flying. A deposit of £15 will be required which may be paid off by instalments up to the end of June. Messing charges will probably total an additional £5 for the fortnight. Courses for instructors' endorsements will also be available.

Keen competition between the girls and boys was a feature of last year's Camp, in which over 100 hours were logged, and apart from the flying, a good holiday was enjoyed by all. The first four applications to be received by the Hon. Secretary, U.L.A.A., accompanied by an initial deposit of £5 will be accepted. Deadline for acceptance is May 31st.

ON SAILPLANES WITH AUXILIARY PROPULSION

by A. R. WEYL, A.F.R.Ae.S. (*Continued from Page 158*)

List of previous Endeavours.

Messerschmitt M.15 :—18 h.p. Douglas engine (20 h.p. at 4,800 r.p.m. ; 68 lb. weight) installed in front of the seat, just above nose of fuselage ; tractor airscrew. Cantilever wing. Two-wheel undercarriage with narrow track. Flew well, but no reports of any soaring. Later developed into a two-seater ultralight aeroplane with more powerful engine.

D.F.S. " Maikaefer " by Lippisch and Kraemer. 17 h.p. Koeller (Kroeber) two-cylinder 2-stroke engine (weight 46.5 lb.) installed in the nose of the fuselage ; tractor airscrew. Swept-back wing (" Falcon " type, 6.1 degr. sweep), strut-braced against fuselage. Two-wheel undercarriage of narrow track (low-pressure wheels). Poor field of vision for pilot. Aircraft was purely experimental for aerological research ; in respect of soaring qualities, no satisfactory results were obtained.

" Motor-Baby " of Schneider, Grunau :—Adaption of the " Grunau-Baby II " general purpose sailplane. 18 h.p. Koeller 2-stroke engine mounted above the wing on the neck of the fuselage ; pusher airscrew. This combination seems to have given fair satisfaction, and a small number were constructed between 1933 and 1938. Two versions known. " Motorbaby II " was equipped with " M.4 " Kroeber-Koeller 2-stroke engine (600 ccm.; 18 h.p. at 2700 r.p.m.). Engine mounting had to be stiffened by the provision of external struts, because of engine vibrations.

Gruse BG.15/1 :—18 h.p. Koeller engine (18.5 h.p. at 2800 r.p.m. ; 60 lb. weight), or 20/25 h.p. Grade " Igel " four-cylinder in line 2-stroke engine ; mounted on a steel-tube structure above the wing ; pusher airscrew (for Koeller engine, 55 in.Dia., 17 in. pitch, two blades). Rectangular strutted wing with 6.5 degr. sweep back. Keel-type fuselage with a single central tail-boom which is wire-braced against the wing. Normal undercarriage. Series construction (at £190.—) intended but not realised.

" Kormoran IIa," by Dittmar, Hartman and Sombold :—18 h.p. Koeller " M.3 " engine (or 18 h.p. 800 ccm. FEPA/1 two-cylinder V-engine, 3000 r.p.m.), mounted on top of the wing ; pusher airscrew. Normal fuselage. Rectangular strutted wing. Conventional low-pressure undercarriage. Enclosed cockpit. One aircraft of this type was constructed by a German enthusiast in Morocco. Reports cover no more than test flights ; no reference to soaring qualities.

Carden-Baynes, by L. E. Baynes :—One of the most serious efforts to achieve a sailplane with auxiliary engine and full retention of soaring abilities. 249 ccm. Villiers Mk.XIV-A (2½ h.p. nominal) single-cylinder inverted two-stroke engine with pusher airscrew. The complete power plant swivels and can be withdrawn into the fuselage aft of the neck which connects wing and fuselage ; engine and airscrew are then completely submerged. Airscrew is stopped with blades vertically. Actual power, about 9 h.p. at 3500 r.p.m. Fuel carried for 30 min. power flight. High-performance sailplane (" Scud III "). Single-wheel, behind a central skid. Wing-tip skids for unassisted take-off (the starboard one equipped with a secondary throttle, for unassisted taxying by the pilot). Starting device in the cockpit ; is inter-connected with the extending gear of the power plant. Provisional price, £250. Flight tests by E. Collins were not encouraging : severe engine vibrations and insufficient power for take-off. More recently, the design was revived on the basis of a 350 ccm. engine, and the performance in power flight stated to be more satisfactory. As a pure sailplane, " Scud III " is even now competitive with present-day performance designs.

" Motor-Condor," by Dittmar, Riedel, and Bley :—" Power-Egg " principle adapted to " Condor " high-performance sailplane : 18.5 h.p. Koeller engine in a streamline fairing (cylinders protruding) with a pusher airscrew, mounted on open structure six streamline tubes, so high on top of the wing that the small-diameter airscrew just clears the upper wing surface. To balance the tail-heavy moment of the power plant, lead weight within nose fairing. Jettisonable two-wheel undercarriage underneath the skid. Normal take-off with aid from a bunjy. The power plant can be detached for soaring. This design was considered a first step towards a sailplane with submerged engine and retractable airscrew. No further developments known, after a few glowing test reports.

" Grey Wolf " by Elsnic :—Developed from a two-seater sailplane. 25/28 h.p. Walter " Atom " 1,100 ccm. two-cylinder engine (28 h.p. at 3000 r.p.m.) mounted on open steel-tube structure above the nose of the fuselage ; tractor airscrew. Engine weight, 88 lb. Strutted tapered wing with open canopy. Skid under-carriage. Take-off with bunjy.

Steffanutti " S.S.2 " :—Tail-first principle. 18 h.p. Koeller engine installed in stern of fuselage ; pusher airscrew of 52 in. dia. Trousered tricycle undercarriage. Tapered, cantilever wing and leading aerofoil. Fins and rudders at mid-span of wing. Slotted elevator.

Lemberg " ITS-", by the Polish Research Institute for Soaring Flight :—18 h.p. Koeller " M.3 " engine

mounted in the wing trailing edge; pusher airscrew, running between two tail-booms. Nacelle underneath the wing. Wing tapered and strutted. Central skid with single wheel. Engine can be started during flight. No reports on soaring experimentation.

"*Mue. 13 Merlin*", of Academic Flying Group Munich:—Installation of a Kroeber M.4 engine (18 h.p.) at the Mue.13 sailplane. Engine installed in nose of fuselage with cylinders protruding; tractor airscrew. Balance weight in stern of fuselage. Retractable central double-wheel (10 in. track). The type "Merlin" is similar to the type "Atalante." The engine shall be mainly used to return with the aircraft after soaring flight, and soaring with a detached power plant or, at least with the airscrew removed, is suggested.

Horten III-D:—Tailless sailplane with power assistance. 32 h.p. Porsche "Volkswagen" four-cylinder 4-stroke engine (modified motor-car engine) submerged in centre-section of wing; retractable pusher airscrew with multiple-belt drive. Tapered wing of 23 degr. sweep-back. Shall be able to take-off within 80 yards. No report on actual soaring qualities.

"C.10", of Wuenscher:—18 h.p. Kroeber engine submerged and geared 2.08 : 1; pusher airscrew revolving around tail-boom which forms the fuselage (1912 arrangement of the R.A.E. !); airscrew has folding blades to reduce drag in soaring. Experimentation seems to have terminated in a fatal accident.

Wolf Hirth (1942):—25 h.p. four-cylinder 2-stroke Krautter engine (25 h.p. at 5500 r.p.m.) submerged aft of pilot in the fuselage; 2-bladed pusher airscrew mounted on a mast on top of the fuselage, and driven by bevel gear (1 : 2.3); the mast together with the airscrew is folded back into the fuselage. Low-pressure wheel aft of centre of gravity, and small nose wheel. Wing and tail are that of the Hirth-Schempp two-seater "Goe-Vier"; steel-tube fuselage. The power plant, complete with driving shaft, bevel gear, airscrew and cooling-air duct forms a compact unit which swivels about its c.g. for retraction. 500 ccm. engine (52 × 62 mm.) weighs complete 45 lb. Airscrew of 55.5 in dia. and 33 in. pitch. Engine was a special development. The design was ready for test in 1939; first flight made in October 1941. Photo shows a cross-country flight across the Autobahn Stuttgart-Munich on 22-3-1942. The war interrupted further experimentation and development.

Finnish P.I.K.10 "Motorbaby":—17 h.p. Aubier-Dunne V.2-D two-cylinder-in-line 2-stroke engine (4000 r.p.m. geared to 1600 r.p.m.) in nose of fuselage, with the pilot having his feet underneath; tractor airscrew, Grunau Baby II airframe. Normal two-wheel undercarriage. Airscrew, 63 in. dia., 28 in. pitch. No report on soaring qualities.

AN OLD TIMER THINKS ALOUD

By Air-Commodore SIR ADRIAN CHAMIER.

It seems to be a penalty of progress that things get more complicated and more expensive; this is certainly true in the matter of learning to fly. Please note that phrase LEARNING to fly; it is nowadays supplanted by flying TRAINING and that is indeed the essence of the matter.

In the early days men learned to fly: there was no one to train them. To-day men and women are taught to fly. It is undeniable that the new method will turn out better pilots, for a good instructor will stop faults before they become habits; it is equally true that dual instruction can be carried on in weather when solo beginners must stay on the ground, so progress will be quicker "dual". It is also a fact that flying training has become a very expensive affair of expert instructors and costly planes. And so it comes about that the state is called upon for subsidies—those unending subsidies without which we pretend that life could not be lived.

But in a chromium-plated world, I—a pilot, if I may presume to call myself one—of the older school, feel that there was much to be said for the older and simpler style of learning by the sweat of one's brow, not by the wear and tear of the nerves of a flying instructor.

To try and make my point let me draw you a picture of a pupil of the older school.

He is lectured on an airfield on the how and why of an aeroplane's flight, the emphasis being in the maintenance of flying speed, followed by an explanation of the controls, one by one. Cockpit drill under the eye of the instructor in a simple ground trainer for each control, to learn smoothness of movement, follows. The trainer may simply be an unserviceable aeroplane, or something more like the "Kronfeld" trainer, or the height of luxury—a Link trainer. Of these I would advocate the simple static aeroplane to start with and something pivoted or balanced if frills are wanted later. But I would insist on its being in the open air—that is the place to learn to fly.

I dislike intensely the stuffy, gloomy halls in which Link trainers glower; flying is a joyful, open air thing and there is no place in it for school-rooms, notebooks or stuffiness. There is also no place in it for cramming; it should be learned gradually, and unhurriedly—absorbed would perhaps be the better word.

When the pupil has a fairly accurate idea of the handling of the controls he is introduced to his friend the engine. This should be a noisy piece of mechanism with open exhausts and the pupil should sit well out in the slipstream. This again is psychology. He must learn to *like* the roar of a hearty engine and to keep his wits, and control of his estimate of pace and distance, in the roaring gale of air rushing past him.

This may be mildly intimidating at first, but custom changes it to exhilaration.

All this is in a tethered machine but the pupil is now ready for movement. He is sent off in a machine incapable of flight and ordered to taxi until he can keep his machine straight at fast taxying speed without swing.

His throttle stop is now altered to give him still more pace, and he is taught to concentrate on keeping his tail up horizontal while still avoiding swing. From this the hopping stage follows easily and naturally but the throttle stop will cause the machine to sink back to earth almost as soon as the machine has left the ground if more than a hop is attempted. But the pupil has got accustomed to being off the

ground and master of his own small fate.

Straight flights of gradually increasing distance bring aileron control into the picture and since at the end of each of these miniature leaps into the air a landing has to be made from gradually increasing heights the nervous tension (which some pilots never lose) of these arrivals and departures never arises. Isn't this to the good? Simple flying in the air under good conditions is as easy as falling off a bicycle—but take off and landing require nerve, judgment and practice.

Above all there has been no big dreaded moment like the "off-you-go-solo" of the present day system; our old style pupil has been solo from the start.

By now our pupil has been making straight flights and has landed from say 50 feet: he has learned to control his machine pretty well both longitudinally and laterally. He is now allowed to start turns. At first these are confined to gentle deviations with landings and so by gradual stages until the first circuit has been made naturally—even if a trifle triumphantly.

In all this there has been no shock or strain on the nerves; it has all been natural and easy. As some proof of this statement I may be pardoned, perhaps, for recounting a small personal experience. During training as described, while about 50 feet up on an early circuit, I found that the machine was on fire just ahead of my feet. I hate to think what would have happened if I had been up on my first solo under modern instruction. As it was, I landed without panic and beat out the flames with my flying coat—an act of sacrifice which my instructor failed either to appreciate or recompense.

To-day all this might be much improved. We have the enormous straight runways of deserted R.A.F. aerodromes. Material will be much better; planes will really fly; engines will be reliable; instructors will, I understand, be in touch with pupils by radio.

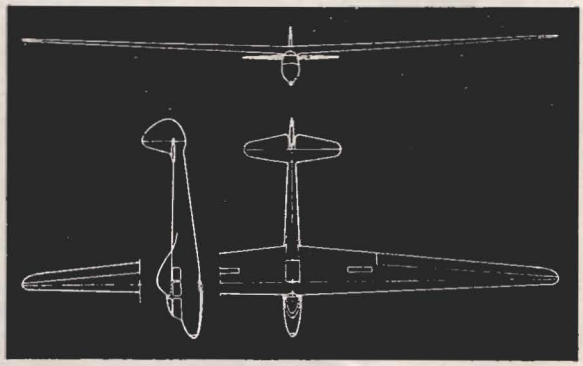
As regards this latter plan, I must confess to doubts. There is something to be said for very short flights within sight of the instructor with brief hints by him to the pupil after he has landed. An instructor's voice bawling in a pupil's ear when he is already conscious that he isn't doing very well may be very disturbing; at least the radio telephone must be used with very great discretion.

I should myself prefer to rely more on aids which make it easy for the pupil to do well; for example, by the use of that flight control instrument that indicates the correct speed to take off, the right angle of climb, the correct glide or bank—a cheap and easy means of giving confidence and avoiding mistakes.

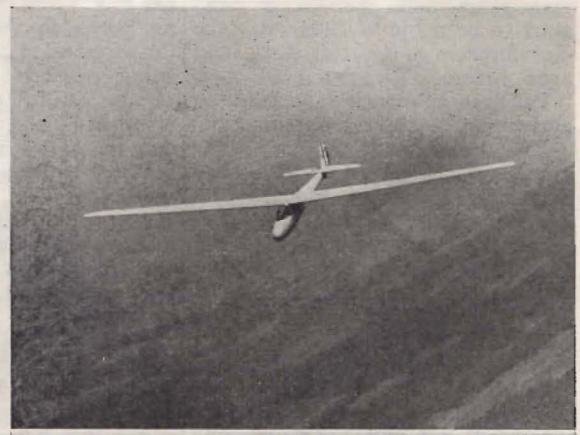
I do not see why instruction on these lines should be expensive or inefficient and I should have thought it better value to encourage the development of these elementary trainers and light aircraft rather than to saddle the public with the recurring expense of a subsidy on flying.

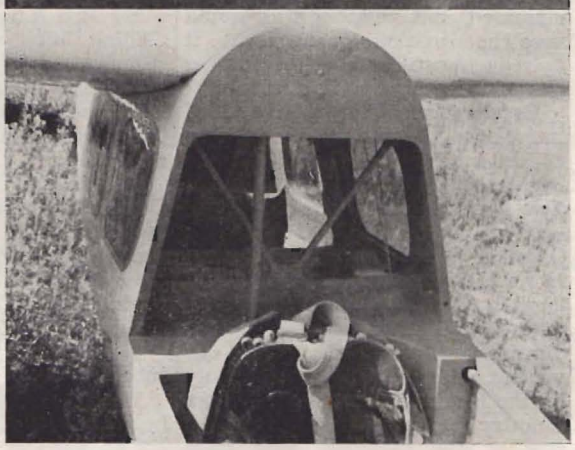
We should not look on flying training as a means of producing cannon fodder of a high class; the real thing is to get the maximum number of young people to enjoy and appreciate the air as a medium for sport and pleasure; the frills and graces of full scale aviation may be acquired later by those who wish to become serious aviators. If we can grow to be an air-loving people, we will be an air-fairing people and we will gather the material benefits of air transportation in peace and the security of air supremacy in war.

NEW ITALIAN 2-SEATER



"Il Canguro" (Kangaroo)





"Kangaroo" (*Pk. Galimberti*)

NEWS FROM THE CLUBS

NEWCASTLE GLIDING CLUB.

14th July, 1950.

On July 10th, the "Newcastle Gliding Club" held its Annual General Meeting and the following officers were elected: *Chairman*, Councillor R. Parker; *Hon. Sec.*, Mr. J. Anderson; *Hon. Treas.*, Mr. H. Lambert; *Committee*, Miss J. Hicks, Messrs. S. C. O'Grady, A. Coulson, L. Tate, A. P. Miller, Dr. De Redder.

The most important change was the resignation of Mr. Alfred P. Miller, who has been Secretary of the club since it was formed in 1930. On behalf of the members, the writer wishes to record our sincere thanks for all that "Pat" has done for the club.

In particular, the older members recall how he kept the club going almost single-handed during the war years and enabled a fresh start to be made in 1946, with the club finances in a better state than ever before. We are glad that "Pat" is to continue taking an active part in the club organization.

The number of active flying members has, unfortunately, been dwindling in recent months and our financial position has consequently deteriorated during 1950. Only about a dozen members appear to take their gliding really seriously and as a result, the revenue from flying fees is insufficient to cover the considerable cost which is entailed. It seems inevitable that subscription rates will have to be increased, but whether this would save the situation, or aggravate it by reducing still further the number of members cannot be foreseen.

Recent thermal flights have added interest to the routine of training circuits. On 16th April, Dr. De Redder with Prof. G. B. Duguid flew for 20 minutes in the "two-seater". On the 10th June, S. C. O'Grady and J. Anderson made a 1½ hour flight in the "T 21B" and landed at Wolsington Airport 8 miles away. This was the longest duration flight made from our present site and was marred only by the fact that their short "Cross Country" stopped flying for the rest of the members who were awaiting their turn to fly. The retrieve was made by Aerotow, but it was then too late for any further thermal flying.

A week later, J. Anderson (our new Secretary), no doubt having benefitted by this extensive practice at thermal circling, obtained his "C" certificate in the "Tutor". This is the first "C" in the club to be obtained by pure thermal lift.

On 25th June, Jack Anderson again showed the rest of us how it is done, by flying for 32 minutes in the "Tutor". While he was cruising overhead, S. C. O'Grady and Lionel Tate were launched in the "T 21B". Although the cable broke at 400 feet, they circled to cloud base at 2,500 feet and then climbed 300 feet into cloud. They returned after 35 minutes.

On 2nd July, Miss H. Crawford flew solo for the first time and took her "A" and "B" certificates in fine style in the "Tutor". Miss Crawford is to be congratulated on being our first lady member to obtain a "B" certificate.

On 9th July, the best flight was one of 12 minutes in the "two-seater" and Len Dent just missed qualifying for his "C" while flying the "Tutor". He did not manage to centre the thermal, but was airborne for 9 minutes. Better luck next time, Len.

ULSTER GLIDING CLUB

The difficulties of Gliding Clubs to-day are well known, and we owe our thanks to several things.

1. R.N.A.S., Eglinton "Gannet Gliding Club" who paid two years' subscription in advance.

2. The Kemsley Flying Trust who made it possible for us to sell our "Kirby Kite" to the Gloucester Gliding Club.

3. Messrs. William Douglas and Don Hamilton who completely overhauled the "Tutor", installed instruments and a wind-shield, and are allowing us to pay for 40 hours work each in Club fees and flying time.

4. Mr. Carl Beck for a generous subscription.

Without these things there would be no Ulster Club; but now we are on our feet and back where we were in the old days of 1932, when we had one Sailplane and a great deal of enthusiasm.

We remember the days when Ulster Club headed the monthly Club news, so now we are on our way back. If the Club members who instructed A.T.C. throughout the war can include their time, it may be said that the Ulster Club members have flown Gliders each year for eighteen consecutive years; so we do have a tradition to uphold.

We started operations this year on 18th June, with the following flights:—

Lieut. H. Stubbins, R.N., High Hop and circuit. J. E. Osborne, R.N.A.S., High Hop and circuit, and then 11 minutes soaring for his "C" Certificate. D. H. Sansom, R.N.A.S., High Hop and circuit, and then 30 minutes' soaring for his "C" Certificate. D. T. Edward, R.N.A.S., High Hop and circuit; and W. Douglas, (who still holds the Ulster duration record), one circuit.

Don Hamilton, who instructs A.T.C., flies the Short & Harland 2-seater "Nimbus" and instructs for Ulster Club, had 1¼ hours' soaring which included his first flight over Benevenagh.

All the while, Liddell flew his "Gull" for four hours overhead like a fussy mother hawk ready to dart down and chase the fledglings if they went too far towards the down currents of Hell's Hole. The interesting point of the day was that this is the first time that "C" Certificates have been flown exclusively on the West slope and launching from the top beach. The river has greatly changed its course through the sand and a longer tow can be made before the end of the cliffs is reached.

It was grand to see the machines again in the air and to know that we have complete equipment and our heads above water.

R.N.A.S., Eglinton, have their own "primary".

Short and Harland are training on the "Nimbus" and, as usual, A.T.C. are turning out pilots; so we look forward to receiving support from all these sources. They will provide the primary tuition, we will provide the soaring. (we hope! —*Ed.*)

DERBYSHIRE & LANCASHIRE GLIDING CLUB

Easter. Almost a complete wash-out. About 10 hours' mild thermal flying in a Southerly wind on Good Friday, then North Westerly gales on Saturday, Sunday and Monday, making flying quite out of the question. The few who were left had a little flying on the Tuesday, the gale almost having blown itself out. A very disappointing week-end.

Sunday, April 16th. Wind S. 5 m.p.h. Veering to W. 15 m.p.h. The day improved as it went on, and thermals began to develop about mid-afternoon. Snatching this unexpected opportunity, Bill Ebrington got away in his "GBII" and landed near Goole, 50 miles, to complete his Silver "C". In the meantime, 20 odd hours were done at home, including John Habershan's 1st solo, followed immediately by "A" and "B" flights.

Sunday, April 23rd. Wind N.W. Backing W.N.W. 20 m.p.h. Rough difficult thermals. L. R. (Curly) Bulling completed his Silver "C" by flying his "Olympia" to Boston, approx. 75 miles; while Harry Midwood took the Club "Gull" to Syerston, some 40 miles.

Sunday, April 30th. Wind S.S.W. 15 m.p.h. Rain morning, clearing by afternoon to allow 18 hours' hill-soaring. Everything flying except the "T-31", which was away at Derby being aero-towed for its Type Test flights. A mild wave sprang up in the evening, Fred Breeze reaching 2,400 feet in his "Kite I".

Sunday, May 7th. Wind E.N.E. 10 m.p.h. Training all day on the home site. Two private owners flew over to Mam Tor and had an hour each, but could not get back.

Saturday, May 13th. Wind E. 15 m.p.h. Several private owners flew to Mam Tor, and this time one got back.

Sunday, May 14th. Wind E.N.E. 15 m.p.h. Continuing our period of Easterly winds, a number of machines crossed over to Mam Tor, 6 eventually getting back to Camphill, while several failed. Approx. 1,000 feet at Castleton was necessary to get back, but 10/10ths cloud base was at 800 feet so one had to find a patch of good lift and go into cloud with it, on course for home, turning back to Castleton if the lift failed too soon. Big "line" but true.

Sunday, May 28th. Wind W.N.W. 30 m.p.h. at Camphill. N.W. 50 m.p.h. at 10,000 feet above Camphill. Cumulus type cloud about 6/10ths to 7/10ths, between 2,000 ft. and 4,000 feet above the site. 70 odd hours' flying, 2 Gold "C" heights, 1 Silver "C" distance and 1 Silver "C" height qualification, amongst many other outstanding flights. To be quite frank no one had any idea of really exceptional heights when we first took off. Cumulus cloud was forming on the hill, with base (at first) about 2,000 feet, but at about 2,500 feet it was found possible to transfer from thermal to wave lift and in this wave Gerry Smith, Derek Roper and George Thompson reached over 11,000 feet above Camphill. Derek eventually turned down-wind, and with the aid of some further waves and a little thermal later on, did a flight of 75 miles to Kettering. Betty Gayes recorded her Silver "C" height in an "Eon Baby", and another of these machines was at over 8,000 feet, spoiling this achievement by getting lost and landing 5 miles away. In the afternoon the wave faded, leaving quite good thermal conditions, in which Roger Dickson completed his Silver "C" by taking his "Viking" 55 miles to Cranwell. Just to round off this incredible day, the wave returned in the evening, and "Olympias" were cruising about at 7,000 feet and 8,000 feet again after tea.

Monday, May 29th. Wind N.W. 25 to 30 m.p.h. Good hill-lift all day, in which all suitable machines were flying. 30 hours' total, but tame after yesterday.

Sunday, June 4th. Wind S.S.W. 10 m.p.h. Scattered and very "slow" thermals, with just *not* enough wind to keep up on the hill. Just the day, in fact, for a "Kite I" which Fred Breeze proceeded to demonstrate by taking his to 3,700 feet. Next best height was 1,000 feet by a humble "Olympia". Woolstoncroft took his "A" and "B" in the "Cadet".

Wednesday, June 7th. Wind W. 15 to 20 m.p.h. Good old "Evening Thermal". Several machines at 4,000 feet. John Habershan took his "C" in the "Cadet", and then took off again to reach 3,400 feet in the same machine.

Saturday, June 10th. Wind W.N.W. 15 m.p.h. Mild wave in the morning (Bernard Thomas best height with 3,700 feet) deteriorating into plain hill lift by mid-day; good enough for 35 hours' total, though.

Saturday, June 17th. Wind W. 15 m.p.h. George Thompson went into cloud at about 1,000 feet and came out at 9,000 feet, iced up—and far from home, with not many instruments working. Unfortunately he had to come down through cloud again, still with very few instruments, which wasn't so funny.

Sunday, June 25th. Wind W.N.W. 15 m.p.h. 54 hours' total. Good thermals up to 2,500 feet (cloud base about 1,800 feet to 2,000 feet) and a very peculiar wave up to 4,500 feet. This wave was unusual in that it occurred in a lighter wind than usual, with the result that the best way of staying in it seemed to be to fly big lazy circles with a slight bias up-wind in order to stay in the same place. Leetham got his "C" in the "Cadet" in the evening.

Saturday, July 1st. Wind W. 5 m.p.h. Medium good thermals in the afternoon. Fred Breeze at last succeeded in completing his Silver "C" with a nice flight of 42 miles in his "Kite I". At home Alec Baynes took his "A" and "B" in the "Cadet".

THE SCOTTISH GLIDING UNION

Traditionally, July and August are holiday months, with the result that the emphasis has been on that ideal holiday, a "course." The July course was a great success. Out of ten members who participated, six obtained "A" certificates and one obtained both "A" and "B" certificates. The weather was perfect with the exception of one windy afternoon, and on this occasion a selection of Gliding at Balado films were shown. There was little doubt that everyone thoroughly enjoyed themselves, and indeed two of the original number immediately joined the Club as full-time members.

The fascinating thing about any course is the cross section that is always presented in any one group. The timid, the vainglorious, the comedian and all the other types and mixtures can be guaranteed to appear. Last year, we had a prize performer in Joe Kerrigan who

performed fantastic gymnastic feats on the narrow ledges abutting our full-size R.A.F. hangar roof. This year, on this particular course, the outstanding member was sixteen-stone Tom Wight, a mining engineer on leave from Singapore. As a comedian he was very competent, but his chief claim to fame is the way in which he baffled Tom Davidson in the two-seater. With no wind, Tom could scarcely scrape 600 feet out of a winch launch.

The July course augered well for the three remaining courses, one of which is in progress at the time of going to press. All are fully booked, and there is a possibility of more to come, if and when instructors become available.

Several more "C" certificates have been won from the Bishophill, and there has been a good deal of pleasurable activity from this site. Mrs. Dorothy Lawson is probably making the greatest endeavour, for she has decided to obtain a "C" certificate to take with her to the national competitions. At the moment, she has not achieved her wish, simply because the weather has always had the last word in the matter. But we would back a woman against the weather any time.

There are no outstanding events to record. The number of flights per week has remained at a satisfactory level; there have been no accidents nor yet have there been any achievements of note. Diplomatic activity has, however, been marked. Secretary David Hendry and old timer George Whyte made a "Moth Minor" foray down to the Newcastle site, whilst Ian Sproule carried the banner even father south with an instructive visit to the London Gliding Club's site at Dunstable. Having left Balado on an obviously 'flat' day, the mission to Newcastle were surprised at the number of thermals that were present. This can be taken as an excuse for the lack of thermal soaring at Balado, but it is a fact that has been remarked upon by many members who have travelled a significant distance south in any one day. There is little doubt that generally speaking the humidity is markedly more in what any good Scot is prone to call the Midlands (that is from the Newcastle to the London area), than is the case north of the Border.

When Ian Sproule visited Dunstable the weather was the very opposite of cumiliform. From a gliding point of view, the weather was poor indeed. Yet despite the limitations, Godfrey Lee demonstrated what can be done in a two-seater even under the most adverse conditions. Sproule was duly impressed!

At both Newcastle and Dunstable our members were treated with great hospitality and were confirmed in the feeling that in the gliding movement there exists a fraternity that is deep, real and very satisfying.

All this amounts to the fact that no news is good news in most senses of the phrase, and the only newspaper space to which we can indirectly lay claim was obtained by Ron Flockhart. To be written up for two days in the *Daily Mail* for his performance in the Rest and Be Thankful Hill Climb, and to be recommended for training as a Grand Prix driver by the one and only Raymond Mays, was quite a compliment. As an aid to greater things, Ron straightaway bought a "Cooper" chassis, and who can blame him.

THE SOUTHDOWN GLIDING CLUB

22nd *July*, 1950

Our figures for the first half of 1950 are :—Hours flown 168½ for 858 launches. I believe this is less

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.

than for the corresponding half of 1949 but may be accounted for by the change in training methods as we have scrubbed using the " SG-38 " this year in favour of our " T21B."

Whether 2-seater instruction is better or quicker than the old " per ardua ad astra " method of shaking the innards out of the pupil first by ground slides, I cannot honestly say—having learnt the hard way in the early days of 161 Gliding School, but the pupil certainly gets the creamy part of the cake first in soaring with all the trimmings, before attempting to nibble the hard crust of taking-off and landing. Nevertheless new members are being converted to the " Tutor " the latest being Ron Tull, Cicely Ross and Maurice Rose.

Don Snodgrass and Jack Godley recently returned from a fortnight at Saint Cyr. They both got in 28 hours soaring. Jack was the luckiest one—he managed two legs of his silver " C " by reaching 6,500 ft. taking 6½ hours to do it. Don, on the other hand, although getting bags of experience did not get his hoped for silver " C " height. Tough luck Don ! let's hope that one of our elusive thermals will whisk you up sufficiently high at Friston. However, both had a whale of a time and were loud in their praise of the French.

At the time of writing these notes Ray Brigden, Chris. Hughes, Dave Parsey, Peter Healey and Vic Tull are up at the Mynd with our No. 1 " Tutor." I have just heard that in spite of low cloud thay have managed to get in 5½ hours soaring for 6 launches. So far Dave has the height record at 2,300 ft. with Ray just behind with 2,000 ft. under a cu.-nb. The rest of the boys range from 1,600 to 1,900 ft. With time still to go we are hoping that they will obtain silver " C " heights and durations—which is what they went all that way for. I also have heard that Joe Hahn (Southdown & Bristol) is there.

On the home site at Friston we have had Messrs. Anson and Buckley from London G.C. with their own " Olympia." Their first week-end did not produce much except that they experienced their first flights over the sea. But on Saturday, July 15th both soared all the way along the cliffs to Beachy Head, and, as an encore, jumped the Cuckmere Valley westwards to Seaford Head. Buckley reported that he reached Beachy Head at 1,500 ft. The weather was nasty with low orographic cloud forming at 600 ft. in small blobs. Each, however, put in 1 hour odd and expressed themselves very satisfied.

The next day (Sunday) saw a small swarm of Surrey G.C. bods arrive with lady friends led by Don Brown and Irving. It seems that they were somewhat cramped by M.C.A. and cloud base so came down to see what we were up to. It so happened that we had clear sky and a very high wind from the S.W. but it did not prevent us getting in 12 hours for 25 launches. At times it was necessary to dive at 55 knots to reach cliff edge but once there lift was up to 1,000 ft. over take-off point and position maintained by flying tail first slowly then diving to regain cliff edge. We were very glad to manage " Tutor " flights for our Surrey friends and their ladies had " T21 " trips with our pilots.

Happy landings friends,

SQUEEGE.

ROYAL AERO CLUB GLIDING CERTIFICATES

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

GLIDING CERTIFICATES : " A " .. 104 (11836-12039 inc.)
" B " .. 114
" C " .. 28
Silver " C " 2
Gold " C " —

" B " GLIDING CERTIFICATES

No	Name	A.T.C. School or Gliding Club	Date taken
998	William Edward Walker	R.A.F.G.S.A.	9. 6.50
4023	Donald Baxter	42 G.S.	28. 5.50
4652	Peter Ernest Jefford	Bristol G.C.	23. 6.50
6760	John Reginald Coleman	R.A.F. College, Cranwell	12. 6.49
6787	Ronald Wynne	192 G.S.	7. 5.50
6790	Peter John Bulford	R.A.F. College, Cranwell	31. 5.50
7126	William Leyland Ball	182 G.S.	26. 3.50
7774	George Henri Potter	42 G.S.	28. 5.50
8328	Christopher Joseph Byrne	London G.C.	16. 6.50
9089	George White	Scottish G.U.	10. 6.50
9622	Arthur Paul John Dodson	R.A.F. College, Cranwell	14. 1.50
9963	Digby Paul Dogherty	24 G.S.	'4. 6.50
10082	Kenneth Stephenson Whitely	24 G.S.	14. 5.50
10221	David Ernest Rock	45 G.S.	4. 6.50
10646	Fred Crook	45 G.S.	11. 6.50
10691	Charles Albert Wells	44 G.S.	11. 6.50
11604	Frederick Stanley Nixon	45 G.S.	4. 6.50
11626	John Frederick Green	130 G.S.	29. 5.50
11774	Peter Lee	183 G.S.	1. 6.50
11836	Raymond Henry Scott	203 G.S.	7. 5.50
11837	Edmund Foyle	203 G.S.	13. 5.50
11839	Kenneth Alan Charles Wirdnam	R.A.F. College, Cranwell	7. 5.50
11840	John Alan Williams	R.A.F. College, Cranwell	12. 3.50
11841	Samuel John West	R.A.F. College, Cranwell	25. 3.50
11842	Ian Hugh Fitzgerald Walmsley	R.A.F. College, Cranwell	13. 4.50
11843	Charles Anthony Vasey	R.A.F. College, Cranwell	6.11.49
11844	John Malcolm Tabernacle	R.A.F. College, Cranwell	7. 5.50
11845	Gerald Breakspeare Stockman	R.A.F. College, Cranwell	11. 6.49
11846	Victor Albert Southon	R.A.F. College, Cranwell	13. 4.50
11847	Richardson Robson	R.A.F. College, Cranwell	18. 1.50
11848	John Michael Anthony Parker	R.A.F. College, Cranwell	14. 5.50
11849	Ronald Parfitt	R.A.F. College, Cranwell	7. 5.50
11850	William Frederick Nuthall	R.A.F. College, Cranwell	14. 5.50
11851	Robin Tennent MacMullen	R.A.F. College, Cranwell	26. 3.50
11852	Alistair James MacKinnon	R.A.F. College, Cranwell	30. 4.50
11853	Edward Hugh Legget	R.A.F. College, Cranwell	30. 4.50
11854	David Angus Lethem	R.A.F. College, Cranwell	29. 3.50
11855	Bryan Michael Burley	R.A.F. College, Cranwell	5. 3.50
11856	Herbert Henry Browning	R.A.F. College, Cranwell	5. 3.50
11857	Michael George King	R.A.F. College, Cranwell	14. 5.50
11858	Michael Gill	R.A.F. College, Cranwell	8. 3.50
11859	Robert Edward Gamble	R.A.F. College, Cranwell	26. 3.50
11860	John Alan Fryer	R.A.F. College, Cranwell	30. 4.50
11861	Colin Henry Foale	R.A.F. College, Cranwell	18. 1.50
11862	Oliver Mattison Cruickshank	R.A.F. College, Cranwell	15. 3.50
11863	John Francis Henry Chick	R.A.F. College, Cranwell	26. 3.50
11864	Donald Percy Hall	R.A.F. College, Cranwell	14. 1.50
11865	Ronald Nelson Taylor	R.A.F. College, Cranwell	17. 5.50
11866	George Anthony Priechenfried	R.A.F. College, Cranwell	14. 5.50
11867	Imre Leonard Schwaiger	R.A.F. College, Cranwell	8. 3.50
11868	Charles David Walker	R.A.F. College, Cranwell	24. 5.50
11869	Thomas Harry Smith Swinscoe	49 G.S.	7. 5.50
11870	Ralph Edmund Hugh Finch	R.E.F.C.	18. 5.50
11871	John Philip Madgwick	H.Q., B.A.F.O.	12.10.49
11876	James Alfred Nimrod Merrills	Fulmar G.C.	4. 5.50
11894	Geoffrey Herbert Nixon	College of Aeronautics	25. 3.50
11896	Hugh Gordon Oates	Perak F.C.	4. 9.49
11899	Peter Stanley Stickley	Fulmar G.C.	14. 5.50
11904	Richard Hoare	125 G.S.	29. 5.50
11913	Lam Theug Pew	Perak F.C.	2. 3.50
11919	John Frederick Gale	R.A.F. College, Cranwell	13. 5.50
11920	William Frank Jacobs	R.A.F. College, Cranwell	29. 3.50
11921	Brian Meadley	R.A.F. College, Cranwell	18. 1.50

THE MIDLAND GLIDING CLUB LIMITED

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

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

THE DERBYSHIRE AND LANCASHIRE GLIDING CLUB

Camphill, Great Hucklow, Derbyshire.

2 seater ab initio training a speciality.

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Resident Steward and Stewardess.

For further details apply to the Secretary.

THE LONDON GLIDING CLUB LTD.

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Flying Membership:

Entrance Fee £5. 5s. 0d.

Annual Sub. £6. 6s. 0d.

(*or* 11/6 *monthly*)

Non-Flying Membership:

Entrance Fee Nil

Annual Sub. £2s. 2s. 0d.

Resident instructor, two resident engineers, dormy houses, licensed bar, full catering at week-ends. Flying instruction every day except Tuesdays.

Twelve club aircraft.

Hours flown 1949. 2,416.

Launches given. 10,270.

Instruction Course 1950: 21st August to 1st September.

All in cost: Visitors £20; Members £14.

Club Meeting: 5th to 13th August. Free to visitors bringing own machines.

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Flying facilities are offered to all *Private Owners, Soaring and Power Pilots.*

For full particulars apply to: L. A. ALDERSON, "Lyndhurst," Sinnington, York. Hon. Secretary, Yorkshire Gliding Club.

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"EON Olympia" new condition (recent C of A) wheeled—£450. Len Swinn, C.F.I. Army Flying Club, Combe, nr. Newbury, Berks.

"B" GLIDING CERTIFICATES

No.	*Name*	*A.T.C. School or Gliding Club*	*Date taken*
11922	Geoffrey Souch	R.A.F. College, Cranwell	9. 6.49
11923	John Anthony Tulk	R.A.F. College, Cranwell	10. 5.50
11924	Henry Alan Merriman	R.A.F. College, Cranwell	3. 5.50
11925	Peter James Bogue	R.A.F. College, Cranwell	31. 5.50
11926	Nigel Graeham Wickman	R.A.F. College, Cranwell	13. 5.50
11927	Derek Frank Smith	R.A.F. College, Cranwell	3. 5.50
11928	John Simpson	R.A.F. College, Cranwell	26. 3.50
11929	Arthur John Rosser	R.A.F. College, Cranwell	25. 3.50
11930	Roy Hollingworth	R.A.F. College, Cranwell	29. 3.50
11931	Antony Gavin Nind Hampton	R.A.F. College, Cranwell	26. 3.50
11932	Edgeworth Frank Winter Gregory	R.A.F. College, Cranwell	13. 5.50
11933	Kenneth John Michael Davis	R.A.F. College, Cranwell	24. 5.50
11934	Gerrard Copping	R.A.F. College, Cranwell	26. 3.50
11935	John de Milt Severne	R.A.F. College, Cranwell	8. 2.50
11936	Matthew Young	R.A.F. College, Cranwell	14. 5.50
11937	Dennis Gordon Slade	R.A.F. College, Cranwell	4. 2.50
11938	Mohammed Khalid Khan	R.A.F. College, Cranwell	30. 4.50
11939	Raymond John Bannard	R.A.F. College, Cranwell	11. 1.50
11940	Derek Renton Atkinson	R.A.F. College, Cranwell	18. 1.50
11951	Robert David Mauleverer Harper	College of Aeronautics	14. 5.49
11954	Leonard Ferguson Kenna	Bristol G.C.	12. 3.50
11957	John Samuel Wolstencroft	Derby and Lancs. G.C.	4. 6.50
11961	John Geoffrey Moore	Luneburg G.C.	31.10.48
11962	John William Lloyd Dixon	Portsmouth N.G.C.	9. 6.50
11963	Peter Timothy Burrell	Portsmouth N.G.C.	11. 6.50
11970	Maurice Rose	Southdown G.C.	11. 6.50
11973	Mark Graham Tomkins	R.A.F. College, Cranwell	3. 6.50
11974	Donald Arthur Cooper	R.A.F. College, Cranwell	17. 5.50
11975	Anthony Richard Thomas	R.A.F. College, Cranwell	3. 6.50
11976	Richard Lennox Treleaven Polgreen	R.A.F. College, Cranwell	3. 6.50
11977	Christopher Kendal Bushe	R.A.F. College, Cranwell	11. 6.50
11978	David Edwin Cooke	R.A.F. College, Cranwell	11. 5.50
11979	Nigel Robert Creswell Price	R.A.F. College, Cranwell	25. 3.50
11980	Nihal Evelyn Weerasinghe	R.A.F. College, Cranwell	4. 6.50
11981	David John Surridge	R.A.F. College, Cranwell	4. 6.50
11982	Sarwar Malik	R.A.F. College, Cranwell	4. 6.50
11983	Alan Leonard Leveridge	R.A.F. College, Cranwell	3. 6.50
11984	Alfred Beill	R.A.F. College, Cranwell	3. 6.50
11985	Henry John Dodgson	R.A.F. College, Cranwell	1. 8.49
11990	John Denny	188 G.S.	15. 4.50
11993	James Michael Sykes	Cambridge U.D.C.	27.11.49
12011	Alan Bott	45 G.S.	4. 6.50
12014	Thomas Couchar Macdonald	Halton Apprentices	13.10.49
12015	Michael Allen Commander Stephenson	23 G.S.	7. 5.50
12016	John Patrick Sinnott	12 Group, R.A.F.	24. 5.50
18017	Thomas Pope	12 Group, R.A.F.	8. 6.50
12018	John Bruce Adlington	12 Group, R.A.F.	24. 5.50
12027	Stuart Barry Cartlidge	45 G.S.	4. 6.50
12028	John Patrick Vale	Luneburg G.C.	22. 4.50
12029	Hugh Somerton Mettam	Cambridge U.G.C.	30. 1.49
12039	Peter Fitzmaurice Wilson	166 G.S.	22. 4.50

"C" GLIDING CERTIFICATES

No.	*Name*	*A.T.C. School or Gliding Club*	*Date taken*
998	William Edward Walker	R.A.F. G.S.A.	9. 6.50
1998	Peter John Bullivant	68 G. Unit	11. 6.50
3512	Kevin Thomas	Bristol G.C.	8. 4.50
6760	John Reginald Coleman	R.A.F. College, Cranwell	21. 4.50
9069	George Whyte	R.A.F. College, Cranwell	10. 6.50
9627	Leslie Banks	Southdown G.C.	5. 6.50
9953	Alan George Jenkins	125 G.S.	11. 6.50
10012	Brian Cosgrove	Midland G.C.	29. 5.50
11125	John Edward Anderson	Newcastle G.C.	17. 6.50
11183	Thomas James Page	126 G.S.	4. 6.50
11313	Evers Turner Buchanan Smith	College of Aeronautics	1. 4.50
11744	Cecily Elizabeth Roe	Southdown G.C.	28. 5.50
11840	John Alan Williams	R.A.F. College, Cranwell	21 4.50
11842	Ian Hugh Fitzgerald Walmsley	R.A.F. College, Cranwell	19. 4.50
11845	Gerald Breakspeare Stockman	R.A.F. College, Cranwell	29. 7.49
11846	Victor Albert Southon	R.A.F. College, Cranwell	19. 4.50
11851	Robin Tennent MacMullen	R.A.F. College, Cranwell	14. 4.50
11856	Herbert Henry Jones Browning	R.A.F. College, Cranwell	21. 4.50
11867	Imre Leonard Schwaiger	R.A.F. College, Cranwell	18. 4.50
11871	John Philip Madgwick	H.Q., B.A.O.F.	10. 5.50
11896	Hugh Gordon Oates	Perak F.C.	11. 9.49
11951	Robert David Mauleverer Harper	College of Aeronautics	25. 4.50
11985	Henry John Dodgson	R.A.F. College, Cranwell	17. 4.50
11993	James Michael Sykes	Cambridge U.G.C.	19. 3.50
12011	Alan Bott	45 G.S.	4. 6.50
12014	Thomas Couchar Macdonald	Halton Apprentices	27. 4.50
12028	John Patrick Vale	Luneburg G.C.	17. 5.50
12029	Hugh Somerton Mettam	Cambridge U.D.C.	19. 3.50
12039	Peter Fitzmaurice Wilson	166 G.S.	4. 6.50

SILVER "C" CERTIFICATES

Badge No.	*Name*	*Certificate No.*	*Date gained*
262	T. E. H. Beck	7112	3. 6.50
263	M. C. Russell	7654	9. 6.50

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