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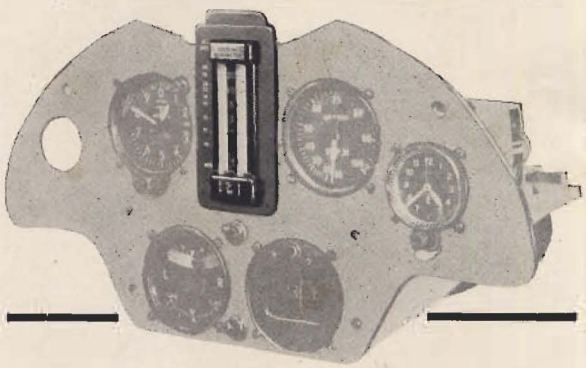
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THE FIRST JOURNAL DEVOTED TO SOARING AND GLIDING

OCTOBER 1949 ★ Vol XVII No 10

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COVER PHOTO:

Swedish Comps. Fru Fannybeth Hakansson and Billy Nilsson.

(*Photo: Olle Hakansson*).

EDITORIAL

THE invocation which follows is culled from the Ultra Light Aircraft Monthly Bulletin for September. Almost every word of it also applies to the Gliding Movement.

Two years ago a Prize Design for a high performance two-seater sailplane was created.

The machine still remains unbuilt. As with the U.L.A. movement there is a need for some altruistic person to build and develop this machine, as there is to build the light engine which the former require.

But with both Movements there is a need to do something for themselves. Gliding is very popular where it is " laid on " and all the repairs are done by someone else. Light flying is also popular where someone else pays for it.

As Peter Fletcher in our last and PYTHAGORAS in this issue state, what is needed is a little self help, and not so much crying for the moon. Let us make the best of what we have. Let us get as many people as we can to join us and then the costs will fall and with added strength we may get the better machines we want.

Of course there are people who are already helping themselves. In this issue will be found photos of R. Swinn's 3½ h.p. powered glider, which he states gives him enough power to take off and that the soaring performance of his machine is not very different with the engine retracted. At least this is a sign of life in the Movement. Now will you do your part and get someone to join your particular club or group. It may be the most you can do, but it is very important.

ACTION IS WHAT WE NEED—

" THE Association consists of a number of Individual and Group Members scattered throughout the British Isles and overseas, all of whom are banded together in the common cause of promoting the sport of flying by cheapening its cost and bringing it within the means of a large number of people who cannot at present possibly afford it. To further this aim, the Association sponsors the development of ultra light aircraft, and the formation of groups of enthusiasts willing to design, construct and operate their own aircraft.

Although disappointingly slow, the development of new ultra-light aircraft designs has taken place through the Association's efforts, and we consider ourselves largely responsible for the conception of the Fairey " Junior " and the Slingsby " Motor Tutor." Other designs of ultra light aircraft are coming along, including a high performance single seater, and a two-seater trainer, and plans for the production of an engine (on which the whole future of our movement hangs) are well in hand. Groups have been formed, and a number are already operating successfully on a self-help basis with flying charges as low as 25s. per hour. Thanks to the Kemsley Flying Trust, the Association has acquired a quantity of unused Aeronca JAP engines and spares, which should keep us flying for some time to come. We have formed a Design Team, which is A.R.B. approved, to assist amateur designers, and we have set up an Inspection Organisation to supervise and guide amateur construction and maintenance of aircraft.

It will be seen that a useful groundwork has been laid, but despite the enormous potential enthusiasm for the sport of flying in this country the ultra light movement still refuses to grow. The Executive Committee consists of volunteers who have put in much hard work for the cause, and some of them are wondering why they should have undertaken such a thankless task. What we really need is some sign of activity among the bulk of our members. We urgently need them to recruit new members and so strengthen our movement. We want to enrol all enthusiasts for the sport, particularly those who are prepared to work for their flying and not just sit back and wait for something to be done for them.

We need action by our members to form constructional and flying groups in their neighbourhood. We can advise on the organisation and regulations, but the action must come from the members themselves. A few keen types in any neighbourhood, with the assistance of the local press, can surely raise enough interest to form a Group. Workshop accommodation has to be found, equipment obtained, a suitable field must be selected (you do not need large aerodromes for ultra light aircraft), and a barn or other accommodation to house the aircraft.

Perhaps the major difficulty will be to raise sufficient funds for the purchase of the first aircraft. An active group can overcome this by means of sweepstakes, dances, appeals to patrons, etc. Appreciating this difficulty, we arranged (again thanks to the Kemsley Flying Trust) for six Slingsby " Motor Tutors " to be made available to our Groups on a down payment of £30, the rest being paid on a pay-as-you-fly plan. How disappointing the result has been.

Finally there is this Bulletin—the mouthpiece of the Association. This should be a central pool of information and an exchange of ideas on all aspects of Ultra Light aircraft. We urgently need news from amateur designers and constructors (of which there are a number among our members) telling us of their progress and difficulties. We need hints and tips on construction and maintenance, on workshop equipment, on getting spares and materials, on methods of flying instruction, and suggestions for events at Air Rallies."

GONE ARE THE DAYS By PYTHAGORAS

WHEN somebody recalls the merits of the past in order to point deficiencies in the present, he is liable to be regarded as a senile old man, an obstinate reactionary, or a young fool, according to the relative ages and viewpoints of his critics. When poor black Joe sings, " Gone are the days," it is hardly surprising that he subsequently hears the Angels reply, with deep understanding, " Poor Old Joe." Nevertheless, there will always be at least some, who are willing to recall the past, and attempt to use it as a guide to the future, and even to pursue their enquiries to the point of asking themselves, " Did we, at such and such a time, proceed in the wrong direction ? Might we not, even now, retrace our steps a little, in order to examine another, and perhaps more profitable line of advance ? "

In an account, published previously, of the 1949 American National Contests, comment was ventured upon the tendency of gliding to develop on increasingly complicated and expensive lines. The bungy launch from the hill slope has given way, even on sites suitable for it, to the winch launch, or even aero-tow; full instrumentation is becoming common, and two-way radio, and oxygen regarded as desirable at times when they may be unnecessary. Admittedly, there is a time and a place for all expensive refinements, but the fact remains that their place in soaring predominates to the point of excluding impecunious youth, upon whom the future of gliding and soaring must ultimately depend. Is it not a fact that, a year ago, one of our foremost clubs announced that, in the absence of a subsidy, it could not afford to train *ab initio* pupils ? Yet this same club, using a site eminently suitable for bungy starts when a soaring wind blows, squandered both money and petrol launching its competent pilots by winch, and retrieving the cable by jeep. Its dual two-seater gave passenger rides, yet nobody doubts the competence of numbers of its members to give dual instruction. Maybe these things have changed; but the question has been squarely put, " If gliding has no subsidy, must youth be excluded ? And if Youth is excluded, what will become of gliding ? "

Let us attempt to take stock of the situation. A subsidy for gliding seems, in the present state of affairs, unlikely. For planning purposes it obviously cannot be counted upon ; and therefore, for the purposes of this argument, it will be assumed that we've had it. The question is, then, what can be done by gliding clubs to make gliding easier for the youth of the country, and one answer seems to be by cutting frills and expenses within the clubs themselves.

Observation of gliding training suggests that the main reducible expenses arise from the following causes :

(i) Insurance rates.
(ii) Expensive methods of launching and cable retrieving.
(iii) Use of unnecessarily expensive gliders.
(iv) A tendency to use mechanical power where muscle power would serve.

Before reading any further (for those who have not yet classified the writer under any of the three headings mentioned above) it is suggested that the reader might like to think of examples known to himself, of excessive costs arising from each of these four causes.

Insurance Rates

Sooner or later, there comes to everyone the realisation that insurance companies are not, and cannot be, philanthropists. And with that realisation the knowledge that insurance rates are set up in accordance with the sums which the companies find they have to pay out. Insurance rates can be reduced only by reducing the cost to the companies ; in other words, reducing the crash-rate. This observer is of the opinion, and believes that statistics will support it, that the crash rate amongst clubs is unnecessarily high. (By " crash " is meant any damage which would result in an insurance claim.) Personal observation suggests that a very high proportion of crashes are " avoidable " and that the majority arise from three distinct causes.

(i) Inferior instruction.
(ii) Inferior flying discipline.
(iii) Inferior " airmanship."

Instruction

How many instructors are properly qualified ? Some time ago the B.G.A. devised a series of instructors' qualifications, which were to be used as a guide, and, which it is believed, were based upon the combined experiences of a number of clubs. It is widely realised that the ability to fly well does not, alone, qualify a pilot to become a competent instructor ; there is far more to it than that. Nevertheless, the writer has yet to hear of a communal effort by clubs to raise their instructional skill (excepting in the A.T.C.) and wonders what efforts have been made by clubs to bargain for reduced insurance rates by training their instructors to increasingly high and universally recognised standards. There is no doubt that there are difficulties to overcome ; nevertheless, as a field in which large reductions in flying cost might be obtained, there seems to be room for far more than clubs have yet seen fit to do.

Flying Discipline

Flying discipline, and airfield discipline, is a difficult question. The very nature of a " Club " is such that discipline imposed from above would destroy a large part of that which is best in a good club. The only method seems to be one in which all discipline is " self-discipline," a quality which in, some people, notably dictators, is conspicuously absent. It is here that good club rules, and a good training syllabus are valuable. One of the most frequent causes of damage is the pupil who, either through lack of supervision, or inadequate instruction in the earlier stages, is allowed to progress too fast. There are numbers of difficulties to overcome here. Many clubs suffer from a shortage of instructors, so that supervision becomes difficult. Much can be done, however, by careful organisation of training sequence ; and it is suggested that pupils themselves, if they are properly introduced to the subject, provided with adequate material which they may study by themselves, and a good detailed syllabus of

the course of instruction to be followed, are capable of relieving instructors of much tedious work, and themselves keeping considerable check on their own progress. To what degree this self-supervision can be carried is a field worthy of some careful research, but, in the writer's opinion, there are grounds for supposing that much advantage can be gained from it. Behind it all lies the idea that each individual club member is keen, and is willing to put at least as much into the club, and probably more, than he ever expects to get out of it.

"Airmanship"

"Airmanship" is a term analogous to "seamanship" used to describe all handling of an aircraft, both on the ground and in the air, not specifically included in actually piloting the machine. It includes, for example, the knowledge required to pick from the air, a suitable landing ground; the knowledge of how to secure the aircraft from damage after landing, from gusts, inquisitive cows, inquisitive children, and all those similar hazards to a sailplane; how to dismantle it; to assemble it, and check it before flight. A vast amount of it is included in common sense, elementary technical knowledge and discipline. Yet it is extraordinary how expense can mount up from failures in "Airmanship." Nearly everybody who has had much experience of gliding can recollect a machine being damaged, or even written off, because the wind took charge of it on the ground. How many seats have been broken by careless feet stepping on the wrong places? How many elevator hinges strained by towing with the controls left free to flap at every bump. How many safety pins lost because the safety straps were left to dangle over the side of the fuselage? There is even a recorded case of a glider launched pilotless into the air, and wrecked, because the winch cable was connected before the pilot was even in the cockpit; and another of a startled spectator, ascending, bicycle and all, into the air, astride the launching cable. Such incidents, some major, many minor, add enormously to existing costs, and destroy the confidence of even the most friendly insurance company, in the club which has many of them. They are all "avoidable accidents." The remedy is two-fold; proper "indoctrination" of new members; and self-discipline in these matters by everybody.

Launching and Cable-Retrieving

Nearly every day, it is possible to read in some paper that American operatives have about twice as much horse-power available per head as their British opposite numbers. We are urged to increase our horse-power. In the sphere of gliding however, the horse-power per launch seems to have increased out of proportion to the results obtained. Admittedly there are clubs with no alternative but to operate from a flat field, but why do clubs blessed with hill-soaring sites continue to burn petrol when a bungy would do the job? If the size of the launching crew is a snag, then they should refer to the method used by the Wright Brothers at Dayton; a greased plank and falling weight were the essential elements of what was probably the first aircraft catapult; the weight was hoisted by muscle-power. Here again there seems to be room for quite considerable economies aided by a little ingenuity and self-help. And for those clubs whose location forces them to use winches, what experiments have been done with two drums on one winch? Retrieving two cables at once? or a small parachute on the glider end of the cable, so that it may fall slowly, and be pulled in by a light cable wound from the launching points? A motor cycle engine will do the job, and much cable wear through dragging it along the ground is avoided. Here again is room for experiment, and some has already been done.

Types of Glider for Training

The pages of pre-war copies of the *Sailplane* offer a surprisingly large amount of information on elementary types of glider, many intended for home construction. It is this writer's conviction that the most economical glider for club *ab initio* instruction is the old broomstick ("Dagling," or "S.G.38"), adapted when occasion requires by fitting a light nacelle around the pilot. No other type can compare with it in price, or ease of maintenance and repair. It is capable of soaring a slope (many "C" certificates have been obtained by them) and of use from flat fields, summer and winter. (The writer has vivid recollections of being hoisted to fifteen hundred feet in twenty degrees of frost in just such a machine.)

Gliders of this type are particularly suitable for home construction, either by individuals or groups, either from raw materials or from kits. Is it not possible that gliding enthusiasts might follow the example of the Ultra Light Aircraft Association in this matter, and obtain by concerted action both the licences to buy materials, and freedom to construct to approved designs?

Muscle-Power v. Horse-Power

Enough has been said already to indicate this writer's views on use of horse-power, and engines in gliding. In some cases it is unavoidable; there are occasions, such as investigation of some standing waves, where aero-towing is desirable. But generally speaking, there are grounds for believing that the horse-power per member of gliding clubs is uneconomically high, and that much can be done to reduce it; with a resultant cheapening of gliding, and increasing the numbers who can take part in it. This requires careful planning of activities, from the moment the hangar door is opened, to avoid all unnecessary use of vehicles, and to use muscle-power wherever possible.

A Suggestion

Finally the writer would like to offer a suggestion aimed at stimulating activity along some of the lines suggested above. We have, along with other nations, our National Competitions. Generally speaking, they are for "unrestricted" classes of sailplane. Very early, yachtsmen found that unrestricted classes limited those who were able to take part. Nowadays, one of the most popular classes is the little twelve-foot National dinghy, whose advent, along with others, has attracted to sailing and racing, thousands of people who otherwise would not have taken part. Something of the sort seems desirable in gliding, and the writer therefore proposes that a prize (preferably cash) should be offered for competition about August, 1950, for a "restricted" class of nacelled "Dagling" type of glider, and all power-driven launching devices barred.

SWEDISH NATIONAL CONTESTS 1949

EIGHT Gold " C's " were taken in the first two days of the recent Swedish National Contests which were held at Orebro, about 160 miles due west of Stockholm from July 7th to 17th. Realising that the International Contests are scheduled to take place at the same place next year *Sailplane* thought the opportunity too important to miss and advantage was taken of the kind invitation of the Swedish Royal Aero Club (K.S.A.K.) to pay an all-too-brief visit.

As the maps will show, Orebro lies to the west of a lake and the inland waterways from Stockholm, to the north of Lake Vattern and the East of Lake Vanern. Indeed, so much of S. Sweden is lakes as the journey by BEA " Viking " at 5,500 feet showed, that it was not surprising to find the contest glider pilots, and all others compelled to carry Mae Wests.

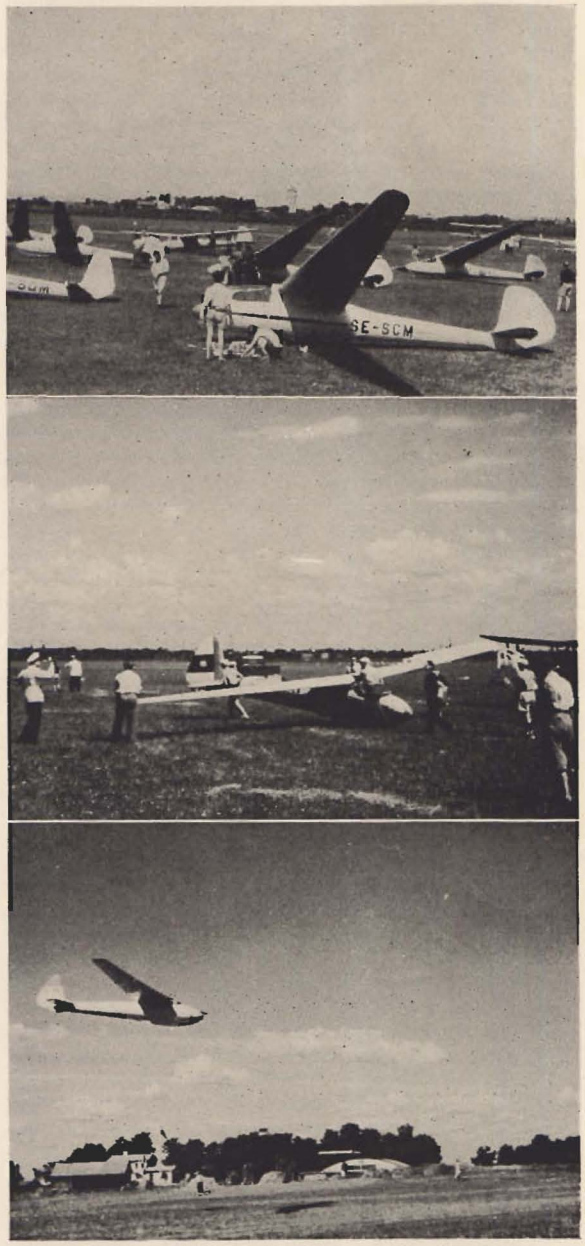
The terrain is mostly rocky hills of perhaps 1,500 feet height at maximum, covered in pine and silver birch trees. At a rough guess one fifth of the surface is water, two fifths forest and the rest arable. There is thus plenty of contrast in surface as regards humidity content, latent and heat conservation. The period of the year chosen for the contests was that which experience has shown to bring the " highs " to the east over the Baltic, Finland and Estonia, resulting in wind average direction of north to south. The whole of Sweden knows this and for these two whole weeks seems to be on holiday. The remarkable summer in Great Britain was broken for a few days about July 13th and 14th by a warm front passing north-east. This had upset the conditions in S. Sweden on those two days, and there were signs of an occlusion at great height to the south-west of Sweden as our " Viking " proceeded north-east above the clouds.

We found Orebro to be a pleasant Swedish country town, and the airfield to lie about 1 mile to the south-west of it. The field is of great size, all grass, about 1,200 m. by 1,000 m. bounded in the south and west by tree-covered rocks, on the north and east by fields and the town. The control offices were housed in several small buildings on the slope rising to the north.

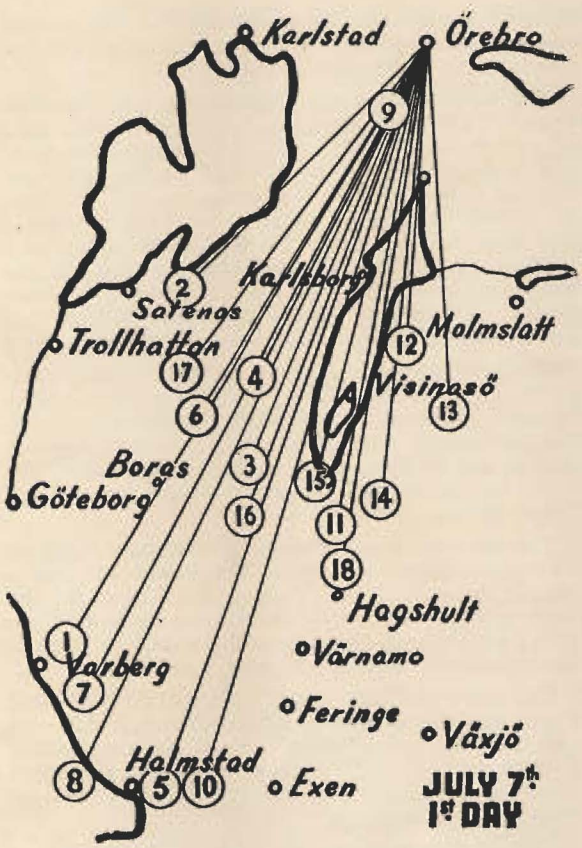
We had no sooner reached the field and were still being introduced when the sound of a loud speaker, apparently operating in the air, drew our attention. We discovered that Mr. Norrvi, the chief instructor at Alleberg and Press and Publicity Chief of the Competition was operating from a " Kranich," with batteries in the back seat and the loudspeakers, one in either wing near the root, and having been aero-towed above the town and finding thermals was giving a running commentary cum publicity address whilst busy circling. He could be heard quite plainly from a distance of 1 mile and a height of 1,500 feet.

Mr. C. Son Bergmann, the Chief Instructor of the K.S.A.K. and Chief Organiser of the Contest, explained the contests and the organisation.

There were 18 contestants, 10 from the Swedish R.A.F. and 8 civilians, whose flying is subsidised to the extent of Sw. cr. 319,000 a year (about £22,500.) The machines were mostly " Weihes," the rest being " Olympias." Although the pilots were the entrants, the composition of their teams of 3 was important. Lacking radio, the retrieving crews had to use what anticipation they could, because the team briefing



1. 10.0 *a.m.* 2. 11.0 *a.m.* 3. 11.05 *a.m.*



and pilots' pre-flight planning did not always work out in practise. Teams therefore departed about the same time as their pilots were seen to have gone away after aero-tow (each was allowed 3 starts) and after 2 hours telephoned to two special telephone officers in the " Expedition " office whose job it was to obtain from pilots, who telephoned to them on landing, both their exact position and the maximum height achieved and time of landing, so that results could be calculated immediately. Thus retrieving crews could know the worst as soon as possible and as will be seen from two of the accompanying charts, some of them had had some very long cross-country journeys. The results were calculated by an expert S.R.A.F. officer using a calculating machine and were put on the board in a few minutes.

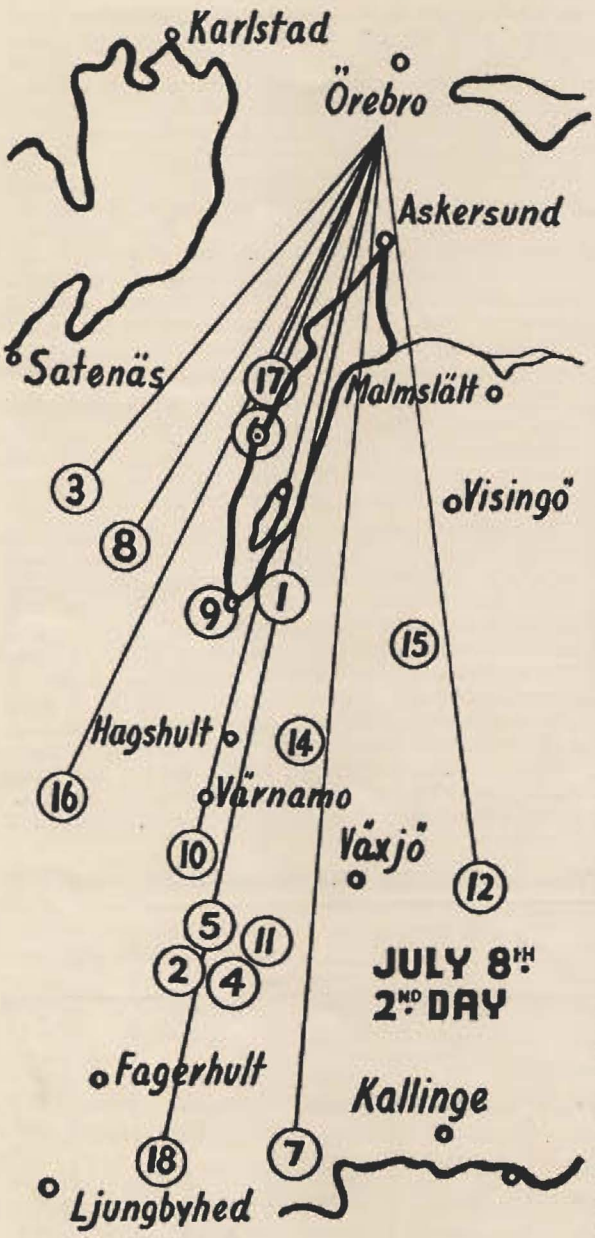
The barographs were sealed by an expert staff who seemed to be on night and day duty, as pilots were returning at all hours of the night to leave their machines and barographs before turning in themselves for a few hours before the Met. briefing at 8.50 a.m.

The Met. briefing we heard by Lt. Häkansson of the S.R.A.F., the tephigrams and weather maps were all clear and confirmed by the events. The H.Q. Staff all were at the field by 7.30 a.m. and stayed there until the last pilot had been located in the evening—usually somewhere about 8 p.m. The contestants were housed in S.R.A.F. barracks (very comfortable too) in the town, but all feeding was done on the field in marquees on the appetizing and lavish Air Force rations. We seemed to have coffee, or milk, fried eggs, bread, butter and marmalade at 7.30 and 10.30 a.m., and at 12.30 p.m., meat, vegetables and pudding, with beer, coffee, milk

FIRST DAY'S RESULTS JULY 7th—DISTANCE WITH HEIGHT

Comp. No.	Name	Distance (dagsfaktor 0,28)		Height (dagsfaktor 0,014)		Day's Points	Day's Placing
		km.	points	m.	points		
1	Norrby, P. O.	298.8	78,064	5,100	71,400	149,464	3
2	Eklind, F.	143.6	34,608	3,025	42,350	76,958	10
3	Osterdahl, S.	195.6	49,168	2,465	34,510	83,678	9
4	Jagaeus, S.	129.6	30,688	4,090	57,260	87,948	8
5	Persson, P. A.	324.0	85,120	5,625	78,750	163,870	1
6	Brostrand, S. W.	158.0	38,640	1,675	23,450	62,090	14
7	Nilsson, B.	298.8	78,064	3,085	43,190	121,254	5
8	Lof, T.	311.0	81,480	4,425	61,950	143,430	4
9	Persson, J. A. H.	24.0	1,120	530	7,420	8,540	18
10	Sonesson, L. H.	324.0	85,120	4,675	65,450	150,570	2
11	Elmegard, S. E.	186.0	46,480	1,840	25,760	72,240	11
12	Hassel, A. H.	117.2	27,216	1,875	26,250	53,466	17
13	Fogde, P. O.	129.2	30,576	2,025	28,350	58,926	15
14	Arnstorp, H-G.	168.0	41,440	1,575	22,050	63,490	13
15	Hedman, A.	181.2	45,136	1,375	19,250	64,386	12
16	Nordholm, F.	192.4	48,272	4,465	62,510	110,782	6
17	Nordin, L.	158.0	38,640	1,425	19,950	58,590	16
18	Hamrén, H.	216.8	55,104	2,925	40,950	96,054	7

Starts : 20. Time : 69 h 28 min. Distance : 3.526,2 km.



or tea, and the same thing again at 5.30. No doubt provision was made for later meals but we repaired with the H.Q. staff to a later supper in the town.

Pilots seemed to think Swedish thermals, if more pronounced, are narrower than those characteristic of Great Britain, and it was certainly true that circling seemed to be tight. They preferred "Weihes" to "Olympias." Towing was done by 6 "Stieglitz" machines ("Tiger" family with 150 h.p. Focke-Wulff engines), and Sw.R.A.F. pilots, although they preferred the better performance of the only "Tiger" (Gipsy 120 h.p.) they had. Retrieving was done by R.A.F. trucks, the crew driving in turn, pilots endeavouring to sleep in the truck body, but, of course, with indifferent success.

The first two days were outstanding, and the eight Gold "C's" were very proudly worn by 15th July when we arrived. The map and results table show the flight direction. At the end of the first day P. Axel-Persson, whom the Swedes proudly acclaim as World Champion (what about it California?) was first, having flown 324 km. (202 miles) and reached 18,500 feet. Lt. Sonesson had flown as far but with only (!) 15,000 feet. Norrby had flown Gold "C" distance and 16,500 feet, and so had Löf at 15,000 feet and Nilsson at 11,000 feet.

The next day saw Hamren, in the distance competition, reach 380 kms., which was the longest distance achieved in the whole competition, with Nilsson second with 358 kms., whilst Elmegard, Eklind and Persson all did Gold "C" distance, the latter for the second time in two days, as also did Billy Nilsson.

The third day was a competition for speed flying on a straight course to Uppsala, and in the end was a contest between P. A. Persson and Tage Löf, the latter gaining the day by the narrow margin of less than 2 km./hour and landing at Uppsala, but Persson was still in the lead in the total marks.

The next day, the fourth (July 11th) was Goal Flight day in which seven pilots succeeded. Löf won by a large margin making his second 300 km. flight of the competition. Billy Nilsson, with a 294 km. effort rose to second place. Persson's goal was only 100 kms. away and he made it.

The next three days—the 12th, 13th and 14th—were unflyable, the warm front whose passage over England had broken the long spell of hot weather had its subsidiary and allied effects in Sweden, but it gave the pilots and crews a much-needed rest.

So we arrived on the 15th in the afternoon to find all the pilots airborne in a distance with height competition, which Persson won with a flight of 243 km. and a height of over 11,000 feet. Löf was second with 248 km. and nearly 10,000 feet, whilst Osterdahl was next with 197 km. and 9,000 feet. Nilsson was fourth with 202 km. and 8,500 feet.

The last day began with Löf leading with 651 points, followed by Nilsson with 609 and Persson third with 603 points. The task was a distance flight and it was won by Hedman, an Air Force Pilot who made 205 km., with another airman, Fogde, second with 192 km. Nilsson, who was fifth did 155 km., Löf, sixth, 112 km. and Persson thirteenth, with only 24 km. The final result was that Persson was third to two pilots from civilian clubs—Tage Löf from Stockholm, and Billy Nilsson from Angermanland, to the great delight of the civilians. Persson, who as World Champion, was expected to win, took this temporary eclipse with perfect good humour, but let no one imagine he will be less easy to defeat next year, and if he is, there are still Tage Löf and Billy Nilsson to overcome.

We can only speak about the weather for the last two days when we were there—the 15th and 16th—

SECOND DAY JULY 8th—DISTANCE FLYING WITH GOAL FLIGHT

Comp. No.	Name	Distance (dagsfaktor 0,54)		Day's Placing	Total Points	Total Placing	Notes
		km.	points				
1	Norrby, P. O.	177,0	84,780	14	234,244	8	
C 2	Eklind, F.	307,0	154,980	5	231,938	9	
3	Osterdahl, S.	158,0	89,424	13	173,102	13	Goal
C 4	Jagaeus, S.	305,0	153,900	6	241,848	7	
5	Persson, P. A.	305,0	153,900	6	317,770	1	
6	Brostrand, S. W.	126,0	57,240	16	119,330	15	
C 7	Nilsson, B.	358,0	182,520	3	303,774	3	
8	Lof, T.	162,4	76,896	15	220,326	10	
9	Persson, J. A. H.	179,6	103,121	11	111,961	17	Goal
10	Sonesson, L. H.	272,0	163,296	4	313,866	2	Goal
11	Elmegard, S. L.	305,0	184,680	2	256,920	5	Gold
12	Hassel, A. H.	249,0	123,660	9	177,126	11	
13	Fogde, P. O.	—	—	—	58,926	18	
14	Arnstorp, H-G.	230,4	113,616	10	177,106	12	
15	Hedman, A.	200,0	97,200	12	161,586	14	
16	Nordholm, F.	271,0	135,540	8	246,322	6	
17	Nordin, L.	126,0	57,240	16	113,830	16	
18	Hamrén, R.	380,0	194,400	1	290,454	4	

Starts : 27. Time : 81 h 21 min. Total Distance : 4,134.8 km.

both of which seemed to be very good days for soaring, as the photographs show. The weather map showed marked instability up to 15,000 feet. Surface wind was north-east, and the upper air at 6,000 feet north-west, with a depression about 100 miles to the S.S.W. Pilots were instructed to avoid this, but the chart for the day show that seven of them failed to do so and all landed in the depression area during a rain-storm. Persson and Löf flew to the west of it and made very good distance.

The last day was equally good with the same north-east wind, and cumulus forming to the east. Consequently all flights were against the wind and success depended in cloud hopping with a premium on luck or judgment.

Although the results were known early in the evening, not all the competitors were there at the beginning of the dinner which took place in the evening of the last day, Saturday the 16th, at the Frimurare-Logen, a romantic restaurant on an



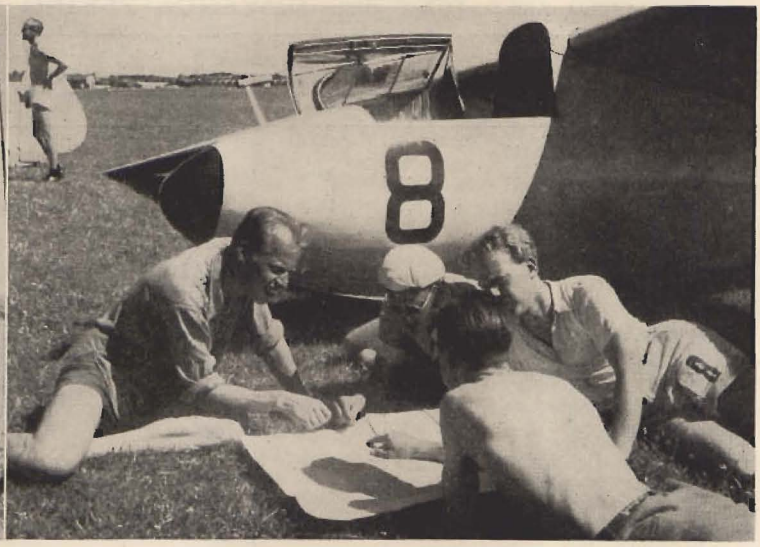
G. Hakansson, B. C. Son Bergmann (Chief of the Competitions), Capt. Alm (Gold "C.")



For pilots to hang on the nearest gate on landing.



Tage Lof (Winner)—



—and his team.

island in the centre of Orebro. Here the Swedish Royal Aero Club were hosts to the competitors and friends. The evening was remarkable for three things—the polish with which Col. Enell, the Secretary-General of the Swedish R.Ae. Club, addressed your Editor in English, the two French parachutists in French, and of course made an apparently inspiring oration in Swedish as well. The second was the gaiety the third that when we broke up at 1.30 a.m., it was dawn, and lastly, the tale of the Hat.

Captain Alm, an early Swedish Champion, and

THIRD DAY JULY 10th—SPEED FLYING IN A STRAIGHT LINE

Comp. No.	Name	Time	D/T km. dagsfaktor 2,406	Speed Points	Proj. km.	Handicap Points	Day's Points	Place	Total Points	Total Placing
1	Norrby, P. O. ..	—	—	—	9,6	2,432	2,432	8	236,676	9
2	Eklind, F.	—	—	—	13,2	3,344	3,344	7	235,282	10
3	Osterdahl, S.	—	—	—	—	—	0,0	11	173,102	13
4	Jagaeus, S.	—	—	—	91,6	23,206	23,206	4	265,054	6
5	Persson, P. A. ..	3h 56m 50s	38.5080912	92,650	—	—	92,650	2	410,420	1
6	Brostrand, S. W. ..	—	—	—	15,22	3,851	3,851	6	123,181	15
7	Nilsson, B.	—	—	—	104,4	26,449	26,449	3	330,223	2
8	Lof, T.	3h 52m 27s	39,234240	94,398	—	—	94,398	1	314,724	3
9	Persson, J. A. H. ..	—	—	—	—	—	0,0	11	111,961	17
10	Sonesson, L. H. ..	—	—	—	2,8	0,709	0,709	10	314,575	4
11	Elmegard, S. E. ..	—	—	—	27,6	6,992	6,992	5	263,912	7
12	Hassel, A. H. ..	—	—	—	8,8	2,229	2,229	9	179,355	11
13	Fogde, P. O. ..	—	—	—	—	—	0,0	11	58,926	18
14	Arnstorp, H-G. ..	—	—	—	—	—	—	—	177,106	12
15	Hedman, A.	—	—	—	—	—	—	—	161,586	14
16	Nordholm, F. ..	—	—	—	—	—	—	—	246,322	8
17	Nordin, L.	—	—	—	—	—	0,0	11	115,830	16
18	Hamrén, R.	—	—	—	—	—	0,0	11	290,454	5

Starts : 35. Hours : 34 h 55 min. Total Distance : 613,2 km.

FOURTH DAY JULY 11th—GOAL FLIGHT OR DISTANCE

Comp. No.	Name	Distance Projected (dagsfaktor, 0,63)			Goal Flight Points	Day's Points	Day's Placing	Total Points	Total Placing	Notes
		km.	P—20	points						
1	Norrby, P. O.	72	52	32,760	—	32,760	13	269,436	8	
2	Eklind, F.	100	80	50,400	10,080	60,480	6	295,762	7	Goal
3	Osterdahl, S.	100	80	50,400	10,080	60,480	6	233,582	11	Goal
4	Jagaeus, S.	145	125	78,750	—	78,750	5	343,804	6	
5	Persson, P. A.	100	80	50,400	10,080	60,480	6	470,900	3	Goal
6	Brostrand, S. R.	100	80	50,400	10,080	60,480	6	183,661	13	Goal
7	Nilsson, B.	294	274	172,620	—	172,620	2	502,843	2	
8	Lof, T.	300	280	176,400	35,280	211,680	1	326,404	1	Goal
9	Persson, J. A. H.	—	—	0,0	—	0,0	14	111,961	18	
10	Sonesson, L. H.	147	127	30,010	—	80,010	4	394,585	4	
11	Elmegard, S. E.	—	—	—	—	—	—	263,912	9	
12	Hassel, A. H.	100	80	50,400	—	50,400	12	229,755	12	
13	Fogde, P. O.	97	77	48,510	9,702	58,212	11	117,138	17	Goal
14	Arnstorp, H-G.	—	—	—	—	—	—	177,106	14	
15	Hedman, A.	—	—	0,0	—	0,0	14	161,586	16	
16	Nordholm, F.	—	—	—	—	—	—	246,322	10	
17	Nordin, L.	100	80	50,400	10,080	60,480	6	176,310	15	Goal
18	Hamrén, R.	159	139	87,570	—	87,570	3	378,024	5	

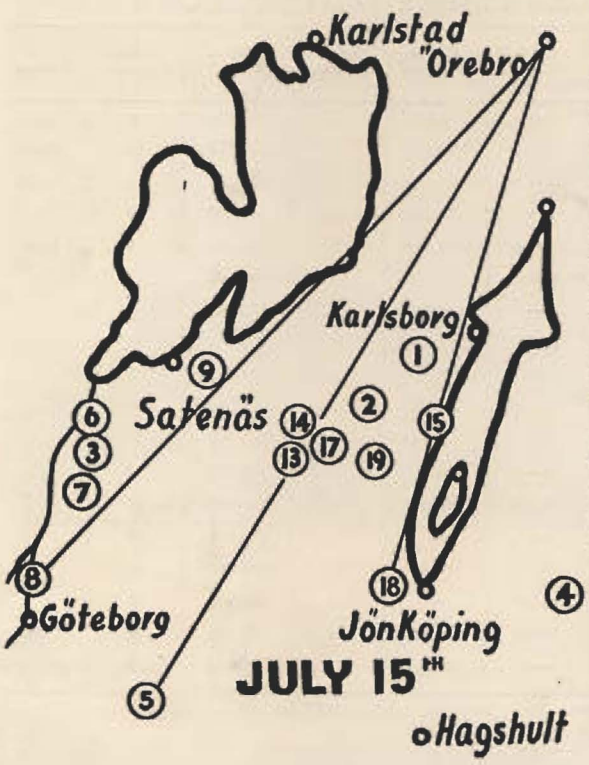
Starts : 20. Hours : 50 h 48 min. Total Distance : 1.848,0 km.



Met. Man Gosta Hakansson and Capt. Sven Alm.



The Young Swedish Idea.



Chief of the R.A.F. flying arrangements, on hearing that someone had declared a goal flight to Uppsala had said he would eat his hat if anyone made so preposterous an (upwind) flight. Nevertheless it was done, and he was called upon to eat his hat—an ancient felt. The performance of that hat, knives, forks, saws, etc., were unbelievable and the H.Q., Bergman, Norrvi and others were called upon to help.

Someone then had the idea of passing the hat round to increase the prize fund first and this was so successful that it was decided to keep the hat to do the same job next year—to the evident relief of Capt. Alm and the others.

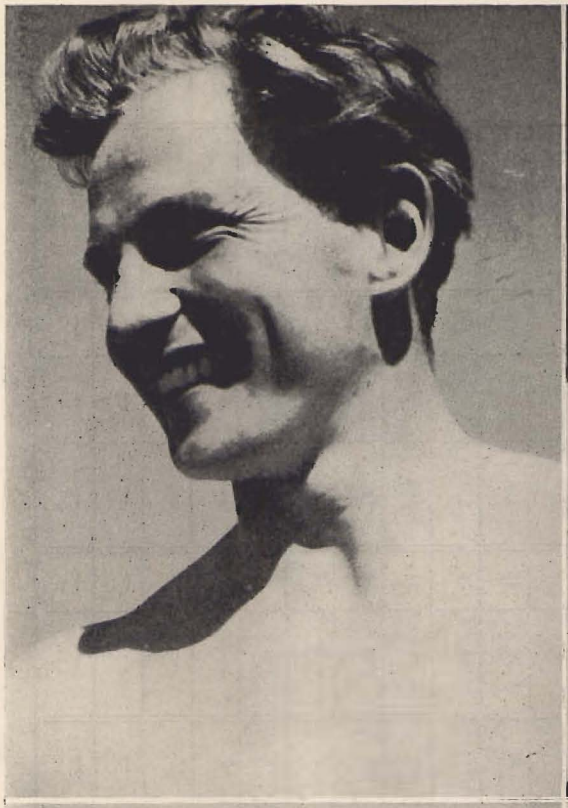
It is fervently to be hoped that in addition to whatever teams may come from the various distant parts of the world next year, their friends will go too. They are promised a warm welcome by the Swedes, and with devaluation now a *fait accompli*, there are great hopes of an American invasion, and perhaps also one from South America. For we sterling area dwellers everything will be made as cheap as possible. Almost everyone of the competitors and all the officials speak excellent English, and plans are being made for each team to have its own Swedish-English, French, Spanish speaking attaché. Gliding wives might be well-advised to accompany their husbands—these Swedish ladies have " got something."

N.B. On second thoughts this is not such a good idea. The photographs seem to show that the Swedish men have " got something " too !

FIFTH FLYING DAY JULY 15th—DISTANCE COMBINED WITH HEIGHT

Comp. No.	Name	Distance (dagsfaktor 0,33)		Altitude Gain (dagsfaktor 0,0176		Day's Points	Place	Total Points	Total Placing
		km.	points	meter	points				
1	Norrby, P. O.	103,0	27,390	2825	49,720	77,110	13	346,546	8
2	Eklind, F.	131,0	36,630	1855	32,648	69,278	15	365,040	7
3	Osterdahl, S.	197,0	58,410	2785	49,016	107,426	3	341,008	9
4	Jagaeus, S.	161,0	46,530	3270	57,552	104,082	7	447,886	6
5	Persson, P. A.	243,0	73,590	3325	58,520	132,110	1	603,010	3
6	Brostrand, S. W.	197,0	58,410	2675	47,080	105,490	5	289,151	11
7	Nilsson, B.	202,0	60,060	2620	46,112	106,172	4	609,015	2
8	Lof, T.	248,0	75,240	2830	49,808	125,048	2	651,452	1
9	Persson, J. A. H. ..	160,0	46,200	2155	37,928	84,128	9	196,089	17
10	Sonesson, L. H.	153,0	43,890	2400	42,240	86,130	8	480,715	5
11	Eluegard, S. E.	—	—	—	—	—	—	263,912	12
12	Hassel, A. H.	143,0	40,590	1880	33,088	73,678	14	303,433	10
13	Fogde, P. O.	164,0	47,520	1925	33,880	81,400	10	198,538	16
14	Arnstorp, H-G.	—	—	—	—	—	—	177,106	18
15	Hedman, A.	126,0	34,980	2525	44,440	79,420	11	241,006	15
16	Nordholm, F.	—	—	—	—	—	—	246,322	14
17	Nordin, L.	144,0	40,920	2125	37,400	78,320	12	254,630	13
18	Hamrén, R.	175,0	51,150	3050	53,680	104,830	6	482,854	4

Starts : 18. Hours : 82 h 43 min. Total Distance : 4.547,0 km.







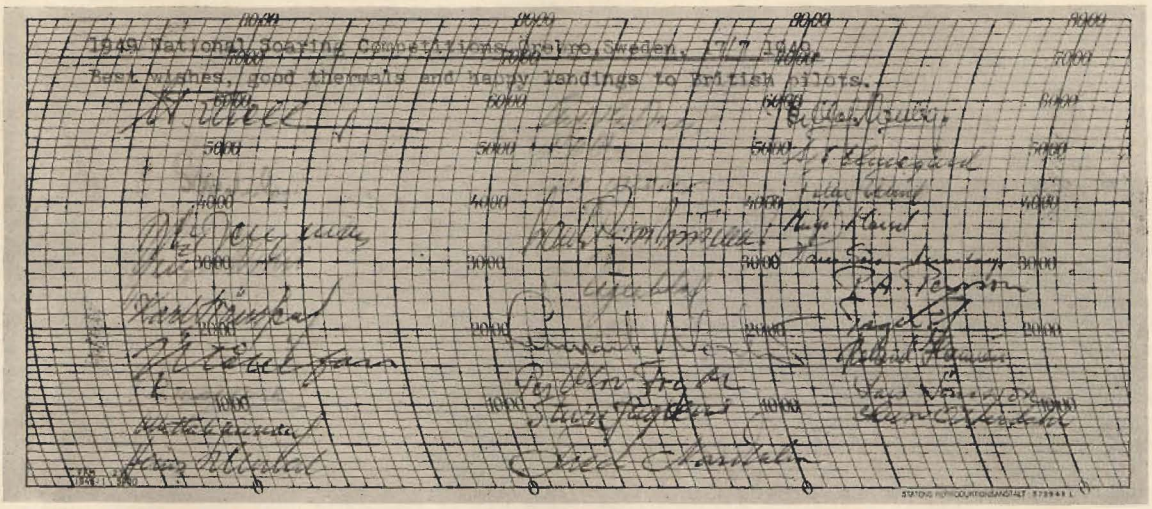


1. *Billy Nilsson* (2nd).
2. *Per Axel Persson* (3rd).
3. *Persson & Yngve Norrvi,* (C.F.I. *Alleberg*).
4. *Olle Hakansson.*

SWEDISH SOARING CONTESTS 1949

Total Starts = 150.
Total Time = 368 h. 41 Min.
Distance Flown = 14,240 km.

Rank	Pilot	Club Sailplane Type	1st Day Distance + Height			2nd Day Goal Flight		3rd Day Speed	4th Day Goal Flight		5th Day Distance + Height			6th Day Goal Flight		Remarks
			Distance km.	Height m.	Rank	Distance km.	Rank	Rank	Distance km.	Rank	Distance km.	Height m.	Rank	Distance km.	Rank	
1	Tage Lof ..	Stockholm "Weihe"	311	4,425	4	162	15	1	300	1	248	2,830	2	112	6	Gold "C"
2	Billy Nilsson ..	Angermanland "Weihe"	303	3,085	5	358	3	3	294	2	202	2,620	4	155	5	Gold "C"
3	Pelle Persson ..	Luftwaffe "Weihe"	324	5,625	1	305	6	2	100	6	243	3,325	1	24	13	Gold "C"
4	Roland Hamrén	Luftwaffe "Weihe"	217	2,925	7	380	1	11	159	3	175	3,050	6	186	4	Gold "C"
5	S. Jagaeus ..	Luftwaffe "Weihe"	130	4,090	8	305	6	4	145	5	161	3,270	7	187	3	Gold "C"
6	L. Sonesson ..	Luftwaffe "Weihe"	324	4,675	2	272	4	10	147	4	153	2,400	8	51	12	Gold "C"
7	S. Osterdahl ..	Linkoping "DFS Meise"	196	2,465	9	158	13	11	100	6	197	2,785	3	100	7	
8	A. Hedman ..	Luftwaffe "Weihe"	181	1,375	12	200	12	—	—	—	126	2,525	11	205	1	
9	P. O. Norrby ..	Goteborg "DFS Meise"	303	5,100	3	177	14	8	72	13	103	2,825	13	89	9	Gold "C"
10	F. Eklind ..	Eskilstuna "DFS Meise"	144	3,025	10	307	5	7	100	6	131	1,855	15	55	10	Gold "C"
11	P. O. Fogde ..	Luftwaffe "Weihe"	129	2,025	15	—	—	11	97	11	164	1,925	10	192	2	
12	L. Nordin ..	Orebro "DFS Meise"	158	1,425	16	126	16	11	100	6	144	2,125	12	96	8	
13	H. Hassel ..	Värmland "DFS Meise"	117	1,875	17	249	9	9	100	12	143	1,880	14	—	14	
14	S. Brostrand ..	Luftwaffe "Weihe"	158	1,675	14	126	16	6	100	6	197	2,675	5	—	14	
15	S. E. Elmegard ..	Luftwaffe "Weihe"	186	1,840	11	305	2	5	—	—	—	—	—	—	—	
16	J. A. H. Persson	Luftwaffe "Weihe"	24	530	18	180	11	11	—	14	160	2,155	9	98	9	
17	F. Nordholm ..	Västeras "Weihe"	192	4,465	6	271	8	—	—	—	—	—	—	—	—	
18	H. G. Arnstorp ..	Luftwaffe "Weihe"	168	1,575	13	230	10	—	—	—	—	—	—	—	—	



ULTRA LIGHT AIRCRAFT ASSOCIATION

(continued from page 184 August Issue)

A single-seat Ultra Light Aircraft of outstanding technical interest was flown at Orly. This was the experimental Hurel-Dubois, with an aspect ratio of no less than 32.5 ! It has a wing area of 47 sq. ft. with a chord of only 1 ft. 4 in. and a wing loading as high as 22.5 lb./sq. ft. With a 40 b.h.p. " Mathis " engine, its maximum speed is 134 m.p.h. and its ceiling 16,000 ft. The aircraft was designed to show the improvement in performance to be gained by using a high aspect ratio wing, with bracing designed as auxiliary lifting surfaces. Fowler flaps are used to increase lift for take-off and landing. Its performance was said to be impressive.

Two versions of the Mathis flat twin U.L.A. engine were shown at the Salon, one being a cheap version of 40 b.h.p. with a split crankcase and a simple two-throw crankshaft. The other one gives 46 b.h.p. and is in effect half the Mathis 92 b.h.p. flat four engine. It has a one-piece crankcase and its connecting rods are arranged in single and double fashion to allow the cylinders to be directly in line and thus avoid out-of-balance vibration couples. We have no information, however, whether either of these engines have passed their type test, or are to go into production.

" Pou de Ciel " (Flying Flea)

We have received a letter from S/Lt. (L) W. B. Stawell, R.N. in which he states that he wants to possess his own plane and not to share it with a Group. For this purpose, the initial cost must not exceed £200, and flying costs not more than 7/6 per hour. He is prepared to build the aircraft himself, so that its construction must be simple. He would be satisfied with the simplest performance, but requires the aircraft to be operated from ordinary fields.

S/Lt. Stawell then suggested that the pre-war " Pou de Ciel " (Flying Flea) fulfilled all these conditions, and added that subsequent development of the aircraft by its designer in France had overcome its original vices. A modified " Flea " might now be considered as a basis for serious discussion.

Our younger members may be unaware of the " Flea " controversy that raged in 1935, and which was largely responsible for the collapse of the promising Ultra Light Aircraft revival at that time. The aircraft was designed by an ingenious Frenchman, M. Mignet, with a view to bringing cheap flying within reach of the man in the street. The instruction book claimed that anyone who could nail a packing-case together could build a " Flea " ! The design was unorthodox in that two very short span wings were fitted in tandem, together forming a " slot." No elevator was fitted, longitudinal control being obtained by pivoting the whole front wing. There were no ailerons and, consequently, no lateral control, lateral stability being catered for by means of the extreme dihedral angle of the wings. A normal rudder was provided, and during turns the aircraft was intended to bank itself through the effect of the dihedral angle.

It was claimed that, though inefficient, the aircraft was foolproof and so simple to control that it could be flown by a novice with the minimum of instruction. That may have been so, but the writer well remembers a conversation with the late Sqdn.-Ldr. Kronfeld after his one and only trip in one, who confessed to having been thoroughly frightened by the experience !

The " Flea " was taken up by one of our leading daily newspapers, who arranged for M. Mignet to fly it over from France and demonstrate it all over the country. It aroused enormous enthusiasm (which would have been better applied to orthodox ultra

light aircraft types) and thousands of people decided to build " Fleas " of their own. Several hundred actually started construction but, unfortunately, a series of fatal accidents occurred to the first few to be completed and the type was grounded. Investigation by the R.A.E. showed that under certain conditions the aircraft was critically unstable in a dive, and recovery became impossible.

The fault was subsequently corrected by Mr. L. E. Baynes, the well-known sailplane designer, who developed a stable " Flea," but by that time it had gained such a shocking reputation in this country that there was no further interest in it. We understand that M. Mignet has introduced a new design of " Flea " in France with safe flying characteristics, but although we should be interested to learn more about it, we do not at present advise a revival of the aircraft over here in view of the strong criticism and opposition it would be certain to meet from many sources, which would do our movement immense harm.

In consequence of the lesson of the " Flea," we will only recommend approved designs of ultra light aircrafts for amateur construction, and then under the guidance and supervision of our Inspection Organisation. We have recommended S/Lt. Stawell to consider the Slingsby Motor-Tutor as an answer to his requirements. This aircraft has remarkable take-off and landing qualities, and is eminently suitable for operation from small fields. Although not quite as cheap as he requires, it is to be made available in kits of parts for home construction, and it is a safe and well-proved design which will shortly be in production.

Ram-Jet Driven Propeller Suggestion

With regard to the notes we published in our Bulletins of August and September 1948, on proposals for jet and rocket driven propellers as the simplest means of providing auxiliary power for sailplanes, Mr. D. E. Felce, whom we have previously mentioned as an experimenter with a pulse-jet motor for this purpose, has made an interesting suggestion. He proposes that two athodyds (ram-jets) should be mounted on a rotating beam which would be arranged to drive a propeller through epicyclic reduction gearing. Such a scheme would allow the supersonic speed necessary for effective operation of the ram-jet, and yet allow the propeller to run slowly enough to be efficient.

Ram-jets are even simpler mechanically than pulse-jets, being without the resonating intake valves. They have, indeed, no moving parts at all. Their use would give rise to less vibration and noise than pulse jets and they should last longer in operation, but their development will involve some severe combustion problems to reduce the present enormous fuel consumption.

Mr. Felce's idea may be of interest to our other member, Mr. Swinn of Blackpool, who is experimenting with the construction of a 4-feet diameter ram-jet driven propeller for providing auxiliary power for a sailplane. He is planning to use ram-jet units at the propeller tips, each 9 ins. long and 2 ins. diameter, which are to be fed with fuel by centrifugal force from a streamlined tank at the propeller boss.

Powered Gliders (Contributed by Chairman, Public Relations Sub-Committee)

Ultra-light aircraft can broadly be divided into three classes. First is the two-seat trainer, which should really form the backbone of any training movement; second, is the lightly-loaded advanced training and sporting type exemplified by the " Motor-Tutor," and third, the more complex touring and aerobatic aircraft such as the " Fairey Junior."

Each of these types has its place in the operating scheme of the U.L.A.A., but so far, our most immediate prospect is the second example, the " Motor-Tutor." Apart from its obvious appeal for Group construction, the " Motor-Tutor " fills a unique gap between sailplanes and powered aircraft, which makes it particularly attractive. For " pure " flying, as opposed to the more utilitarian kind, the powered glider has much to offer in the way of the dual qualities of pleasure and economy, in addition to which its kinship with its powerless brethren develops a flying instinct that up to now has been the prerogative of the glider pilot. An aircraft similar to the " Motor-Tutor " enables even the most inexperienced pilot to learn the mysteries of the uncharted currents in the ever-changing air, and to boost his puny horse-power from Nature's inexhaustable power supply. Local flying in the " Motor-Tutor " should form a part of the education of every pilot in the Association, towards better airmanship.

Many other countries have been quick to realise the potentialities of the powered glider, and even behind the Iron Curtain, developments of the idea are continuing. The most recent example has been from Finland, which has an enthusiastic light aeroplane and gliding movement. There, A " Grunau Baby " has been fitted with a 1y b.h.p. " Aubier and Dunne " engine, in a similar way to the modification of the " Motor-Tutor." The power-plant, driving a two-bladed wooden airscrew, is completely enclosed in a very neat installation. A large windscreen fairs in the gap between the cowling and the leading-edge of the centre-section. Mounted well forward is a narrow-track, cantilever undercarriage. The cockpit retains its flying instruments, including a variometer, and is the essence of simplicity. With a variometer, it would be possible to organise height and distance competitions with this class of aircraft, allowing only a limited amount of petrol for the initial climb from the aerodrome.

Taking this idea a step further, the Americans have produced several types of powered sailplane, in which a small engine replaces either an aero-tow or a winch-launch. They have also shown that this can be done with little detriment to the soaring performance. These aircraft are, strictly speaking, ultra-lights, and some details may be of interest to our members.

One of the most outstanding of these aircraft is the little Nelson " Dragonfly," several of which have been built for private owners. This interesting design is a semi-cantilever high-wing monoplane, with a pod-and-boom fuselage, and a tricycle undercarriage. Two occupants are seated side-by-side under a large Perspex canopy, and are provided

with dual controls. The main wheels retract into the fuselage, and have independent brakes, while the semi-retractable nose-wheel is steerable.

A four-cylinder, two-stroke, horizontally-opposed air-cooled Nelson engine, developing 25 b.h.p. at 3,800 r.p.m. is mounted in a pusher installation at the rear of the fuselage pod, and is fitted with a ratchet starter. Six U.S. gallons of fuel are provided in a fuselage tank.

Span of the " Dragonfly " is 47 feet 4 inches, length 19 feet 8 inches and wing area 169.3 sq. ft. Empty weight is 465 lb., weight loaded 900 lb. These figures give a power loading of 36 lb./b.h.p. and a wing loading of 5.31 lb./sq. ft.

Despite the low power available, the " Dragonfly " has a take-off run of only 200 yards and an initial rate of climb of about 250 ft./min. After gaining sufficient height, the engine can be stopped, and the " Dragonfly " settles down to its minimum sinking speed of 3.9 ft./sec. The best gliding ratio is 1 : 20. For landing, the engine is not needed, and if necessary, the " Dragonfly " can be put down on a belly skid without damaging the airscrew. The aircraft handles like any orthodox sailplane, and can be dismantled and stowed in a trainer in a few minutes. One " Dragonfly " was soared to 14,600 ft. for a world record.

From experience gained with " Dragonfly," a further aircraft was developed with an even better performance. Also a two-seater, the " Humming-Bird," as it was called, had a 36 b.h.p. engine mounted above the plywood semi-monocoque fuselage. After take-off, the power plant retracts into a fairing behind the cockpit, the wheels retract into the wings, and the Humming-Bird becomes a pure sailplane. Gross weight is 1,000 lb. and climb exceeds 275 ft./min. at take-off power. The cantilever wing is mounted in the midway position on the fuselage, and the whole design is very clean.

A similar project was undertaken in Germany by Wolf Hirth, in 1937, who adapted the " Govier " two-seater as a single-seat powered sailplane. War intervened with the project, but work began again in 1941, and the first flight was made on October 25 of that year.

No undercarriage was fitted to the " Hi 20," except for a bicycle arrangement of two pneumatic wheels half-protruding from the fuselage. An engine was specifically designed by Diple. Ing. W. Krautter, with four cylinders operating on the two-stroke cycle, and a capacity of 500 c.cs. Twenty-five b.h.p. was eventually obtained from this power plant, at 5,500 r.p.m. The two-bladed propeller was driven through a 1 : 2.3 reduction gear.

The engine was mounted in the fuselage, and drove the propeller, which was mounted at the top of a strut, through shafting. Through a system of levers, the strut could be retracted after the engine was stopped, to lie flush in the fuselage.

Specification of the " Hi 20 " is : Span 44 ft., length 23 ft., wing area 190 sq. ft. The best gliding angle is 1 : 20, and the best sinking speed 2.9 ft./sec.

Insurance Supplement (Contributed by C. P. Choularton, Chairman, Insurance Sub-Committee)

Rates for aviation personal accident insurance are hardening and the Operations Sub-Committee recently suggest that a special scheme should be organised for the Association. The success of any scheme depends upon a wide measure of support from Groups and individual members—at least one hundred and fifty members need to participate to interest Insurers sufficiently to secure special facilities.

If there is sufficient interest then cover can be arranged for :—

Benefits :

Death only £500

Temporary Total Disablement limited to 26 weeks (ex. the first 10 days' disability £5 per week.

The Annual premium is approximately 12/6d. per member.

Groups and Members are requested to write to the Chairman, Insurance Sub-Committee, 30 St. Ann Street, Manchester 2.

It will interest Groups to learn that a policy has been taken out by the Doncaster Group to protect their three Instructors who give free services. Benefits to each Instructor of :—

Death £1,500

Loss of one or more limbs £1,500

Loss of sight in one or both eyes £1,500

Temporary Total Disability—weekly compensation up to 100 weeks £15

Permanent Total Disability after 100 weeks except where compensation is paid under 2 or 3 above £1,500

Doctor's charges up to 15 per cent. of compensation under 5 above.

The annual premium is £8. 8s. 9d.

Instructors' Endorsements

Further to the announcement of our negotiations with F.A.P.A.N. on the question of Instructors' Endorsements for ultra light types only. The following is an extract from a letter received from G.A.P.A.N.

" Those of your members who wish to give instruction should present their applications in the normal way, and each case can then be treated on its merits. As to whether the full or Assistant Certificate is issued will depend on the degree of " passing out " of the applicant. The panel have the authority to issue a Certificate for a specific type or class of aircraft only. As our members have no ultra light aircraft at their disposal for testing purposes, it would mean that in each case the applicant would have to supply his own aircraft. It obviously must have a Certificate of Airworthiness, or the equivalent, and be properly maintained, as well as having full dual control. The applicant may be examined on all or any of those parts of the sequence which are within the capacity of the particular aircraft. Broadly speaking, this would mean all features of single engine instruction other than aerobatics."

Training

As announced in the March *Bulletin* we had received some information on a new " Link " type trainer. We have now received further details.

The Primary Trainer has been designed to meet

the needs of elementary flying pupils and to produce for them an efficient and cheap machine requiring the minimum of maintenance. Accordingly, all telegon operated instruments have been removed and have been replaced by other types of instruments which require little or no maintenance. There is no reason why the instruments installed should not give trouble-free running for a long period. The trainer is fitted with stick control and a detachable hood, as it is felt that all flying in the initial stages will be done visually with occasional references to instruments.

The Instrument Panel comprises :—

1. Airspeed Indicator
2. Altimeter
3. Turn and Bank Indicator.
4. Fore and Aft Level.
5. Magnetic Compass.

The flight recorder is included with the trainer, but no table is provided, since it is felt that any flat surface will serve for recording purposes and space can be saved by using either a small table or even the floor.

It is felt that the best use can be made of this trainer by using some form of horizon, either drawn or painted on the walls of the room in which the trainer is situated, or by having an horizon line drawn or painted on a canvas screen which can easily be erected round the trainer. This would give the pilot a reference and would enable him to fly visually with occasional reference to the instruments. Various types of problems can be carried out on the trainer, including cross-country flying, either visually or by instruments, and the use of the recorder in this respect will be invaluable.

The Rough Air Mechanism is fitted to the trainer and this will give the pilot some experience in controlling the machine under more difficult conditions.

We hope to visit the manufacturers soon and try our hand at this machine and possibly comment upon it in a later *Bulletin*.

Research Supplement (Contributed by A. R. Weyl, Chairman, Research Sub-Committee)

German Views on Auxiliary Powered Sailplanes

Thermik, a German monthly journal on soaring flight, a rather interesting article on powered sailplanes by Walter Horten, one of two brothers who have become well known through their experiments with tailless sailplanes and aeroplanes. Among the large number of the designs which were built before the war, they flew a powered sailplane with a 70 b.h.p. Hirth engine, and during the war, they seem to have constructed (though not flown) another specimen. Both brothers began as sailplane pilots and have always maintained a keen interest in soaring flight.

According to Walter Horten, the disadvantages of soaring at present are still the high expense and the waste of time. This is the result of handling difficulties of the sailplane on the ground, and the necessity for assistance in order to take off and to reach a useful altitude. It is not the price of the sailplane and its maintenance which renders soaring so very expensive ; but all the additional costs of flying and of the movement on the ground, result in the fact that, taken per hour of flying, soaring is far more expensive than power flight with light aeroplanes.

The average cost of soaring in Germany (taken over one year) per hour of flight was authentically found to amount to five times the cost of an hour's flying with a 100 h.p. light aeroplane. This explains (not counting the waste of time) why so many people simply cannot afford to soar and have to satisfy themselves with occasional flying on chartered light aeroplanes.

But even this is still far too expensive for people of small means.

Horten sees a solution in a combination of the sailplane and the aeroplane. This would be able to take off and climb without special exterior facilities and to utilise the energy in the atmosphere for flying.

Before the end of the war several solutions of this problem had been seriously attempted in Germany. Horten gained personal experience with a tailless powered sailplane of his design. This had a pusher airscrew the blades of which automatically folded back when the engine was stopped, the blades spread themselves automatically again when the engine was started. The engine was so well faired in that it did not cause any additional drag. He thinks that when the additional weight of the power plant is accurately taken into account, a soaring performance equal to that of the best sailplanes can be obtained. In his view the powered sailplane is really the ideal for soaring flight.

So far as engine power is concerned Horten discusses two cases. One is the entirely self-contained powered sailplane ; the other relies on launching assistance.

The former must have a retractable undercarriage ; for 42-49 ft. span and 112-130 sq. ft. wing area, Horten thinks a power of 12-14 h.p. adequate, to give a reasonable unassisted power loading. The other alternative would be cheaper, as the expensive retractable undercarriage could be replaced by a single wheel or a skid, if some take-off help was available. Car towing is deemed sufficient for this purpose. In this case the engine power required is assessed to 6-8 h.p. (Based on the tailless sailplane layout) the power required for maintaining height would be only 2.3 to 2.8 h.p. ; an excess horse power for climb would thus be available.

Assuming a volumetric output of 60 h.p. per litre cylinder volume, an engine of 200-250 c.c. is sufficient in the case of an entirely self-contained sailplane, and an engine of only 100-125 c.c. in the second case ; in both cases assuming a gearing down of the airscrew by 5 : 1.

As a flying wing has fewer parts than a conventional sailplane the price of the powered sailplane á la Horten including its power-plants should not exceed that of a quite conventional sailplane. Horten is at work to realise his contentions.

Horten bases his arguments on an hour's flying. The satisfaction derived from an hour of soaring flight as compared with an hour of power flight, is, of course, individually quite different, and nearly impossible to assess in hard cash.

Till now, no satisfactory hybrids between aeroplane and sailplane have been achieved. Usually, the trouble has been with the power plant. Small engines

(usually adapted motorcycle engines of poor reliability) have few cylinders and produce an enormous amount of vibration which the rather flexible structure of a high-performance sailplane is unable to withstand. The unavoidable result was a redesign of the airframe with a subsequent reduction of the soaring qualities. Moreover, it is hard to see how the addition of an engine and airscrew will not reduce the aerodynamic efficiency. The cooling alone of an engine will cause some additional drag, at least at the speeds sailplanes are likely to achieve. Also the suggestion to gear the airscrew down by as much as 5 : 1 sounds a somewhat fearful proposition. Mechanical gearing is very likely to give trouble, in particular with engines which will have, most probably, one or two cylinders only.

(This subject of powered sailplanes is very controversial, but we would remind members of the pre-war Carden-Baynes auxiliary powered sailplane, which had a 250-c.c. " Villiers " engine in a retractable installation. Further examples of powered gliders will be described in the next *Bulletin*.

" Keen Type "

Mr. J. J. McLellan, the Hon. Secretary of the Flintshire Aviation Group, has made an offer which should be of interest to all Groups, and possibly some of our individual Members as well. It appears that Mr. McLellan's hobby is printing (we have often wondered what Group Secretaries did in their " spare " time !) and he has offered to undertake the printing of letterheadings, membership cards, or any of the many other printed items that Groups are likely to require from time to time.

Mr. McLellan assures us that his prices will be extremely competitive and that such small profits as he can make will be devoted to swelling the funds of the Flintshire Aviation Group. This appears to be a fine chance for Groups to cut some of their own costs and at the same time help a " fellow Group." Will Groups who are interested in this scheme please communicate direct with Mr. J. J. McLelland at Aelwyd Uchaf, Cwm, Dyserth, Flintshire, who will send samples and quotations as required.

We should like to congratulate Mr. McLellan on his enterprise and wish him success in his efforts to assist his own and other Groups. We are also going to give him practical support by way of an order.

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U.L.A.A. EXECUTIVE COMMITTEE

At a recent Meeting of the Executive Committee, Group Captain E. L. Mole was elected to the Chair for the coming year, in succession to Mr. R. W. Clegg who did not wish to seek re-election. Mr. Clegg remains on the Committee in his capacity of Chairman of the Communications Sub-Committee.

AN HONORARY SECRETARY REQUIRED

Because of pressure of his own business, our Hon. Secretary regrets that he will be unable to continue with his duties much longer. We are therefore, anxious to hear from any member, preferably in the London area, who would volunteer to undertake the work in his spare time. As at present organised, the duties are shared between a secretariat consisting of several volunteer members who meet on two evenings a week at Londonderry House. The Hon. Secretary's duties are mainly to co-ordinate the work of the secretariat, and to ensure continuity.

The post includes membership of the executive committee, and we would appreciate offers from members with spare time who are keen to help the Association.

FACILITIES IN BEDFORD

The Proprietors of Eaton Bray Model Sportsdrome, Stanbridge, Nr. Leighton Buzzard, Beds., have offered workshop and flying facilities at their aerodrome, which is licenced by M.C.A., to members of the Ultra Light Aircraft Association, at very low rates. Two air displays have been held at this aerodrome this year, and in the latter, the Association's " Zaunkoenig " was demonstrated by the Chairman of the Public Relations Sub-Committee.

To interested members in the Bedford area, Eaton Bray is a good potential site for accommodation, and we should like to see the formation of a group there.

APPOINTMENT OF REGIONAL INSPECTORS

Mr. A. Royden Woods has been appointed Regional Inspector for the South Western district of the U.L.A.A. Groups and others needing advice or help on matters of inspection and maintenance should get in touch with Mr. Woods. His address is : " Norbury," Church Road, Caldicot, Nr. Chepstow, Mon.

GROUP NEWS

Ultra Lights in Birmingham

An Inaugural Meeting is to be held early in September in Birmingham for the projected " Midland Ultra-Light Flying Club." Support is vital for the Club, and all members in the Birmingham area should contact Mr. J. E. Harding, 755 Warwick Road, Tyseley, Birmingham, and help him to get an active group established as soon as possible.

Aerotech at Blackbushe

The Aerotech (Hayes) Club, which until recently has been lodging with the Experimental Group at Elstree, has now moved to Blackbushe, through the co-operation of M.C.A. and the assistance of Mr. D. E. Bianchi. The Club hopes to start operating at their new base in the near future.

SLINGSBY " MOTOR TUTOR "

Mr. F. N. Slingsby has written to say that the flight tests for the C. of A. of the " Motor Tutor " are proceeding well. As soon as the C. of A. is cleared, he proposes to hand over the prototype to our Experimental Group at Elstree so that demonstrations can be given to all groups and members. We would like to hear from everyone interested so that arrangements can be made for demonstration and trials of the aircraft. We have an idea that its phenomonal take-off and angle of climb are going to surprise a number of our members.

As already announced, Mr. Slingsby is prepared to market kits of parts for home construction of the " Motor Tutor " this winter. His provisional price for a complete kit will be about £280, and we are

anxious to know whether our members consider whether this will be within the resources of an average group. We would welcome comments and suggestions on this scheme.

Brookside Flying Group, Shoreham

This Group was recently visited by the Hon. Sec. U.L.A.A., who spent a pleasant Sunday afternoon with the members at their clubhouse on Shoreham airport. The Group has now acquired a " Magister " which it operates at 35/- per hour. One of their chief difficulties however is lack of sufficient instructors to keep the aircraft fully employed. The Group will be very pleased to hear from any " instructor types " who would be interested in helping them.

Experimental Group, Elstree

The Group, by arrangement with one of its private owner-members, is now operating an "Auster" for instructional work. The " Bibi " has emerged from overhaul and was completed just in time to take part in the Grosvenor Challenge Trophy Race at Elmdon. Group Captain Mole flew the " Bibi " to second place at 104.5 m.p.h., after the machine had spent a night out in the open, an airlock in the petrol pipe causing a forced landing during a practice run round the course. The Group hope to support the South Hants Group by flying both the " Auster " and the " Bibi " down to the display at Christchurch on September 3rd.

All enquiries concerning membership of the Group should be addressed to the new Secretary, Mr. J. A. Allan, 33 Palace Court, London, W.2.

Proposed Design and Construction Group in S.W. London

Mr. G. A. Henwood of Wandsworth Common, London, S.W.18, is very keen to design and build his own aircraft and is willing to put a great deal of time in to such a project. He aims to build the aircraft for the interest and amusement to be derived from it, but he intends to design it for possible market later on should circumstances appear favourable. Mr. Henwood is anxious to get into touch with others who may be interested in collaborating with him over the project, and we shall be glad to put those interested in touch with him with a view to forming a Design and Construction Group in his locality.

Potential Group at Gatwick

We have been informed that it is probable that facilities can be offered at Gatwick should a U.L.A.A. Group be formed there. The Association would like to see an active group formed just South of London, and will assist in every way to form this Group. Those who live in the district or who are within a reasonable striking distance of Gatwick and who are interested in the projected Group are requested to send their names and addresses to the Hon. Secretary.

THE SPANISH RALLY IN AN " AERONCA 100 "
Contributed by Peter Gooch

When I first bought my " Aeronca " I had no idea that I should ever undertake such a long journey as the 2,200 miles I have just flown through France and Spain. Having flown the aircraft locally in Southern England I realised its sturdiness and so entered my name for the Deauville, Spanish and La Baule Rallies.

Obviously the 6¾ gallon capacity petrol tank would be insufficient for some of the hops, so copying an idea from Lt.-Cdr. Sproule (a well-known " Aeronca " enthusiast) I set to and made up a long-range tank. This consisted of the bottom halves of two Jerry cans welded together, giving a capacity of 5 gallons. This tank was placed on the aircraft seat with a thin cushion between it and myself. In the left hand front corner I sweated a 2¾-inch diameter filler cap and built on to the actual cap a small hand air pump, the barrel of which went down inside the tank. The air pump was made from the barrel and plunger of a grease gun with the non-return valve from a Primus stove at the bottom. Two push-pull petrol taps were fitted alongside one another on the front of the tank, and a pipe from one of the inside of the tank went to the top of the tank and from the other to the bottom, to let out air and petrol respectively. The exits from the taps on the outside were taken to a common outlet pipe. A 4-inch length of copper pipe was sweated into the normal aircraft tank filler cap, and the two tanks were connected by a rubber hose. On pumping air into the long-range tank, petrol was forced up into the main tank. The rubber hose going through the cockpit was cut and a 3-inch length of glass pipe inserted as a visual indication that petrol was flowing up into the main tank when the pump was operated. For this long range tank the only modification to the aircraft was the sweating of the copper pipe into the main filler cap.

I had next to think of stowage of kit for myself and my passenger, Pat Boyd. A certain amount went in the luggage locker, some in a canvas bag on Pat's knees, and two dinner jackets and two suits were hung on hangers at the back of the cockpit. What remained was put into another sawn-off Jerry can upon which Pat sat.

The route was from Shoreham to Lympne, Deauville, Tours, Limoges, Perpignan, Barcelona, Valencia, Madrid, Pamplona, Biarritz, Bordeaux, La Baule, Deauville, Lympne and Shoreham, a distance of some 2,200 miles which occupied 32 hours 50 minutes flying time. Petrol and oil consumption respectively were 74 gallons and 2 pints, yes 2 pints !

The trip was comparatively uneventful. The rate of climb was of course very poor with the weight we were carrying, especially in the hot weather and taking off from altitudes around 2,000 feet as we did at Madrid. The greatest height reached was 8,000 feet, but this was easily attained by playing the thermals, which are pretty terrific. With so little power to spare it is advisable to fly over mountains with plenty of height in hand. Between Valencia and Madrid we flew through a thunderstorm at 7,000 feet, and between Madrid and Pamplona the turbulence over the mountains rattled us around like two peas in a drum. The maps of Spain are far from good. Things are marked which are not there, and those which are there are not marked. I stuck to my compass. Anyone undertaking a journey like this should have a decent compass. Mine is a small

dashboard type. 10 degrees on the scale was represented by ⅛ inch, and the lubber line was ½ inch away from the bowl. Heaven knows what the long-range tank did to the compass magnetism, but we always arrived at our destination.

The only other incidents on the trip were mechanical. At Valencia the tail skid packed up, having been completely worn out on the concrete runways. It was ably repaired by the aerodrome mechanics. I also had an exhaust valve ground in ; it had been leaking slightly. At Biarritz I took off both pots and ground in all the valves. I put down the reason for this valve trouble to two possible causes. At Barcelona they might have filled up with 100 octane, but somehow I cannot be sure of this. The second reason was that at Biarritz the valve guides were not as good as they might have been and possibly the valves were not coming down to their seats squarely and so causing the burning (it was the seats that were burnt more than the valves, especially the exhausts which had the worst worn valve guides). At home I always use upper cylinder lubricant in the petrol and before each flight squirt oil on to the valve stems with a small force feed oil can. I could not get upper cylinder lubricant on the continent, and I expect this accounts for the valve guides being worn. This does seem to be a weak point with the J.A.P. 99 engine. There is no positive lubrication to the valve gear, only grease nipples to the rocker bearings. Would it not be possible to exit the crankcase breather through the rocker boxes ?

In spite of the fact that the " Aeronca " weighs only 618 lb. and is powered by a two-cylinder 36 h.p. J.A.P. engine it is nevertheless a sturdy and reliable little aircraft and as this trip has shown, can be used for more serious journeyings than local hops round the airfield. One could certainly find no cheaper way of travelling by air.

NEWS FROM THE CLUBS

THE NEWCASTLE GLIDING CLUB LTD.

Club Notes

August, 1948 *to August*, 1949

In August, 1948, the Newcastle Gliding Club obtained permission to operate from the runways of an ex-R.A.F. aerodrome at Stannington, between Newcastle and Morpeth. This gave the Club a new lease of life, since it has been without a training site since the loss of Cramlington in 1946. Training commenced with an old " Dagling " for slides and a Hawkridge-nacelled " Dagling " for hops and circuits. Launching and retrieving was done by " Beaverette."





R. Swinn's "Scud III" with retractable 3½ h.p. motor, which he has successfully flown at Dunstable.

" A " certificates were obtained by Mallender, Anderson, Steele and Dagliesh, and " B "s by Lion, Lutman, Anderson, Steele and Dagliesh. " C's " were obtained at Sutton Bank in our " Tutor," by Lion, Callahan, Lyddiard, K. Driver and Bill Thompson.

The nacelled " Dagling " was badly damaged by a " B " certificate holder in October, and training was seriously interrupted. Another nacelled machine was soon acquired and training continued.

An " Airspeed Turn " (modified by Andy Coulson, our maintenance engineer), a syndicate owned " Kite," and the club's ex-German " Olympia " were also flown.

In April, 1949, a " T.21B " two-seater was obtained through the Kemsley Flying Trust, and this opened new opportunities for training and joyriding.

On April 8th, Andy Coulson and Jack Lyddiard after an auto-towed launch flew the 9 miles to Wolsington Airport, after reaching 3,500 feet, and having a look at Jack's home at Ponteland on the way.

On April 10th, the official inaugural flight was made in the " T.21B " by the Chairman, Mr. Robert Parker, piloted by Mr. S. C. O'Grady. The machine then commenced its working life and several ab-initios were soon introduced to gliding.

A successful Easter Camp was held, and 106 launches were made.

" Robby " Robertson, an ex-R.A.F. and civil " B " licence pilot joined the club, had a few circuits in the two-seater, during which he did loops, spins and stall-turns, and then took his " A " and " B " certificates in the Hols.

On May 8th, " Mick " De Redder flew the " Olympia " to Wolsington after reaching 2,500 feet, with the aid of some cumulus nimbus. He returned, after the rain stopped, by aero-tow.

Another successful camp was held at Whitsun, and a large door was made in the blister hangar which the club now use. This operation was supervised by Flying Field Manager Bill Wilson, and Hon. Secretary, Pat Miller.

On 29th May, several thermal flights were made in the " 21B." Mick Fidler, with Stan Steele as pupil, reached 2,700 feet and stayed up for 20 minutes.

The " Olympia " was badly damaged when a pilot who had recently graduated to the machine undershot and hit the hedge.

On June 19th, the club took part in the Newcastle Air Display at Wolsington. The C.F.I. Arthur

Burningham demonstrated the syndicate owned "Slingsby Petrel," while Andy Coulson and Mick Fidler did aerobatics in the "21B." John Leach of Slingsby's paid us a visit at Stannington in the "Motor Tutor." This prompted much discussion on the subject of "little engines," to the disgust of one or two purists.

On July 10th, Len Dent obtained his "B" and Doug. Collinson his "A" and "B." A week later, Ken Thompson completed his "B."

A 48 h.p. 1924 Rolls Royce was acquired for luanching in conditions too calm for the Beaverette. It has been lightened by the jettisoning of all unnecessary accessories (such as bodywork), and has proved very satisfactory. We use ⅛-in. diam. single strand steel cable for launching, using the Cambridge methods.

On the social side, the "Voluntary Barmen" have been relieved by the employment of a steward in the city headquarters. The catering rota at Morpeth, however, still requires additional strength.

Jack Anderson has become Assistant Secretary, Dick Patterson Chairman of the House Committee, and Ron Brown Secretary of the House Committee.

Shiela Renwick has left us, and is teaching in London, Arthur Burningham is in Canada for 3 months, and Mick Fidler has gone to Burton-on-Trent.

Andy Coulson has spent most of August in France at Troyes, and has put in 25 hours soaring.

We were glad to have a visit from David Hendry, and Dr. E. Hick, former members of the Club.

Great difficulty has always been experienced in getting the attendance of sufficient members for Saturday flying, but the problem has been solved by reducing the launching fee for the two-seater from 4s. to 3s. on Saturdays only.

On 27th August, John Allan brought his "Scud" to Stannington, and members were impressed by its small size and ease of ground-handling. John is a pre-war member of our club, and we were very pleased to see him.

Bill Wilson has gone to Coventry (yes the town!) and his place as F.F.M. has been taken by G. Robertson.

Ken Lion has put in several hours in the "Tutor" at Sutton Bank in recent months. The "Tutor" is to be brought to Stannington to introduce the "C" aspirants, to the machine, and for thermal soaring practice. The delays in bringing the machine up, however, have been so great, that one or two people are beginning to look despondent.

Great difficulty is experienced in keeping non-members off the aerodrome, despite numerous "Private" notices, barbed wire, and other hazards. Strangers have a habit of walking across the approach path of the machines, but worse still, they pinch all the blackberries!

Two social events have so far been arranged for the coming season. On October 17th, a gentleman will entertain and Mr. Donald D'Adamo will give a demonstration of ladies' hairdressing, including colouring the hair to suit the dress. On November 26th, the annual Tramps' Party will be held in the City Headquarters.

D.C.

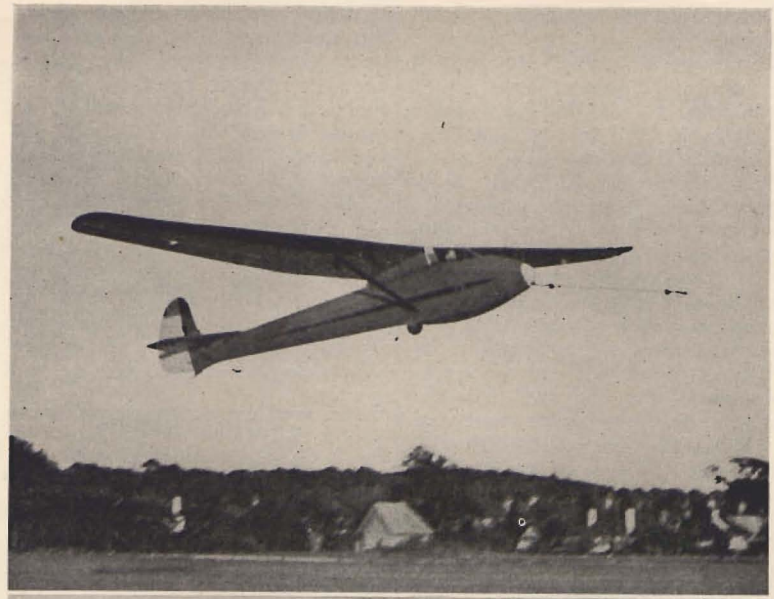
SCOTTISH GLIDING UNION

The S.G.U. has slowly gathered strength since the end of the war, and has overcome many obstacles to its success. We are certainly not in any position to relax, but there is a feeling about the place that at last we are getting somewhere. We have for example, got a "home" in once dilapidated W.A.A.F. quarters, which are now being re-roofed, repainted and refurnished. We have also got at least two gliders, a "Baby" and an "Olympia" which have soaring probabilities. And finally, the soaring site at Bishophill has been brought into use again by taking up to its substantial heights two gliders and one winch. To show that the right spirit is also there, Hal Thorburn, on the 7th September, was bunjied off the Hill in a Cadet, and sat it out for five hours and three conclusive minutes to break the Scottish Endurance record. It remained in the family however, for the previous record of three and three quarter hours, had been held by brother Andrew.

As Hal said afterwards, he had waited twelve years to get himself and the right wind on the Hill at the same time, and he could not miss such a golden opportunity. Of course it was not all plain sailing. Particularly in the last twenty minutes when the wind strength fell considerably and he only maintained height by exploiting the Bowl to its uttermost. The Bowl it should be explained acts very much as a chimney in magnifying the slightest wind into a very narrow but constant stream of rising air. It is in fact one of those places where the theory of the ever diminishing circle can be carried out almost to its logical conclusion. At any rate it served to keep Thorburn aloft for those last critical minutes.

No one has yet achieved any endurance in straightforward soaring because the acquisition of soarable gliders has been of relatively recent origin and it was in this connection that we were glad to welcome David Brown of the Cambridge University Gliding Club. His advice on soaring as well as on other matters was most welcome, and we shall be pleased to receive any other club member who wishes to add culture and beauty (by visiting Edinburgh) to his life and knowledge to ours.

During July two courses for would-be glider pilots were run at Balado including one for a party of twelve Scottish Air Rangers. If only the weather had matched their enthusiasm the results would have been very gratifying. As it was a blustery wind which lasted from mid-week until their weekend, spoiled their chances of obtaining "A" Certificates. Tom Davidson was their guide and counsellor and has high hopes of graduating some of these young girls when they return for a long week-end in the near future. Tom Davidson it should be noted probably holds the Scottish record of "A" and "B" pupils who have passed through his hands and have received the benefit of his inexorable patience. This visit incidentally did bring us some publicity—and how we love publicity—in that one British daily and one Scottish daily gave the Rangers and the S.G.U. what is commonly known as a "write up." Incidentally in the process one reporter trebled our membership and the number of our aircraft and indeed the only thing he didn't, quite literally enlarge upon, was our bank deficit, which apparently was unknown to him. But it all helps. . . .





Top. *"Kite II" with R. Hayter (C.F.I.) at the controls.*

Bottom. *Hurn Club Members:*
Back Row (l. to r.) R. Downes, I. E. Baker, R. Haigh (Chairman) R. Hayter (C.F.I.), J. Nunn, P. Squelch.
Front Row (l. to r.) Haigh (Jnr.), G. A. Joynes, Mackinlay, J. Allan, G. E. House, Bampton.

AIRWAYS AERO CLUB, HURN

A group has recently been formed within the Airways Aero Club, Hurn Branch, who operate in the Bournemouth area.

Necessary qualifications for entry are the Royal Aero Club's Gliding "B" and "C" Certificates—which accounts for the small number of group members at present. However, a gradual influx of members is expected in the near future.

The initial demand for soaring facilities has been met by recently acquiring a "Kirby Kite II," whose condition is absolutely first class. Launches will mainly comprise of aero-tows, using the group's own "Tiger Moth" aircraft.

Flying commenced on September 1st this year, and the programme to date has consisted of aircraft familiarization only. An abundance of optimism is equally shared by the members, for many among the few are literally thirsting for their "five-hours" and such.

GLIDING CLUB OF WEST AUSTRALIA SOCIAL ACTIVITIES (JULY)

Dancing every Thursday at 8 p.m. Leederville Town Hall

The attendance of every Club member is needed, and will be greatly appreciated, at these Dances.

The Games Evening held on 11th June was a great success and the Social Committee wishes to sincerely thank Mrs. Davern for her generosity in making her residence available to them on that evening.

Raffle

The S.C. is running a raffle to boost their funds and tickets are available from any of the Social Committee. The Prize is a pair of "Polaroid Sun Shields," either ladies' or gents' style.

Wanted for Winch

Small Gear Box—three-speed, preferably without clutch housing.

Anyone who has the above and would like to donate same to the Club would they contact C. Bentley at 180 Salvado Road, Wembley.

"Hutter Sailplanes"

The Twin "H17's" being built by Alan Milligan and Neville Wynne are, according to a report from the builders, expected to be completed in about 3 or 4 months' time.

Both fuselages and tail units are complete and the wing ribs—spars and component parts are finished. Work has started on the torsion boxes.

The fuselages are being stored at Geoff. Higginson's home at 61 Birkett St., Bedford Park, so as to make room in Alan Milligan's workshop for the assembling of the wings.

Both fuselages have been painted yellow-goldish colour.

Grunau Syndicate

The "GB.11" sailplane is now owned by a syndicate of five, comprising Messrs. R. Young, L.

Anderson, A. Pearce. W. Major and R. Baird.

The "Grunau" was formerly entirely owned by Warden Major who purchased the machine from its builder, Arthur Farmer, some years ago.

Flying for June (Caversham Field)

Total Tows: 70, Total Time: 2 hrs. 56 minutes 51 seconds.

The Following Pilots Flew:

"Rhon Ranger," R. Young, L. Anderson, M. Villiers, K. Main, C. Gandy, A. Milligan, G. Higginson, P. Davern and R. Baird.

"Jenny Wren," A Milligan, K. Mitchell, C. Gandy, N. Wynne and R. Baird.

"Grunau Baby," R. Baird, N. Wynne, R. New, A. Milligan, C. Gandy and K. Mitchell.

On Monday the 6th Len Anderson progressed to circuit stage and did a nice job of his first circuit too!

Sunday the 26th, Mary Villiers did her first circuit and one of the smoothest circuits seen for a long while. "Nice Work," Mary.

Pupils on Circuits are: Ray Young, Mary Villiers and Len Anderson.

On High Hops with S turns are: Keith Main, Pat Davern and Geoff Higginson.

Best Flights for the Month:

Monday the 6th, Kev Mitchell, 4 minutes 45 seconds ("Jenny Wren").

Sunday the 19th, Ray Baird, 4 minutes ("Jenny Wren").

Sunday the 26th, Ray Baird, 13 minutes, 900 feet to 3,000 feet ("Grunau Baby").

Sunday the 5th, R. Young, flying the "Rhon Ranger" turned too low on his approach, and in trying to dodge a couple of motor bikes which were parked on the strip, he let the port wing tip on a low bush resulting in mild damage. The wing was repaired on the strip and the "Rhon" was left at a nearby farmhouse for the night as we were to be flying again next day.

On Sunday the 19th, Kev Mitchell stood the "Wren" on its tail in a violent "stall turn." A small crowd of visitors gazed in awe at the sight and remarked on the amazing things one could do with gliders. Hastily spitting out bits of fingernail several gliding types agreed with their views and then staggered over to where Kev, who by this time had landed the "Wren," was sitting in the cockpit grinning broadly at his effort.

On Sunday the 26th, Ray Baird had his first flight in the recently-acquired "Grunau" with somewhat nerve-wracking results. The tow line broke at approx. 500 feet, and the chute on the wire, being hooked too far forward of the machine, immediately whipped the trailing wire back behind the tailplane and the pull of the 'chute jammed the release before the pilot could pull the ring. Billowing around all over the place the 'chute wrapped itself and the wire over the fuselage and around the tailplane, restricting the movement of the elevators. Fortunately the 'chute freed itself somewhat and enabled Ray to effect a safe landing. The need for a parachute tube and a better type of release was emphasised by this incident.

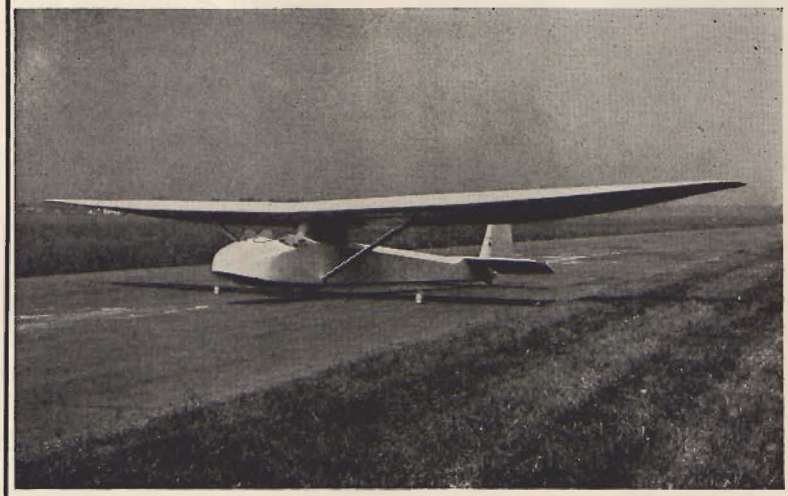
FOR SALE

One "Cadet," good condition, only used two years, current C. of A., £200. **Wanted**: "Grunau Baby" or similar intermediate sailplane. Maj. Purser, Hon. Sec., Royal Engineers' Flying Club, Gliding Flight, R.E. Mess, Brompton Bks., Chatham, Kent.

"Kranich" high performance two-seater Sailplane, perfect condition—never crashed—fully equipped.—Write to Box 266.

We have a few bound copies of SAILPLANE for 1948 on sale at this office. The price is £2 2s. per copy, and orders should be accompanied by cash.

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.

YORKSHIRE GLIDING CLUB

We hear that the Yorkshire Club are going to start " ab-initio " training, using a " Cadet " and a " Tutor." This marks, we hope, the first sign of the Club's return to active gliding.

THE BRISTOL GLIDING CLUB

September, 1949

Our big news this month is the acquisition of a Slingsby " Type 21B " two-seater. This machine, a secondhand one, arrived by aero-tow at the beginning of the month after a somewhat adventurous journey. It has already proved extremely popular especially with our long-suffering gliding wives, who have heard so much about the joy of gliding without the means of sampling it. One of the most useful features of the aircraft is its ability to climb on the winch. It has already been kited up to 1,900 feet, thus providing height to practise spinning and aero-batics. It is intended to use the machine mainly for instruction, but it is expected that joy riding will prove a lucrative side line.

Our Club team (K. W. Turner and C. Stafforth) were not among the point-scoring minority at the National Contest. However we did manage to win one daily prize for spot landing and failed to win a second prize for sport landing and failed to win a second by 2 inches.

We have not yet had an opportunity to try out our new hill site at Roundway, near Devizes. After being abandoned to the depredations of local hooligans for a number of years the cottages and barn require a considerable amount of work before we can call them habitable. However work parties have already cleaned out the barn and re-erected the doors. We hope to take the " Grunau " over shortly and do some flying before the winter wind brings things to a standstill.

NEW GLIDING RECORDS

The Royal Aero Club has just confirmed the following British National Records for Category II (Multi-seater) Gliders :-

1. *Distance in a Straight Line without Landing.*

To Flying-Officer K. Hirst and Aircraftsman K. Simpson of Headquarters, B.A.F.O. Gliding Club, for a flight of 138.9 miles from Gutersloh to Fuhlsbuttol (Hamburg) on 28th May last.

2. *Gain of Height.*

To Mr. J. Grantham and Mr. B. E. Bell of Cambridge University Gliding Club for a gain in height of 10,080 feet at Cambridge Airport on 24th July last.

ROYAL AERO CLUB GLIDING CERTIFICATES

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

AUGUST, 1949

GLIDING CERTIFICATES : "A" .. 218 (Nos. 10432-10649 inc.)
"B" .. 73
"C" .. 64

Silver "C" .. 14 (Nos. 227-240 inc.)
Gold "C" .. 2

"B" CERTIFICATES

No.	*Name*	*A.T.C. School or Gliding Club*	*Date Taken*
1095	William Edward Percival Corbett	London G.C.	15. 8.49
2479	John Charles Mason Mogg	Derby and Lancs. G.C.	14. 8.49
3382	Peter David Hall	143 G.S.	21. 8.49
5504	Ronald Pattison	Slingsby F.C.	15. 6.49
6001	Victor Alexander MacDonald	5 G.S.	31. 7.49
6416	George Ivor Gianacopulos	Gutersloh G.C.	24. 4.49
6452	Frederick Ronald Lund	R.A.F. College, Cranwell	9. 6.49
6765	David Edmund Hobday	R.A.F. College, Cranwell	11. 6.49
6767	Ian Ridley Hinde	R.A.F. College, Cranwell	15. 6.49
7007	Alexander O'Connor	Gloucester G.C.	24. 7.49
7266	Peter Goddard Sharman	183 G.S.	24. 7.49
7323	Leonard Dent	Newcastle G.C.	11. 7.49
7383	Gordon Alfred Joynes	89 G.S.	22. 1.49
7481	Peter John Linney	106 G.S.	13. 8.49
7755	John Robinson	43 G.S.	26. 6.49
8351	William Geoffrey Parr	Cambridge U.G.C.	6. 8.49
8619	James Sidney Pearce	Shoreditch G.C.	13. 8.49
8679	Robert Riddell	Scottish G.U.	22. 7.49
8684	Roger Marcus Herbert Goodall	London G.C.	13. 8.49
8824	John Henry Walmsley	Bristol G.C.	4. 8.49
9279	Reginald Peter Awcock	Shoreditch G.C.	13. 8.49
9683	Kenneth Thompson	Newcastle G.C.	17. 7.49
9800	Frank Alfred Williamson	95 G.S.	17. 7.49
9953	Alan George Jenkins	125 G.S.	3. 7.49
10061	Walter Alec Godber	Derby and Lancs G.C.	26. 7.49
10100	James John Buxton	London G.C.	26. 6.49
10180	William Charles Nelmes	162 G.S.	14. 8.49
10433	Henry Reginald Harvey	Wahn G.C.	15. 6.49
10434	Robert Dennis Birch	Army F.C.	10. 7.49
10436	George Holsinger	Southdown G.C.	17. 7.49
10445	Michael Pierce Garrod	12 Group G.C.	19. 6.49
10448	John Michael Perkins	Halton Apprentices	10. 7.49
10450	William Arthur Frederic Gotch	Bristol G.C.	22. 5.49
10461	Alfred William Bedford	E.T.P.S.	16. 6.49
10463	Peter Alexander Shephard	Lubeck G.C.	7. 7.48
10470	Thomas McCarthy	London G.C.	25. 4.49
10471	Douglas Collinson	Newcastle G.C.	11. 7.49
10472	Neil James MacLeod	H.Q., B.A.F.O.	18. 7.49
10489	Eric Frank Evans	Uetersen G.C.	1. 6.49
10490	William Henry George Elliott	London G.C.	16. 7.49
10496	Henry James Cobb	203 G.S.	16. 7.49
10498	Charles Francis Carlisle Spedding	Oerlinghausen G.C.	28.11.48
10499	Derek Dudley Martin Butcher	London G.C.	9. 7.49
10505	Douglas Roy Faulkner	Bristol G.C.	28. 5.49
10506	Ronald Graut	Wahn G.C.	9. 7.49
10507	Christopher Gordon Clark	E.T.P.S.	28. 5.49
10516	Harold William Weston	Gloucester G.C.	19. 6.49
10520	James Cotton Martin Mountford	123 G.S.	25. 5.49
10535	John Jacob Ray Davies	Gutersloh G.C.	4. 5.49
10536	Myrtle Violet May	Scharfoldendorf G.C.	10. 7.49
10537	Richard Frank Wharton Cleaver	E.T.P.S.	15. 6.49
10538	Douglas Sinclair Morgan	Halton Apprentices	2. 7.49
10541	Joseph Anthony Kerrigan	Scottish G.U.	27. 7.49
10542	Arthur Louis Lionel Alexander	London G.C.	25. 7.48
10543	Anthony Arthur Dixon	Surrey G.C.	18. 6.49
10547	Douglas George Nicol	Scottish G.U.	22. 7.49
10551	George Butt Miller	Midland G.C.	5. 8.49
10552	Alfred Raymond Jones	61 Group R.A.F.	18. 5.49
10553	Michael John James Rolt	Combined Services S.C.	24. 2.49
10554	John Hamilton Colin Bennett	London G.C.	13. 7.49
10565	David Leyland Martlew	Cambridge U.G.C.	25.11.48
10573	Ian McCallum Banquier	Gutersloh G.C.	30. 6.48
10586	John Herbert Willard	Portsmouth G.C.	30. 7.49
10591	David Michael Whitby-James	94 G.S.	25. 9.48
10592	Victor Samuel Bailey	125 G.S.	7. 8.49
10596	John Stuart Clements	Combined Services G.C.	13. 8.49
10613	John Edwin MacDonald	Scottish G.U.	18. 7.49
10614	Ladislav Lostak	Elliotts G.C.	22. 7.49
10623	William Edward Launcelot Bond	41 G.S.	13. 8.49
10628	James Webster Aitken	Scottish G.U.	9. 4.49
10637	Antony Stock Dickinson	Combined Services G.C.	13. 8.49
10641	Lockhart Taylor	Combined Services G.C.	13. 8.49
10649	Richard Quintus Pine	London G.C.	13. 8.49

"C" CERTIFICATES

2479	John Charles Mason Mogg	Derby and Lancs. G.C.	14. 8.49
2970	Gordon Leslie Dollery	Portsmouth G.C.	24. 7.49
3237	Alan Edward Hillyer	Southdown G.C.	26. 7.49
3988	Harold Priestley	102 G.S.	2. 8.49
4381	Geoffrey Gerald Lee	Scharfoldendorf G.C.	19. 4.49
4593	Geoffrey Ronald Jackson	146 G.S.	27. 7.48
4929	Cecil George Foord	Bristol G.C.	30. 7.49
5922	Gerald Hammond	Midland G.C.	6. 8.49
6138	Charles Fenneu	Midland G.C.	15. 8.49
6223	Frank Cawood	E.T.P.S.	27. 7.49

THE LONDON GLIDING CLUB LTD.

Dunstable Downs, Beds.

Tel.: Dunstable 419.

Full Flying Membership:
Entrance Fee £5. 5s. 0d.
Annual Sub. £6. 6s. 0d.
(*Payable* 11/6 *monthly*)

Associate Membership
(non-flying):
Entrance Fee Nil
Annual Sub. £2s. 2s. 0d.

Ten Club aircraft, including high performance, 2-seater, and primaries.

Resident engineer and resident professional instructor; flying every day, Dormy house always open, licensed bar, full catering (at week-ends).

Soaring flight at 8s. an hour.

Training flights from 1s. 6d. to 6s. a day.

THE YORKSHIRE GLIDING CLUB,

SUTTON BANK, YORKSHIRE.

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.

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.

DERBYSHIRE & LANCASHIRE GLIDING CLUB,

GREAT HUCKLOW, TIDESWELL,

Phone Tideswell 207 **DERBYSHIRE**

To people living in the North Midlands the Club offers full soaring facilities at 10/- per hour in the club fleet of Sailplanes.

Primary training if required, and power conversions are a speciality.

The clubhouse is fully licenced and meals are available if booked in advance. Whether there is flying or not there is always something doing every week end.

Subscription, 6 gns.; Entrance fee, 2 gns.; Non-flying members, 1 gn. If you are interested please write to the Hon. Secretary, 87, Fargate, Sheffield 1, for further details.

ROYAL AERO CLUB GLIDING CERTIFICATES—*continued*

"C" CERTIFICATES

No.	*Name*	*A.T.C. School or Gliding Club*	*Date taken*
6416	George Ivor Gianacopulos	Gutersloh G.C.	3. 7.49
6452	Frederick Ronald Lund	R.A.F. College Cranwell	8. 8.49
6504	David Charles Lyall	London G.C.	25. 5.49
6765	David Edmund Hobday	R.A.F. College Cranwell	5. 8.49
6767	Ian Ridley Hinde	R.A.F. College Cranwell	5. 8.49
7073	Antony Peter McDonald	Scharfoldendorf G.C.	8. 8.49
7250	Stanley Colley	24 G.S.	10. 7.49
7365	A. S. Lee	Scharfoldendorf G.C.	29. 7.49
7383	Gordon Alfred Joynes	89 G.S.	10. 7.49
7387	Kathleen Grania Bodell	Derby and Lancs. G.C.	1. 8.49
7804	Roger Lawton Dimock	Scharfoldendorf G.C.	29. 7.49
8172	John Taylor Edwards	Midland G.C.	31. 7.49
8238	Raymond Leslie Richardson	89 G.S.	30. 4.49
8289	Peter Davis	Portsmouth G.C.	26. 7.49
8428	Ernest Hummerston	Scharfoldendorf G.C.	9. 7.49
8524	Derek John Buckle	Midland G.C.	3. 8.49
8684	Roger Marcus Herbert Goodall	London G.C.	19. 8.49
8924	Roderick Glyn Thomas	87 G.S.	4. 8.49
9179	Gavin Antony James Goodhart	Surrey G.C.	26. 7.49
9319	Alexander James Fyfe	Scottish G.U.	6. 8.49
9356	Peter Michael Healey	Southdown G.C.	28. 7.49
9448	Patrick Dale Wood	Surrey G.C.	13. 8.49
9717	P. Firth	Wahn G.C.	23. 7.49
9879	Frederick George Hillyer	12 Group G.C.	22. 5.49
10061	Walter Alec Godber	Derby and Lancs G.C.	27. 7.49
10135	Douglas George King	Midland G.C.	2. 8.49
10183	Victor Frederick George Tull	Southdown G.C.	30. 7.49
10275	George Schneider	Southdown G.C.	30. 7.49
10281	Charles Martin Harcourt	Scharfoldendorf G.C.	8. 8.49
10296	Ronald Thomas Willbie	Southdown G.C.	26. 7.49
10363	Colin Percy Howse Kunkler	R.A.F. Cranwell	26. 7.49
10381	Cyril Geoffrey Alington	Hereford G.C.	14. 8.49
10433	Henry Reginald Harvey	Wahn G.C.	10. 7.49
10461	Alfred William Bedford	E.T.P.S.	23. 6.49
10472	Neil James MacLeod	H.Q., B.A.F.O.	20. 7.49
10489	Eric Frank Evans	Uetersen G.C.	17. 7.49
10490	William Henry George Elliott	London G.C.	19. 7.49
10498	Charles Francis Carlisle Spedding	Oerlinghausen G.C.	3. 4.49
10499	Derek Dudley Martin Butcher	London G.C.	30. 7.49
10506	Ronald Grant	Wahn G.C.	17. 7.49
10507	Christopher Gordon Clark	E.T.P.S.	13. 6.49
10520	James Cotton Martin Mountford	123 G.S.	22. 6.49
10535	John Jacob Ray Davies	Gutersloh G.C.	23. 7.49
10536	Myrtle Violet May	Scharfoldendorf G.C.	24. 7.49
10537	Richard Frank Wharton Cleaver	E.T.P.S.	27. 6.49
10542	Arthur Louis Lionel Alexander	London G.C.	26. 2.49
10551	George Butt Miller	Midland G.C.	6. 8.49
10553	Michael John James Rolt	Combined Services S.C.	13. 8.49
10554	John Hamilton Colin Bennett	London G.C.	27. 7.49
10565	David Leyland Martlew	Cambridge U.G.C.	15. 3.49
10573	Ian McCallum Banquier	Gutersloh G.C.	3. 7.49
10591	David Michael-Whitby-James	94 G.S.	10. 7.49
10614	Ladislav Lostak	Elliotts G.C.	22. 7.49
10628	James Webster Aitken	Scottish G.U.	6. 8.49

SILVER "C" CERTIFICATES

No.	*Name*	*Certificate No.*	*Date Gained*
227	E. Westman	8623	26. 7.49
228	A. J. Bridge-Butler	9523	23. 7.49
229	M. R. Chantrill	5191	30. 7.49
230	W. F. Jordan	6968	28. 7.49
231	F. E. Allen	9667	26. 7.49
232	R. Greenslade	8804	23. 7.48
233	W. J. Hammond	302	26. 7.49
234	R. S. Hooper	8071	20. 7.49
235	D. P. L. Scallow	6818	7. 8.49
236	R. Worters	1897	17. 8.49
237	E. E. Geall	2000	24. 8.49
238	B. J. Gould	2335	29. 8.49
239	F. G. Moore	9339	25. 7.49
240	M. Gilbert	9000	14. 8.49

GOLD "C" CERTIFICATES

5	Prince Birabongse	4949	21. 1.49
6	D. H. G. Ince	6798	9. 8.49

FOR SALE

For quick sale: One "SG38," has done circuits but recommended for ground slides and low hops only. £50. Also "Cadet" Fuselage and Port Wing, £20 each. In each case reasonable offers will be considered. Enquiries to: Major McNinch, R.A.F. Station, Middle Wallop, Andover, Hants.

"OLYMPIA" Sailplane, "Yellow Witch," of New Zealand Tour fame, complete with Instruments, Parachute, Full Set of Plans, two-wheeled Trolley, Bulkhead and Rib Jigs. Tray body of trailer incorporated in Crate. Further particulars, please apply to A. D. Hardinge, 106 Rose Street, West Coburg, Melbourne, Australia.



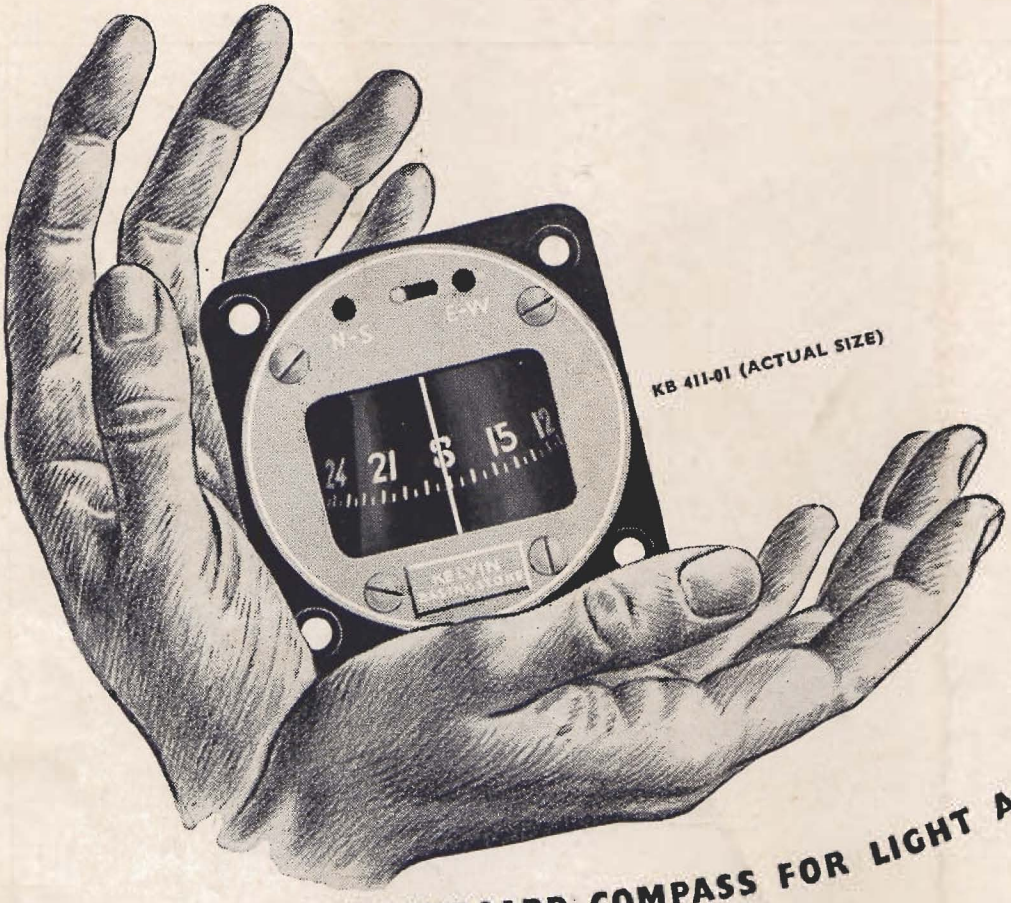
The Psychiatrist dreams

(thó he won't tell)

But the motorist

only dreams of SHELL

—and when the days of "Pool petrol only" are over, you will find once more that — *you can be sure of Shell.*



KB 411-01 (ACTUAL SIZE)

A SMALL DASHBOARD COMPASS FOR LIGHT AIRCRAFT

The Kelvin-Kollsman Dashboard Compass has been designed for use on sailplanes, gliders, helicopters and light aircraft. It can also function as a standby for remote indicating compass systems.

The instrument indicates the course of the aircraft with respect to magnetic North by means of a floating graduated card read against a fixed lubber line. It operates efficiently up to 18° displacement from its normal axis, and is accurate within two degrees at all points on the card.

The card is attached to a magnet system of high magnetic moment which ensures quick settling after turns. The bowl is completely filled with special compass fluid and has an expansion chamber at the rear for temperature compensation from −40° to +70° C. A built-in corrector allows neutralisation of any local magnetic fields.

DATA; Type; KB 411-01. *Case;* 2¼" *S.B.A.C. (overall length* 2⅝"). *Weight* 8 *oz.*

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