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Sailplane and Glider

8, LOWER BELGRAVE STREET
LONDON, S.W.I. SLO : 7287

March, 1954.

DEAR READER,

We are endeavouring to improve the quality of *Sailplane and Glider* by publishing more photographs and improving our Editorial columns by including a well balanced selection of specialised technical articles, general features of interest to all, as well as helpful and instructive features for our younger and less experienced readers.

We will be resuming as a monthly from January, 1955, but until that date we are hoping that it will soon be possible for us to increase the number of pages per issue.

To do these things we must have your help—if you are not already a regular reader place a firm order with your newsagent to-day or, better still, just fill up the Subscription Form on the inside back cover and post to us.

Special Offer.—Send us the name/s and address/es of your friend/friends who do not have *Sailplane and Glider* and we will send them the current issue **Free of Cost** with no further obligation. A Form will be found on page 20.

CAN WE COUNT ON YOUR HELP ?

Yours sincerely,

Assistant Editor.

Sailplane and Glider

Founded in 1930

and ULTRA LIGHT AIRCRAFT

THE FIRST JOURNAL DEVOTED TO SOARING AND GLIDING

MAR./APR. 1954 ★ Vol XXII No 2

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Cover Photo :
Japanese student pilot, one of fifteen girls in training during 1953.

Editorial

IF IT WERE EASY
IT WOULD'NT BE FUN

TRAVEL broadens the mind, they say. Maybe or maybe not, but it certainly gives one to think. Hundreds of wonderful gliding sites exist where transport facilities, airfields and young athletic people are all available, and even weather conditions are consistently good. And what do we find? Gliding is regarded as a kind of amiable lunacy, not in serious competition with watching football or going to the cinema, which are the real sports of the day—One despairs —And then quite suddenly one finds a small group of terrific enthusiasts fighting every inch of the way to be allowed to fly a home-made glider off an entirely unsuitable site under most unreasonable and uncomfortable hazards of climate and temperature.

Gliding flourishes in the snow-covered mountains of the Alps, in the intense, dry heat of Texas plains, in the sweating bush greenness of tropical Malaya, perhaps *because* of the hazards to be overcome. When something can only be achieved by sheer hard work and determination we value it the more. Perhaps we are doing wrong when we try to make gliding cheaper and easier to come by ? When we can read that it is a 'pleasant sedate sport requiring very little energy, therefore most suitable for the middle-aged and elderly,' we have evidently not only failed to put across our message with a bang but have apparently cut our own throats in so doing ! Let the grandparents go out and fly their nice sedate toys—the children will seek adventure on their television sets. They don't have to be trained ; it just comes naturally.

Something is terribly wrong there. Gliding is the King of Sports. It calls for initiative, patience, tolerance, intelligence, and a spirit of co-operation. It calls also for physical strength and tireless endurance, for courage, for skill, and for a tremendous willingness to overcome handicaps of all kinds—bureaucratic, meteorologic, or merely monetary. It is more truly international than any other sport and its devotees are scattered all over the world among all races and all classes of society. It may not be useful or necessary and we are probably a daft lot, but we love it. So we go on struggling—and in the struggle lies half the fascination. If it were easy it wouldn't be fun.

The next issue of *Sailplane and Glider* (May/June) will be published on May 28th.

WORLD GLIDING CHAMPIONSHIPS, 1954

£10,000 IS NEEDED

£10,000 is needed to provide the organisation for this year's World Gliding Championships, to be held at the Derbyshire and Lancashire Gliding Club's site at Camphill, Great Hucklow, Derbyshire, from July 20 to August 4.

The Appeal was launched recently by the British Gliding Association and this International Event will be the largest ever to be held in Great Britain.

A total of 37 sailplanes will be competing in the single-seater class, and 10 in the two-seater class. The entries are as follows :—

CHAMPIONSHIP ENTRIES

Argentine.—Two single-seaters, one two-seater.
Australia.—S. V. Owen (' Olympia ').
Austria.—F. Linher (' Superspatz '), W. Grafe (' Weihe '), W. Hesse and A. Hasenknopf (' Musger Mg 19 ').
Belgium.—Two single-seaters.
Brazil.—G. Munch (' I.P.T. 17 '), A. W. Viera da Rosa (' Barros Neiva 1 ').
Canada.—One ' Olympia.'
Denmark.—H. W. Jensen, A. Feddersen ('Olympia')
Finland.—A. V. J. Koskinen (' PIK 13 '), S. Relander (' Weihe ').
France.—Two single-seaters, one two-seater.
Germany.—A. Wiethuechter (' Focke Wulf Weihe 50 '), E. G. Hasse (' HKS 1 '), Hanna Reitsch and Erika Leutloff (' HKS 1 ').
Great Britain.—Philip Wills (' K.1 '), Geoffrey Stephenson (' Sky '), Lorne Welch and Ann Welch (' Slingsby T.42 ').
Holland.—I. de Boer (' Sky '), O. P. Koch (' KNVvL-491 ').
Israel.—M. Bar (' Olympia ').
Italy.—R. Brigliadori (' Spillo '), M. Guerrini, A. Mantelli and L. Braghini.
Jugoslavia.—F. Mordej (' Orao '), M. Arbajter (' Lasta '), B. Kemac and Z. Rajn (' Ilic-Kisovec Kosava ').
South Africa.—H. R. Lasch (' Air 100 '), P. J. Beatty (' Skylark Type 37 ').
Spain.—Two single-seaters, one two-seater.
Sweden.—Two ' Weihes.'
Switzerland.—A. Gehriger (' WLM-II '), A. Kuhn (' Sky '), H. Nietlispach and P. Muller (' Spyr V').
United States.—S. W. Smith (' Schweizer 1-21 '), P. B. MacCready, Jr. (' Schweizer 1-23E '), C. W. See, Jr. and P. A. Schweizer (' Schweizer 2-25 ').

Amongst the British entries for the championships are two aircraft which have not yet flown. They are the ' K.1 ' from Elliotts of Newbury and the Slingsby ' T.42.' We hope to publish full details of these machines in the next issue if they are available in time.

Both these machines are two-seaters being side-by-side and tandem respectively, but the ' K.1 ' is to be flown solo in the Contests by Philip Wills.

Geoffrey Stephenson, winner of last year's British National Contests, will fly a ' Sky,' and in the two-seater class Lorne Welch will fly the ' T.42 ' with his wife Ann, as co-pilot.

As in the 1952 World Contests held in Spain, the team is again to receive generous support from the Standard Motor Company and also from Pye Ltd. These companies are making available to the British (and some of the visiting) competitors, vehicles and radio equipment to assist in the general organisation and retrieving.

Other news items from the entry list are as follows : Paul Schweizer, designer and constructor of the machines bearing his name, and with which the entire U.S.A. team is equipped, is flying with C. W. See, Jr. in the two-seater class. Also in the team, a strong one, is Paul MacCready, Jr. who was runner-up in the 1950 world championships in Sweden, and came 6th in Spain in 1952.

In the German team is Hanna Reitsch, holder of several world gliding records in the 1930s, and a competitor both in Spain and at the Wasserkuppe in 1937. The ' HKS 1 ' which she will fly was recently designed by Ernst Guenter Haase (also in the team) and Heinz Kensche, and first appeared in the German competitions last year. It has no ailerons, but the camber of the wing can be changed mechanically.

The Austrian entry is the first to be made by that country in an international contest since the 1937 Wasserkuppe meeting.

Although the names of the two French pilots have not yet been announced, it is almost certain that one will be Gerard Pierre, runner-up to Wills in 1952, and the present French champion.

The Israel entry, the first in international gliding, is sponsored by the Manchester Jewish Sportsmen's Committee. The pilot, Menachem Bar, will fly a borrowed British ' Olympia.'

The Slingsby ' Skylark,' the prototype of which flew in the British nationals in 1953, has been chosen by P. J. Beatty, of the South African team. His colleague, H. R. Lasch, will fly a French ' Air 100.'

The Jugoslav ' Orao ' to be flown by Mordej, obtained third place in the 1950 world contests ; the ' Lasta,' the second single-seater, is still under construction, and the two-seater ' Kosava ' was flown into first place in last year's Jugoslav nationals.

Donations :

These should be sent direct to :

The British Gliding Association,
Londonderry House,
Park Lane, W.1.

The Editor Reports

A VISIT TO ELMIRA

By Veronica Platt

ELMIRA, home of the American National Gliding Championships, lies about 220 miles north-west of New York City and has a climate that is much influenced by its proximity to Lake Ontario. The prevailing winds vary through south to north-west and this makes long distances something of a problem, for the route north-east lies over some pretty rugged country of hills, lakes and forests, whereas south-east brings one to the sea short of the 300 miles needed for the Diamond 'C'. Around Elmira itself the country is good—long fairly wide valleys with a level floor of cultivated land divided by rather steep strips of wooded hills.

One of these ridges is Harris Hill, site of the Elmira Club. There is a fine launching field with room for aerotowing and a winch for economy. The hangar is very large and well built and advantage has been taken of the steep side slope to build it in two storeys. At field level there is space for twenty or more sailplanes fully rigged, while down below there is a trailer garage capable of holding another fifty machines, though there were only about twenty stored there when I visited it in mid-winter. (Most of these, by the way, are privately owned, but have the same rights of tow with Club machines).

The Clubhouse itself is a big wooden building reminiscent of Sweden. There is a very large dining room with picture windows along the side of the hill, a big room with a fireplace for meetings, an office for the administration, another for the meteorologists, and a barograph room downstairs, together with a magnificent kitchen. There is a series of small cabins for sleeping accommodation and this can be increased on special occasions by overflowing into the cabins of the Youth Organization alongside. There is also a swimming pool but the snow was combined with such a bitter wind that I forgot to look at this, except from a discreet distance.

The ridge runs along a crescent or rather a convex curve, the Club thus being able to take advantage of a 90 degree variation in wind direction. The slopes are thickly covered with small trees but very steep so that a sailplane once launched is immediately out over the valley. Immediately below is the Chemung County Airport with several regular passenger services daily, and from here a commercial tow plane can be brought up whenever it is needed. The Chemung river cuts along the base of the hills to the left, and there are a couple of railway lines for identification as well as a scattering of little farms and villages. The country itself is delightful. It is the district of Mark Twain and Rip van Winkle, and the whole place is full of character. With a light sprinkling of snow the bare trees, white frame houses, and old red Dutch barns are like a Grandma Moses Christmas card come to life. And the people are as kind and gracious as their surroundings. I would like to be there in the summer, drifting along in the evening thermal over that quiet valley. . . .

NOTES FROM THE U.S.A.

BY a lucky chance our arrival in New York coiacided with the 22nd Annual Meeting of the Institute of Aeronautical Sciences and the morning when motorless flight held the floor. Three papers were read. The first, by Robert Kidder of the Flight Research Dept. of the Cornell Aero Laboratory, concerned (as he said) "The difficulties of getting upstairs as cheaply and as quickly as possible," and was devoted to a study of various adaptations of the 'Piper J3C Cub' for possible use as a towplane. Most delightful was the Siamese twin 'Piper'—two standard 'Pipers' joined about seven feet apart—although he confessed regretfully that he saw no real prospect of getting a C. of A. for this idea. . . .

He was followed by Dr. August Raspet on the application of sailplane performance analysis to aeroplanes. This was a fascinating paper, Dr. Raspet being quite the clearest and most instructive lecturer I have ever heard. He showed some extremely interesting graphs of the improved performance of the 'R.J.5' after five sets of cleaning-up operations. By sealing gaps, changing the line of the canopy, and putting a skid instead of a wheel, he was able to increase the glide ratio from 30 to 40 (though admittedly in 7,000 hours of work on it). He discovered, for example, that waviness on a wing can cause a 30% loss of efficiency, and that the efficiency of the towplane is only about 46%. By cleaning up airfoils we could probably get a better and a cheaper result than we could by redesigning them.

The third paper was by Paul MacCready, Jr., last year's champion of the U.S.A. He spoke on the measurement of vertical air motions from a glider and demonstrated various types of variometer by means of drawings and formulae. He recommended the use of three types together: (1) some kind of audial variometer, though this might become tiresome in a long flight; (2) the French Badin, backed up by a ringscale airspeed selector which points to the best cross-country speed for the next expected up- or down-conditions; and (3) the usual aircraft variometer. He said that by this means one might improve the efficiency by from 5-10% for a very moderate cost.

Paul MacCready also spoke at a meeting of the Meteorological Society in the afternoon—the first time in their fifty years of existence that they have invited the soaring people to co-operate. This paper was on the effect of mountains on thermals and his conclusion was that cloudbase over a mountain is usually about half the height of the hill above cloudbase over the level ground. He said also that isolated hills probably provided better thermal conditions than did a mountainous area.

Next came Dr. Kuettner on cloud streets, with pictures and drawings to explain their growth and decline. This was only a short paper, as he was to speak again after Mr. Colson of the Weather Bureau who gave us graphs of weather conditions causing the big standing waves of Bishop, California. This is the project on which Dr. Kuettner was working for two years when he made his famous jet stream flight and the high altitude experiments of 1952-53.

The final paper was by Mr. Tepper, who showed

(Continued at foot of next page.)

GLIDING IN BELGIUM

Belgian Records Broken

By A. Van Ishoven

THREE Belgian records were broken on January 14th, during an advanced gliding course for Belgian pilots at Fayence in southern France.

Mr. J. Carpentier, piloting a 'Nord 2000' rose to a height of 6,370 m. gaining a height of 5,241 m., so breaking two Belgian records. Mrs. Debauche broke the feminine gain of height record with 5,400 m. (absolute height, no record 4,525 m.).

Four other Belgian pilots got a gain of height of more than 3,000 m. All those flights were done in a standing wave.

National Championships this Year.

These will not be held at Temploux, but probably during August at St. Hubert aerodrome. Except for a gliding camp organised by A.Z.M. (Antwerp Gliding Club) during August 1953, this aerodrome although in excellent condition has been closed to all aeronautical activities.

Activity During 1953.

During 1953 less than 900 flying hours were flown by the Belgian clubs (National Gliding Centre not included).

These are the results of the more important clubs :

A.Z.M.	Antwerp ..	..	150 hours
C.N.A.	Brussels ..	..	115 hours
A.C.M.	Liége ..	..	35 hours
V.A.	Namur ..	..	225 hours
R.M.U.	Verviere ..	..	266 hours

The National Gliding Centre at Temploux had a total of 1,256 hours.

Financial Help to the Belgian Gliding Movement.

For the first time, the Ministry of Public Health has given direct financial help to the different gliding clubs. Financial help to the participants at the International Championships is hoped for.

SABENA Helping the Belgian Gliding Movement.

SABENA (Belgian Airlines) made available two prizes consisting of two return tickets to the Belgian Congo. They will be awarded to the best out-and-return flight and the best distance flight of over 100 km. made by a Belgian during 1954.



Standing Wave above Fayence (Southern France)
[*Photo by A. van Ishoven*

'Fauvel' Flying Wing being Built in Antwerp.

The 'Fauvel AV 36' flying wing glider that is being built by A.Z.M. (Antwerp Gliding Club) will be the first in Belgium, and all plans and blueprints bearing number 2, will be the second to be built in the world.

The wing nose ribs have now been glued to the wing spar and as the intense cold that made impossible all glue-work has gone, work will progress on the plywood wing nose covering.

THE EDITOR REPORTS—*continued from previous page*

us that over eighty per cent. of the violent storms over a large area followed within an hour of a sudden upward jump in barometric pressure—a theory that is well worth watching.

After these two extremely interesting meetings I was lucky enough on the Saturday to be able to go out to Elmira and see Paul Schweizer testing his new '1-26' in very rough, gusty conditions. It is a pretty ship in flight and quite obviously re-acted extremely well, both with Paul and later with Howard Burr, who came down smiling in spite of driving snow and extreme cold. We hope to be able to give full details of this new machine in our next issue.

In the evening at Howard Burr's house, we were shown some very fine colour slides, many of which we hope to be using at our London Gliding Exhibition in July.

V.P.

NOTES

Trinidad. A two-seater training sailplane, tandem, is being built at Port of Spain Flying Club and should be ready for testing shortly.

Malaya. The Perak Flying Club at Ipoh now has about 40 flying members.

SOUTH-WEST AFRICAN GLIDING CLUB

By Peter E. Riedel, Windhoek

THE S.W.A.G.C. was founded by the initiative of Mr. Herbert Bartaune together with Mr. Robert G. Schultheiss some two years ago. Windhoek is a tri-lingual town. Its white population is composed of English, Afrikaans and German-speaking parts who are getting along very well with each other. Our Club is equally composed and everybody is welcome to join it. The greater part of our active members are German-speaking, but we are well on our way to have a group of English-speaking motor plane owners and pilots join us after we ' converted ' several of them. These conversions were largely due to our excellent soaring conditions and to the good old work horse, our ' Slingsby T21B ' two-seater.

This plane was purchased by the Swakopmund Section of the S.W.A.G.C., but placed at our disposal, since our group has an airport of its own. This glider airport can be found on official air maps of South-West Africa, situated some 8 miles south of Okahandja, some 30 odd miles north of our town. A farmer permitted us to build it and aided by bull-dozers from neighbouring farms, but mainly by much sweat of all our active members, two runways were cleared in the bush country, each one 2,000 yards long and 150 yards wide. Our president, Mr. Schultheiss, being in the construction business, had a big hangar built near the crossing of the two runways, and so flying could begin, as soon as a winch was available.

The winch was built from an old La Salle model by some members from Okahandja, who were either garage owners or in the water-hole drilling business. After some modifications this winch has given us excellent service, towing the ' Slingsby ' with ease to 1,000 feet and more altitude.

The writer happened to come to Windhoek just at the moment when all the heavy work had been done and flying could begin. Since the then chief-instructor Mr. Bartaune made a trip to Australia in order to study Australian methods of rain-making, the Club asked me to take over. This I did with pleasure, and soon we were spending practically every Sunday and even week-ends at our Osona airport. Flying began in May last year, which meant late autumn on the Southern Hemisphere.

Osona is 4,000 feet above sea level, Windhoek 5,500 feet. This means that in winter-time night temperatures drop surprisingly low, often below freezing point. Mrs. Riedel and I came from Canada to South-West Africa, but we never froze so much during the Canadian winter as we did here in Windhoek. Pullovers and warm water bottles are highly recommended for those who want to visit South Africa. Nevertheless, the sun is powerful during the day and creates good thermal conditions during all winter months.

There were some periods without flying activities when the old towing cable was too worn out and had to be replaced. Much energies were concentrated in organizing a lottery and a dance which both were supposed to fill the Club's empty cash box. Fortunately they did, and our president, Mr. R. G. Schultheiss purchased a second-hand ' Grunau Baby II ' in the Union. This ship arrived in Osona a few weeks ago, and permitted several of our members to solo on it : Messrs. G. Voigts, M. Dantzer, O. Kaufholz, E. Gouws and H. Hameister.

A few words about our training method. We are trying to give each student a number of long flights, of 20 to 30 minutes duration in the average. Each flight consists of two periods. During the first period the instructor is handling the ship trying to gain altitude in the thermals. The student might take over, once enough altitude is reached to be a safeguard against spoiling the chances given by the up-current. When the altitude of 7,000 feet above sea level is reached, 3,000 feet above our airport, the controls are given to the student. First he is supposed to keep the ship flying straight ahead, without consideration to up- or down-currents. Some mountain range is picked at the horizon and the student is told to keep the plane exactly on the course towards the far away goal. Once this technique is mastered, turns are made, then full circles, with attention to the ball of the turn and bank instrument.

We are making an effort to teach clean flying habits. Before a student has not learned to fly circles with the ball remaining in its place, he is not given the chance to solo. Finally shorter flights are made. Now the student takes over controls during take-off and landing manoeuvres. The winch take-off being inherently more difficult than other take-off methods makes it necessary to be very thorough with the training, giving each student several more training flights than would be necessary with f.e. airplane towing.

The side-by-side arrangement of instructor and student is a great advantage. The instructor can observe his student so much better. He can see, if the beginner's face is slowly turning green or yellow, in spite of his verbal assurances that he is feeling fine. One can see a trembling hand or foot which give warning not to be misled by otherwise clean flying. One can see puckered-up faces which tell clearly of mental strain. One can put one's hand on the student's while he fumbles around during the landing manoeuvre and let him feel with his own hand remaining around the stick how a landing is to be made. Conversation is easy in the ' Slingsby.' No shouting is necessary to make one understood, shouting which might mean a shock to the beginner's tense nerves.

All in all, the ' Slingsby ' two-seater for training and the ' Granau Baby ' for solo flights seem to be an ideal combination. Both planes look very much alike while in the air, and they handle quite similarily. For countries with strong thermals like ours here the ' Slingsby's ' flying performances are perfectly good enough. Here it does not matter if a plane has one foot per second more or less sinking speed. Up we go anyway, once we catch an up-current. The other

(Continued on page 16)

AMBROSINI C.V.V.6 'CANGURO' High Performance Glider

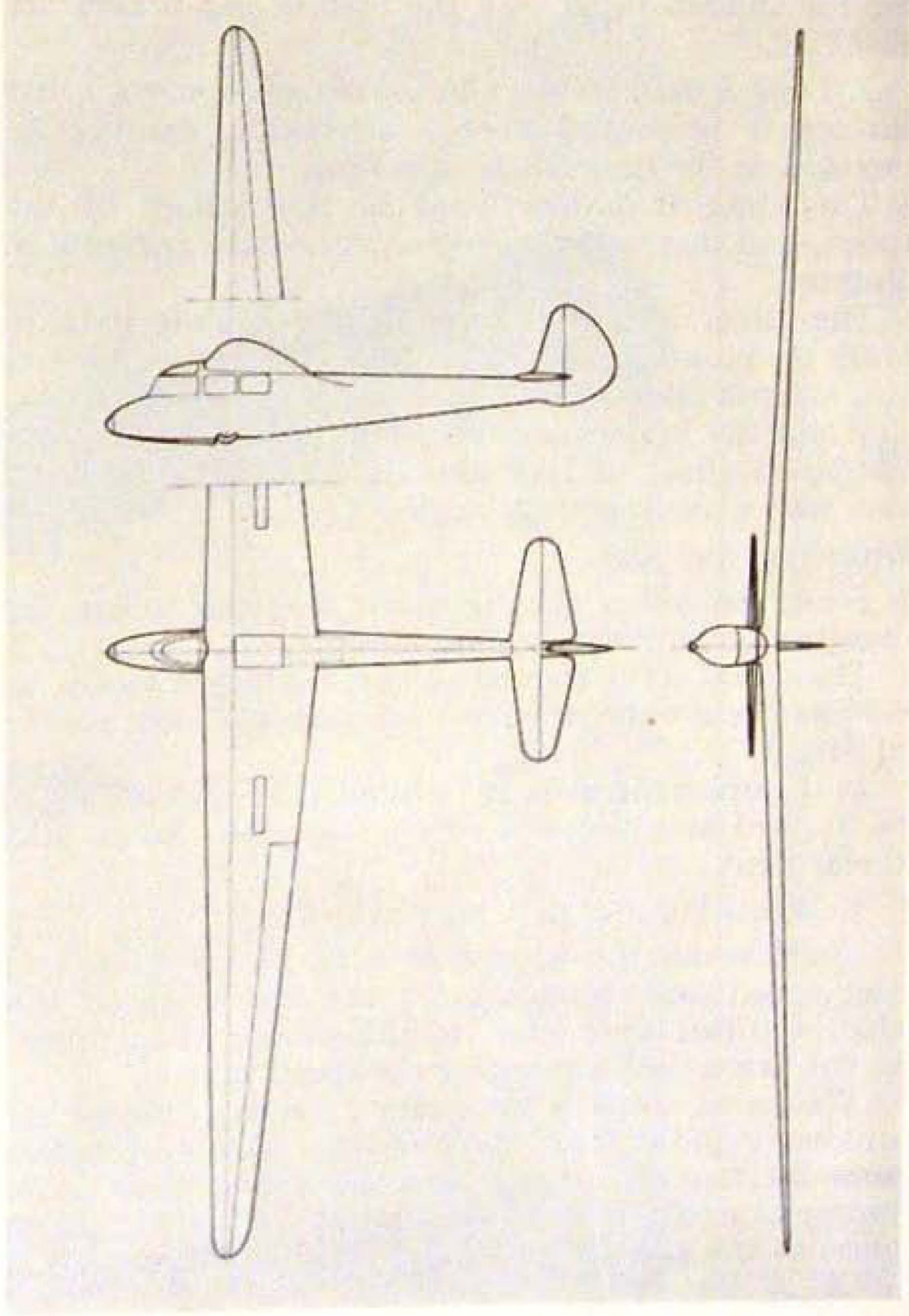


Ambrosini C.V.V.6 'Canguros' on parade.

Two-seat high-wing glider. Construction is all-wood, with a monocoque fuselage and a single-spar cantilever wing. The wingroot-fuselage intersection has been carefully designed in order to reduce interference to the minimum possible value. The landing skid has rubber shock absorbers and carries the attachment for the jettisonable double-wheel undercarriage, which is used on take-off only. The single-spar wing has a tapered planform with parabolic wingtips; the leading edge is plywood skinned to form a torsion box with the spar, while the rear section of the wing is fabric covered. The wing is built in two sections, to be easily assembled on current field operation. The fin is integral with the fuselage, while the tailplane may be assembled by quick-action bolts. The ailerons are quite large, being extended one-third of the span; rudder and elevator are regular fabric-covered structures. Double symmetrical spoilers are mechanically operated to protrude from the wing, in order to keep the maximum speed within a 220 km/h limit and to increase the sinking ratio at will. The two seats are arranged in tandem in an enclosed cockpit, with duplicated controls and full IFR instrumentation. Canopy and hood are jettisonable.

Span	62 ft. 12 in.
Length	26 ft. 3 in.
Aspect ratio	17,00
Wing area	232.5 sq.ft.
Equipped weight	617 lb.
Useful load	397 lb.
All-up weight	1,014 lb.
Rate of sink at 34 knots	118 ft./min.
Best glide at 40 knots	1:30
Wing loading	4.36 lb./sq.ft.

(Enquiries to 'Sailplane' Office)



A Lesson on Dive Brakes

By ADEL KLEYN

MANY expensive sailplanes have been damaged as a result of the wrong use of dive brakes.

This is often caused by a lack of knowledge of the purpose, action and use of this important accessory.

This article on the use of the Schemp-Hirth type of dive brake (as fitted to 'Grunau Baby,' 'Olympia,' etc.) may make their use clear.

Pilots regard dive brakes as being primarily an aid to landing, and secondly as an emergency brake for cloud-flying.

Originally, however, it was the other way around.

Designers first incorporated brakes for cloud flying and then, later, found that it simplified landing by way of steepening the gliding angle.

On what is the action of the dive brake based?

1. *Leak Effect.* As everyone knows, the lift of a wing is caused by maintaining a low pressure on top and a high pressure below it.

When the dive brake is opened, even the smallest amount, a passage is made from the high to the low area of pressure.

This decreases the lift over the span of the brake, resulting in a higher sinking speed and a steeper gliding angle.

This leak effect is already at its maximum as soon as the brake leaves its seat in the wing, which accounts for the sudden rapid sink the instant the brakes are eased on.

2. *Drag Effect.* When the brakes are opened, a flat surface is presented to the airstream, causing an increase in the drag of the machine.

This drag is proportional to the square of the speed, and increases sharply with a slight increase in airspeed.

The glider has to assume a steeper glide path in order to maintain airspeed, which in turn produces a still steeper glide path.

When the brakes are completely opened there is a combined effect of leak and drag resulting in rapid sink and a steep gliding angle.

Directions for Use

First, remember that it is not essential to use the dive brakes to make a good landing.

They only serve to remove surplus height easily, so we use them only when we are sure we have plenty of height.

It is important to bear in mind that brakes should be applied and removed *slowly*, especially when near the ground.

1. When landing in a normal field.

First, make the approach with plenty of height and speed and do not cross the boundary at less than 100 feet then ease the brakes out about 2 ins. at the same time increasing the speed a little.

The extra speed is necessary: (a) because we are sinking rapidly and will need to level out before actually touching down and the extra speed gives better control; and (b) because of the wind gradient close to the ground.

On a day of light winds this gradient is almost negligible but on windy days the air may slow down as much as 10 m.p.h. in 10 or 15 feet, and if the glider is making a slow approach it will probably stall.

Even if it doesn't stall, it may not have enough control to level out properly before touching down.

If you think your speed is a little slow—judging by ear and feel, *not* by watching your a.s.i. close to the ground—the correct thing to do is to ease off the brakes a little.

If you push the stick forward you will simply increase the drag which will make you sink faster and you still haven't got enough control to level out, so 'ker-plunk' goes the keel.

When touching down, it is not advisable either to pull the brakes full on or to take them off altogether.

Doing the first will make you hit down hard and bounce, while doing the second will simply float you into the air again.

2. When landing on a small field, over high obstacles, e.g. after a cross-country flight.

Dive steeply over the obstacle with the brakes full out—a dive of 45 degrees can be achieved without the airspeed exceeding sixty m.p.h.—then level out and land.

Remember that when landing towards a high obstacle there will be 'dead air' on the down-wind side and the wind gradient will be very high, so that you will soon lose excess speed.

This method is safer than side-slipping with the brakes out, providing that there is a fair wind blowing.

In calm air a side-slip with the brakes out could be useful, but only by experienced pilots after a lot of practice.

When working out this type of approach, it is important to apply the brakes first, then start to slip.

It should *never* be done the other way around as this will cause the tail surfaces to be blanketed, resulting in a diving turn.

The way in which the dive brakes restrict the terminal velocity is clear.

If we lose control while blind-flying, just pull the brakes completely out and the speed will never become dangerously high.

The brakes should always be applied before the speed reaches 70 m.p.h., as applying them at higher speed may result in having them torn out by the sudden excessive drag.

The maximum speed at which the brakes may be applied should be clearly marked on the instrument panel.

Footnote.—This article was originally printed in the Dutch magazine *Avia*.

Adel Kleyn, the author, is now a member of the Toowoomba Soaring Club, in Queensland.

Late News—New Italian Record

Adriano Mantelli, with a 'Languro' of S.A.I.—Ambrosini firm, has broken the Italian duration record.

Start was on the 22nd Feb., 0905 a.m.; landing 23rd Feb., 0915 a.m. The flight was done over Vigna di Valle (20 km. Nord of Roma). Height till 4,500 mt. (14,800 ft.), was obtained in waves. The preceding record was 11 hours.

The History of The Students' Aviation League of Japan (N.G.K.R.)

THE Students' Aviation League of Japan which is one of the most active student-fliers organizations was established in 1931, under the sponsorship of the Asahi Shimbun Press, by the enthusiastic request of young students who were interested in flying.

Since the establishment, the organization has overcome every sort of critical situation, and enlarged its scale step by step. And in April 1942, its members reached 2,080 from 53 universities and colleges in our country. At the end of the last war, the organization increased its membership to 3,500, possessing more than 70 training aeroplanes, 12 high performance sailplanes and about 50 training gliders.

The remarkable Motorless Flight events in the history of Students' Aviation League of Japan were :

(a) *1st Students Sailplane Flying Meet*—
Kirigamine Hights, Nagano pref. August 1937.

(b) *2nd Students Sailplane Flying Meet*—
Kirigamine Hights, Nagano pref. August 1938.

(c) *3rd Students Sailplane Flying Meet*—
Kirigamine Hights, Nagano pref. August 1939.

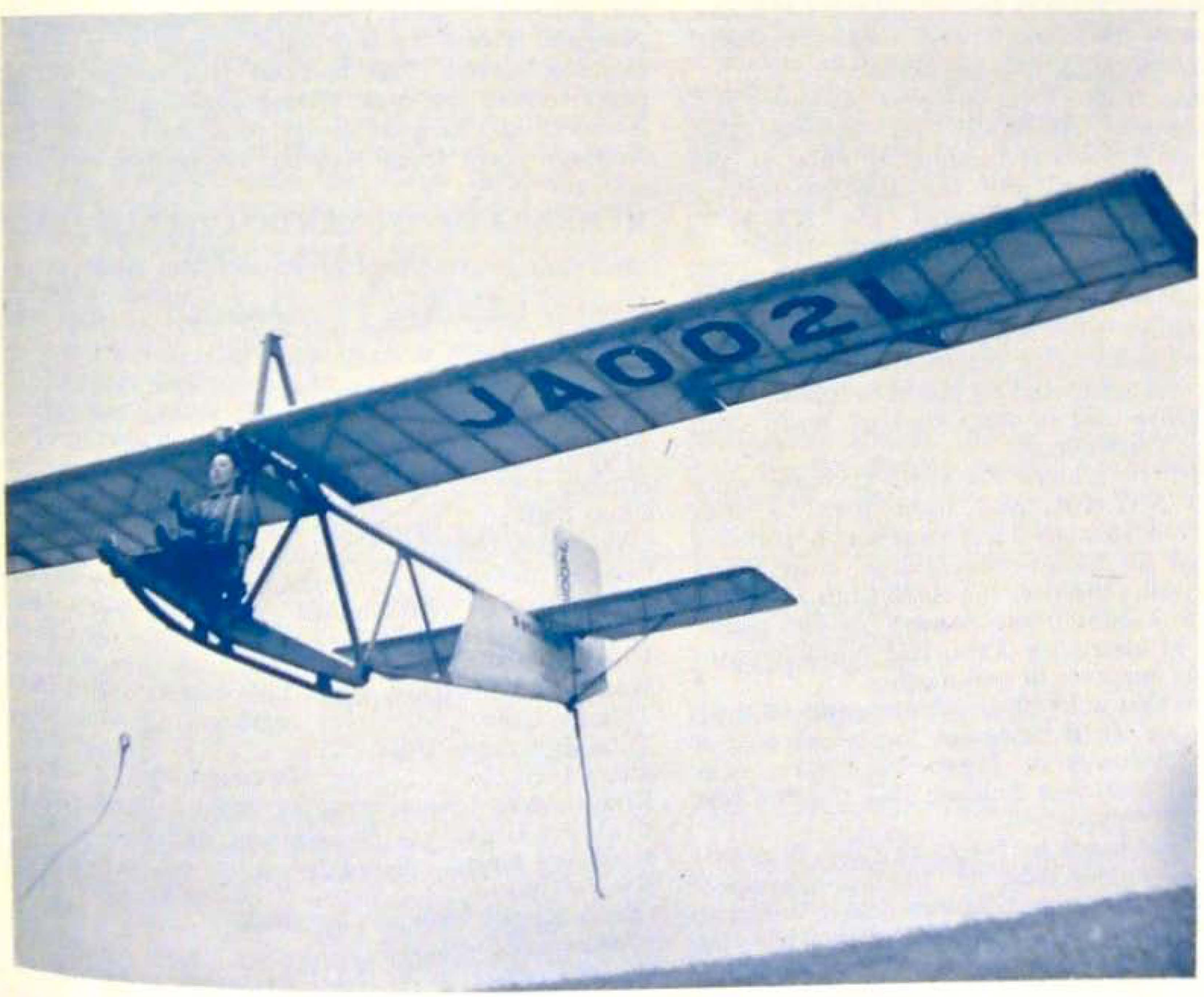
(d) *4th Students Sailplane Flying Meet*—
Kirigamine Hights, Nagano pref. August 1940.

(e) *5th Students Sailplane Flying Meet*—
Kirigamine Hights, Nagano pref. August 1941.

(f) *Sailplane Instituting Flight, January* 1942—
Mt. Ikoma (Osaka) :



Kirigamine Heights : Girls, members of the Students' Aviation League of Japan who take part in glider training, discuss their flying experiences. Left to right : Miss Sumiya, Miss Takamashi, Miss Ishikawa and Miss Ichikawa.



Start of the 'K-14' Type Training Glider, flown by Miss Yoshiko Ishikawa at Kirigamine Heights.



Secondary class training at Kirigamine Heights. 'M.A.' Type Secondary Trainer, towed by auto-tow winch gained approximately 80-100 metres height, landing at the starting point after 360° turn.

T. Nakagawa (Waseda Univ.) 6:00 hours flight.
M. Maeda (Waseda Univ.) 5:59 hours flight.

(g) *6th Students Sailplane Flying Meet*—
Kirigamine Hights, Nagano pref. August 1942.

The organization continued its distinguished development, until the war broke out, when all the members were forced to join the military service without choice. In August 1945, the N.G.K.R. automatically desolved because of Japan's defeat.

On June 1st, 1952, the Students Aviation League of Japan was re-established by the efforts of enthusiastic former members, and freshmen from universities, and many other colleges came in as well.

N.G.K.R. is still sponsored by Asahi Shinbum Press as in pre-war days and is supported by more than 600 enthusiastic students.

Last summer, 10 gliders for their training were contributed to N.G.K.R. and from 10th to 20th August, and from 15th to 22nd October, a training course was held at Kirigamine Hights, near Suwa Lake, Nagano pref. Besides, the Aero Club of Nihon Univ., designed a light plane named 'N-52' under the leadership of instructor Prof. Hidemasa Kimura who is a famous engineer of aeronautics.

The engine of this light plane, Continental 65 h.p., contributed by Mr. D. B. Sherman, representative of Pan American Airways in Japan. Recently, construction of this ship was finished and the 2nd test flight is under contemplation.

Another attempt made by the institution is instaling of small gas-engines such as 10 h.p. 2 cycle, 2 cylinders, fixed on Training Glider.

The first test for this project was carried out last summer with 1.5 h.p. 2 cycle 1 cylinder light engine for generator, and the end of last year again we designed a new 16 h.p. light engine to be fixed on training glider. The test for this engine will take place during the next Glider Training Course which is open at Kirigamine Hights, near Suwa Lake, Nagano pref., from August 1st to the end of the season.

MEMBERS OF STUDENTS' AVIATION LEAGUE OF JAPAN (1953).

Name of University.	*Address.*	*Number of Members.*
Waseda Univ.	Tokyo ..	42
Keio Univ.	,, ..	60
Hosei Univ.	,, ...	35
Rikkio Univ.	,, ...	10
Tokyo Univ.	,, ...	13
Nippon Univ.	,, ...	42
Chuo Univ.	,, ...	30
Gakushuin Univ. ..	,, ...	42
Seijyo Univ.	,, ...	6
Tokyo Kogyo Univ. ..	,, ...	17
Aoyama Gakuin Univ. ..	,, ...	35
Komazawa Univ. ..	,, ...	3
Kanto Gakuin Univ. ..	Yokohama ..	18
Tohoku Univ.	Sendai	26
Tohoku Gakuin Univ. ..	,, ...	19
Shiga Univ.	Hikone City ..	24
Ritsumeikan Univ. ..	Kyoto	35
Doshisha Univ.	,, ...	40
Ryukoku Univ.	,, ...	10
Kyoto Univ.	,, ...	7
Osaka Kogyo Univ. ..	Osaka	33
Kinki Univ.	,, ...	26
Osaka Univ.	,, ...	25

(Continued at foot opposite page)

Len Schultz Wins Australian National Contest

Specially Reported by ALLAN ASH



Ric New's Laister-Kauffman 'LK-10' Note the large cockpit ventilator in the nose.



The Schneider 'Kangaroo' flying at Narromine.



Jock Barratt with the 'Pelican' two-seater.

THE 1953-54 Australian National Soaring Contest was won by Len Schultz, of the Sydney Soaring Club, with a total of 625 points. This year's contest was carried out in poor soaring conditions and was marked by the number of attempted out-and-return flights—none of which was completed.

Because of the distances which separate the gliding clubs in Australia contestants did not operate from one central site, but followed the previous pattern of flying from any site they chose. This method makes it impossible for pilots to compete on anything like an equal footing, but it has been found that, as a centralised contest would be both difficult and expensive to run, the present de-centralised method is the next best thing.

It has many advantages, so competitors overlook any slight inequality in opportunities. Nobody worries very much about the result; competing is more important to the pilots than winning. What a pity this spirit does not apply to more sports.

During the contest the pilots gained points for the number of cross-country miles they flew. The points were awarded on a sliding scale so that the further he flew the more points per mile a pilot earned. A bonus of 25% was given for a flight to a goal nominated before taking off and a bonus of 40% was given for a successful out-and-return flight. If the out-and-return flight failed (through the pilot not returning to his home base) it counted as straight-out distance, with the distance returned added to the distance to the turning point.

It was this 40% bonus and the hope of establishing a new out-and-return record that encouraged pilots to make the more difficult flight. Had slightly better weather prevailed there is no doubt that the record would have been raised considerably from the present figure of 144 miles held by Ric New of Perth.

Another important feature of the contest rules is that a pilot was allowed to make as many flights as he wished, but his final score was the sum of the points gained on his two best flights.

Activities in New South Wales were centred at Narromine in the central north of the state. The Hinkler Soaring Club did not take part in the contest this year and although both Ron Willis' 'Kangaroo' and the Dubbo Gliding Club's 'Venture' flew at Narromine, almost all the cross-country flying was done by the Sydney Soaring Club members in their 'Olympia.' The exception was Bob Krick who flew 100 miles in the 'Kangaroo.' (*Continued on next page*)

(*Continued from previous page*)

Naniwa Univ.	Sakai City	7
Kobe Univ.	Kobe	17
Kansaigakuin Univ.	Nishinomiya	25
Kansai Univ.	Suita, Osaka	21
Total 27 Univ.		Total 694

AEROPLANE & GLIDERS FOR N.G.K.R. (1953)

Aeroplane—'N-52' Low wing Monoplane :

Engine	Continental 65 h.p.
Span	8.6 m.
Length	6.0 m.
Height	2.6 m.
Wing Area	12.0 m²
Empty Weight	300 kg.
Gross Weight	500 kg.
Wing Loading	41.7 kg./m²
Power Loading	7.7 kg./h.p.

Gliders—Primary Trainers :

'K-14'	6
'K-14s'	4
Secondary Trainers	2
Sailplane :	
Kirigamine—'Taka-7'	2
Auto tow winch cars :	
Tokyo area	1
Osaka area	1

LEN SCHULTZ WINS—*(Continued from previous page)*

Len Schultz made an outstanding flight by taking the 'Olympia' on a goal flight of 207 miles from Narromine to Wagga. During this flight he reached 14,000 feet in clear air and was on oxygen for some time. The new and more powerful radio now fitted to the sailplane allowed him to be retrieved in record time. A few days later he made an attempt to fly 210 miles out-and-return but had to land after 175 miles. A third flight by Schultz was an attempt at a goal flight to Tamworth (165 miles) but he had to land at Breeza (145 miles).

Sel Owen, of Sydney Soaring Club, won second place in the contest with a total of 370 points. He attempted an ambitious triangular flight of 195 miles from Narromine to Tooraweena, then on to Coonamble and return to Narromine. Once again the poor conditions resulted in failure and he landed 15 miles short of Narromine.

Owen's other contest flight was one of 110 miles from Narromine to Forbes. The flight was terminated prematurely when the pilot became sick after eating an apple coated—unknown to him—with fruit-spray. His arrival in Forbes—and his explanation for landing—caught the imagination of the local newspaper which gave the item front-page headlines.

Lt.-Comdr. Tony Goodhart, D.S.C., R.N., English Gold 'C' pilot at present stationed in Australia, accepted an invitation from the Sydney Soaring Club to join in the activities at Narromine and flew the 'Olympia' 180 miles to Hillston.

The only other flights by Sydney Soaring Club members were 70 miles by Keith Colyer and 40 miles by Mervyn Waghorn.

In West Australia the members of the Gliding Club of W.A. based their operations at Wongan Hills, about 120 miles north-east of Perth. Four sailplanes took part in the National contest but only two pilots scored points.

Ric New made three cross-country flights in his 'Laister-Kauffman LK-10.' Two of these were attempted out-and-returns. On the first, he flew from Wongan to Gutha and back as far as Morewa, a total distance of 155 miles. The flight took 7 hours 16 minutes. On his second attempt he covered 108 miles, but we have been unable to learn the name of his turning point or how far it is from Wongan Hills. New's third flight was a straight distance of 134 miles from Wongan to Cuballing. His total of 364 points placed him third in the contest.

The only other contest flight in West Australia this year was made by Wally Williams who flew his 'Kestrel' 58 miles from Wongan to Buntine. Williams in the 'Kestrel' and Reg Currell in the 'H.17' made a number of short flights ranging from 10 to 20 miles but under the contest rules no points are awarded unless a pilot flies 40 miles from his home base. (This rule, incidentally, has caused some dissatisfaction and will probably be amended for the next contest).

Dr. Mervyn Hall, of the Toowoomba Soaring Club was the only Queensland pilot to make contest flights this year. Flying his 'R-3' sailplane from Oakey aerodrome, near Toowoomba, he made flights of 45 miles to Grantham, 120 miles to Goondiwindi, and an attempted out-and-return flight to Leyburn, 60 miles away. He could only manage 10 miles of the return trip so can count only 70 miles for points. Dr. Hall, fourth in the contest, gained 211 points.

Only two cross-country flights were carried out in Victoria during the contest. Ron Roberts, of the Victorian Motorless Flight Group, declared Swan Hill, 200 miles away, as a goal when he took off from Berwick in the 'Golden Eagle.' After crossing the ranges north of Melbourne, however, he encountered totally different soaring conditions to those in the south. He finally landed at Lancefield, 65 miles. After landing he had to hold hard to the 'Golden Eagle' to prevent it blowing away in the strong wind and was thus marooned for some time before a farmer happened along to help him tie the machine down.

The other Victorian cross-country flight was made by Don Brown of the V.M.F.G. who flew the 'Golden Eagle' 40 miles to Tawonga.

At Waikerie, in South Australia, pilots were plagued by a low inversion on most days and an almost constant southerly wind. As the wild nature of the country north of their site made down-wind flights impossible they had to travel cross-wind. The best flight was made by Jock Barratt and Les Brown who made an unsuccessful out-and-return attempt to Parafield in the 'Pelican' two-seater. The flight did not start until late and although Parafield was reached safely they were only able to get about half-way back to Waikerie, finally landing at Accommodation Hill having covered 143 miles in less than five hours.

Harry Schneider took off in the 'Grunau Baby 3' on an attempted goal flight to Port Pirie, about 150 miles away, but was forced to land after only 40 miles. Several other Waikerie pilots set off on cross-country flights but did not get very far. Although Barratt and Brown reached 10,200 feet on their flight the thermals during the contest seldom went higher than 5,000 feet, and on several days went only to 2,000 feet.

Members of the Gliding Club of Victoria, based at Benalla, and the Adelaide Soaring Club, at Gawler, made no contest flights as they were concentrating on training.

WEST AUSTRALIA CLUB HAS NEW OFFICERS

GEORGE CUTTER was elected as the new President of the Gliding Club of West Australia at the Annual General Meeting on August 5th.

Max Johnson and Neville Wynne were elected Vice-Presidents, and Len Anderson was elected Treasurer.

Secretary is Geoff Higginson, 61, Birkett Street, Bedford Park, W.A.

At the A.G.M. the following trophies were presented by the Chief Instructor, Ray Baird.

Luckly Trophy, for the highest aggregate time in club aircraft :—R. C. Currell, 1 hour 53 minutes.

Whinfield-Baird Trophy, for the greatest altitude gained :—C. R. New, 11,500 feet.

Dunkling Trophy, for the longest distance flight over the Christmas Camp :—C. R. New, 130 miles.

C. R. New Trophy, for the most meritorious flight of the year :—R. T. Baird, 75 miles goal flight in the 'GB.'

TWO-SEATER TRAINING GLIDER (For Gliding Schools)

Type 'GREIF V-DSG'



Right: 'Greif V-DSG' two-seater.

TO-DAY, the training of beginners on the two-seater principle is increasingly being demanded, but the majority of our two-seater gliders are, however, high-efficiency models, too expensive for the individual groups for training purposes. What is required, is a simple, robust two-seater at a reasonable price.

Herr Ob. Ing. Hans Hollfelder, the designer, thereupon constructed the two-seater training glider 'GREIF V-DSG,' with a view to filling this gap. It is one that corresponds to the present day demands of aeronautical societies for the training of beginners, is robust in design, and simple and straightforward in its construction. It is very easy to fly and will not pitch and roll over under bad flying conditions: it is therefore, absolutely fool-proof.

At the German gliding competitions in Oerlinghausen the flying characteristics of the 'GREIF V-DSG' were repeatedly demonstrated and it can be said, that it met with fullest approval on all sides. Its efficiency is approximately midway between that of the training glider 'SG 38' and the 'Grunau Baby,' although it conforms more with the 'Baby.'

The fuselage consists of body and tail unit. The body is an open steel tube construction: it can, of course, be covered, whilst the tail unit is a duralumin torsion tube, tapering towards the back.

The wing, with I-spar, auxiliary spar and large torsion nose is of parallel ribbed profile—very advantageous for self construction—and is self-supporting. The wing is pushed on to a rear lug and fastened to the body by means of the main lug on the main spar with a long bolt.

The rear seat is at the point of gravity, therefore if flown singly no ballast is required for balance.

The wheel is fitted just ahead of the point of gravity, consequently good braking through pressure is possible upon landing. The ash skid is mounted in rubber and the tail spar has spiral springing. The tow-coupling, which is of the safety pattern, type 'Tost,' is located a little ahead of the point of gravity.

It is absolutely impossible to connect up the elevator and aileron controls incorrectly, as this is effected by means of rods and not by cables.

The 'GREIF V-DSG' is entirely self-supporting and has no bracing whatsoever, which permits of a very speedy assembly. Ten minutes is all that is required to fit wings and tail unit.

Technical data :—

Wing span	13.00 metres
Wing area	21.10 sq.metres
Wing breadth	1.70 metres
Wing length	7.65 metres
Weight	210 kg.
Load	180 kg.
Flying weight (total)	390 kg.
Surface loading	19.0 kgs./m².
Breaking load	8 times
Stress	Group 2
Transverse elasticity	1:14 approx.
Vertical descent (speed) ..	1.10 metres/sec.

Other 'Greif' Designs

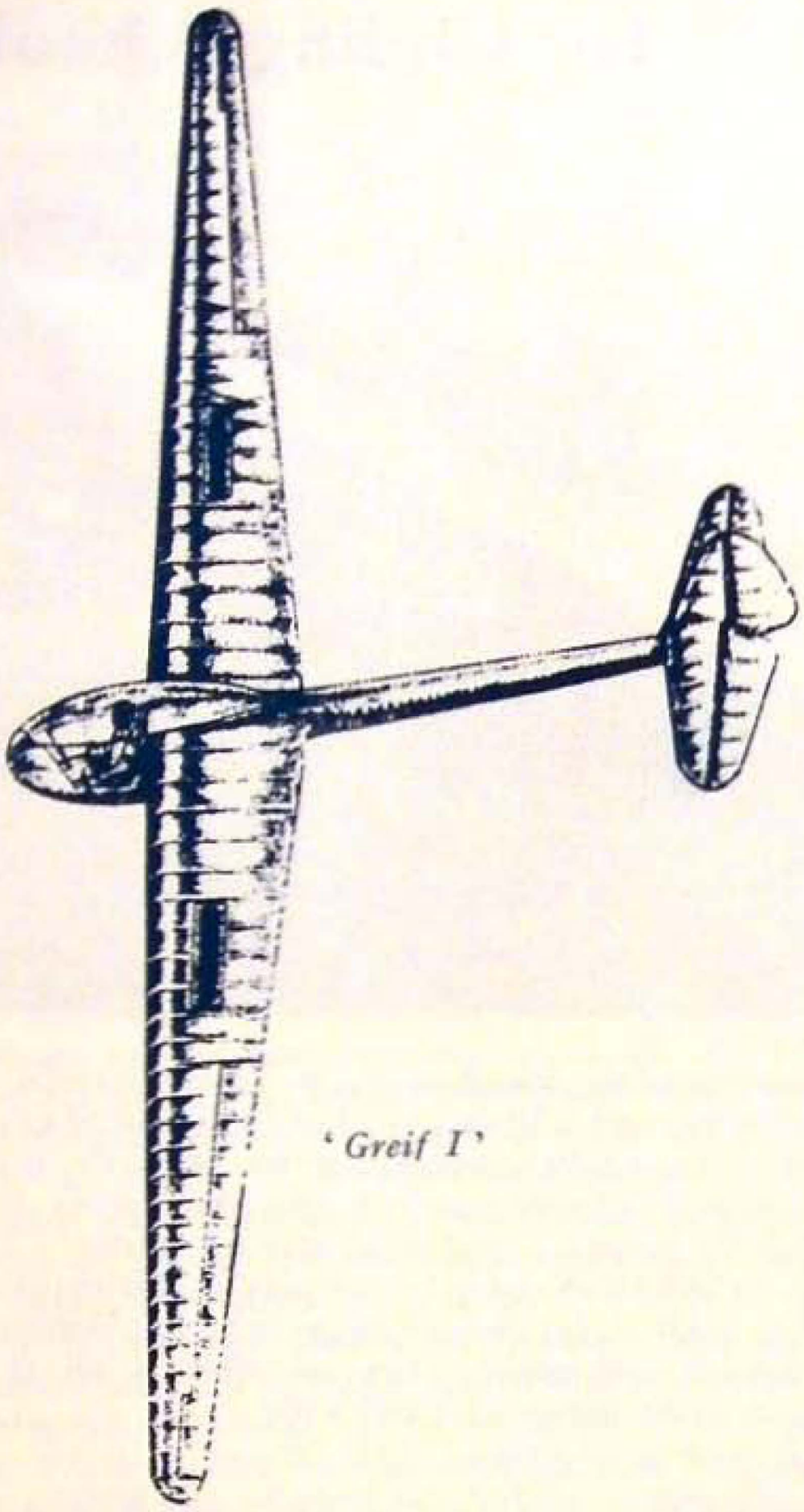
'GREIF 1'

A single-seater high performance sailplane, also for training.

'GREIF I' is an excellent sailplane for instruction purposes, as it is very easy to fly. It is practically foolproof; that is to say, that faults made in flying will practically never bring the plane into a perilous situation. The plane will not stall nor sideslip and will not start spinning.

As a high performance sailplane it is particularly suitable, owing to its uncommonly low weight.

The hull, the planes, the tail structure and the tail and rudder assembly are exchangeable against spares, owing to the series production, which has been planned



'Greif I'

and adapted to this purpose. Assembly of the plane is extremely simple.

Design and construction materials

Mixed construction—Main plane structure : wooden skeleton, fabric covered : Hull : steel tubing, fabric covered, and planked with duraluminum ; Tail structure : Dural ; Horizontal tail surfaces (stabilizer and elevator surfaces) : wooden skeleton, stabilizer ply-wood covered, elevator fabric-covered ; Rudder assembly : wood skeleton, vertical fin ply-wood covered, rudder fabric-covered ; Landing gear : rigid balloon tyred wheel, skid ; Type of construction : mid-wing monoplane ; Design : cantilever type.

Dimensions.

Span	13.00 m.
Length	6.42 m.

Area.

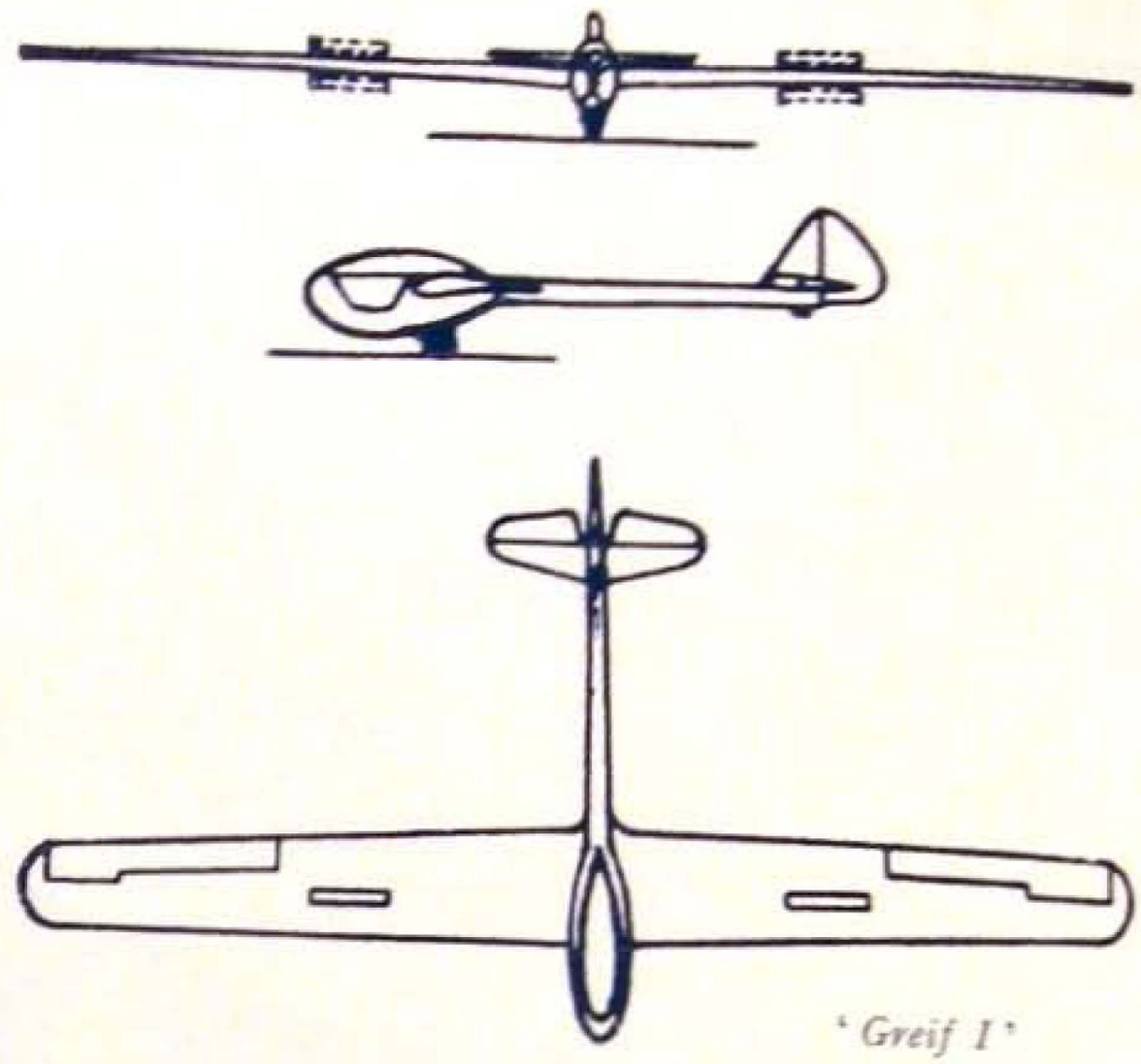
Area of wing including ailerons ..	13.00 sq.m.

Weights.

Empty weight plus fixed weight ..	120 kg.
Service load	90 kg.
Gross weight (weight in flying order)	210 kg.

Lifting Surface.

Outline	trapezoidal
Dihedral angle	2°
Multiple of breakage load ..	8.00
Stress group	2



'Greif I'

Performance.

Lift-drag ratio (fineness ratio) ..	1:24
Sinking speed	0.68 m./sec.
Permissible maximum speed ..	200 km./h.
Wing loading	16.5 kg./m².

Licenses.

For mechanical towing	up to 80 km./h.
For towing by aircraft	up to 90 km./h.

Special Features.

Extremely light ; quickest possible erection ; all-round visibility ; excellent outlook ; no rope controls (except for rudder), but rod-control.

This sailplane is also built for stunt-flying—' Greif II.'

'GREIF III'

Two-seater high performance sailplane and instruction plane.

The ' Greif III ' is a two-seater instruction plane, which like all ' Greif ' sailplanes features only the tail structure of Dural behind the hull, instead of a fuselage. This also is a sailplane, easy to fly and showing excellent properties in flight.

The wing has a ' break ' and joins the hull immediately astern of the second seat, thereby providing excellent visibility from the second seat also.

A full visibility cockpit still further improves the range of vision.

The wings, hull, tail structure and rudder assembly are again exchangeable.

Design and construction materials.

Mixed construction—Main plane structure : wooden skeleton, fabric covered ; Hull : steel tubing, fabric covered, and planked with duraluminum ; Tail structure : Dural ; Horizontal tail surfaces (stabilizer and elevator surfaces) : wooden skeleton, stabilizer ply-wood covered, elevator fabric-covered : Rudder assembly : wood skeleton, vertical fin ply-wood covered, rudder fabric-covered ; Landing gear : rigid balloon tyred wheel, skid ; Type of construction : mid-wing monoplane ; Design : cantilever type.

Dimensions.

Span	16.00 m.
Length	7.80 m.

Area.

Area of wing, including ailerons ..	17.8 sq.m.

Weights.

Empty weight plus fixed weight ..	220 kg.
Service load	180 kg.
Gross weight (weight in flying order)	400 kg.

Lifting Surfaces.

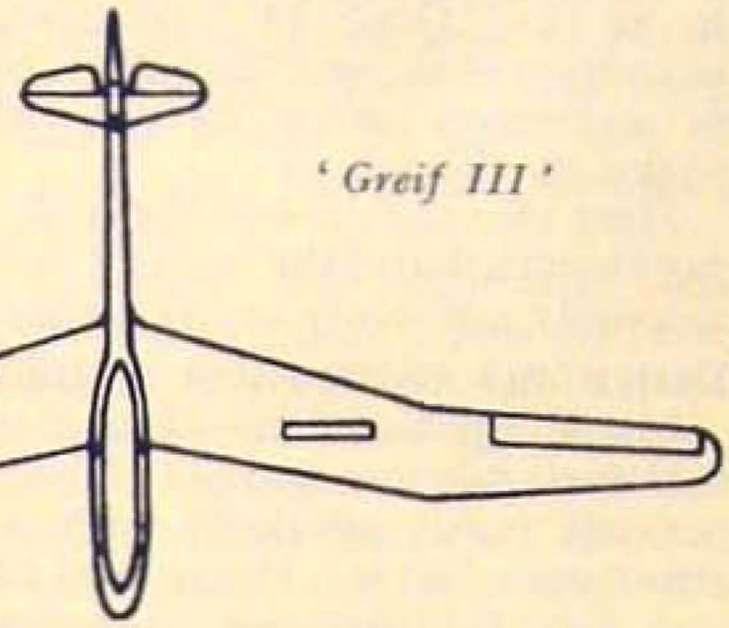
Outline	trapezoid with Kink 10°
Dihedral angle	2°
Multiple of breakage load ..	8.00
Stress group	2

Performance.

Lift-drag ratio	1:26
Sinking speed (as single-seater) ..	0.65 m./sec.
Sinking speed (as two-seater) ..	0.72 m./sec.
Permissible maximum speed ..	200 km./h.







'Greif III'

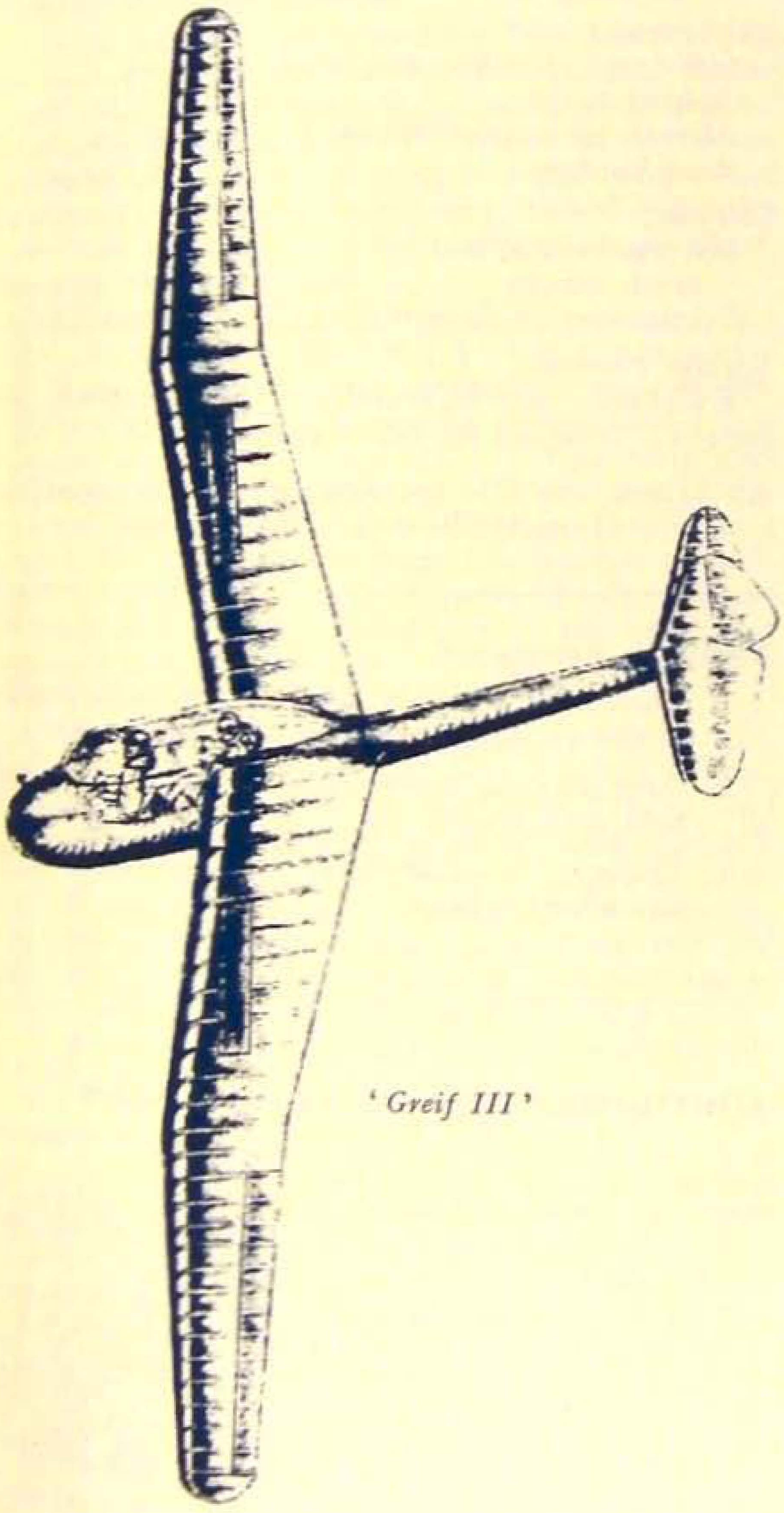
Wing loading (flown as single-seater) 17.4 kg./m².
Wing loading (flown as two-seater) 22.4 kg./m².

Licenses.

For mechanical towing ..	..up to 80 km./h.
For towing by aircraft ..	..up to 110 km./h.

Special Features.

Excellent visibility from both seats; all-round visibility; speedy erection; comparatively light weight.

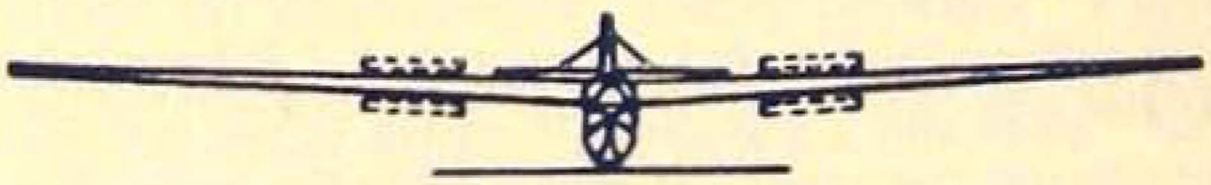


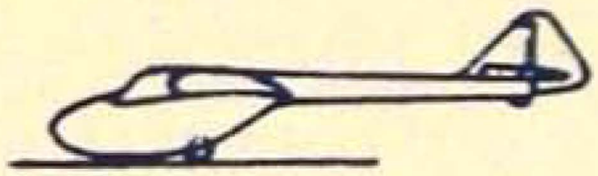
'Greif III'

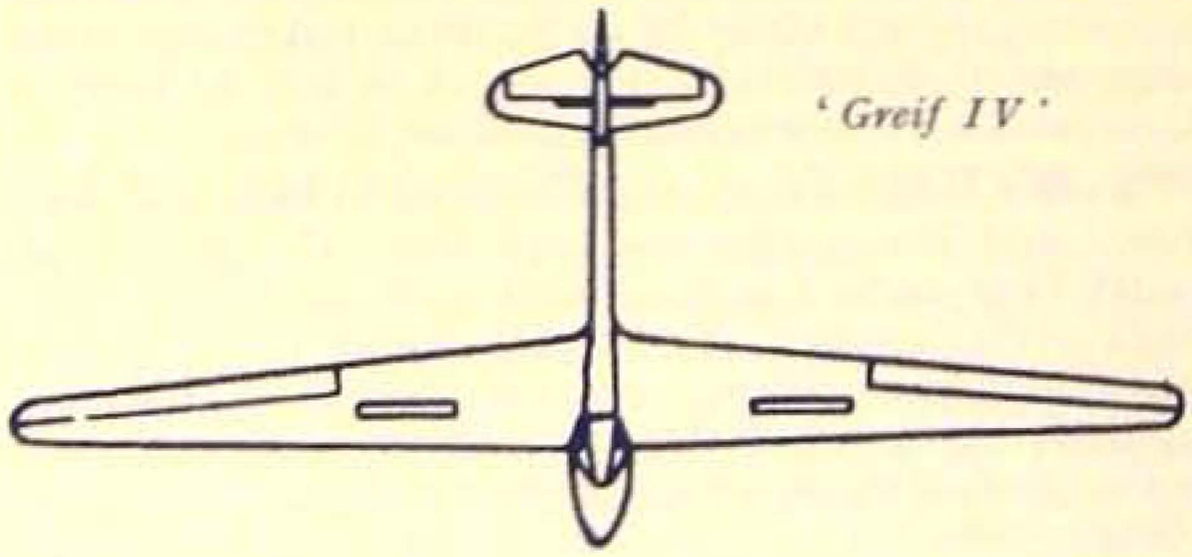
'GREIF IV'

A single-seater high performance and instruction sailplane, suitable for stunt-flying.

'Greif IV'—formerly known as the 'EW 18'— is a high performance sailplane, suitable for instruction and for stunt-flying. From this model 'Greif I to III' were developed. 'Greif IV' is regarded by





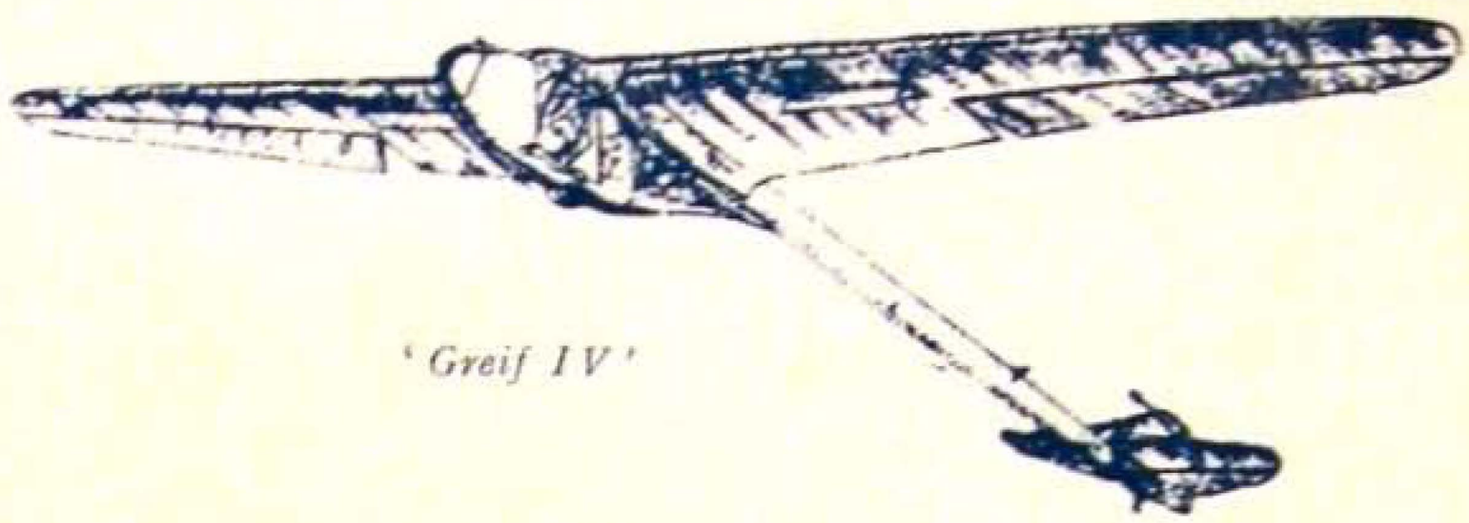


'Greif IV'

experts as a first-class sailplane. It probably is one of the sailplanes most frequently tested and flown in training and testing centres, a machine extremely easy to fly, practically fool-proof and very manoeuvrable.

Brake flaps may be furnished at the wing tips if desired and make the 'Greif IV' particularly manoeuvrable, enabling it to bank in extremely steep curves, when flying in thermics.

Here also the planes, the hull, the tail structure and the tail and rudder assembly are easily exchangeable.



'Greif IV'

Design and construction materials.

Mixed construction—Main plane structure : wooden skeleton, fabric covered ; Hull : steel tubing, fabric covered and planked with duraluminum ; Tail structure : Dural ; Horizontal tail surfaces (stabilizer and elevator surfaces) : wooden skeleton, stabilizer plywood covered, elevator fabric-covered ; Rudder assembly : wood skeleton, vertical fin ply-wood covered, rudder fabric-covered ; Landing gear : rigid balloon tyred wheel, skid ; Type of construction : mid-wing monoplane ; Design : cantilever type.

Dimensions.

Span	14.80 m.
Length	6.85 m.

Area.

Area of wing, including ailerons	14.4 sq.m.

Weights.

Empty weight plus fixed weight	150 kg.
Service load	90 kg.
Gross weight (weight in flying order)	240 kg.

Lifting Surface.

Outline	trapezoidal
Dihedral angle	2°
Multiple of breakage load	12.00
Stress group	suitable for stunt-flying (0)

Performance.

Lift-drag ratio (fineness ratio)	1:24
Sinking speed	0.69 m./sec.
Permissible maximum speed	200 km./h.
Wing loading	16.7 kg./m².

Licenses.

For mechanical towing (with winch)	up to 80 km./h.
For towing by aircraft	up to 110 km./h.

Special Features.

Excellent manoeuvrability ; comparatively low weight ; designed for rapid assembly.

All 'Greif' models are designed and developed by Hans Hollfelder, Chief Engineer.

ELIMINATE THAT EMBARASSING FENCE-HOPPING . . . Killjoy

ONE of the contributing causes of sundry grey hairs and a few minor disasters, is the practice of placing the 'spot' at which launches begin, too close to the downwind boundary. While every available inch of tow path is desirable, this practice leads to approaches which often shave the down-wind fence, in an effort to stop on the spot and save ground handling.

Making a long approach into wind aimed at skimming the fence in these conditions asks for trouble. Should there be an error of judgment or an unexpected downdraft, no reserve is left to dive at the fence, and subsequently pull up over it.

A safer method is to stand in close to the downwind fence and use a slipping turn from the last cross-wind beat onto the final approach to throw away that extra height. The rate at which height is lost then, depends entirely on the whim of the pilot. A little extra speed may be held in reserve, just in case, and after a little practice you'll hit the spot every time.

Points to Remember

1. Become thoroughly familiar with side-slipping in the air, *before* trying it near the ground.
2. Stop slipping before you run a furrow in the field with a wing-tip.
3. *Trainees . . . Lay Off !* Continue to overshoot and wheel it back.

SOUTH-WEST AFRICAN GLIDING CLUB

(Continued from page 6)

day, our Swiss instructor Hans Wuerth, flying the 'Slingsby' with one student, climbed to 16,000 feet above sea level in less than 15 minutes, while we others in 'Grunau Babies' touched the cloud base at 17,200 feet. Such can be soaring conditions in this country. During the rainy season, January to the middle of April, conditions are not so ideal. Following careful observations, the months from October to December are the best of the year for high perform-ance soaring.

Just 20 Miles Short of a New World Record

By DICK JOHNSON

THE first four days of the 3rd South-western Contest had been used for a new type of task flying—nomadic. A daily goal was set by the contest committee and each contestant either flew his machine there or trailered it in the event the elements played him foul. Take-off the following day would be from the previous day's goal to a new goal.

August 27th saw us all back at our home roost, Grand Prairie Airport. Now the more serious part of the competition would start. Open days were scheduled for this and the following day.

On the two previous days moderate ESE winds and humid air had plagued the contestants because our task flights were both due east since we were returning from west Texas. Now for a change we all could fly downwind if we so desired, and without exception, everyone chose to.

The air was still too humid for best soaring, but the wind on the ground was 15 m.p.h. and had swung to SE. Small low cumuli were forming by 9.00 a.m. With some misgivings I finally decided to try for an optimistic goal flight. A couple of Russians had established a goal flight two-place record of 396 miles earlier this summer; so I set Garden City, Kansas, 411 miles NW, as my goal.

For such distances an early start is necessary. At 10.20 a.m. I climbed the 'R-J-5' thirty feet above the Waco tow plane and jettisoned my wheels. I released at 1,800 feet above the airport and a few minutes later found 1 m/s lift. It was early and conditions were not good yet; so I climbed slowly to 3,000 feet. The thermal now had weakened so I headed NW toward some large low ragged cumuli. After flying under several of these clouds without finding even 1 m/s lift, I decided to be less particular because I now was down to 1,600 feet over the Bell Helicopter plant.

After working a weak thermal back to 2,500 feet, I soon found better thermals north of Fort Worth. I reached cloudbase at 3,500 feet at 10.50 a.m. and now increased my cruising speed between thermals to 65 m.p.h. I passed over Decatur, Texas, at 11.20 a.m. It was 50 miles and one hour out. Considering the weak start, that was not too bad for the first hour, but I would have to do better now if I was to reach Garden City. The drift of the clouds seemed to be good and in the better 1½ m/s thermals the old 'R-J-5' was in her own.

The going was good and I arrived at Wichita Falls at 12.50 p.m. That was 125 miles in 2½ hours—only 50 m.p.h. average speed still! I was somewhat dismayed. The wind-drift appeared to be 15-20 m.p.h. along course and the 'R-J-5' is good for an easy 45 m.p.h. average with no tail wind under the thermal conditions encountered. Either I or 'R-J-5' or the wind or the thermals would have to do better during the next five hours or the goal would not be reached.

After leaving Wichita Falls I encountered some difficulty in locating these better thermals. After looking for some time I had only 2,000 feet of altitude left; so I had to be less choosey and work some 1 m/s thermals for a time.

Over the Red River north of Vernon, Texas, the clouds were better, and for the next two hours it was excellent thermalling from cloud base to cloud base 6,000 feet over Oklahoma. Soon I was over Texas-Oklahoma Panhandle border 20 miles east of Highway 83, the road that Steve Newphew, my crew, would follow with the trailer.

Soon after leaving Canadian (270 miles out) conditions weakened, and I went many miles without finding a suitable thermal. I was below 2,000 feet when I saw a vigorous dust devil 3 miles to the north. I arrived there with about 1,400 feet and was rewarded with a small, rough, but moderate lift. As I climbed it became smoother and larger, and it carried my sailplane to 6,000 feet before weakening.

Conditions were fairly good for a while, but as I left Texas north of Perryton (320 miles out) at 4.40 p.m., the few clouds that were left told me it would be rough going now. I deviated from course appreciably several times looking for even weak lift. A few dust devils were still kicking up the ground occasionally, but when I tried to locate their thermals, I found either very weak or no lift.

By the time I crossed the Kansas border at Liberal I was down to 2,000 feet with little prospect of getting any higher. It was now 5.40 p.m. and Garden City lay 55 miles north. Down at this lower level the wind drift was about 20 m.p.h. and directly along course. To make the best out of the situation, I circled in zero sink whenever it was encountered and thus added miles toward my goal. Once I gained 30 feet but lost it soon afterward.

After 30 minutes of austerity gliding I was down to 400 feet and directly over Highway 83. The large Kansas wheat fields under me had been harvested so there was no problem in landing anywhere. I kept going until I was down to 150 feet, chose the field under my left wing, made a 180° turn, and landed near Sublette, Kansas, at 6.10 p.m.

This was 391 miles, only 20 miles short of Garden City Airport. My average ground speed for the entire flight was still only 50 m.p.h.! When I landed the wind was 20-25 m.p.h. from the south and I was puzzled as to why I did not make better time. The following day I discovered that although the clouds appeared to me to be drifting well the pibal reports showed the wind above 3,000 feet to be light and variable thus contributing little to my progress.

'Soaring,' Nov./Dec.

S.B.A.C. FLYING DISPLAY & EXHIBITION 1954.

THE Society of British Aircraft Constructors announces that the 1954 S.B.A.C. Flying Display and Exhibition will be held from Tuesday, September 7th, to Sunday, September 12th, inclusive. There will be a Technicians' Preview on Monday, September 6th. The Display will be held at Farnborough, Hampshire.

Prospect of Gliding in India

BY GROUP CAPTAIN H. N. CHATTERJEE, D.F.C., I.A.F.

EFFORTS to develop air-mindedness started as early as 1928 with the formation of Flying Clubs. The object was to popularize and develop civil flying in this country and to enable flying to be learnt at a comparatively low cost.

Twenty-five years is not a short period, yet if one compares the development of aviation in this country in the context of development of aviation in other advanced countries, he cannot but conclude that progress in aviation in India has been far too slow.

Although, India today possesses an Air Force and a network of efficient civil airlines, the range of aviation activities of our nation is negligible compared with many smaller countries of Europe. There must be some basic reasons for this slow progress in aviation. An average man in our country does not appear to lack air-mindedness. In fact, there is an abundance of enthusiasm amongst the masses of our country to see and learn something about aircraft and their accessories.

No Desire To Take Active Part

But the kind of enthusiasm normally seen at an air-rally or aérial display also exists for any kind of mechanical exhibition which is held in any corner of this sub-continent. It is natural that in a country which is industrially so backward, there would be curiosity on the part of the masses to see what a modern mechanical contraption can demonstrate. Yet, it would not be far wrong to categorically state that there is a serious lack of real enthusiasm for aviation activities in this country—that is, the enthusiasm which should exist to take active part for the development of aviation in all its branches.

High Costs

An authority on Civil Aviation has recently stated : ' It is evident that in spite of their existence for the past 24 years, the Flying Clubs have failed to popularise amateur flying. The purse of an average Indian is too lean to afford the cost.' This may not be the whole truth, but the fact remains that the cost of flying in this country is beyond the reach of the majority. Even those who can afford the high cost have stayed away from flying for one reason or the other.

The cost of flying is high because the prices of even elementary aircraft, all of which are of foreign make, are too high. Moreover, any powered aircraft today requires extensive maintenance organisation and with the higher cost of gasoline, the operating cost of these machines has become prohibitive. The minimum cost of an elementary aircraft these days exceeds the Rs.50,000/- and its operating cost is about Rs.80/- per hour. Even with the production of the Hindustan Trainer aircraft ' HT 2 ' at our only aircraft factory, this state of affairs is not expected to improve, since we do not produce either the engines or the raw material for the manufacture of aircraft. Cheap labour alone cannct bring down the cost of powered flying.

One way of reducing this cost is by higher subsidy, but even in that sphere our present financial condition would be a great barrier in the matter of reducing the cost of powered flying to bring it within the easy reach of the majority. Those who can afford to bear the high cost of powered flying have stayed away from aviation activities due to either ignorance or fear of flying risks.

Poor Propaganda

It appears that no real effort has been made in the past to create airmindedness amongst the youth of this country. If real enthusiasm is inculcated amongst the youth right from the beginning, this ignorance and prejudice will soon disappear. Gliding and soaring has played quite an important part in making more than one nation airminded at a comparatively cheaper cost. Yet, this form of aviation has remained almost foreign in our country which is so much industrially under-developed.

Gliding Offers Solution

There is a great need of bringing down the cost of flying in this country so that an average youth can take up aviation easily, and that is why the introduction of gliding on a large scale becomes more necessary in our country.

Indian Built Gliders

The first step to build gliders in India was made in Baroda, but this did not survive for long, although they did build one or two gliders there. The technical centre of the Director General of Civil Aviation, then undertook to build a few gliders on an experimental basis. During the last few years, they have been successful in constructing two primary and three single-seater intermediate gliders out of indigenous material.

Since a glider is just like a small aeroplane without an engine all it requires is good timber, dependable glue and fabric to cover its structure. The gliders they had produced were made entirely of Indian timber, glue and fabric. Although, these gliders were made on an experimental basis, it has been proved that good, dependable gliders can be manufactured in India in quantity the cost being far lower than the price of imported gliders.

Cheap Production

At the Technical Centre of the D.G.C.A., the cost of manufacturing an intermediate glider came in the region of Rs.7,000/-. If the production of gliders is taken in hand on an industrial scale, its cost is bound to be reduced by a substantial margin.

Gliders can be launched in the air by a variety of methods—the most common are launching with the help of a winch or towing by an aircraft. Besides these, a glider can also be towed behind a motor-car or it can be launched from a suitable slope by means of an elastic cord known as ' Bungee.' Out of all these methods, winching of gliders is considered to be the most convenient method and the operating cost of winching is also cheaper. A winch can also be manufactured in India from any old motor lorry at a low cost.

It is, therefore, apparent that gliding can be intro-

The A.B.C. of Gliding

By A. FOX GEEN. ***Foreword by Air Commodore L. R. S. Freestone, O.B.E.***

Tells the hows and whys of elementary gliding and soaring in very easy stages. Should be of greatest value to the layman—and this includes the A.T.C.—and to the many hard-working gliding instructors who badly need some form of literature to supplement their instruction. "Covers the chosen ground well and the theory is very simply explained, and is readily understandable to the partially initiated."—*Aeronautics* "The value of the book derives from two facts: it is one of the few if not the only book of its kind so far published; and it is superbly done."—*Manchester Evening News*. **Illustrated 12s. 6d. net**

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PROSPECT OF GLIDING IN INDIA

(Continued from previous page)

duced in our country at a much reduced cost than powered flying and this form of aviation is bound to create greater enthusiasm than what has been possible in the past. Moreover, gliders are easy to fly, and there is no complicated machinery in them. They do not either consume gasoline or oil, nor do they require any large scale workshop facilities. It would be easier to introduce gliding even to smaller towns provided the right kind of enthusiasm could be created amongst the population.

Gliding and soaring will help the public to understand the basic principle of flight and also the habits of the atmosphere, because gliding depends primarily on the movement of air and air current. A glider pilot enjoys thrills which a powered pilot cannot possibly experience in his aircraft. Gliding develops the exploratory outlook with a spirit of adventure.

Gliding is really a simple form of flying and young boys and girls can learn its technique easily. It is more safe—safer than any other form of flying—and accidents are very rare in gliding. Gliding will open a new source of industry in our country, because gliders can be easily made with local materials. Gliding is rather new to us. If it is made popular, it will provide a pleasant and profitable medium of developing airmindedness and to a large measure air sense, among the youth of this country.

By courtesy of 'Indian Skyways,' January 1954.

'UP DRAFTS'—

You can learn about soaring from this

By Glenn Robinson

I WAS getting my first taste of thermal flying. I had been used to flying the wind currents coming off the mountains near Salt Lake City. I was contestant No. 12 in the Western Soaring Championship held at Arvin, Cal., in April 1941. It was the second day of the contest and I was making my second flight of the day. The winch towed me to an altitude of about 700 feet. Immediately upon releasing from the tow rope, I headed for some fields where I thought I might catch a thermal. I found nothing but down-drafts in this particular area.

I was rapidly losing altitude. I was now only 1,200 feet above the ground and approaching a level field for a landing when all of a sudden I felt the ship lurch a little and begin to rise. I checked my rate of climb and saw the ship was rising 10 feet a second. I immediately put the ship in a tight spiral. I began to rise faster as the thermal became stronger, and I soon found myself very near the base of a small thunderhead that was forming.

I flew a safe distance away and found I had lost some altitude. I looked back and saw Howard Morrison, Dick Johnson and a couple of more well-known pilots of the day skirting near the edges of the cloud. I began to think I was missing out on something, so decided to fly back and join them. As I neared the cloud my rate of climb began indicating terrific lift. I glued my eyes to the instrument panel, thinking this was my chance to show these hot pilots that a beginner could soar right alongside them.

I hadn't been paying too much attention to what was going on around me. I was too interested in the terrific speed at which my 'Baby Albatross' was rising. I was at about 4,500 feet when I noticed a shadow in the cockpit. I looked up quickly. To my horror I found the black cloud wrapping itself around me. I tried to turn to get away, but it was too late. I was in the very centre of it.

I tried to fly by my instruments but they seemed to have gone screwy. They weren't acting like the seat of my pants was feeling; therefore, I disregarded the instruments. Immediately thereafter the airspeed began to increase and the wind was screaming around the enclosure. I pulled back on the stick, but it didn't help a bit. I could see I was going to have to check that airspeed soon. I could hear the plywood leading edges crackling as if they were ready to rip apart. And me without a parachute.

The air was beginning to get rough. I felt like I was in a right spin so I tried to recover. The ship didn't respond. I heard a loud crack on my left wing. I looked out expecting to see it pulling apart. It was still there, and seconds later it was pointing through a thin hole in the cloud. I could see Bear Mountain—a part of the Tehachipi range—spinning around far below. I was in a left spiral dive. No wonder I couldn't right the ship—I was helping it spiral-dive all the time. I brought the 'Baby' back into level flight only to be sucked back in the cloud again. This time I believed my instruments and flew by

(Continued at foot of next page)

New American Designs

'SCHWEIZER SGS 1-24.' Designed by the Schweizer Aircraft Corporation and Howard Burr, owned and flown by Burr. The dimensions and performance data as yet have not been released officially by the designers and owner. We know it is of all-metal construction, single-seater, 55 feet span, straight tapered wings; workmanship and finish are of the highest order. Whether this machine will be offered and at what price has not been announced by the Schweizer Aircraft Corporation. It was successfully flown by Burr in the 20th National and on its maiden cross-country trip attained a distance to a goal of 185 miles. It has the appearance of being a very high speed machine and under the most desirable conditions would undoubtedly cover great distances.

The 'Mitchell Sailplane.' Our information on this interesting new high performance single-seater is very sketchy indeed. Its designer and builder is Don Mitchell of California, who produced the ship for Dr. John B. Sawyer of El Cerrito. The machine was flown by Dr. Sawyer in the two-day contest of the Northern California Soaring Association, June 13th and 14th. In this contest Dr. Sawyer won the duration trophy flying this new Mitchell machine. Our information and photos of the ship come through the courtesy of Capt. E. H. Butts, Jr., b-50 MTD, Castle AFB, Merced, Calif. Capt. Ed says the machine has clean lines and shows generally good workmanship.

It is hoped that we will later be furnished with details of these highly interesting new ships. This should come after the designers have had time to make proper measurements of their machine's performances.

The Perl 'Penetrator'

The Perl 'Penetrator.' Design of Harry Perl and constructed by Perl and Ted Nelson at San Leandro, California. The following is reprinted from *Towline* the Official Bulletin of the Seattle Glider Council, Seattle, Washington. 'The long-awaited moment has finally come, and Harry Perl has hopped his slick new "Penetrator." This is the "supersonic" sailplane that he has designed, and which has been a-building in Ted Nelson's San Leandro shop for the last couple of years. On July 12th, it was taken up for several 6,000 feet tows from Hayward and Centerville airports. There were too many inversions around to allow accurate polars to be obtained, but Harry reports approximately 32 to 1 glide at 2/sec. sink.

The ship is a small single-seater, and looks somewhat lost when sitting on a TG-3 type trailer. Wings are strait taper, with 120 sq. feet of area and an aspect ratio of 17. They have an unusually smooth surface on the plywood D-section, as the wood is supported from the inside by a solid filling of Styrofoam blocks. Thanks to the stiffening effect of this material, known technically as Cellular Cellulose Acetate, the D-section skin is covered with 1/16 ins. mahogany-poplar plywood instead of a heavier gauge. The horizontal tail surface is one piece, and resembles that used on the two-place Nelson "Hummingbird."

In profile the "Penetrator" looks supersonic, thanks to the long needle nose and the swept-back fin and rudder. The moulded canopy fairs back into the hump that will house the Crosley engine and retractable propeller. The ship weighs 650 lbs., all-up now, and installation of the 25 h.p. engine can be expected to add another 120 lbs. without appreciably reducing the ship's performance as a sailplane."—*Soaring*.

TRIBUTE TO C. G. GREY

IN an address delivered by Marshal of the Royal Air Force, Lord Tedder, at the memorial service for Mr. C. G. Grey on January 13th, he said: 'I was a junior commander during those critical years when the Royal Air Force led by Sir Hugh Trenchard was fighting for its very existence—fighting against vested interests, outworn traditions, ignorance and prejudice. In that fight Charles Grey played a vital part. To me and those of my generation, officers and men, week by week, C.G., with his sparkling flow of wit and wisdom, provocation and encouragement, damning criticism and frank praise, was an unfailing source of inspiration. I feel we can never be too grateful for what Charles Grey did towards giving our young Service a real feeling of unity, a sense of its mission and role in the future—moral foundations without which it could never have met the tremendous responsibilities which were to rest on it in the Second War. We have indeed much to be grateful for, for the man himself—his personality, his courage, his integrity, his humanity and for what he did—for the Industry, for the Service and for his Country.'

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N.B.—One or more friends may be introduced and readers who do not wish to cut their copy may send addresses on plain paper.

'UP DRAFTS'—*(Continued from previous page)*

them instead of by the seat of my pants. I was in the cloud 15 minutes this time, although it seemed like an hour.

I finally drifted out the north side of the cloud. My altimeter read 10,000 feet, and from this altitude I had a difficult time getting my bearings, since the countryside was unfamiliar. I landed about an hour later. I slept very little that night when I realized how near that flight had been to being my last.

The next morning Frank Kelsey and Hawley Bowlus inspected the 'Baby' and found scarf joints on the pod's neck and the wings' leading edges had begun to pull loose. It was then I realized just how lucky I had been to get out of that flight alive. *Soaring*

LETTERS

SIR,

I would like to draw the attention of glider pilots everywhere to the following points, which arise out of the forthcoming World Championships.

First is limitation of entries by the country holding the event. Although this does not inconvenience Australia this year, it must handicap many other countries, and I believe that it is wrong in principle to limit each nation to an average of less than two gliders, especially when this covers two events—single and two-seaters.

More than twenty countries wanted to take part this year—but only forty gliders will be permitted to compete. This would be very comical if it wasn't so serious.

While it is apparent that five entries per nation may result in an unwieldy total, it also seems that a total of forty entries is unjustifiably restrictive. My own view is that no country should seek or be permitted to hold the event unless it can guarantee to accept a fair and representative field of entries.

I believe too, that countries with small and weak gliding movements should not be allotted the same number of entries as those with large numbers of highly qualified pilots. I would suggest that the pilot-standard required be raised much higher; this would help to solve the problem.

Another idea would be to proportion the entries to the number of Silver 'C's' held by each country, with a maximum of four entries to any one country. This idea could be based on the number of Gold 'C's', but that would be unfair to countries of small area; the Silver 'C' would give a fairer idea of relative national performances, while at the same time the Silver 'C' would not be a high enough qualification for the pilots chosen. In any country with a large land mass, modern gliders make a Silver C' so easy that it is no indication of skill (unless earned before 1939). Although it is virtually impossible to get a Gold 'C' in small countries, pilots from such countries should be required to show evidence of outstanding performance for the conditions in which they fly. No 'rabbit' should be permitted to clutter up a championship field; there is little enough room for those who have earned the right to compete.

Another important point, which has caused much difficulty in Australia each year. When the contest is held in the northern hemisphere, it is easy for all northern nations to name their pilots six months before the contest starts, but for southern nations this is quite impossible. In the north, it is mid-winter, the national contests are over, results are in, placings and performances for the year are known. In the south, it is mid-summer, national contests are in progress, results cannot be even guessed at, nobody knows who is likely to be the best selection.

The organisers of the World contest need to know how many entries there will be, or at least the approximate number. They do not need to know who the pilots are. I strongly urge that very great importance of this point be recognized and the requirement of the pilots' names be dropped altogether. If no Australian pilot goes to England this year, it will be almost entirely because of the sheer impossibility of complying with that useless requirement in time. If ever the event is held in Argentina or Australia or Africa, the northern nations will be trapped in the same way. All that the contest organisers are entitled to ask is that the pilots selected will be of whatever standard is required.

Another point which needs to be cleared up is whether the World contests are to determine the individual champion or the best nation. The present set-up is purely national, which allows Silver 'C' pilots from one country to exclude Diamond 'C' pilots from another. Perhaps it would be better to accept entries on a personal basis and drop the national angle altogether. What do you think?—**Fred Hoinville, Victoria, Australia.**

(*More letters on Page* 22)

GERMAN EDITION OF 'ON BEING A BIRD'

THE Aero-Verlag Hubert Zuerl, Munich 15, Hermann Lingg-Str. 9, editors of the well-known *Aero* monthly, have acquired from Messrs. Max Parrish & Co. the German translation rights on P. A. Will's book *On Being a Bird*, which will be out early this summer under the title *Dem Vogel gleich*.

SPRING FLIGHT

March-mad weather this,
A delirious wind cursing white-thatched clouds
across the brisk spare rain-washed plains.
A sailplane saunters on a hill slope,
Her wheeling white wings clear against the smeary sky.
An unkempt squall tumbles over the valley,
outraged grey-haired spinster dangling ragged rain lace,
scurries toward this beautiful trespasser.
Unseen air quakes seize and fling aloft her graceful form,
and curling clouds gnaw their tenebrous teeth
at this shapely intruder taken in their seething realm,
Clutching her, carrying her off, away . . .
eating open land and forest, meadows, cowering orchards,
villages and moors, railways and roads,
Wild valkyrie ride,
In the fifth,
The final, quintessential freedom,
Freedom from Man.

R. A. M.

MIDLAND GLIDING CLUB, LTD., Long Mynd, Church Stretton, Shropshire.

★ Summer Gliding Courses will be held as follows :—

May 29th—June 5th, July 3rd—10th, August 7th—14th, August 28th—September 4th.

Inclusive fee for each course of 8 days with accommodation, 4 meals per day and all flying, £15.

Full particulars from :—S. H. JONES, 9 Hagley Road West, Harborne, Birmingham, 17.

LETTERS *(contd.)*

SIR,

I was most interested in Mr. Reid's design for a twenty-five foot span glider. Like him, I believe in the prone position for the pilot, but in his sketch he seems to have ignored the major problem of such an installation.

He shows the pilot *in* the machine, but does not tell us how he *got* in. For weight economy, the main-spar should be straight across the fuselage, and since the skid rests on the ground, the only way the man can enter the cockpit is by wriggling in backwards, or possibly by slithering in sideways—both very difficult, and probably, neither meeting the A.R.B. 'Easy exit' clause. This is a problem at first sight trivial, but on closer study, very difficult, and I should be interested to hear Mr. Reid's comments!

M. SIMONS, Brendon Way, Bush Hill Park, Enfield, Middlesex.

DEAR SIR,

Please permit me to tell you that I cannot quite agree with some parts of your editorial in the Nov./Dec. 1953 issue.

There was said that everybody in my country in Europe knew and was proud to help, because the new glider clubs were going to be the nucleus of the new *Luftwaffe*. I am a real old-timer, participated as the youngest competitor in the first Rhoen-Contest of 1920, and saw German gliding grow in the years before Hitler, and after. I can only say that *before* 1933 only the romance and beauty of gliding attracted our youth. Official support came from the civilian-managed Ministry of Transport, and I remember very well how we wrote similar editorials trying in vain to make the Reichswehr (Army) bosses gliding minded. They remained sceptical about it until after 1933 Hitler took everything in his hands and militarized soaring too. The romantic attraction of soaring has remained the same, and our youth of to-day is following this attraction as we did. Any sinister plans behind this tendency would certainly not be known to everyone. I think it became quite clear in the past few years that lots of persuasion had to be used from part of the Western Powers to make our people give up their reluctance to re-arm. I understand that for the sake of argument you used these sentences, in order to stir up your authorities and gain more support for British Gliding. I wish you all the success for your campaign, only please do not sow new distrust, especially not in the year which is going to unite the world's best soaring pilots in your own country.

I want to leave it to you if you want to treat this letter as a private letter from me to you, as it is meant, or if you want to publish it as a letter to the Editor from me. I hope you will not mind my remarks, but since you yourself must have been attracted to soaring by its romance and beauty, you will understand my points.

PETER RIEDEL, Windhoek, South-West Africa.

SIR,

It is aggravating to read in the *Sailplane and Glider* of the apparent apathy and lack of support given to gliding in this country especially when one reads of advances being made abroad.

I am a regular reader who once tasted the thrill of gliding (ten years ago) and am determined that this permanent interest I have developed shall have an outlet. Unfortunately there is no gliding club within reasonable distance and I should be glad if you could supply me a list of names and addresses of all the gliding clubs in the country, so that when I change the locality of my employment I can bear them in mind.

There are probably thousands of really keen and would-be active enthusiasts in the under 30's, all over the country and it could be, in answer to your Editorial (November/December) from this bunch, that the future Wills', Stephenson's and Forbes' will be forthcoming.—**Wilfrid P. Thorington, Vint Crescent, Colchester, Essex.**

SIR,

On a recent trip to California, I was invited by Kirk Harris, who was a member of the U.S.A. 1952 gliding team in Spain, to accompany him to Elsinore. This is a fine site beside a lake with a backdrop of brown hills rising to around 8,000 ft. Elsinore is not a gliding club as we know it, nor is it a school like El Mirage. It is a private aerodrome where private glider pilots meet and fly together. These pilots are mostly young men who design, build, or re-design their Sailplanes and fly them. I had the pleasure of a flight with Milton Kuntz and with Larry Bell. With the former I travelled 25 miles out-and-return above the mountains. Unfortunately the 'L-K' was a 'flat top' and I was rather cramped. Larry also had cut down his 'L-K' but had added 'Blisters' so that there was room and I had a view of the back of his head in an inverted Goldfish bowl. The performance of these two machines was remarkable.

The Town Council of Elsinore is a great booster for the community and encouraged not only the glider meet but sponsored a banquet and, as a result, has secured the American National Contest this year for Elsinore.

When prizes were being distributed, one competitor, Dave Vonderahe, received his prize minus one shoe. It transpired that while flying his 'Bowlus Baby Albatross' during the competition, he had reached forward to retrieve an apple from the cockpit floor. Accidentally he bumped the wheel and sent the glider into a steep dive. At the same time he felt a terrific jerk on his safety belt and his water canteen and one of his shoes (they were off for comfort) went hurtling past his ear and out into the void.

The end of each flight was a spot landing contest, the winner ending with his glider's nose touching the small stake which marked the spot. One machine when landing hit a parked car but with no personal injury. My impression of the meet was one of tremendous good fellowship and more akin to the old days at Sutton Bank when gliding competition was more a group of pals having a good time than the sophisticated, serious tension of the modern competition. Is it still possible in Britain for a group of flyers to meet in friendly rivalry without having to beat world records in order to justify themselves?—**William Liddell, 44 Upper Queen Street, Belfast.**

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'KIRBY KITE 1.' Offers invited.—G. Thomas, 32, Edenpark Road, Birkenhead, Cheshire.

WANTED

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ROYAL AERO CLUB CERTIFICATES

(Issued under delegation by the B.G.A.) **JANUARY, 1954**

'B' CERTIFICATES

No.	*Name.*	*A.T.C. School or Gliding Club.*	*Date taken*
17455	G. M. Manuel	No. 166 G.S.	20.12.53
17456	R. C. Davies	No. 146 G.S.	27.12.53
17457	C. A. Andrews	No. 45 G.S.	10. 5.53
17458	T. A. Ryman	No. 122 G.S.	20.12.53
17459	J. W. G. Harnden	Midland G.C.	20.12.53
17460	D. Craig	No. 2 G S.	13.12.53
17461	H. J. Bradley	No. 42 G.S.	7.6.53
17462	G. E. P. Atwell	No. 49 G.S	18 10.53
17463	R. K. Dowsing	No. 104 G.S.	3. 5.53
17464	M. J. Reed	No. 146 G.S.	20.12.53
17465	B. Harrison	No. 42 G.S.	20.12.53
17466	D. A. Norris	R.A.F. G.S.A.	16. 8.53
17467	H. Schofield	No. 125 G.S.	20.12.53
17468	B. J. Willcocks	No. 125 G.S.	13.12 53
17469	D. J. Thomas	No. 68 G.S.	20.12.53
17470	J. C. Sturrock	No. 142 G.S.	29.11.53
17471	A. H. Ayres	No. 142 G.S.	22.11.53
17472	I. Purves	No. 2 G.S.	22.11.53
17473	A. Herd	No. 2 G.S.	27. 9.53
17474	R. R. Nelson	No. 2 G.S.	25.10.53
17475	D. T. Penney	No. 82 G.S.	13.12.53
17476	N. C. Ford	No. 89 G.S.	20.12.53
17477	C. J. Sharpe	No. 49 G.S.	20.12.53
17478	J H. Carter	No. 141 G.S.	29.11.53
17479	I. F. C. Leach	No. 87 G.S.	4.10.53
17480	R. G. Simpson	No. 2 G.S.	13.12.53
17481	D. Bailey	No. 89 G.S.	20.12.53
17482	T. Wishart	Shorts G.C.	24.12.53
17483	R. Eaton	Shorts G.C.	3. 1.54
17484	J. Gregg	Shorts G.C.	3. 1.54
17485	T. F. Robson	No. 31 G.S.	31. 5.53
17486	L. W. Slee	R.A.F. Halton	25.11.53
17487	K. R. Coates	No. 2 G.S.	10. 1.54
17488	G. T. Blaber	No. 186 G.S.	20.12.53
17489	J. Collins	No. 89 G.S.	6.12.53
17490	J. E. Harrison	No. 92 G.S.	18. 7.53
17492	B. H. Wigham	No. 89 G.S.	27.12.53
17493	K. M. Irving	No. 1 G.S.	6.12.53
17494	S. G. Scott	No. 5 G.S.	13.12.53
17495	P. J. Hill	No. 125 G.S.	10. 1.54
17496	A. M. McLaren	No. 166 G.S.	15. 8.53
17497	W. R. Bradford	London G.C.	24.12.53
17498	E. S. Oakes	No. 146 G.S.	13. 9.53
17499	A. S. Beer	No. 168 G.S.	25. 7.53
17500	A. L. Veitch	No. 2 G.S.	13.12.53
17501	J. Catton	No. 186 G.S.	12. 4.53
17502	S. Baker	No. 168 G.S.	14. 6.53
17503	G. Cochrane	No. 106 G.S	24. 1.54
17504	B. R. Cox	No. 123 G.S.	24. 1.54
17505	R. H. Rawlings	No. 123 G.S.	24. 1.54
17506	R. K. Lewis	No. 84 G.S.	17. 1.54
17507	B. Wright	No. 49 G.S.	27. 9.53
17508	V. A. Bull	No. 82 G.S.	17. 1.54
17509	R. W. Clark	No. 7 G.S.	7.12.53
17510	T. L. Hughes	Bristol G.C.	24. 1.54
17511	B. E. R. Strathen	No. 82 G.S.	24. 1.54
17512	N. A. Phelps Brown	No. 126 G.S.	24. 1.54
9737	H. E. Bridgens	No. 89 G.S.	27.12.53
10863	R. J. Crucefix	No. 122 G.S.	10. 9.53
15952	R. N. Gregg	Coventry G.C.	10. 1.54
16655	D. Rennison	Yorkshire G.C.	27. 9.53
17441	A. G. Clarkson	Kettering G. Synd.	20.12.53

'C' CERTIFICATES

6291	M. C. Fairman	London G.C.	24.12.53
12002	C. J. Dyne	No. 122 G.C.	19. 7.53
13938	J. N. Hamilton	Southdown G.C.	12.12.53

'C' CERTIFICATES—JANUARY—*continued*

No.	*Name.*	*A.T.C. School or Gliding Club.*	*Date taken.*
14447	V. T. Charman	R.A.F. Fassberg G.C.	26. 4.53
16104	B. Hoggart	No. 64 G.S.	24. 8.53
16164	K. Kelly	No. 24 G.S.	21. 8.53
16213	B. Watson	Derbyshire & Lancs.	10. 8.53
16214	H. Clarke	No. 64 G.S.	10. 8.53
16362	C. F. J. Watts	No. 84 G.S.	24. 5.53
16414	G. E. Ashton	London G.C.	20. 9.53
16447	E. A. Cornelius	No. 64 G.S.	1. 8.53
16458	R. H. J. Nunn	No. 64 G.S.	18. 8.53
16813	J. C. Taylor	Derbyshire & Lancs.	10. 1.54
17459	J. W. G. Harnden	Midland G.C.	27.12.53
17497	W. R. Bradford	London G.C.	24.12.53

SILVER 'C'

443	Peter John Holbrook	H.Q. 2nd T.A.F. G.C.	4. 8.53

FEBRUARY

'B' CERTIFICATES

No.	*Name.*	*A.T.C. School or Gliding Club.*	*Date taken*
17514	B. W. Greatorex	No. 49 G.S.	10. 1.54
17515	B. T. Collins	No. 141 G.S.	24. 1.54
17516	N. P. I. K. Brown	No. 104 G.S.	15. 8.52
17517	A. J. Smith	Oxford G.C.	23. 1.54
17518	D. G. Stephens	No. 92 G.S.	27. 9.53
17519	T. M. B. Eiloart	No. 126 G.S.	24. 1.54
17520	E. J. English	No. 123 G.S.	15. 8.53
17521	J. McRobert	No. 165 G.S.	18.10.53
17522	C. W. Nicolaou	No. 141 G.S.	24. 1.54
17524	P. Morris	No. 183 G.S.	31. 1.54
17525	J. V. Maude	No. 183 G.S.	31. 1.54
17526	B. Penny	No. 166 G.S.	6. 7.52
17527	A. A. H. Wright	R.A.F. Halton	19.10.50
17528	M. J. Walsby	No. 106 G.S.	17. 1.54
17529	C. Wilcox	No. 105 G.S.	23. 1.54
17530	G. A. Bushell	London G.C.	22.11.53
17531	A. J. Pike	Surrey G.C.	18. 9.53
17532	B. K. Gammond	No. 183 G.S.	31. 1.54
17533	B. P. Wood	R.A.F. Oldenburg G.C.	3. 1.54
17534	L. C. Warburton	No. 183 G.S.	13.12.53
17535	A. Crosbie	No. 1 G.S.	22.11.53
17536	B. C. Crosbie	No. 1 G.S.	22.11.53
17537	D. A. Smith	No. 44 G.S.	24. 1.54
17538	P. C. Walker	No. 49 G.S.	24. 1.54
17539	K. E. Wills	R.A.F. Celle G.C.	19. 4.53
17540	A. Dunnett	No. 102 G.S.	24. 1.54
17541	A. J. Colbert	No. 42 G.S.	31. 1.54
17542	P. J. Dennell	No. 45 G.S.	26. 4.53
17543	F. J. Goddard	Army G.C.	4. 7.53
17544	E. N. Graham	No. 2 G.S.	20.12.53
17545	J. A. Russell	No. 45 G.S.	24. 1.54
17546	E. J. Blackie	R.A.F. Sylt G.C.	26.12.53
17547	L. J. Tunnicliffe	No. 45 G.S.	24. 1.54
17548	I. D. Turner	No. 186 G.S.	9. 8.53
17549	A. Aldott	London G.C.	In Germany
17550	J. Morgan	No. 82 G.S.	14. 2.54
17551	J. W. J. Brotherston	No. 2 G.S.	20.12.53
17552	R. J. Carter	Oxford G.C.	14. 2.54
17553	G. G. Roberts	No. 186 G.S.	4.10.53
17554	A. Coathop	No. 186 G.S.	27. 9.53
17555	J. Dodd	No. 68 G.S.	14. 2.54
17556	D. N. Warwick	No. 203 G.S.	3. 1.54
17557	R. H. Segall	No. 142 G.S.	14. 2.54
17558	J. H. Kensit	No. 166 G.S.	20. 9.53
17559	T. R. Atkins	No. 186 G.S.	13. 9.53
17560	J. E. W. Friston	No. 102 G.S.	24. 1.54
17561	J. M. Nunn	No. 104 G.S.	12. 2.54
17562	G. W. Golding	No. 141 G.S.	21. 2.54
17563	J. B. Vidler	No. 7 Area G.C.	20. 2.54
17564	L. G. Watteau	No. 143 G.S.	17. 1.54
17565	E. G. Bown	No. 130 G.S.	25.10.53
17566	R. J. Luke	No. 82 G.S.	24. 1.54
17567	J. Watson	No. 92 G.S.	14. 2.54
17568	T. K. Wilson	No. 2 G.S.	7. 2.54
17569	L. J. Fennell	Handley Page G.C.	20. 2.54
17570	J. P. Y. Ormiston	No. 2 G.S.	13.12.53
17571	W. G. Winder	No. 45 G.S.	7. 8.53
17572	J. A. Abbott	R.A.F. Bruggen G.C.	14. 2.54
17573	Pamela M. Birds	Surrey G.C.	14. 2.54
17574	M. J. Dyde	No. 166 G.S.	8. 6.52
5759	G. S. Flory	No. 89 G.S.	28.11.53
10430	D. G. Grainger	No. 48 G.S.	31. 1.54
12125	W. J. Wight	R.A.F. Bruggen G.C.	7. 2.54
13173	J. P. Merriman	No. 48 G.S.	24. 1.54
14988	S. D. Kay	R.A.F. Bruggen G.C.	14. 2.54
17513	G. G. Moss	R.A.F. Bruggen G.C.	14. 2.54

'C' CERTIFICATES

15888	B. Pethick	R.A.F. Sylt G.C.	1. 6.53
16320	S. Fryer	No. 64 Group	16. 8.53
16502	S. L. Smith	No. 64 Group	30. 8.53
16555	A. N. Bratt	Coventry G.C.	18.10.53
17527	A. A. H. Wright	R.A.F. Halton	10.10.52
17543	F. J. Goddard	Army G.C.	3.10.53
17549	A. Aldott	London G.C.	20. 1.54

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