Sailplane and GLIDING

2/6

AUGUST 1956





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SAILPLANE AND GLIDING

OFFICIAL ORGAN OF THE BRITISH GLIDING ASSOCIATION

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COVER PHOTOGRAPH.—Members of the British team and their equipment at St. Yan for the World Championships. Nick Goodhart is in front of the wing and Frank Foster beside the cockpit of the Slingsby T-42B "Eagle" with which they won the Two-seater Championship. Behind are the two Skylark IIIs flown by Philip Wills (No. 7) and Geoffrey Stephenson (No. 48), and beyond, on the right. their trailers and Standard Estate cars.—Photo by Betsy Woodward.

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1956 WORLD GLIDING CHAMPIONSHIP RESULTS

Single-Seater Class

Pilot	*Nation*	*Sailplane*	*Placings after* 30/6	2/7	3/7	5/7	6/7	9/7	*Final Place*	*Points*
P. B. MacCready	United States	Bréguet 901	2	1	1	1	1	1	1	4,891
L. V. Juez	Spain	Sky	10	3	5	2	2	3	2	3,806
— Gorzelak	Poland	Jaskolka	3	7	6	3	4	2	3	3,576
— Saradic	Yugoslavia	Meteor	20	4	3	4	3	4	4	3,435
W. S. Ivans	United States	Olympia IV	12	2	2	5	5	5	5	3,289
G. H. Stephenson	Great Britain	Skylark III	24	6	14	22	16	12	6	3,142
M. Ara	Spain	Sky	16	27	12	7	8	8	7	3,097
H. Nietlispach	Switzerland	Elfe PM-3	28	30	15	19	18	15	8	3,081
Hanna Reitsch	Germany	Zugvogel	9	10	8	8	9	6	9	3,042
P. A. Wills	Great Britain	Skylark III	36	13	7	12	12	16	10	3,031
J. Ortner	Argentina	Skylark III	14	12	16	9	7	7	11	2,977
P. A. Persson	Sweden	Weihe	6	24	25	13	13	11	12	2,887
M. Bar	Israel	Air 102	22	5	4	6	6	10	13	2,875
E. Dommisse	South Africa	Bréguet 901	29	22	23	27	23	18	14	2,866
W. Toutenhoofd	Holland	Skylark III	18	28	21	20	11	19	15	2,775
G. Munch	Brazil	Barros Neiva I	6	10	11	10	10	9	16	2,658
J. Kumpost	Czechoslovakia	VSM 40 Demant	8	17	20	18	17	13	17	2,580
G. Pierre	France	Bréguet 901	17	9	10	16	15	14	18	2,527
J. D'Otreppe	Belgium	Air 102	30	29	28	28	25	21	19	2,338
A. Feddersen	Denmark	Olympia	33	37	33	17	24	26	20	2,337
A. Wiethüchter	Germany	HKS 3	43	42	39	25	19	20	21	2,268
L. Harrer	Austria	Musger 23	25	8	9	15	20	24	22	2,255
M. Arbajter	Yugoslavia	Orao 2C	19	16	29	11	14	17	23	2,169
T. Gora	Poland	Jaskolka	10	14	18	24	22	23	24	2,040
L. Kalmar	Hungary	ZO 8 Siraly	5	15	17	14	20	22	25	2,034
O. P. Koch	Holland	Skylark III	39	33	36	39	35	28	26	2,029
J. Lacheny	France	Bréguet 901	15	20	19	23	27	25	27	1,983
F. H. Brame	Canada	Geier 2	20	19	22	26	26	27	28	1,889
J. Cuadrado	Argentina	Skylark III	1	17	13	21	28	36	29	1,880
I. Silesmo	Sweden	Bréguet 901	4	23	30	32	34	29	30	1,810
I. Oda	Japan	Bréguet 901	23	25	26	30	29	31	31	1,671
N. Dubs	Switzerland	WLM II	38	32	35	34	32	33	32	1,663
J. Hollan	Czechoslovakia	VSM 40 Demant	13	21	24	28	30	30	33	1,509
S. H. Georgeson	New Zealand	Air 102	32	36	38	33	33	32	34	1,396
M. Cartigny	Belgium	Jaskolka	26	26	32	36	38	34	35	1,393
H. Resch	Austria	Musger 23	34	34	27	31	31	35	36	1,378
G. Mezo	Hungary	Z 08 Siraly	44	44	41	41	36	37	37	1,285
J. W. Ames	Canada	Bréguet 901	42	38	34	37	40	38	38	1,265
J. Heinonen	Finland	Air 102	31	35	37	38	41	40	39	984
J. J. Jalkanen	Finland	Pik 3	35	39	40	40	39	39	40	961
C. Uygun	Turkey	Air 102	36	40	43	43	43	42	41	903
A. D. Thomsen	Denmark	Olympia	27	31	31	35	37	41	42	836
A. W. V. Da Rosa	Brazil	Barros Neiva 1	41	41	42	42	42	43	43	526
G. A. Ferrari	Italy	Eolo 3V.1	45	44	44	44	44	44	44	176
Edibe Subasi	Turkey	Weihe	40	43	45	45	45	45	45	41



Dr. Paul MacCready, the new World Gliding Champion, who scored 4,891 points out of a possible 5,600 in the single-seater class, flying a Breguet 901.

Two-Seater Class

Pilots	*Nation*	*Sailplane*	*Placings after* 30/6	2/7	3/7	5/7	6/7	9/7	*Final Place*	*Points*
H. C. N. Goodhart F. Foster	Great Britain	T-42B Eagle	8	3	1	3	1	1	1	3,828
Z. Rain V. Stepanovic	Yugoslavia	Kosava	3	6	5	5	2	3	2	3,187
J. Sadoux R. Bazet	Argentina	Condor 4	6	8	9	6	6	4	3	2,748
K. Trager J. Miller	United States	Schweizer 2-25	5	1	2	1	4	5	4	2,684
G. Rousselet L. Trubert	France	Bréguet 904	4	2	3	4	5	6	5	2,602
J. Nowotarsky — Sandauer	Poland	Bocian	2	4	4	2	3	2	6	2,404
A. Yaykin Z. Argun	Turkey	Rhönschwalbe	1	5	6	7	8	7	7	1,336
A. Nuñez F. Vicent	Spain	Kranich III	7	7	8	9	9	8	8	1,058
E. G. Haase — Heinzel	Germany	HKS 2	10	11	6	7	7	9	9	1,057
H. O. Tandefelt O. A. Rautio	Finland	Bergfalke 2	12	9	12	12	12	13	10	795
R. Brigliadori — Fanoli	Italy	Canguro	9	10	11	11	11	10	11	752
J. Sebesta M. Janek	Czechoslovakia	L 13 Blanik	13	11	10	10	10	11	12	364
H. Ostermeyer F. Angerer	Austria	Musger 19C	11	11	13	13	13	12	13	331

THE 1956 WORLD GLIDING CHAMPIONSHIPS

by Philip Wills

THE French did it: they held at St. Yan the best Championships the world has yet seen. They had the weather—extremely varied but all the more interesting for that; they had the equipment, on a scale which made British mouths water; and to this they added the right spirit in full measure and running over. They knew we had come to fly, and they saw we were given tasks, and sometimes very difficult tasks, on every possible flying day. They ran the meeting with just the right mixture of discipline and good hunour. The result was a Championship which I can hardly hope to see bettered in my lifetime.

In this analysis I will again follow the general lay-out of my previous efforts after each of the last five Internationals.

Aircraft.—A quite extraordinary conclusion is to be drawn from St. Yan. Generally speaking, competing aircraft fell clearly into two separate classes, which one might call the "exotic" and the "practical". The first, involving great refinements of design, materials and constructional methods, were mainly intended as competition aircraft built more or less regardless of cost; the most extravagant dream at St. Yan would have been cheap at £20,000.

These aircraft were flying in direct competition with the second class, which were more or less built down to a price which the ordinary man or unsubsidised club might be able to afford.

Machines built for performance, regardless of cost, versus machines built to a price should make a poor contest. Yet only three of these aircraft appeared (in 1st, 4th and 8th places) in the first 13 places in the single-seater class, and the two-seater class was won—and handsomely won—in the T-42 which was popularly called the "soap-box", so plain did it look in comparison with some of its sleek competitors. And probably one could buy five T-42's for the price of one of the exotics. Whilst Juez brought the dear old Sky to second place, beating all comers except the redoubtable MacCready!

Where have "exotic" designers failed? Generally speaking, I would say that they have gone too far in chasing "penetration", and these advanced aircraft have lost the ability to circle efficiently in small, or even in averaged-sized thermals. Personally I would also bet that in the vital field of handling and stability characteristics our British aircraft were far superior to some others many times their price.

There were still far too many gliders at St. Yan which had never been spun, and far too many without speed-limiting brakes. Another factor is the use of structural methods and materials which permit rapid repairs should a pilot have a minor accident. Such things are more important than retractable skids or variable camber devices.

In the first 11 places were 6 British aircraft, and one each German, Polish, French, Swiss and Yugoslav, the last three probably costing from 3 to 6 times as much as any of the other eight. An extraordinary result, and one of which we can feel proud indeed, for one can say without exaggeration that in 1956 Britain still has the best all-round sailplanes.

Equipment.—Once again, Standard cars and Pye radio saw to it that our retrieving teams arrived, as a matter of course, ahead of the others. On my two long flights, to Cuers and St. Auban, my trailer rolled in two hours ahead of the next. For this my gratitude must also go out to my untiring team, but even they could not have done it without the right machinery.

My Cook compass again proved itself by enabling me invariably to come out of a circle in cloud straight onto the desired course, and at one crucial and rather nerve-racking moment enabled me to gain 1,000 ft. slope-soaring in cloud over a 3,000 ft. ridge, which got me over a rotten spot (and under a perfectly horrid rotor-cloud) which brought many aircraft down and led Bill Ivans and the Olympia IV to their nasty accident. I saw one aircraft actually fitted with an electrical directional gyro, a vast and expensive machine to do the same job as the Cook compass does. Frank Irving's new prototype total-energy variometer (and Nick Goodhart's similar one) worked splendidly, and is undoubtedly the best

solution to date, although unfortunately it is bound to be relatively expensive when it shortly comes on the market. Normalair oxygen is better than any previous equipment I have seen.

Pilotage.—Another curious result: the winners in both classes pulled out away of everyone else. MacCready topped Juez by no less than 1085 points, after which the next ten places fell within a spread of less than 800 points; Goodhart was 640 points ahead of Rain.

There is no doubt that MacCready is a quite exceptional man, and no one has more deserved his victory. He was flying with a machine-like consistency which was most impressive, not for the top place in each task, but to win the Championships as a whole. The staggering thing is that he never flies a sailplane at all between Championships, and where this gets one I simple do not know. To get into a strange aircraft after two years' absence from the game and put up a show like he did seems hardly possible.

The performance of the Goodhart-Foster combination was equally impressive. To hear them at work on the radio made one realise the advantages that a good two-seater team can achieve over a solo pilot, however able. There are to be no more two-seater championships as such, but this last one has produced a memorable and instructive result indeed.

Paul's lead in the single-seater class was so impressive that one might feel that his chance of being the first man in history to pull off the double win in 1958 is indeed a strong one. But Nick's performance was of the same calibre.

As regards the general results, as I said in my 1954 report, I think the chances of the next World Champion being found in the first 25% of the list of placings in the previous one are strong, so I do not think our placings in the single-seater class were unsatisfactory. Here I am writing as an analyst, not as an individual pilot who felt very blue indeed after one or two bad days.

As an analyst, I would say that to have won the two-seater class by a handsome margin and to have achieved 6th and 10th places out of 45 in the single-seater class is a good record. As a pilot, what would I give for a chance to fly the first and fourth tasks again!

Organisation.—Quite excellent. The met. was superb, the task-getting showed genius, the launching of nearly 60 aircraft in 28 minutes, absolutely safely, was beyond praise.



Philip Wills, World Gliding Champion 1952-54, and the only pilot to have flown in every international gliding contest, is here seen in his Skylark III at St. Yan.

Marking system.—The gradual development by C.V.S.M. of the basic marking system has clearly reached a stage where marking systems and tasks are now pretty satisfactory, and results achieved were very good. The system now copes satisfactorily with very bad weather as well as very good.

Someone had been too clever by half with the order-of-take-off system, and laid down that it should depend on the previous day's results. This meant (a) that, properly speaking, no flying could start until everyone had come back and handed in their landing certificates, and (b) that the wretched marking committee had to sit up all night and every night to have the results out in time. With launching as rapid as it was, it didn't in fact matter a hoot where one was in the launching order anyway.

The idea of dropping each pilot's worst day's marks has been deleted, but I am not sure whether it is still permissive if the organising nation wants it. I believe it would have been a good one at St. Yan, as on at least one day certain pilots had no chance to catch a big storm that came over and blotted out the field, so scored nothing whilst the rest of us were disporting ourselves up to 20,000 ft. and over.

The Future.—The main worry about the

future is the possibility that no nation will find itself able to offer the necessary facilities to hold the 1958 Championships. In Europe, Poland and Yugoslavia might be possibles; elsewhere the United States seem the only chance. But who could afford to get there, unless they can raise far more official help than anyone has so far dreamed of? The F.A.I. will shortly be sending out invitations, and I do indeed hope we shall get some interesting offers to take on what has become so gigantic a task.

The "restricted class" which it is hoped will take the place of the now defunct two-seater class in future World Championships is not, I imagine, likely to be ready until 1960, for even if the formulae and regulations are agreed in the fairly immediate future it is likely to take all of two years for the designers and constructors of the various nations to produce a sufficient number of qualifying types to make a contest possible. But progress is being made, and eventually I believe the restricted class will become more important for the development of gliding than the open one.

THE O.S.T.I.V. CONGRESS

by Alan H. Yates

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THE international scientific and technical organization of the gliding movement, OSTIV, holds a Congress at the same time and place as the World Championships. Many delegates come especially to attend the Congress, but others who are concerned in the Championships as meteorologists, sailplane designers and even pilots and crews, are able to contribute papers and join in the discussions. The VIth Congress of OSTIV was held at St. Yan, France, from July 6th to 13th, 1956. Two halls were available in the village, half a mile from the airfield, and on several days papers on meteorology and technical matters were being presented simultaneously.

Meteorology

The meteorological contributions covered three main subjects—jet stream and squall lines, thermal convection and atmospheric waves. In each section, papers were presented by professional meteorologists developing the theory of the phenomena and presenting observations by the usual tools, the synoptic charts and soundings. The contributions of the glider pilots—often the only direct experimental evidence available—were invaluable. Dr. Paul MacCready, who became World Gliding Champion during the week and is a professional meteorologist as well as a pilot, presented a paper on "Research and the transport of freezing nuclei and on atmospheric turbulence by means of a sailplane." Observations by amateur meteorologist-pilots were equally well received. Hanna Reitsch described a flight beneath a powerful squall-line in Germany, and Philip Wills his flight up to 30,000 feet in the atmospheric wave over Mount Cook in New Zealand. Betsy Woodward, of the U.S.A., holder of the world height record of over 40,000 ft. for women flying gliders, is also a meteorologist, working at Imperial College, London. She described experimental sailplane flights through cumulus clouds in tests to throw light on the structure of these clouds. Similar tests in the United States, in which powered aircraft, equipped with sensitive and very responsive thermometers and hygrometers, had been used, were described in a paper by Dr. Cunningham.

Dr. Joachim Kuettner, U.S.A., presented another film showing the work of the Sierra Wave Project in California. This magnificent enterprise, now concluded, has revealed the extent of the extreme turbulence in certain wave systems and the very large up and down motions in these waves. Flight transverses by B.29 and B.47 aeroplanes had shown vertical deflections of the air of more than 5,000 ft. A pilot unappreciative of the situation might easily find a mountain top in his path in such conditions. and the air safety organizations have rightly publicised these findings. To the glider pilot, of course, this free power supply is welcome—provided that he knows enough to avoid the dangerous parts of the wave.

A description of a smaller project at St. Auban in the French Alps was given by

M. Gerbier, of the French S.F.A.S.A. It was appropriate that several of the pilots competing in the World Championships reached heights of over ten thousand feet above St. Auban in these very waves—a happy marriage of theory and practice.

Technical

On the technical side, contributions covered a wide range. There were specialist papers on metal construction, boundary layer suction, total energy variometers (Frank Irving), short wave radio and training methods in Britain (Ann Welch). Wider interest was aroused by papers on the development of certain sailplanes. By chance, the two speakers on this subject were Mr. Fred Slingsby, whose T-42B Eagle won the two-seater championship and whose Sky and Skylark III sailplanes flew so well in the Championship, and MM. Cayla and Cartier of Bréguet, who were responsible for the Bréguet 901, one of which was flown by Paul MacCready, the new World Single-Seater Champion.

A joint session with the meteorologists was held to discuss the progress toward a stratospheric sailplane. Many sailplanes have now exceeded 40,000 feet and have there found upcurrents of more than 1,000 feet a minute. There is some evidence that upcurrents may be strong enough to sustain a glider at very much greater heights—in fact, the low wing loading of the sailplane may enable it to exceed the present height record of powered aeroplanes. The next step is clearly a pressurised cabin, and several design studies have been made; at least one pressurised sailplane is under construction.

O.S.T.I.V. Publications

The Congress papers will be published in due course. Most of the meteorological papers will be published and the specialist meteorological journals, although off-prints, will be available from OSTIV. The technical papers have hitherto been printed and published in one volume by OSTIV. This process has taken about two years, and the papers read at Buxton at the Vth Congress in 1954 are only recently available (price 9s. from British Gliding Association, 19 Park Lane, London, W.1).

In future, the technical papers are to be published in the official organ of OSTIV—*Swiss Aero Revue*. Papers in French or German will appear in the general text, but there is also to be a monthly, four-page insert called "OSTIV News". This will contain the text of papers written in English and will also provide a regular news-letter from OSTIV. The editor is Betsy Woodward, Imperial College, London, S.W.7., and "OSTIV News" will regularly present a bibliography and summaries of papers of interest to gliding published all over the world. OSTIV will eventually bind the off-prints to form a record of the Congress.

O.S.T.I.V. Board

The Officers and Board, the governing body of OSTIV, were elected as follows:—

President: L. A. de Lange (Holland).

Vice-President: Dr. W. Eichenberger (Switzerland).

Board: M. Agesilas (France), Dipl. Ing. Boris Cijan (Yugoslavia), Wolf Hirth (Germany), Dr. W. B. Klemperer (U.S.A.), Alan Yates (Great Britain).

The Secretary is C. Slikkerveer (Holland) at Kanaalweg 3, The Hague, Holland.

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WORLD CHAMPIONSHIPS AT ST. YAN

SAINT YAN is most easily found on a map at the half-way point on a line joining Nevers with Lyon. It is 35 miles N.E. of Vichy, the nearest towns are Digoin and Paray-le-Monial, and the areodrome is between St. Yan village and the Loire.

Most of the British party arrived on Sunday, June 24th, to find all but a few of the other national teams there, too. Of the absentees, most anxiety was felt about the Poles, who had been stopped at their own frontier on a previous occasion, but they arrived before the practice period was over. Countries whose representatives failed to turn up at all were Australia, with two entries, and the Saar, with one, while Egypt had withdrawn its entry earlier. Those represented for the first time at an international contest were Hungary, Japan, New Zealand and Turkey; and for the first time since 1937, Poland and Czechoslovakia.

Following are some particulars of the national teams and aircraft taking part, in alphabetical order:—

ARGENTINA.—José Cuadrado and José Ortner, who flew a Sky at the two previous championships, had originally entered a Sky and an Air-102, respectively, but Slingsby managed to produce a couple of Skylark IIIs for them just in time to be collected at Dieppe. Their two-seater was a German Condor IV, as at Camphill.

AUSTRIA.—Single-seaters, flown by Leopold Harrer and Hans Resch, were of a new type, Musger Mg-23, designed for economic production, though a more refined "competition" model is to be produced later with laminar-flow wing and V tail. Span is 16.4 m. (53.8 ft.); aspect ratio 20; wing loading 22 kg./sq.m. (4.51 lb./sq.ft.); best gliding angle with semi-laminar wing, 1 in 29-30 at 53 m.p.h. Materials are conventional, but it is hoped to include foam eventually. The two-seater Mg 19c differs from the 19b used at Camphill in having a higher-speed wing section.

BELGIUM.—Jean D'Otreppe de Bouvette flew a French Air-102 and Marcel Cartigny a Jaskolka from Poland. Both have the Gold C distance leg and a diamond.

BRAZIL.—J. C. Barros-Neiva produced two sailplanes of his design BN-1 for George Munch (who competed in 1952) and A. W. A. Da Rosa, who was out of action after the 5th day; it was designed for economic production.

CANADA used two borrowed machines. Frank Brame, who last year completed his Gold C and became Canadian soaring champion, was loaned a Geier II by the Allgeier firm of Allgau; its fuselage was that of the Geier I flown in the German contest last year, but it had new wings with an NACA section instead of the previous Göttingen one. He found the fuselage cramped for his large frame and had to move the instrument board out of the way of his knees, but said it flew well. Jack Ames was loaned a Bréguet 901. A two-seater Bergfalke had also been entered for Al Pow and G. L. Oates to fly, but it failed to materialize in time.

CZECHOSLOVAKIA entered two single-seaters of VSM-40 Demant type, built of wood, with wings of remarkable smoothness after six years of use, and all the aids such as flaps and retractable wheels; also an all-metal two-seater, the L-13 Blanik, which was badly damaged on the way through Germany and had to go home for repairs before being finally brought by aero-tow. Blanik's designer, Karel Dlouhy, claims only 30 per cent laminar flow over the wing although the spar is at 40 per cent chord; span is 16.2 m. (53.15 ft.), area 205 sq. ft., aspect ratio 13.5 and all-up weight 500 kg. (1,102 lb.); it has Fowler flaps.

DENMARK brought two Olympias of German Meise type, smaller in span than anything else but the Pik-3, yet with one of them Feddersen finished less than half-way down the list, and on two days he was one of only seven or eight to complete the set course.

FINLAND, like the U.S.A., got its aircraft from three different countries: a German Bergfalke two-seater, a French Air-102, and a home-produced PIK-3 with 13 metres span (42 ft. 8 in.), the smallest machine in the contest.

FRANCE had a complete Bréguet outfit—two 901's and a 904. Compared with the 901 of 56.8 ft. span, the 904 two-seater is a stepped-up version with 65.6 ft. span (20 metres); it has the same minimum sink (0.65 m. = 2 ft. 2 in. per sec.) but at faster speed and therefore a better gliding angle (1 in 37 against 35). Its wing loading (31 kg./sq. m. = 6.35 lb./sq. ft.) was only equalled by that of the Yugoslav Meteor and exceeded by the Swiss Elfe. Pilots were Gérard Pierre, World Champion of 1954; Jean Lacheny, 100th French Gold C, who replaced René Fonteilles; Guy Rousselet, who had just put up a world's speed record for the 200-km. triangle at 77 km./h.; and Louis Trubert, in the back seat as at Camphill.

GERMANY.—Hanna Reitsch had the Zugvogel with which she won last year's German contest; but it had undergone several alterations, many of which she did not like and tried to have eliminated. Designed for laminar flow, it has the same span and practically the same wing-loading as the Polish Jaskolka (52½ ft., 5 lb./sq. ft.); but its best gliding angle is claimed as 1 in 34 against the Jaskolka's 1 in 27, though at 2 km./h. less speed. For the rest, the Germans brought their entire stock of HKS sailplanes: No. 3 for Wiethuchter, No. 2 for the two-seater class, and No. 1 as a spare. We were told by Heinz Kensche (who is the middle letter) that he does not contemplate building any more.

GREAT BRITAIN'S pilots need no introduction here, nor does Slingsby, who supplied all their aircraft. But it is interesting to see, in a table of data published by OSTIV, that the T-42B is given a best gliding angle (1 in 31) superior to those of the Schweizer 2-25, Blanik and Bocian, equal to that of the Kranich III, but inferior to those of the Kosava and Bréguet 904, while it has a lower (i.e., better) minimum sink, at 0.61 m./s. (2.0 ft./sec.) than any of the other six. Also, the difference between its speed for best gliding angle and for minimum sink is only 2 km./h., compared with 14 and 15 km./h. for the Kosava and Bréguet, which it managed to beat nevertheless.

HOLLAND'S two Skylark III's were made specially to A.R.B. (not B.G.A.) requirements and had, therefore, to be test-flown by A. W. Bedford at Whitsun; they were delivered by air in early June.

HUNGARY, taking part for the first time, brought two single-seaters with a type name meaning "Gull"; we were unable to gather data about them.



Geoffrey Stephenson, his wife Beryl, and his Skylark III.

ISRAEL had entered two pilots, but only one, Menachem Bar, could obtain the loan of a sailplane; he had finished 12th at Camphill in 1954 with the Midland Club's Olympia.

ITALY was unfortunate. Mantelli was unable to come this time; and the other single-seater pilot, Ferrari, had not time to get used to the new Eolo and was unable to do much with it. Then the "Super Canguro CV-V6" had been damaged in transport a fortnight before the meeting, so an ordinary Canguro had to take its place in the two-seater class.

JAPAN was represented for the first time by Isamu Oda, who obtained his Silver C last February by putting up a national distance record of 56 miles, which he easily beat in France. According to a colleague of his, thermals in Japan are poor, and almost non-existent in the summer.

NEW ZEALAND was also a first-time entrant, with S. H. "Dick" Georgeson, whose feats in the famous standing wave which stretches all along South Island in the lee of the Southern Alps are familiar to our readers.

POLAND has been among the world's leading gliding nations for over twenty years. The Jaskolka is a standard type, reported as selling for £1,250, including flaps, slotted ailerons, sliding hood, retractable wheel and water ballast. The two-seater Bocian, of 18 m. span (59 ft.), has a best gliding angle of 1 in 26 and minimum sink 0.8 m. (2.6 ft.) per sec.

SOUTH AFRICA was represented only by Boet Dommisse, holder of the world's

two-seater goal-and-return record of 271 miles; Helli Lasch turned up during the meeting, but without the Jaskolka which he had entered.

SPAIN's four pilots are all familiar by name—or rather, they become so at each Championship after the provisional list, which usually gives them the wrong surnames, has been corrected. (The Spanish custom is to add the mother's surname when writing out one's name in full.) The single-seater pilots achieved remarkable success with the good old Sky, which, according to OSTIV figures, has two inches per sec. more sink and 5.4 per cent less wing-loading than the Skylark III, with gliding angle and aspect ratio both less by about 2.

SWEDEN sent the trusty old Weihe with "Pelle" Persson, the first post-war champion, to fly it yet again. Irve Silesmo, winner of the last Swedish championships, had removed his beard and borrowed a Bréguet.

SWITZERLAND had Niklaus Dubs with the WLM-II, which was too new for success at Camphill but has now been cured of its teething troubles; and Hans Nietlispach with the latest version of the remarkable laminar-flow Elfe. This Elfe was the most heavily-loaded machine in the contest with 33.6 kg./sq. m. (6.86 lb./sq. ft.) and had to be flown at 100 km./h. (62 m.p.h.) to achieve its best gliding angle of 1 in 39½. Its span is 16 m. (52½ ft.), aspect ratio 19½, and maximum wing thickness 13 per cent of chord.

TURKEY was a newcomer of whom no-one had the least idea what to expect, and everyone was rather staggered at the opening performance of the two-seater, a German Ka-2 Rhönschwalbe from the Poppenhausen factory. Both its pilots started gliding in 1937; Avni Yaykin is Director of a gliding school and Ziya Argun a parachute instructor. Cemal Uygun, who flew an Air-102, is Assistant Director of the Turkish flying organization; and Mrs. Edibe Subasi, aged 36, widow of an airline captain, unfortunately put her Weihe out of action early in the contest after making 65 miles on the first day.

UNITED STATES.—Paul MacCready's out-



The Yugoslav "Meteor", the last word in sailplane design, and its pilot, Mr. Saradic, who won the race to St. Etienne on July 2nd and finished fourth in the single-seater class.

standing achievement is described later, but here it may be said that he had not flown a sailplane since the last Championships and had never before handled a Bréguet. "Bill" Ivans, holder of the world's single-seater height record (42,100 ft.), called at Lasham to be initiated into the Olympia IV before going to France; according to a news bulletin, "il n'a eu aucun accident," but unfortunately this record was broken on the last day. The same two-seater as at Camphill was brought over, but with different pilots, Kempes Trager and J. Miller, who twice got it into leading place.

YUGOSLAVIA had Maks Arbajter flying the Orao 2C as at Camphill, but Bozidar Komac, who was down to fly a Kosava solo, was displaced to make room for the new Meteor and its test pilot, Saradic.

This remarkable new machine, to quote Alan Yates, "was designed by Obad, Cijan and Mazonec and sponsored jointly by the Yugoslav Government and Aero Club. The construction is all in metal, and the magnificent wing finish indicates the use of large and expensive jigs. The large landing wheel is retractable, as is the front skid. The Meteor wing section is laminar, 16½ per cent thick with a 1½° washout, and is disturbed only by dive-brakes fitted well towards the trailing edge and by full-span flaps of small chord. The chord of the flap proper varies from 4 to 6 inches and of the aileron from 6 to 9 inches. The basic wing-section is slightly cambered, but a downward flap deflection increases the camber for circling and for landing. For very high speed flying, even the basic camber leads to high drag, and a small *upward* deflection is used to improve performance. The elevator and rudder both have horn balances, and longitudinal trimming is obtained by a variable-incidence tailplane. Two Meteor prototypes have been built, and the measured performance shows a maximum glide ratio of more than 40. The cost is, however, at least three times that of the British machines."

Zvonimir Rain, two-seater World Champion at Camphill, had V. Stepanovic this time as second pilot in the Kosava, which found the second T-42 a tougher antagonist than the first.

Practice Period

Most of the British team arrived on Sunday, June 24th, after a night at Barbizon, bringing Stephenson's Skylark, Goodhart and Foster's T-42, their pilots and crews, and Ann Welch, the team manager—all by road except Lorne Welch, who flew to St. Yan in the Goodhart family Auster. Philip Wills's party and Skylark had come two days earlier.

On Monday, June 25th, after early morning drizzle had cleared off, thirteen tugs, mainly Stampes, got to work, and soon opinions could be heard on the local thermals: Wills thought they were much better to the east away from the river, and Haase was distressed at the sight of so much lush greenery which made for poor thermals in all the district around, in spite of the sandy soil. The scarcity of local thermals seemed to be confirmed when at 5 p.m. eighteen pilots were seen sharing the same one.

We were flattered to see that the score card issued with the programme was an enlarged copy of the one this magazine produced for the previous championships at Camphill; and the programme, too, included many of the same features as ours, though in the list of participants at previous international contests all the Austrians had been translated into Australians.

On Tuesday, June 26th, pilots were invited to rehearse a race round a triangle: either a 100-kilometre one via Lapalisse to the S.W. and Roanne to the S., or 200 kilometres via Moulins to the west and Autun to the north. At once all sorts of people started breaking their own national records. Goodhart and Foster beat the British two-seater record for a 100-km. triangle by going round at 22.8 m.p.h.; but the question whether Wills, who was with them at each turning point, could officially observe them there, did not arise, because in any case they had not declared their route beforehand. Stephenson did it the other way round, but nearly came unstuck when at only 200 ft. above Roanne airfield.

Ivans in the Olympia IV completed the 200-km. triangle in 5 hrs. 35 mins., and Ames, who took 8 hours trying to get round it, missed beating the Canadian duration record by only half an hour.

Wednesday's triangles were the same size but over different routes, and several national records were set up in a very light wind. Wills, however, stuck to the Moulins-Autun route and broke the British record by going round it (actually 203 km.) in 4 hrs. 16 mins. Other national records for the 200-kilometre triangle were set up for



L. V. Juez, of Spain, 1952

World Champion in the two-seater class, with the Slingsby Sky in which he finished second in the single-seater class in 1956.

Holland by Toutenhoofd in 4 hrs. 49 mins. (Koch accompanied him but did not photograph the turning-points), for Austria by Harrer in 6 hrs. 42 mins., for Switzerland by Dubs in a little over 4 hours; and Rousselet and Trubert put up the first French record of the kind for two-seaters with 32.2 m.p.h., which was 9 m.p.h. under the world record. Dommisse would have set up a similar record for South Africa if he had been officially observed.

Goodhart and Foster did not attempt either triangle, but instead put up a new British two-seater record for out-and-return by flying to Montlucon and back, 141 miles in all; they took 5 hrs. 10 mins.

Next day Wills beat his own British record for the 200-km. triangle by taking 3 hrs. 58 mins. over 205 kms.; his average speed was 51 km/h. (31.7 m.p.h.), but he covered the last leg down wind at 110 km/h. Saradic, in the Meteor, covered the same last leg at 140 km/h. (87 m.p.h.) while putting up an unofficial Yugoslav record at over 70 km/h. average. Wiethüchter tried a 300-km. triangle and came within 20 kilometres of completing it. Two Canadian records were set up: by Ames for the 200-km. triangle (5 hours) and Brame for the 100-kms.

During this period and after, a tailless Fauvel AV-32 was available in charge of Eric Nessler for people to try out, including B.G.A. test pilots, and later a two-seater version of the machine appeared. One incident is worth mentioning: the rudder of the Turkish Air-102 came off during a launch, unknown to the pilot, who went on flying it for 20 minutes, wondering why it yawed so much.

Opening Ceremony

The Championships were officially opened on Friday, June 29th, by M. Duveau, Under-Secretary of State for the Merchant Marine, from a raised platform in a large open space lined by campers' chalets. National flags were draped round it, and the team captains and pilots of each of the 25 nations, in alphabetical order beginning with Allemagne, were introduced to the spectators by name (phonetically: the British team included a Goodyear), and their national anthems played as their respective flags were run up on each of a semicircle of flagpoles.

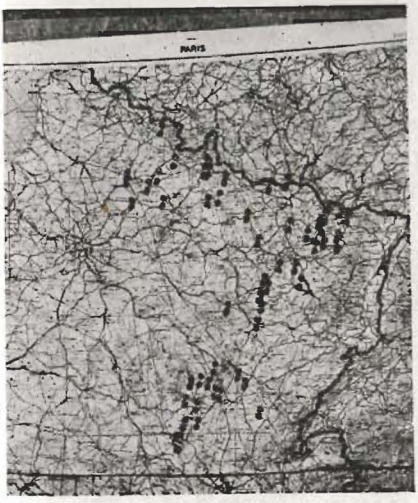
Saturday, June 30th
Free Distance

A notable feature of the daily assembly of pilots in the "Salle de Brieffing" (actually a hangar) was the very detailed and usually reliable met. briefing of M. Norbert Gerbier, the chief meteorologist. It was

done into English and German by Alex Nickolsky (whom many at Camphill will remember), and into Spanish by Señor Castans, meteorologist at the 1952 meeting in Spain. The British team had the additional advantage each day of a preliminary briefing by Mr. C. E. Wallington of the Meteorological Office at Dunstable, who had gathered inside information from the forecasting office at an early hour.

On this first competition day M. Gerbier drew quite a complicated picture of the different kinds of air masses over France, in spite of a dearth of isobars on the weather map; and he was evidently right, as pilots were later to discover, because it really did matter which part of France they were soaring over.

The task was for free distance within French territory, and a south-westerly wind directed everyone towards the nearest point on the north-eastern frontier, 230 miles away. The only way to get further was to skirt northwards along the frontier across the wind direction; the maximum possible was 320 miles to Dunkirk, and the nearest to achieving it was Cuadrado, with 268 miles to Maubeuge in a Skylark III. MacCready came second best with 242 miles; this was the only day he did not finish in the leading position on total points.



Pins showing landing points on the first contest day, June 30th, with a south-west wind. (Note that each pin is duplicated by its shadow.)

From a map showing the landing points it is obvious that the most difficult part of the journey was the first 75 miles to the neighbourhood of Dijon; 15 pilots came down on this stretch, including Wills, who went furthest of them with 74 miles, and another top scorer at Camphill, Wiethüchter, with 57 miles.

After that there was a gap of 50 miles in which nobody landed; evidently, once beyond Dijon the going was good for many miles further. Four of the gap-crossers set up national records for their own countries: Brame for Canada with a goal flight of 208 miles to Metz; Harrer for Austria with 200 miles distance; Bar for Israel with 207 miles; Oda for Japan with 204 miles (nearly quadrupling his own previous record of 56 miles); and Hanna Reitsch, with 228 miles, broke the women's distance record for Germany, which she herself had set up in the first international contest of 1937.

Among the two-seaters Goodhart and Foster just jumped the post-Dijon gap with 122 miles; but the big surprise was the Turkish two-seater, which outflew all others in its class and hopped over the border into Luxemburg, making 240 miles of which 231 counted for points. Unfortunately the only Turkish retrieving car got stuck in Luxemburg for the next three days because the frontier, though invisible from the air, was found at ground level to consist of a high barrier of red tape.

As to the improvement in soaring conditions after Dijon, Stephenson put it down to the time of day, because in the middle third of the flight he could ignore all thermals of less than 10 ft/sec. whereas at the beginning and end even 2 ft/sec. was acceptable. Others attributed it to change of topography or air mass, and certainly the cumulus clouds around St. Yan were as small and scarce in the afternoon as in the morning. In north-east France, however, afternoon cumuli were well developed and took Hanna Reitsch, for instance, twice to 6,500 ft.

Following are the leading scores and a few others of special interest. Among the single-seaters 800 points correspond to 268 miles, 600 to 214, and 400 to 161. The method of scoring was: first give the winner 1,000 and mark everyone else in proportion, then subtract 200 from each score; other tasks were marked on similar principles, so

that each day's winner in each class got 800 points.

SINGLE-SEATERS

Place	*Pilot*	*Nation*	*Points*
1.	Cuadrado	Argentina	800
2.	MacCready	U.S.A.	702
3.	Gorzelak	Poland	700
4.	Silesmo	Sweden	686
5.	Kalmar	Hungary	683
6.	Munch	Brazil	677
6.	Persson	Sweden	677
8.	Kumpost	Czechoslovakia	658
9.	Reitsch	Germany	651
10.	Gora	Poland	649
10.	Juez	Spain	649
12.	Ivans	U.S.A.	637
17.	Pierre	France	584
20.	Brame	Canada	577
24.	Stephenson	Gt. Britain	558
29.	Dommisse	S. Avrica	440
32.	Georgeson	New Zealand	368
36.	Wills	Gt. Britain	76

TWO-SEATERS

1.	Yaykin	Turkey	800
2.	Nowotarsky	Poland	791
3.	Rain	Yugoslavia	778
4.	Rousselet	France	743
5.	Trager	U.S.A.	705
6.	Sadoux	Argentina	555
7.	Nunez	Spain	380
8.	Goodhart	Gt. Britain	329

Monday, July 2nd
Goal Race

Many pilots took a night and a day returning by road from the first task, and then thundery weather set in, humidifying some of those under canvas. Rain continued into Monday morning, so not till 2.15 p.m. did launches begin for a race to St. Etienne, 62 miles (99.8 km.) south by east, on high ground between the Loire and the Rhône.

Nothing much happened at first because of a high "anvil" from the south casting its shadow over the site; but by 4.30 another thunderstorm had arrived from the west, where the wind was coming from. Naturally, everyone tried to get up high inside it with a view to making a high-speed dash to the goal, but the structure of the storm was large and complicated, so things were not all that easy. Although Cuadrado made the greatest height of 8,000 metres (26,250 ft.), he was down to earth again after 11 miles.



The thunderstorm which helped so many pilots on their way to St. Etienne on July 2nd, seen approaching St. Yan from the north-west at 3.54 p.m.

The adventures of the three British machines inside the same thunderstorm were followed from Ann Welch's control car, from which radio messages from the pilots to their crews could be overheard. Here are a few selected ones from Ann's log:—

4.36. Steve: 9,000 ft.

4.37. Philip: 10,000; oxygen mask . . .

4.37. Nick: 14,000; flashes tremendous.

4.44. Philip: 18,000; ailerons frozen.

4.44. Steve: 19,000; on course, descended to 18,000.

4.46. Nick: 16,000; on course.

4.47. Philip: going on course . . .21,000 . . . still climbing on oxygen.

4.48. Nick: fix, Marcigny [9 miles from start].

4.50. Philip: better; out of the rough; 22,000 ft. on south-west course . . . receiver not in perfect order . . . get it fixed tomorrow.

4.51. Steve: am down to 12,000 ft., will have to go into cloud.

4.59. Steve: all well; do not know position.

5.01. Nick: Position Roanne (25 miles from start); 9,000 ft.; no doubt about pressing on; now in another cloud, going up at 10-15-20.

5.07. Steve: still do not know position; in cloud; everything O.K.

5.07. Philip: think I made a — of this; down to 6-7,000 ft.; got behind storm.

5.08. Philip: iced up; blind.

5.11. Philip: 9,000 ft. above Z30.

5.12. Philip: still in cloud; can't see anything; where are you?

5.14. Philip: out of cloud, exactly over Roanne; 8,200 ft.

5.18. Philip: following river . . . but looks better to west of course.

5.21. Philip: 5,000 ft. over river; on course . . . go as far as possible.

5.22. Steve: think I am . . . don't know where I am . . . 2,500 ft.

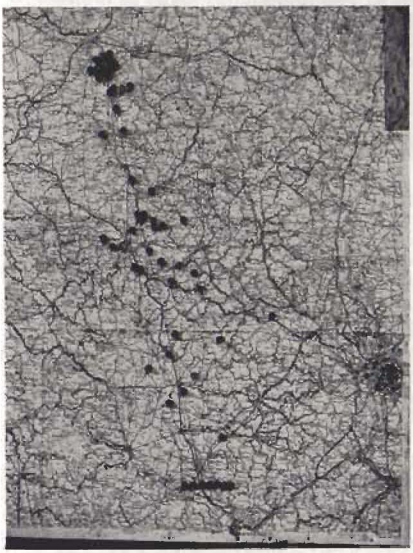
5.29. Philip: . . . railway crossing, 3,000 ft.

5.32. Nick: 6 miles out . . .

5.34. Nick ("sounded cheerful, probably going into St. Etienne").

As it happened, this guess was right, for the Eagle was officially timed to have crossed the finishing line at 17 hrs. 37 mins. 53.8 secs. It was, in fact, the first to arrive of the seven machines which made St. Etienne, while Philip Wills's was the last. Stephenson landed 16 miles short, but made the best distance but two of all those who failed to reach the goal; Bar of Israel landed 14 miles short and the French two-seater 15 short.

The following list of the successful ones and their speeds show, among other things, that four of the seven machines were British, and that all the Americans got there.



Landing points on the race to St. Etienne on July 2nd: at the top, the bunch who landed back at the start: at the bottom, the seven who reached the goal, and near them that of G. H. Stephenson's Skylark.

Pilots and sailplanes	*m.p.h.*
1. Saradic (Meteor)	45.9
2. Trager & Miller (Schweizer)	44.9
3. Goodhart & Foster (T-42B)	40.9
4. Ivans (Olympia IV)	35.7
5. Wills (Skylark III)	31.8
6. Juez (Sky)	27.8
7. MacCready (Bréguet 901)	25.7

Leading positions on over-all points for the first two days were:—

Single-seaters

1. MacCready	U.S.A.	1,452
2. Ivans	U.S.A.	1,412
3. Juez	Spain	1,404
4. Saradic	Yugoslavia	1,377
5. Bar	Israel	1,257
6. Stephenson	Gt. Britain	1,215

Two-seaters

1. Trager	U.S.A.	1,505
2. Rousselet	France	1,202
3. Goodhart	Gt. Britain	1,174

Tuesday, July 3rd
Distance on Fixed Bearing

A preliminary private briefing of the British team by Mr. Wallington showed what was in the wind—a north-west wind at St. Yan which would be replaced in the Rhône valley by the notorious "mistral" blowing at 35 knots from the north and spreading laterally to affect the mountains on either side.

The official briefing confirmed this story, but it was not till a second briefing at noon, after a clearance of the weather, that the task was announced: distance along a line drawn from St. Yan through Cuers aerodrome, which is 10 miles N.E. of the Mediterranean port of Toulon. The distance to Cuers was 242 miles—a long way to go considering that launches did not start till 1 p.m., and in fact those who covered the longer distances only did so by using slope lift and waves after the thermals had given out.

To many pilots it was the most interesting and enjoyable flight of their lives. First there were good and reliable thermals for the initial 25 miles to Roanne; anyway, there was no difficulty in seeing where they were because, as Ivans said, the route was so crowded that every thermal was occupied. Goodhart and Foster covered most of this stretch inside a cloud street.

Then, suddenly, from Roanne to Lyon, there was a bad patch where thermals were hard to find and clouds became unreliable. Several machines came down there, in-



Beside the Eagle's tail Mr. C. E. Wallington, meteorological adviser to the British team, tells Philip Wills and Geoffrey Stephenson what weather to expect on the route across the Rhone valley to Cuers on July 3rd.

cluding Stephenson's Skylark, and several more in the Rhône valley, where, as forecast by M. Gerbier, thermals tended to be broken up by the mistral, and a general downcurrent over the valley, as predicted by Wallington, was shown by the absence of clouds.

The most successful crossings of the Rhône were made just north of Valence, about 110 miles from St. Yan, and some pilots were early enough to find a few cumulus clouds on the other side. But now came a spell of slope-soaring—actually, hopping from ridge to ridge across a series of large-scale east-west ranges running at right-angles to the valley. They were precipitous, and the lift, which at one place raised the Eagle 3,000 feet in 5 minutes, was described by Goodhart as exhilarating.

Many pilots carried on across these ridges for distances varying from 25 miles (Fedderson) to 50 or 60 miles (MacCready); Wills kept it up as far as Mt. Ventoux. Then, one by one, they found the slope lift leading up into waves overhead. Toutenhoofd, Haase and Hanna Reitsch all made the first wave flights of their lives.

Lift in these waves was no more than 6 ft. per sec. MacCready spent 1½ hours in one but left it as soon as he was high enough, at 11,000 ft., to reach the coast. Ivans, on the other hand, stayed in it up to 14,000 ft. and then climbed to 21,000 in the next one down wind. Wills climbed in successive waves to 10,000, 15,000, 12,000 and 10,000 feet, while Goodhart and Foster's best were 8,800 ft., after which they found a thermal as late as 7.55 beside the confluence of the Durance and Verdon.

None of the two-seaters got as far as Cuers. The Eagle landed after 211 miles and thereby overtook the American Schweizer, which came down in the Rhône valley, on total points. The Yugoslav Kosava made 215 miles and the German HKS 11, which went furthest with 225 miles, could probably have made Cuers if Haase and Heinzel had not left their map of that district behind because they never expected to get as far.

After enjoying a magnificent view of the snow-clad Alps, lit by the setting sun, from the tops of their waves, Wills and Ivans both reached Cuers at 10,000 ft., and put down there because of oncoming darkness and bad visibility ahead, Wills at 8.10 and Ivans a little later. They were joined by Saradic in his Meteor, and these three felt sure they had made the longest distances of the day.

But, unknown to them, MacCready had passed overhead and carried on for another 9 miles to a lit-up military airstrip on the coast, where he landed at 9.15 p.m. This reminded many people of his feat two years ago in landing beside the lighthouse at the tip of Flamborough Head so as to make the longest possible distance from Camphill. So he gained 800 points to the 762 each of the three who came down at Cuers.

Leading positions after three days:—

Single-seaters

1. MacCready	U.S.A.	2,252
2. Ivans	U.S.A.	2,174
3. Saradic	Yugoslavia	2,139
4. Bar	Israel	1,866
5. Juez	Spain	1,689
6. Gorzelak	Poland	1,650
7. Wills	Gt. Britain	1,604
8. Reitsch	Germany	1,414

Two-seaters

1. Goodhart	Gt. Britain	1,853
2. Trager	U.S.A.	1,802
3. Rousselet	France	1,651
4. Nowotarsky	Poland	1,644
5. Rain	Yugoslavia	1,533

Thursday, July 5th
100-Km. Triangle Race

After a day's allowance for returning from south-east France, pilots were given a race round the Lapalisse-Roanne triangle of 116 km. (72 miles), starting at noon. The met. balloon released at 8.55 a.m. went almost vertically upwards; so that, as the results showed, "penetration" was of little avail in helping a machine to get round, though it counted for speed among the few that succeeded.



Showing Nick Goodhart's silhouette, this photograph by Frank Foster from the back seat of the Eagle was taken at the beginning of their climb to 3,000 ft. in five minutes over a precipitous ridge near Crest, east of the Rhone valley, on July 3rd.

This was another day of weak and sparse lift, with as many as 28 machines sharing the same thermal. Many pilots, including Wills and Goodhart, spent hours around the site searching in vain for something good enough to go away on; Stephenson managed 18 miles and Pierre was among six who got as far as the first turning-point. Small cumulus clouds could be seen around the horizon for most of the day, but they were completely absent from St. Yan except for some small flattish ones which we noted overhead at 3.12 p.m.

Perhaps significantly, this was just the time when MacCready, who eventually won the race, set off round the triangle, and the other eight who completed the course are believed to have got away about the same time. In fact, whereas Wills, in the course of a four hours' flight, was never above 2,000 ft., MacCready was never below it.

Wiethüchter, who made third best time, said that the flight was difficult from St. Yan to Lapalisse, and even more difficult from there to Roanne, but after sinking to 850 ft. he was up to 4,400 ft. just before Roanne. The last leg was easiest and took only 30 minutes in spite of his deviating well to west, away from the Loire valley. Hanna Reitsch and Persson missed getting round by only 4 miles, and the Argentine two-seater, though it completed the course, was the only one of its class to do so, and consequently received no points for speed, but only for distance, in accordance with the rules.

The successful single-seaters and their speeds were:

Pilots and sailplanes	*m.p.h.*
1. MacCready (Bréguet 901)	27.34
2. Arbajter (Orao 2C)	24.61
3. Wiethüchter (HKS 3)	22.37
4. Ara (Sky)	22.06
5. Gorzelak (Jaskolka)	21.56
6. Ortner (Skylark III)	21.38
7. Fedderson (Olympia)	16.65
8. Juez (Sky)	15.40

Leading positions after four days:—

Single-seaters

1. MacCready	U.S.A.	3,052
2. Juez	Spain	2,465
3. Gorzelak	Poland	2,442
4. Saradic	Yugoslavia	2,381
5. Ivans	U.S.A.	2,174
6. Bar	Israel	2,171

Two-seaters

1. Trager	U.S.A.	2,098
2. Nowotarsky	Poland	2,009
3. Goodhart	Gt. Britain	1,853
4. Rousselet	France	1,836

Friday, July 6th
Free Distance

A west wind of 23 knots at 2,000 ft., with a bit of north in it higher up, blew towards the Swiss frontier, only 95 miles away at its nearest point. As before, one machine landed across the border; this time it was Stephenson's and he put it down at Geneva, but had no trouble getting it back again. Goodhart and Foster also flew over Switzerland, crossing the Lake of Geneva after emerging from a col in the Juras, but managed to reach French territory again for a landing, so were credited with their full 111 miles. Wills landed before reaching the crest of the Jura range.

This range runs from S.W. to N.E. and the wind was blowing along it, so provided no slope lift. There was little wind there anyway, and MacCready said he could not even determine which way it was blowing. Most of those who reached this mountain region found the going difficult; but a large number never reached it at all, many coming down near the Saone valley to the north of Lyon, and most of the two-seaters did not get as far as that.

The two British machines went furthest of all those who made for the Swiss border, and the Eagle thereby regained top place. But they were beaten in each class by two adventurous people who felt the call of the mistral in the Rhône valley. The Yugoslav two-seater was one of these, and though its



Zvonimir Rain of Yugoslavia, World Champion of 1954 in the two-seater class, in the front seat of the Kosava in which, with V. Stepanovic, he made the longest two-seater flight on July 6th and finished second in the two-seater class.

pilots found no waves, and did all their slope-soaring to west of the Rhône, they managed 131 miles to a point near Montelimar. The other was Toutenhoofd, who went 152 miles and nearly got to Avignon. After using thermals till 6 p.m., he reached 5,000 ft. by hill-hopping and then over 9,000 ft. in a wave; finally he made a long gliding descent from this height into gathering darkness, helped along by the mistral, and slightly damaged his tailplane on landing in a field of cornflowers. While waiting to be retrieved, he no doubt meditated on that morning's briefing, at which someone asked whether there would be waves in the Rhône valley, and was told that nobody was expected to get as far.

Leading positions after five days:—

Single-seaters

1. MacCready	U.S.A.	3,382
2. Juez	Spain	2,709
3. Saradic	Yugoslavia	2,699
4. Gorzelak	Poland	2,670
5. Ivans	U.S.A.	2,439
6. Bar	Israel	2,354

Two-seaters

1. Goodhart	Gt. Britain	2,501
2. Rain	Yugoslavia	2,333
3. Nowotarsky	Poland	2,154
4. Trager	U.S.A.	2,116

Two No-Contest Days

On Saturday, July 7th, the organizers, anxious as ever to give everyone as much flying as possible, offered a race to Vichy and back; but there were immediate protests that some competitors had not yet returned from yesterday's flights. So a meeting of team managers was called, the task was cancelled, and an excellent evening's entertainment was laid on instead.

The task for Sunday, July 8th, was a race to Beaune, 59 miles to the north-east, against a very light wind.

It was a day of weak, scarce and "dry" thermals, made scarcer than ever by large patches of cirro-stratus high overhead. In fact, there seemed to be no more than two thermals at a time in the whole of that region of France, and those were in sight of St. Yan. So every thermal was liable to be crowded out; for instance, when Stephenson found one half-way to Paray, he radioed its presence to Wills, Goodhart overheard and joined them, and in a few minutes there were 18 circling in it. Thirty-eight machines landed at Paray, 5 miles from St. Yan, most of them on the airfield, though Thomsen of Denmark put his Olympia down in the market place (unoccupied) after an approach over a canal bridge. The only ones to go any further were Arbajter,

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Landing points on July 3rd when the task was distance along a line through Cuers, near the south coast of France. Three landed there, but Paul MacCready went on to the Mediterranean.

Kumpost and Pierre; but as nobody got even a third of the way to Beaune, it was declared "no contest".

Monday, July 9th
Out-and-Return Race

Moulins, 34 miles up-wind to the W.N.W., was the turning-point for this race, and the first half of the direct route to it lay along the Loire valley. However, the thermal-producing qualities of the land soon became less important than what was going on higher up. As usual, the first cumulus clouds to appear were on the horizon, but they looked very unstable, and to the south were obviously building up into cumulo-nimbus.

By the time launches began at 12.30, another cumulo-nimbus mass could be seen in the direction of Moulins; in fact, some simple trigonometry disclosed that it was fifty times as far off as the height of its base, so it may well have been over Moulins. Two hours passed, during which nearly everybody sank to earth, before the edge of its "anvil" arrived overhead and, lower down, some bits of cumulus preceded the main body of the storm. This brought the opportunity most people were waiting for, though MacCready had already turned at Moulins at 2.04 p.m.

Ann Welch's car, as usual, was parked alongside the Pye man's portable radio mast at St. Yan, and over the radio the adventures of Goodhart and Foster could be followed. They reached 17,000 ft. inside the storm and were down to 7,000 ft. on turning at Moulins; fortunately the Pye man was there

and was able to tell them that they had been officially observed. But by then the storm cloud—at least that part of it between Moulins and St. Yan—had spread out into a huge amorphous mass which gave no help to anybody, and the gradually diminishing height readings that came over the radio concluded with the words "landing, landing!" from less than five miles away.

Nobody else completed the course either, though 32 machines reached Moulins and 26 of these set out on the return journey. Goodhart and Foster made the longest distance of 63 miles and in the single-seater class Kumpost of Czechoslovakia did best with 57 miles, while MacCready, who wandered well off course in search of lift on the way back, was credited with 55 miles. Marking was as for distance along a set course.

Placings and total points after 6 contest days showed both MacCready in the single-seater class and Goodhart and Foster in the two-seaters to be more than 800 points ahead of their nearest rivals, so their leading positions were now unassailable provided that there was only one more contest day during the three days remaining. This actually happened, because the next day was too wet for flying, and the last task was a long-distance one from which many spent all next day returning.

Single-seaters

1. MacCready	U.S.A.	4,149
2. Gorzelak	Poland	3,283

Two-seaters

1. Goodhart	Gt. Britain	3.301
2. Nowotarski	Poland	2,404

Wednesday, July 11th
Goal Race

A northerly gale raging at 2 a.m. brought Goodhart and his team out of their tent to lash the Eagle's trailer to their car. By the morning briefing it had eased off a bit; but when a race to St. Auban, 188 miles to the south-east, was announced, it was accompanied by the information that the mistral along the Rhône valley was doing 40 knots on the ground and 70 knots higher up, and that parties at St. Auban would be ready to hold down each glider as soon as it landed.

St. Auban-sur-Durance, the gliding centre famous for its waves, is 60 miles east of the Rhône and 65 north of Toulon. The route, therefore, was much the same as on the Cuers day; but the weather was very different. That series of east-west ridges,



William S. Ivans, of the United States, in the Olympia IV with which he finished fifth.

so convenient before for slope-soaring, now had their tops in the clouds; yet they had to be negotiated, and Wills's method was to let himself be lifted into cloud, facing the wind and watching the Cook compass, then turn and dive into the next valley so as to emerge below cloud base before hitting the next ridge. He and many others found this part of the flight extremely turbulent. Further south, the mountains were clear, and were producing waves, in which MacCready climbed to 14,000 ft., sometimes at over 20 ft. per second, and Stephenson to 13,000 ft. (it was the first wave flight of his life). Wills used the Mt. Ventoux wave and soared along a ridge leading from it to St. Auban, still going up while maintaining 80 m.p.h. airspeed; he and Stephenson both arrived over the goal at 10,000 ft.

Of seven pilots who reached St. Auban, Nietlispach made the fastest average speed of 40.7 m.p.h., Wills made 38.9 m.p.h. and Stephenson 33.2 m.p.h. Feddersen did very well to average about 30 m.p.h. in an Olympia, and Dommisse made his best flight of the meeting. MacCready and Toutenhoofd each spent 1½ hours over a single hill below cloud base; Toutenhoofd was looking at his watch to see how long he dared wait for the clouds to lift before it got too dark to go on, and when at last he landed, a shower of sparks from his skid was practically the only sign of his whereabouts.

Goodhart and Foster made 100 miles,

and the best two-seater performance was 137 miles by the Yugoslavs; this figure, however, was exceeded among the single-seaters by Cuadrado, Harrer, Juez, Koch, Persson and Ivans. Unfortunately Bill Ivans had to make a sudden landing in a tiny field and stalled in the turbulence over some high trees; he smashed up the Olympia badly and himself suffered a crushed vertebra. Luckily Persson had just landed near by; he got Ivans out of the wreckage and had him taken to hospital. Since then his progress is reported as satisfactory.

Here are the flying times and speeds of those who reached St. Auban:—

Pilot and sailplane	*hrs.*	*min.*	*m.p.h.*
1. Nietlispach (Elfe)	4	37	40.78
2. Wills (Skylark)	4	53	38.96
3. Stephenson (Skylark)	5	40	33.23
4. Feddersen (Olympia)	6	21	29.63
5. Dommisse (Bréguet)	6	25	29.32
6. MacCready (Bréguet)	7	02	26.82
7. Toutenhoofd (Skylark)	8	20	22.59

Closing Ceremony

The weather on Friday, July 13th, did not behave quite so well as on the opening day. A start was made with presentations to all the teams in turn, their national anthems were played and their flags ceremonially hauled down, until progress through the alphabet reached Grande Bretagne, whereupon a threatening thunderstorm broke over the scene and the rest of the ceremony was adjourned to the briefing hangar. Here had been earlier a less formal ceremony in which Philip Wills, on behalf of all the participants, complimented the organizers in the terms used in his article in this issue. M. Agesilas, Director-General of the Championship organization, mentioned in his reply that 3,000 hours' flying had been done during the meeting and 50,000 kilometres flown across country.

A riotous barbecue that night in the hangar made a fitting end to a memorable meeting.

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A Project for a Soaring Centre

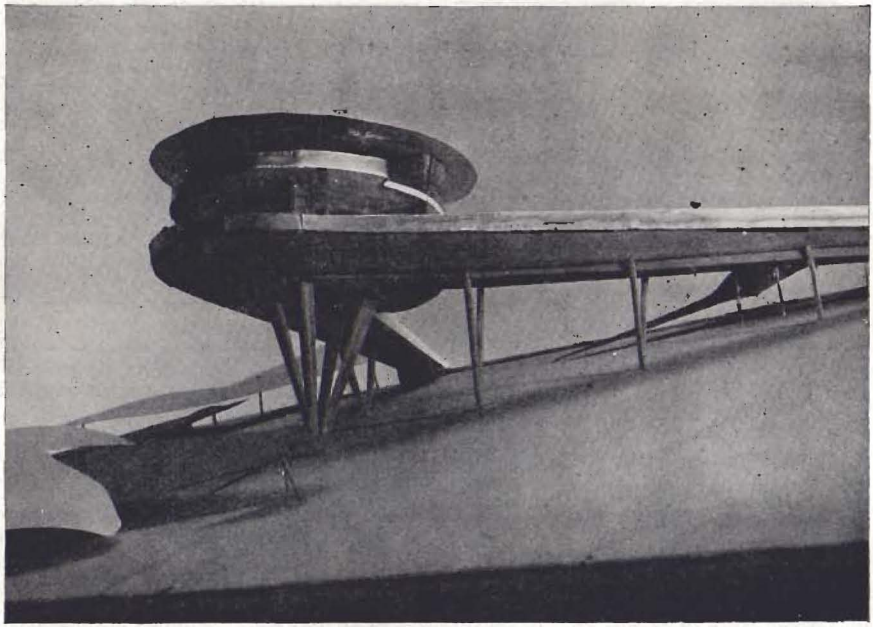
by Walt. H. Pratt

SOME 70 kilometres west of Paris lies the Soaring Centre of Cherence where the Aero-Club du Scoutisme Français carries out its soaring activities every Saturday and Sunday. Situated on a slope overlooking the Seine valley some 140 metres below, the site consists of a main landing field of about 550 metres and a secondary field running parallel to the crest of the slope. The latter, which runs east-west, can be utilized on a length of around 5 km. by S.W. winds of 7 m./sec. force (16 m.p.h.). The main landing field runs N.E.—S.W., and on its eastern side stands a small hangar to which is joined a small office.

One of the sailplane pilots flying there developed a project for an installation adapted to the site and, with a few modifications, this installation could be used in other places. This project, which I am presenting to you here, was submitted by the pilot as final test for his studies at the "Ecole Nationale Supérieure des Beaux-Arts", and for it he received his diploma as architect. I believe this project to be worthy of interest as it does not follow ordinary lines of architectural thinking with regard to airfield installations, and also because it shows that creative imagination can find a wide field of application even in the utilities necessary to soaring activity.

Mr. A. Salomon, who is the father of this project and who is 27 years old, conceived the installation for the housing and requirements of about 40 pupils. It consists of a hangar, a garage, an administrative section, a clubhouse, and dormitories for the pupils and instructors.

The hangar, housing 20 sailplanes and four power 'planes of various types, consists of a thin concrete vault stretched on two diagonal arcs with a reach of 120 m.



Model of the Club house



Model of the hangar (The top has to be imagined flat).

(394 ft.). This vault rests on the four external points of the parabolic support arcs. A system of rolling doors of corrugated steel plates closes the hangar on every side. The shape of the vault is particularly favourable for a good wind-flow over its surface.

The garage can house two winches, two tow-cars for the cables, two 1,200-kg. trucks, two trailers and a couple of other cars.

The administrative section includes:—

(a) For the repair of sailplanes:—a carpenter's shop (8 × 16 m.); a painter's shop (5 × 8 m.); a store-room for timber.

(b) For the repair of power 'planes and vehicles:—a small mechanic's shop (4 × 8 m.).

(c) For theoretical courses:—a club office; a class-room with approximately 40 seats; a room for practical exercises with models; a sanitary installation; an entrance.

(d) For the Administration:—an office for the chief pilot with a view of the airfield and hangar; an office for the secretary; a map room and meteorological service.

The clubhouse is built near the crest of the slope and overlooks the slope, the field, and the valley. Two large ramps lead to the first floor on which are located the reading room with terraces. On the second floor is located a restaurant with bar and kitchen. The clubhouse, whose top is about 7 m. (23 ft.) above the ground, is situated in such a manner as not to hinder the evolutions of the sailplanes over the slope or during the approach.

The dormitories of the pupils and the instructors are conceived in the same manner as the clubhouse. Each block has separate rooms with five beds and one washroom per block. Bull's-eye windows are disposed in such a way as to give the maximum light and air to each bed. In winter, the whole installation is heated by a furnace located independently and half-buried.

The framework of the clubhouse and the dormitories are of concrete. The other elements are of metal or wood.

ITALIAN SAILPLANE EOLO 3 V-1

THE sailplane Eolo 3 V-1 was designed by the Vergiate Sailflying Sports Section of the SIAI-Marchetti works after a model by Mr. Bruni, engineer, and was built by SIAI-Marchetti employees. It has been designed particularly for long-range flying and its excellent characteristics should give it a very good chance in the World Gliding Championships. In order to obtain the best possible efficiency, laminar profiles were used for the wing sections.

After careful consideration, this choice was based mainly on the following factors:

1.—The drag coefficient of the laminar profile has a characteristic "valley" (minimum zone) corresponding to the scale of the value for the lift coefficient for which the profile has been designed, in the case of the normal values of the Reynolds Number for gliders in flight (2-3 million); for the higher values of the Reynolds Number the "valley" diminishes appreciably and therefore the use of these profiles is of no great advantage on the larger and faster machines, or on those fitted with an engine.

2.—For equal drag coefficients, the thickness of the laminar profile is greater than that of a normal profile; therefore a wing made from a laminar profile could be structurally lighter than a wing made from normal profiles.

Naturally, it is not possible to obtain the advantages of laminar profiles if the profile as constructed is not very smooth, particularly at the forward end. In practice, on a wooden wing, the surface plywood shows bumps which are due both to the normal shrinkage of the wing unit which occurs between the surface and the wing rib, or to variations in humidity, and to the buckling which may occur in flight through the flexion-deformation of the wing and the alternation of aerodynamic pressure and suction.

In the wing of the 3 V-1 an attempt has been made to prevent deformation of the surface plywood by using very thick plywood with widely spaced wing ribs in the stretch of wing between the leading edge and the first spar. The choice of span and of aspect ratio were also made the subject of careful structural and aerodynamic study.

In actual fact, from the structural point of view, the value of the ratio between the half-span and the thickness of the profile at the attachment is of great importance: in the case of wooden wings, if the figures for this ratio were to exceed 50, it would mean excessive flexibility and inadequate strength, with the wing itself being too heavy. For example, the wing of that excellent glider Reiher has a ratio of 46; that of the Schweizer S-21 is 45; that of the Orao is 53; only the D-30 Cirrus has the exceptional value of 74, but in this case there is an "electron" spar.

In the case of the 3 V-1, the ratio selected was 48; in order to make the wing light and not very flexible, the spar is made of treated beech, with flexibility and resistance figures approximately double those for spruce.

From the aerodynamic point of view, the value 25 was chosen for the aspect ratio because, after comparing various glider wings, it was found that, for an equal wing span, the minimum speed of descent decreases by about 3% when the aspect ratio is raised from 20 to 25, but it does not decrease any further with greater aspect ratios. Moreover, no practical advantage would derive from such aspect ratios and their use would lead inevitably to structural complications and increased weight.

Structural Characteristics

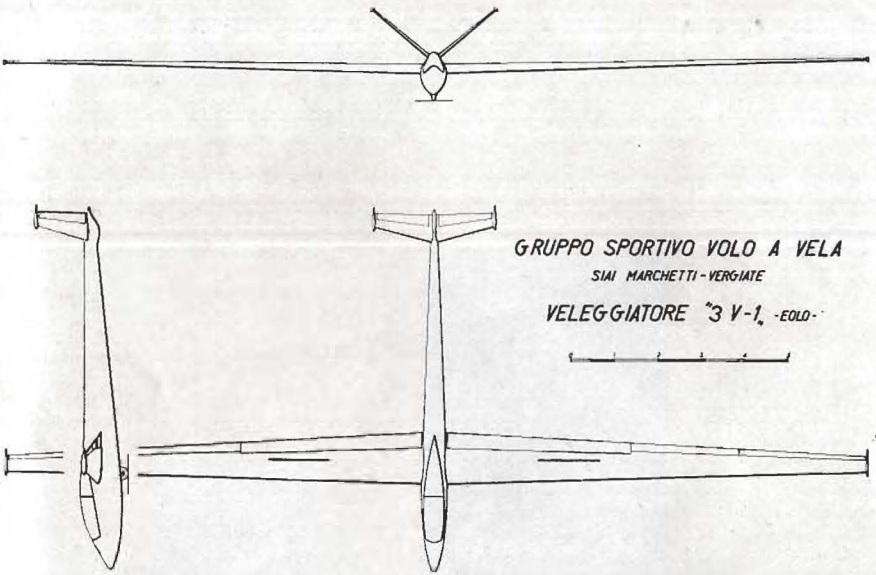
The structure is made completely of wood.

The high wing, in two parts, has a spar at 35% of the chord with flanges of treated beechwood, and a second auxiliary spar at 70% of the chord.

The portion between the leading edge and the spar is surfaced in very thick "diagonal" beech plywood; the portion between the 1st and 2nd spars is surfaced in a thinner plywood, but the whole constitutes a stout "torsion box" which gives outstanding torsional resistance to the wing.

The wing flaps are of the slotted type which make it possible to reduce speed in a thermal without markedly reducing the efficiency.

The ailerons, with rigid differential



control, are divided into two sections: in the outer section, the wing flap control draws the ailerons down so that in this way they exercise a considerable lifting action in addition to that exercised by the normal flap.

The spoilers, which extrude vertically in a fan-type manner, are situated in an opening of 2.80 m. total length at about 50% along the chord.

Streamlined shapes are fitted at the tips of the wings and of the tail, and have the effect of reducing marginal losses.

The fuselage is covered completely in plywood. The pilot's position has been carefully placed, both from the point of view of visibility and of the fitting of the instruments (a small radio set and oxygen equipment are included in the useful load). The pedals can be adjusted in flight.

A tank has been provided to carry approximately 46 litres (10 gallons) of ballast water, so that, if necessary, the wing loading can be varied within certain limits.

Landing is effected on one wheel, retractable in flight, which is in front of the centre of gravity. There is no forward skid; the base of the fuselage is reinforced externally.

Control of the tail unit is by cable.

The tail unit is the V type with differential control, and it is so proportioned that the same stability is given as that provided by a normal tail unit, whereas its aerodynamic resistance is lower.

Technical Data

Span, 20 m. (65 ft. 7 ins.); wing area, 16 sq. m. (172 sq. ft.); aspect ratio, 25.

Normal all-up weight, 400 kg. (882 lb.); all-up weight with ballast, 450 kg. (992 lb.); useful load, 120 kg. (265 lb.); weight empty, 280 kg. (617 lb.).

Normal wing loading, 25 kg./sq. m. (5.1 lb./sq. ft.); maximum, 28.2 kg./sq. m. (5.75 lb./sq. ft.); span loading, 28 kg./m. (18.8 lb./ft.).

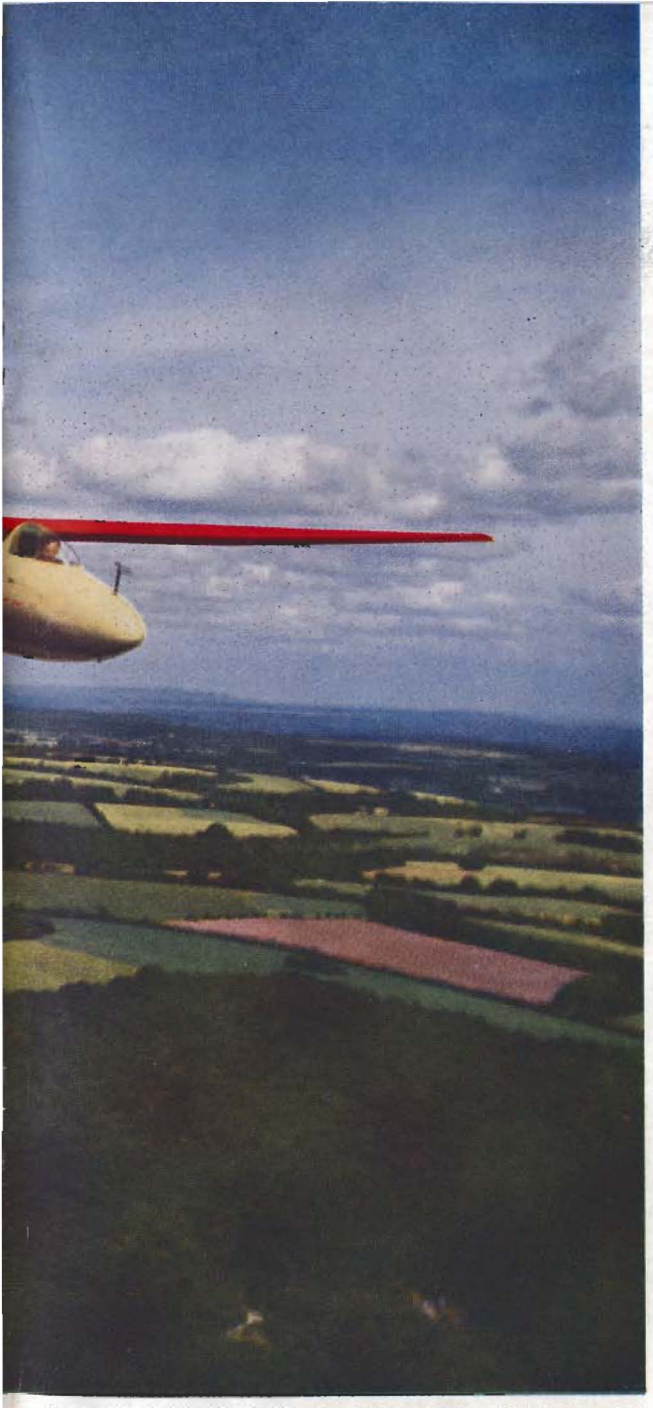
Strength coefficient, 2n=9.

Estimated performance at 992 lb. all-up weight: minimum sink, 0.54 m. (1 ft. 9 ins.) per sec. at 82 km/h (51 m.p.h.); sink at best gliding angle, 0.58 m. (1 ft. 11 ins.) per sec. at 90 km/h (56 m.p.h.); sink at 100 km/h forward speed, 0.7 m./sec.; at 120 km/h, 0.9 m./sec. (2 ft. 3½ ins./sec. at 62 m.p.h. or 54 knots, 2 ft. 11½ ins./sec. at 75 m.p.h. or 65 knots). Minimum landing speed with maximum flap and ailerons functioning as flaps, 50 km./h. (31 m.p.h.).

[We are indebted to Mrs. Veronica Platt for supplying a translation of this article, which was sent by the Vergiate Sailflying Sports Section of Messrs. SIAI-Marchetti. —ED.]



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A Year of Skylarking

by R. H. Prestwich

I THINK perhaps that the idea occured to us almost before Sling. In any event the syndicate finally took delivery of the "idea" in February '55, and spent the next month teeth-gnashing with the Mynd snowbound. Finally the Rover managed to haul her up Asterton and we were off.

Up to the Easter rally nothing much happened. We flew her every daylight hour, and the Cambridge University Gliding Club drooled over her during the week. However, on Easter Saturday the syndicate's most northern member drew a bow at a "Vulture" by declaring Leiston, and brought down a small pigeon by landing at Cambridge. A day or two later she arrived in a hedge near Bridgenorth, and to Sling's delight merely bent the hedge!

We were all quite entranced with her by now. Every week we wrote to Sling saying what a poppet she was, then we would tell him what was wrong!

Meanwhile the syndicate's western members were doing yeoman work on the trailer. This had originally been built for Skylark I on Sling's assurance that Mk. II would not have a longer centre-section. However, this was not to be. The fuselage also grew, as did a large excrescence on the front of the trailer. Apart from housing the sailplane more efficiently, it prompted some of the more flippant members to neigh in its presence, and offer it carrots.

Two Gold "C" legs were gained in May and June. She went to Yarmouth for a distance leg, and gained a height leg at the Mynd. The height leg might well have been diamondiferous but for a bit of bad luck. With the youngest member driving, Skylark had reached 12,500 ft. when the horizon died. The plug from the Venner, never a strong point of the installation, had come adrift due to the severe turbulence. Even 30 ft./sec. up cannot compensate for the lack of blind-flying instruments.

Just before going to the comps., we had our second attempt at wrecking. The most exalted member wanted to soar thermals, and as it was a windless day, the northern member agreed to drive the winch. The wrong cog was engaged, and Skylark did a fast ground slide over a very rough piece of Mynd. When this was over, the complete tail skid and a slice of sternpost had been left behind.

At the competitions Skylark was flown into 6th place by the youngest member. In doing so, some hundreds of miles passed under her wings at some extremely fast speeds.

On her return the medical member visited South Wales, evidently via Holyhead and Hull due to a slight disagreement with the map! Since then wave-hunting has been the order of the day. A trip round West Salop and the discovery of a "breaking" wave behind the Mynd have been the best ones.

In all we flew 184 hours and travelled 1,193 miles. We launched from four sites, and visited two more by air. At one site the youngest member had a long glide from the top of a cu-nim, and evidently arrived after they had gone to bed. I expect it may have been the carbon-monoxide-laden air from Vauxhall's works!

Sometimes outside the hangar our old Blue Olympia may shed a quiet tear or even grind her root fittings at the yellow-painted hussy from Yorkshire. Still, time marches on, and one day it may be a porous-wing, boundary-layer-sucking Skylark XX, blinding people with flashing Machmeters! Who knows?

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A Dream Nearly Comes True

by John V. Inglesby

One of six pilots who made 300-kilometre qualifying flights for the "Gold C" distance leg during Whitsun week, Mr. Inglesby, works at the Aeroplane and Armament Experimental Establishment at Boscombe Down. He competed in last year's National Championships, when he made flights of 58, 31 and 85 miles.

THE merest suggestion of flying to Land's End in Cocky provoked the ironic response, "Dreamer!" Ah, well—Penzance is not far from Land's End, and we got nearly as far as Penzance.

Cocky needs no introduction. She/he (she's a he) is the Oly that was slung up in an aerobatic attitude somewhere near the roof in the Festival of Britain. The original Cocky, by the way, was a budgerigar of a similar hue of blue. The flight described below was essentially a duet, Cocky undoubtedly playing the major rôle.

A visit to the Boscombe Down "met" office on the morning of Saturday, May 26th, revealed that the wind would be north-east and 15 knots over the operating band of heights. There was promise of instability, which should improve to the west, and with perhaps less northing in the wind.

The plan was to follow the line of airfields: Thruxton, Boscombe Down, Yeovilton, Merrifield, Dunkeswell, Exeter. After that —well . . . In idle moments, the map had been opened out at Devon and Cornwall, but it seemed well beyond Cocky's capacity ever to get so far. Dartmoor was something of an obstacle. It was rather high, for one thing, some of the Tors reaching up to 2,000 feet, and what with bogs, boulders and escaped convicts, it was obviously no place for a glider. It seemed that one could do one of two things—go round it to the south or round it to the north. But which would be best? It was anybody's guess.

Perhaps the main interest of this sortie lies in that we were able to get nearer Land's End than anyone has yet been able to do. (But, to be fair, most of those who have tried have started further to the east.) Little will therefore be said about the first half of the flight. We were towed off from Thruxton at 10.35 hours B.S.T. and released a few minutes later at 2,600 feet (all heights a.s.l.), 2½ miles upwind. Cu was beginning to form with base about 3,500 feet. Being in good thermal country, it was thought that an early start could be made. We were soon away, but it was touch and go, getting precariously low over Salisbury, and being blown much too much to the south. But we recovered, and gradually made up into wind, passing just south of Henstridge and just north of Yeovil. From Yeovil to Dunkeswell conditions were really wonderful and we simply fizzed along.

The technique used, which is partly my own but mainly due to others, was roughly as follows. I decided on a lower limit of 3,000 feet (and rather higher over high ground). While we were above this height, we kept going straight, keeping underneath the clouds where areas of lift might be expected, and circled only while 10 feet per second up could be maintained. In lift, we flew at the minimum-sink speed, and in sink, at the speed for best glide angle in zero wind appropriate to the rate of sink (remembering that thermals drift along with the wind). On getting below the lower limit, we could circle in anything we could find, back up to 3,500 feet. If the lift had not built up to 10 feet per second by then, we would be on our way again. Cloud base was about 4,000 feet most of the time. but there was not much vertical development and it did not seem worth while fumbling about in cloud for the sake of a few hundred feet. My upper limit then was cloud base; but two or three times we found ourselves sailing along in cloud, and then steered a compass course.

Having reached Dunkeswell we had to do some quick thinking. Should we go to the south of Dartmoor or to the north of it? The wind had too much north in it, and it seemed natural, therefore, to make up into wind while the going was good. The clouds, too, looked more active to starboard, and so the northern route seemed to be the right answer, and we set course nor'-west. We left Exeter to port at about 13.15 hrs. B.S.T. and were all set for the second half of the flight.

Then followed a short interlude with the

map. It was time now to have a look at it, but I had forgotten to open it at the right place before starting. I had quite a tussle trying to open it in the confined space of Cocky's cockpit, and having got it open at the wrong place, could not fold it again. It ended by being screwed up into a ball, and shoved out of the way!

The next half-hour was rather trying. The one thought was to stay up. Most of the clouds somehow seemed to be past their prime. We were groping after every scrap of lift, and much of the time was spent below our lower limit. Eventually, we were saved by a good thermal off a village, and then the runways of Winkleigh appeared on our starboard bow.

After that the going was much easier. Gradually the Land of Legends spread out before me, and very lovely it was—with the sea and the picturesque coastline to starboard, stretching away into the distance, and the green fields and hedgerows below. The sky, too, seemed a purer blue, and the clouds more brightly lit. Then followed a long, straight glide without meeting any lift, and for a moment it looked as if the flight would end up at Davidstow Moor, but on passing over it, the best thermal of the day came off the runways there and took us to 5,700 feet. It was a dry thermal and took us up above the base of most of the surrounding clouds.

At that point I remember thinking I could just see Land's End, and wished Cocky had a glide angle of 1 in 50. We had real hopes of getting there now. Also, as the land got narrower, I could see the sea to the south as well as to the north.

Down along the northern shore we were getting the full benefit of the north-east wind. The best clouds seemed to be three or four miles inshore, perhaps on account of the sea breeze effect, and we were getting along well.

Then (I have forgotten exactly where) a gigantic mass of rather wet-looking cloud loomed up ahead—rather curious. There was a line of it out to sea, and it just fringed the shore. It is hard to say, but the top might have been 8,000 or 9,000 feet. On getting near to it, the base was seen to be almost down to the deck, and it was rather dark underneath, and there were dark ugly-looking wisps around about it. We went straight into that part of it which projected over the shore. There was some lift, but not enough to make it worth while stopping for, and we were soon out the other side. But I remember thinking that if I had been a better and braver glider pilot I might have done something with it, even though it would have meant flying out to sea. But I had been airborne now for five hours, and was getting pretty tired and just had not the guts to tackle this monster.

So in we went, in one side and out the other, glad of the lift it afforded. Then followed a well-defined cloud street parallel to the shore, but although we were near cloud base, it was not playing, and the best we could find was no sink; and I knew the end was near at hand.

Gradually losing height now, we arrived over Redruth at 2,000 feet. We found a little lift, but could only get up to 2,500 feet, and so on again. Land's End seemed terribly far away now, but we must be pretty near Gold C Distance, so we scraped along and arrived over Hayle at 1,500 feet. We searched but could find only a suspicion of lift. The sky ahead was now a placid blue, entirely devoid of cloud. This really was the end. All that was left was a final downwind glide. I toyed with the idea of making a downwind landing to gain the extra mile, but the only good field was one to starboard (small, flat and green with young wheat); and so we came round, and skimmed over some small trees at its southern end to touch down at 16.15 hrs. B.S.T.

It was an inspiring spot, the field overlooking Mount's Bay with St. Michael's Mount pointing heavenward; and it was good to smell the sea again.

Farmer Laurie and his men helped me de-rig Cocky, and Mrs. Laurie gave me the the best tea of my life with lashings of Cornish cream!

My distance worked out as follows:

Point of release: 2½ miles N.E. of centre of Thruxton airfield; lat. 51° 14′ N; long. 01° 34′ W.

Point of landing: on straight line through St. Michael's Mount and Badgers Cross, and one mile inshore; lat. 50° 09′ N; long 05° 31′ W.

Great Circle distance, 304 km. (188.9 miles).

Gold C distance, 300 km. (186.4 miles).

WITH YOUR CAMERA AT THE GLIDING CLUB

Look around you at any meeting of a gliding club and you'll see a collection of cameras that would do credit to a shop window. Simple box cameras, reflex cameras, miniature cameras and movie cameras—you'll see them all. The fact is that gliding is an extremely rewarding subject for the photographer, and no gliding enthusiast who has a camera can resist the temptation to use it. There's something so essentially photogenic in the slim shape of a sailplane, whether it be in the air or on the ground, and a spacious airfield or a brilliant sky will always provide an impressive background.

How can one make the most of all these possibilities? It all depends, of course, on what kind of camera you have and if you're prepared to remember just a few simple tips. Generally speaking, the eye-level type of camera is easiest to use for gliding pictures, but even the simplest "Brownie" cameras will take good pictures of ground scenes and simple shots of launches and gliders airborne. With a more elaborate camera you can naturally be more adventurous, get much closer to your subjects and take shots of gliders coming in to land, for instance, which call for higher shutter speeds. But whatever the camera that you use, it's important to choose a suitable film for your pictures. It is best to use a panchromatic material of medium speed, like Kodak "Plus-X" Film; this will give you enough speed to cope with low-flying gliders and fast launches, as well as sufficiently fine grain to make big enlargements possible. Enlarging is often necessary, since aircraft nearly always come out much smaller on the negative than they look at the time you take the picture. You should remember this when taking shots of gliders in the air. A yellow filter helps a great deal to make clouds and light-coloured gliders stand out clearly against a blue sky; particularly dramatic effects can be obtained if you use





an orange or even a red filter (with panchromatic film). With these latter filters however, a considerable increase in exposure is necessary.

Air-to-ground pictures and air-to-air shots are not, perhaps, as difficult as many people seem to think. Remarkable air-to-ground shots have been taken with "Brownie" cameras, although it is, of course, easier to get a good result if your camera has a speeded shutter. Depth of focus is not important in this kind of work since distances are usually so great, and the camera focus can safely be set at infinity, and a wide aperture used, so that an exposure of, say, 1/250th second can be given. Then it's just a matter of choosing the right moment—preferably when flying speed is at its lowest, and keeping the camera steady. Here again, a yellow or green filter will help to improve the rendering of ground detail.

Colour pictures of gliding are especially effective, particularly as the gliders themselves are often brilliant colours. If you are shooting in colour on "Kodachrome" film, there are a few points that you should bear in mind which will help you to get the best results. Gliding usually takes place on a large, open area of country, where there are no obstructions like buildings or trees to shade your subjects from the sun. Further, these large open spaces reflect a great deal of light, very much as a sandy beach does. Consequently the light is usually strong and short exposures can be given. If your exposure is worked out from the printed sheet enclosed with your "Kodachrome" film, then you should be about right. If, on the other hand, you are using a photo-electric meter, you should beware of exaggerated readings caused by the large open areas of ground and sky which may be included in your picture. For much the same reasons, colour pictures of gliding subjects are sometimes affected by an overall bluish cast caused by an excess of ultra-violet rays altering the balance of the colour reproduction. This can be countered by using a "Wratten" No. 1A Skylight filter over your camera lens.

One last word: gliding is delightful to photograph, but can be dangerous if you disobey the orders of marshals and ground staff. Make sure that you keep to safe areas when taking your pictures.

(*From Messrs. Kodaks*)

The Nyborg Sailplane Again

by Air Commodore L. P. Moore, C.B.E.

THOSE of us who were in the gliding fraternity in this country during the early thirties are not likely to forget the immense interest and controversy aroused by the Nyborg sailplane. So revolutionary was this aircraft in its conception and so novel the theory of its designer that I feel it would be interesting to review them in the light of present knowledge and future trends.

A Danish engineer of high repute and a student of bird flight, Mr. Nyborg had observed that the higher the weight and dynamic soaring competence of the bird, the higher is its wing loading and aspect ratio. Scaling this up to man-carrying size, the result came out approximately as follows:—

All up weight—360 lbs.
Wing span —30 ft.
Aspect ratio —20
Loading —8 lbs. per sq. ft.

By Mr. Nyborg's calculations, based upon unique and arguable assumptions and formulae, the performance of his ideal worked out at:—

Minimum sink—1.7 ft. per sec. at 56 m.p.h.
Best gliding angle—1 in 54 at 62 m.p.h.

Now this novelty burst upon the gliding world when the value of "penetration" was scarcely appreciated. Lowest possible sink was the major aim in those days and a wing loading of 2 to 2½ lbs. per sq. ft. was the fashion while a good gliding angle was more apt to be regarded as a bonus.

If you were not with us at that time, you may well imagine the impact of Mr. Nyborg's bomb upon us and the frustration he was to suffer in trying to convince so conservative a race as ours that he really had got something worth while. By normal calculations his sailplane's landing speed worked out at about 40 m.p.h., a prodigious and wholly dicey pace in those days of no glide-control.

Not to be daunted, however, Mr. Nyborg had the courage to build a sailplane to his own design and to proceed to teach himself, in middle age and from scratch, to fly. We could hardly expect him therefore to be able to evaluate performance at the same time and apart from a long low glide by our ace of those days, Eric Collins—who announced that it seemed to have no sink at all—I believe that I am right in saying that it never was reliably evaluated before it was once again crashed or otherwise removed from the scene for ever.

In the meantime, however, the Nyborg sailplane's performance had been calculated by recognised formulae and factors appropriate to aerofoils of those days and—mark you—not taking into account the now well-recognised potential of laminar flow and disregarding the effect his ingenious full-span smooth camber-changing flap could be expected to have in enhancing performance at the low speed end; and this is how it worked out:—

Min. sink—2.4 ft. per sec. at 44.5 m.p.h.
Speed for sink of 6 ft. per sec.—80 m.p.h.
Best glide angle—1 in 27 at 48 m.p.h.

When one bears in mind the date of this calculation and then corrects for laminar flow, I feel sure that it will make you wonder how we have been spending our time since then. By modern standards, stressing as they do high speed performance, the Nyborg sailplane was years ahead of its time and in a class by itself. Yet, alas, it passed the world by.

Whereas many of us found it hard to



Mr. Nyborg standing beside his 1938 model in which Ralph Slazenger (in cockpit) is about to take off from Duxford Aerodrome. R. C. G. Slazenger preparing to take off from Duxford, near Cambridge, in the Nyborg sailplane in 1938. The canopy is seen beside the tail. After a few winch launches, the machine was aero-towed.

accept Mr. Nyborg's assumptions, not a few of us were pretty impressed by his basic reasoning. I for one was heartily disappointed to see this brilliant flash fade out and not to have the opportunity and time to try and do something to stop it. Now we are left with the question as to whether the Nyborg sailplane is not indeed ahead of present time.

Since Mr. Nyborg's day there has been continuous competitive development to increase the speed range, with particular emphasis on performance at the high-speed end. But to design a machine also able to hold its own with any other on those occasions when thermals are at their weakest—an "all-weather Open competitor", as it were—equal regard has to be had to the low-speed end.

This calls for two conflicting design requirements—a high aspect ratio to give maximum speed range and, on the other hand, a low wing loading to keep the flying speed for minimum sink as low as possible to enhance thermal circling performance.

Now, by increasing span and size the pilot's weight becomes a lesser proportion of the whole, making it possible with a 50-60 footer to keep wing loading lower than it would be with a 30-40 footer, assuming the same aspect ratio.

Thus has the all-weather Open competition sailplane developed. It is too expensive for you or me and even if it weren't, we probably couldn't afford the huge pantechnicon required to transport it. Our car isn't big enough to haul it: it won't go in the garage and we often cannot raise a big enough team to handle and launch it. It is essentially a Club machine for Club-site operation and one's only objection on that score is the price.

I believe that there is a real need for something much nearer the Nyborg type with a span of, say, 36 ft.; an A.R. of 18-20 and a wing loading of 5½-6 lbs. per square foot. In orthodox form this "Sports Model" would go under to the big types on weak thermal days, would hold its own in moderate thermal activity and would see the big ones right off on days of cracking thermals. But it could be made to do better than that. The low-speed end could be markedly enhanced by the employment of *full*-span low-drag slotted flaps exploiting boundary layer control. They must be full span.

It does seem that the more ambitious would-be private owner needs this sports model, that the private owner who is happy with the less spectacular ridge-soaring needs a modernised version of Scud II and not one jot bigger, while the Club wants to equip its first XI for the Open with the advanced type we now have. What do you think?

TRY KENYA FOR EASY RECORDS

by D. G. KUYPER

IT is always satisfying to achieve what you set out to do, and this was a Goal Flight with a hook. First of all it *had* to end at our home ground because we own no trailer, so there was no choice of goal. Then we had our date and time of departure practically determined for us, more than a week ahead, within the narrow limits of 10 a.m. and 1 p.m. on Sunday, March 25th, 1956. Finally, in the allotted time the machine had to be test flown as well.

Our T-21b, bought as a kit in 1952, was built by R.A.F. personnel in their spare time, after the Mau Mau rebellion had called the original builders to other duties. It had taken a long time, and when the last voluntary R.A.F. worker returned to the U.K., the club members had to finish the fabric covering and the final touches.

As we had no suitable means of transport, the machine had to be test-flown at Eastleigh Airport, which is the main airport of Nairobi and is used by the R.A.F. as well as by the large civil airliners. Hence the narrow time limits and the advance notice required for the NOTAM.

The test flying was reduced in scope when it was found that the A.S.I. indicated 15 to 20 knots at all normal flying speeds, which made performance tests too difficult. The

parachute, kindly offered by the R.A.F., appeared to be packed for storage and not for use, so Peggy, my managing director, put her foot down and forbade fast dives and spins. What remained to be done was accomplished in one low hop and a few circuits, and by 12.30 the ballast was thrown overboard and Paul Thompson and I got in our seats for a try at Kenya's first goal flight. The tow-car, an Opel, was rather light for the job, but managed to heave us up to 800 ft. We got some reduced sink, but soon we were down to 400 ft. above the end of the runway.

It is marvellous what moral support one gets from a co-pilot. When a sudden surge showed 20 ft./sec. rise on the Cosim we started circling, both protesting at the same time that of course we were far too low to make use of the lift and that as responsible club-members we should not turn our back to the landing ground but turn in for the final approach. When we had gained 300 ft. in a couple of circles, partly in and mostly out of the lift area, we stopped nattering about what we ought to do and settled down to serious flying and back-seat driving.

At 8,500 ft. a.s.l. we turned our back on Eastleigh and set out for Home, feeling both very dry in the mouth, and in our shirt-sleeves, considerably cooler than when we started.

We made it, with more than 1,500 ft. in hand, worked a final thermal over the home ground for fun, and landed in front of the clubhouse of the Aero Club.

In an unofficial way (because we have no barograph), we had broken the East African records for Gain of Height, Absolute Altitude, Distance, Distance to a Declared Goal, and the now obsolete Duration record.

It sounds good but I suppose I ought to mention that the "Home Ground" is Nairobi West Airport, five whole miles from Eastleigh, and that both airfields are at approximately 5,500 ft. elevation. That makes the total gain of height 2,600 ft. We were airborne for a full 30 minutes.

Oh, for the delights of a young country!

CORRESPONDENCE

THE POETRY OF SOARING

Dear Sir,

Surely Mr. Foster (SAILPLANE & GLIDING, June 1956, p. 134) should have used these lines from the same poem:—

See, how he scorns all human arguments,
So that no oar he wants, nor other sail
Than his own wings, between so distant shores!

The poem is "The Celestial Pilot", Longfellow's translation of Dante's "Purgatorio", canto 2.

F. P. NEWLEY.

94, Lodge Lane,
Collier Row, Romford.

WORLD CHAMPIONSHIP PUBLICITY

Sir,

May I, through your columns, explain the grave lack of news concerning the British Team in the National Daily Press? I ask this favour merely to vindicate my Publicity Panel and to establish responsibility.

The Championships were covered by Dr. Slater as Gliding Correspondent of *The Times* and by the local Reuter reporter. Dr. Slater, being a true "gliding type", was able to ferret out news of the day's happenings immediately and then phone it direct to *The Times*. This then appeared the next day in the morning paper. The Reuter correspondent apparently waited until the next day when the official landing reports and marks were handed out by the Press Section at St. Yan and then phoned them through so that his dispatch arrived at about 10 p.m. in London. This news was sent out on the tape to the National Press in time for the first editions. They did not publish the dispatch as *no* newspaper ever prints dated news, especially as it had appeared in *The Times* the previous day.

I personally contacted as many Air Correspondents of daily papers as I could, as well as the Heads of News B.B.C., and further caused the Director of News Reuters to phone his man at St. Yan.

In addition to the above, we (the British Gliding Association) only received three rather incomplete bulletins from the British

Team from which I was unable to write any stories which I could pass on to the Press.

These are the facts—this letter is not an excuse.

WALLY KAHN.
Chairman, B.G.A. Publicity Panel.

[This letter needed to be written because of a widespread belief among gliding people that (a) newspapers automatically print everything sent them, and therefore (b) if a piece of gliding news fails to appear, the person responsible for sending it could not possibly have done so. It is time they realized that, on the contrary (a) newspapers receive many times more news than they have room for, and (b) the decision whether a particular item should be published is made by the editorial staff, not by the contributor who sent it in. Furthermore, many newspapers print several editions which do not all contain the same selection of news; *The Times*, for instance, published nine dispatches from St. Yan, but several did not appear in every edition.

As to other newspapers, their record was pretty disgraceful. Through a press cutting agency we received the whole British press, apart from *The Times*, only 14 cuttings during the contest, including three from London papers; and at the end 17 cuttings giving the results, including only one from London (*News Chronicle*). Of these 17, six gave the winners in both classes, nine gave Goodhart and Foster only, and two (*Birmingham Post* and *Scottish Daily Mail*) gave MacCready only. Regarding full news bulletins from the team, this has only been possible at past contests when extra assistance was available for the job.—ED.]

Lieut. P. G. Flower, R.N.

It is with deep regret that we have to announce the death of Lieutenant Peter G. Flower, R.N., of the Royal Naval Gliding and Soaring Association, Lossiemouth, in a Service accident. Lt. Flower obtained his Silver C at the Long Mynd and Lasham earlier in the year, and was a member of the Bristol Gliding Club. He crewed for Commander Nicholas Goodhart in the recent World Gliding Championships.

THIS GLIDING

Kemsley Trust By-passed

"A Slough barber wants Sir Bernard and Lady Docker to go into partnership with him. Not in cutting hair, but in a gliding school. . . He wrote to the Dockers four months ago, saying he wanted to start a £12,000 gliding club, and asking for £6,000. Lady Norah replied. She was interested. But they were going on a cruise in their yacht and would reply when they got back . . . 'If I could start my gliding school I'd throw up all this,' he said. He has written (also without success) to Charlie Chaplin, the Duke of Sutherland, Sir Samuel Hoare, the late Sir Stafford Cripps, and Joy Nicholls. 'They mostly say they are too busy,' he told me."

—Slough Observer.

* * * *

Tenacity

"The Southdown Club had pushed their two-seater T-21 back to the take-off point and were parking it. They put one wing-tip on the ground and then, to everyone's amazement, they saw that a little man who had been holding the other wing-tip on the way back was still firmly holding on—now some four feet off the ground!"

—From a Correspondent.

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Puzzled

"Towing one aircraft by another is something we did not learn from the birds; and it is fun to watch the buzzards fly along wondering how we do it and why."—Dr. W. B. Klemperer, reported in *The Thermal* (Southern California Soaring Association).

* * * *

All The Same Incident

"Following a report that an aircraft had crashed near Linton-in-Craven, fire appliances from Skipton, Keighley and Silsden made a dash to Upper Wharfedale last night. They found, however, that the pilot of a R.A.F. single-seater sailplane, Sgt. A. Gough, of Andover, who was on his way to Weeton, had decided to make an emergency landing because of bad visibility. —*Yorkshire Observer.*

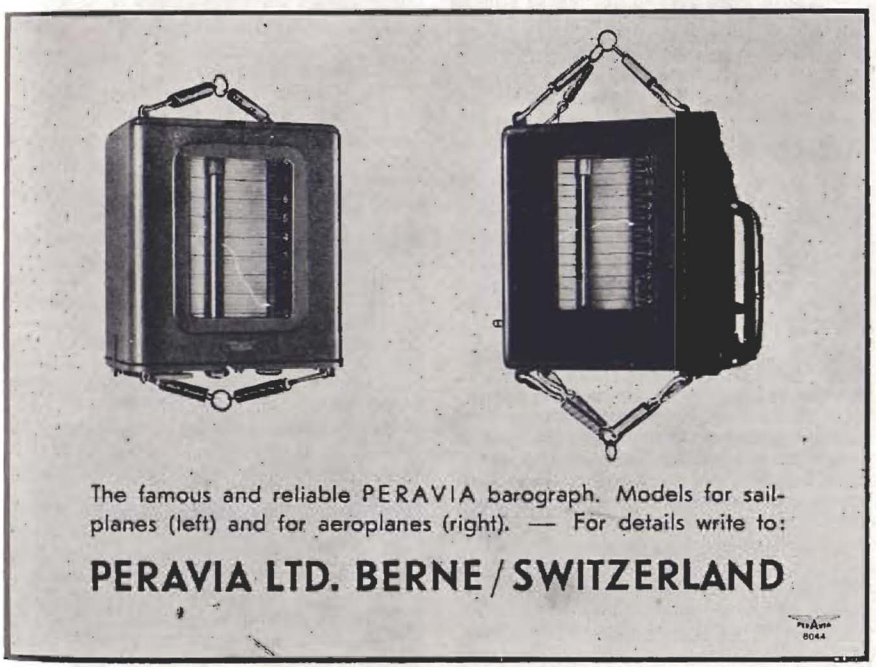
"Three fire engines—one of which broke down—and a bevy of police cars had arrived from Skipton, and traffic returning from the coast through Skipton was disrupted . . . As his glider was being dismantled and a bed prepared for him for the night, the fire engine was still trying to start."—*Yorkshire Post.*

"When the glider was preparing to land, someone mistook it for an aeroplane and dialled 999 . . . All unwittingly, the glider pilot caused the biggest commotion at Linton for many years."—*Craven Herald and Pioneer*

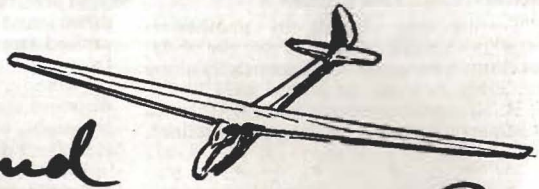
"SAFE LANDING"—Headline to report in *Daily Mail.*

"GLIDER CRASH"—Headline to report in *Times of Malta.*

"Sergeant Gough was uninjured and the glider was undamaged."—*Western Daily Press.*



Club and Association News



All contributors of Club News are hereby thanked for the material they submit, and will, we hope, understand that it is impossible to acknowledge safe receipt of every covering letter. It is, nevertheless, the policy of this magazine to maintain close touch with the Clubs, and from time to time visits to Club sites will be arranged by the Editorial staff.

There seems to be an endless queue of people wanting to join in our Sport, and to minimise the inevitable frustration almost all the major Clubs have, it seems, now either closed their membership lists or instituted waiting lists. Whether an increase in the number of Clubs is possible must of course depend not only on the availability of suitable gliding sites but also on the availability of experienced people to organise and run new Clubs.

Will Press Secretaries please note that contributions for the October issue will be required at the latest by September 1st and should be sent, with photographs of special interest, to 33B, Eccleston Square, London, S.W.1.

GODFREY HARWOOD,
Club & Association News Editor.

Air-to-Air Photography

ON July 6th Lord Brabazon opened at the Royal Photographic Society's headquarters at 16 Prince's Gate, London, an exhibition of photographs of Sail by Frank and Keith Beken of Cowes and of Charles E. Brown's Masterpieces with the air-borne camera. The exhibition comprised 70 examples of each type of photography and was open for three weeks.

These expert photographers are truly remarkable for their skilled use of natural daylight and cloud background effects, and even the most hardened glider pilot would have enjoyed the pictures of ships and yachts scudding along with the enlivening wind at every improbable angle.

As for the air-to-air shots, every type of aircraft was caught in a moment of grace. We specially liked the Olympia on tow behind an Auster; but from balloons to the Britannia, from Hurricanes to helicopters, each print was a picture that we wished to own. Indeed many copies, we were told, were ordered on the opening day of the show. J.E.G.H.

The Kronfeld Club

WITH a talk or film every Wednesday the membership of the Club is increasing gradually and we are now up to 250. The instructional lectures, which we had thought of starting this Summer, have in fact been postponed until the Autumn and will be starting on September 27th with a series of six each by Dr. Scorer and Frank Irving. Their subjects will be, respectively, meteorology and theory of flight, and full details of these lectures will be sent to members in a News Letter which should have gone out by the time these Notes appear.

Our main need at the moment is still projection equipment, in the shape of an epidiascope, and we will be very grateful to hear of any going at a reasonable price and also a slide projector.

Information or suggestions should be sent to The Hon. Secretary, The Kronfeld Club, Basement 74, Eccleston Square, S.W.1.

AUSTRALIAN NAVY

THE June issue of SAILPLANE AND GLIDING arrived simultaneously with a great disappointment to the Australian gliding movement, as well as to our Chairman and C.F.I., Tony Goodhart, as the Naval authorities did not see fit to grant permission for him to take part in the World championship meeting at St. Yan as Australia's sole entry.

A definite order has now been placed for a Schneider E.S. 56, due for delivery at the end of August (early Spring in Australia). It is reputed to have a performance similar to that of a Skylark II. The week-end to be spent collecting it from Adelaide, over 600 miles away, promises to be an exhausting one, as the Navy's only Tiger Moth is apt to be temperamental.

In the past two months flying activities have been somewhat curtailed due to bad weather, the fitting of spoilers to our T.31, and the settling in a tree of our Grunau. However, four more pilots have gone solo, and we believe we show the greatest total of certificates for any club in Australia for the year ended April 30th.

A.C.G.

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BOY SCOUTS

THE Air Scout Branch of the Boy Scouts Association is fifteen years old this year, and the enthusiastic membership is showing a gradual increase. Air Vice-Marshal J. G. W. Weston has recently been appointed as Headquarters Commissioner for Air Scouts and hopes to do much to expand this useful branch of the Scout Movement in the U.K.

Gliding Courses for Scouts, first introduced in 1955, are being held at Lasham, and prove highly popular. They provide basic flying training, an introduction to soaring and lessons in handling aircraft on the ground. Training is also given in dismantling gliders, making simple repairs, etc., and there are lectures on gliding, theory of flight and meteorology. Scouts who have reached a certain standard of proficiency are officially recognised by the Air Ministry, and may be allowed to fly as passengers in Service aircraft.

E.G.W.W.

BRISTOL

OUR hopes of making Whitsun the occasion for the official opening of our permanent home at Nympsfield faded when the start of the club house was delayed by protracted dealings with the local authorities. We had perhaps been over optimistic in assessing the effort required to finish the site and to prepare new basic equipment. However, the completion of our new hangar decided us to leave Lulsgate and start at Nympsfield with a Whitsun Camp.

Invitations to this camp produced three Skylarks from the Long Mynd and one from Cambridge, a Grunau from Oxford and another from the R.A.F., together with an Olympia. These, together with the Club Prefect, Olympia, and T.21, and the syndicate Olympia and Kite 2, tried our winching facilities to the utmost, and caused delays in the launching rate for which we must apologise. Fortunately the weather proved co-operative, and once more showed the thermal possibilities of the site, without any assistance from the West and North ridges.

Thursday, May 17th, Cotton and Prestwich arrived by soaring from the Long Mynd. Saturday, May 19th, Rutherford also soared down from the Long Mynd, while Prestwich flew on to Lasham. Pringle viewed both Cheltenham and Bristol during a four hour flight in the Cambridge Skylark.

Mike Hodgson soared the syndicate Olympia for two hours locally, whilst Collier made the first club cross-country flight from the site when he flew the Olympia 20 miles to Colerne.

Sunday, May 20th, Ken Machin flew the Cambridge Skylark locally for nearly three hours, and Parkes experienced icing in the club Olympia at 6,800 ft. Weir took the Prefect to 6,400 ft. to gain his Silver "C" height, and later found an evening thermal which took him to 3,900 ft. on his conversion to the Olympia. John Hickling flew the Skylark back from Lasham.

Monday, May 21st, thermals were definitely scarce locally, but Barry Jones got back to the Long Mynd in 90 minutes, and Jack Houghton, in the club Olympia, landed four miles East, at Shipton, having gained his Silver "C" height as well as distance. Tuesday, May 22nd, the Skylarks were replaced by the Grunaus and the Olympia from Oxford and the R.A.F. F/O Derek Ellis completed his Silver "C" with a five hour local flight, and Paul Hodgson got his "C" with a two hour flight in the Prefect. Parkes took the club Olympia round a 30 mile triangle including Malmesbury and Cirencester, and Garnett reached 8,000 ft. in the syndicate Olympia.

Total flying for the camp was 180 launches and 48 hours, of which the visitors accounted for 18.

Rather less spectacular flying has taken place since the camp, but soaring has been possible to some extent at every weekend, and also during mid-week flying. Both the West and North ridges have been soared the best day being June 17th, when 28 hours were totalled in a strong North wind. Weir did a five hour "leg" in the Tutor, whilst Leach and Garnett soared the T.31 for 1½ hours.

Flying membership has increased since leaving Lulsgate, and we have had to impose a waiting list for prospective ab-initios. Of the newcomers, Peter Scott, who claims that gliding and television require more patience than any other of his activities, is the first to be trained to "C" standard entirely at Nympsfield. Our summer courses were fully booked from the start, and these are now in full swing in the hands of Pete Collier and Jack Houghton.

The conversion of the barn into our new club house is expected to be finished by August when we plan an official house warming. In the meantime we are concentrating on the bumps on the field, and already many of these hazards have been filled in.

M.G.



Finale at Lulsgate, former site of the Bristol Gliding Club. Against a setting sun and clouds lowering over the long line of the Mendips the last flight of the day is ending.

—Photo by N. W. Kieffer.

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CAMBRIDGE UNIVERSITY

APRIL and May proved to be record months in which 700 miles of cross-country flying (550 of which were in the Skylark) and 1,630 launches, were carried out, compared with 3,300 launches for the whole of last year.

May was particularly good with 1,000 launches, 160 hours, and cross country mileage of 210; and on Whit Monday the record total for local Cambridge soaring of 20 hours was achieved with three Silver "C" heights and one completed Silver "C".

So far this year we have amassed one Gold "C" distance flight when Peter Neilson flew to Exeter; three Silver "C" heights (Purnell, Pat Harris and David Gray); four durations (John Griffiths, John Teasdale, Peter Bulman and Chris. Duthy-James); two distances (Anne-Marie Neumann and John Griffiths); and three complete Silver "C" (Bruce Smith, Michael Jackson and Gordon Stevens).

Numerous attempts are being made on the elusive Gold "C" height, Pip Gaskell being the unluckiest when he reached 11,200 feet in the Olympia recently being beaten by the narrow margin of 200 feet, because of its launch height.

At the Annual General Meeting, at the beginning of June, John Pringle was again elected President, with Pip Gaskell and Elisabeth Machin in the Treasury, and David Clayton in the post of Secretary. Ken Machin as C.F.I. heads the Committee composed of Maurice Pleasance, Ken King, Pat Harris, Peter Bulman and John Griffiths. At the meeting the Pringle Cup for the longest local flight at Cambridge was presented to Sigfrid Neumann for his flight of 3¾ hours including a climb to 8,600 feet.

Arriving at Marshall's one Saturday recently, Club members were puzzled to see a curious object, said to have been bought by David Clayton and transported by Pat Harris, standing outside the hangar. Various suggestions were made as to its purpose, the most popular being a combine harvester. The only clue was the R.P.M. indicator, and the word "Wilson". We now understand that it will be a winch some day.

At the end of the term all the aircraft were packed in their respective trailers and taken to the Long Mynd, where, at the time of writing, the Club is spending a fortnight. After arriving in the most depressing drizzle and sitting in the Clubhouse for two days, the weather cleared, and we were greeted by waves in which Peter Neilson reached 9.200 feet, and Gordon Stevens topped 7,800 feet.

We have been presented with a hut which Anthony Edwards and a gang of stalwarts are converting and weatherproofing to form a Clubhouse, which will no doubt be much appreciated in the winter months.

B.H.S.

CENTRAL AFRICA

THE most important announcement so far this year has been the Central African Soaring Association's decision to hold our first National Competitions, which will be staged at Thorn Park, on the Golden Stairs road near Salisbury. The dates are from August 22nd to 29th, and entries are expected from at least the Salisbury and Bulawayo Clubs, which between them can muster a Skylark II, H.17, Tutor, Kite and Grunau 1 and Grunau IIb, also T.31 and Condor in the 2-seater class.

Eric Bone becomes our new C.F.I. on taking over from Derek Lane, who has retired on taking up a post in England. Our best wishes go with him and Anita back to the old country.

Eric Burditt in his new Skylark II has in one month done a 64-mile cross-country and over 5 hours in thermals and cloud. Doug. Elliott has flown two minutes over the five hours in the Kite, and David Ryland flew 42 miles in his Tutor, landing in a valley with 6-foot tall grass concealing ant-hills. Fortnuately he had 2-way radio and was "talked down" by Eric Burditt who had arrived with trailer in advance.

At Thorn Park a strip of 900 yards has now been levelled, our hangar has been moved and re-erected, and Arthur Price, our architect, has built a clubhouse 40 ft. by 40 ft. for less than £200. Membership has increased by fifty per cent.

M.P. and R.L.M.

COVENTRY

A striking feature of the club flying activity so far this year is the large number of laurels won by ladies. Of the four "C" Certificates gained since the last account was published all went to members of the gentle—but buoyant—sex, the ladies concerned being Mrs. Grace Tarver, Mrs. Bertille Hunt, Miss Beryl Saunders and Miss Barbara Cartwright. The last named did it with a flight to 2,400 ft., and in order to prove that it was no mere fluke has bettered the performance on two subsequent occasions with flights to 4,000 ft. and 4,300 ft., still using the Tutor which unfortunately is not equipped with a barograph. She is not the only young lady who has lost a Silver C height for this reason; Cathy Liquorish has also climbed to 4,300 ft. in the Tutor: since then, however, she has flown the Viking with a barograph, attaining over 4,000 ft. on three different days.

During this time the male element has not been entirely idle: Silver "C" height legs have been gained by Doug. Cunningham, Ivor Tarver, Peter Berthelsen, Alan King, Norman Bell and Bob Cairns, and the duration leg for completion of Silver "C" by Mike Hunt. Owing to the extensive C. of A. work on the Club Olympia cross-country flying this year has been limited to the recently acquired syndicate Olympia, Jacob's Ladder, now owned by Thompson, Carr and Hunt.

There have been two visits to Edgehill since the last account. One Friday Vic Carr took time off to try for his Gold "C" distance and took the Club Viking down to Edgehill where John Greenway launched him with his Ford Zephyr. Unfortunately the expected soaring conditions did not materialise and, apart from one short soaring flight, all the flights were circuits.

The weather over the Whitsun holiday was very good and many soaring flights were made. On the Sunday, Vic Carr paid a visit to the Kettering Club at Sywell, and on the Monday George Thompson did a goal flight to Camphill. Also on the Monday Doug. Cunningham made the best gain of height this year with a climb of 7,200 ft. in the Club Olympia without entering cloud.

Whit Tuesday was probably the best day of all although unfortunately both club and syndicate Olympias were temporarily *hors de combat*. The Viking and the T.21 ran shuttle services (nine in all) to over 5,000 ft. (best height 6,800 ft.) and more than one pilot was heard to remark that he could get down only by circling in sink. The best flight of the day was probably that by John Curtis who took the Tutor up to 5,700 ft. making yet another Silver "C" height lost for want of a barograph.

Mike Hunt's Silver "C" duration flight on May 26th is possibly unique. He thought that the thermal period might not last 5 hrs. and decided to fly to the nearest suitable hill, the Malverns, 40 miles from Baginton. This he carried out successfully, with 2 hours local soaring at Baginton, 2 hours on the way, and a final 3 hours of hill soaring, thus setting up a new club duration record of 7 hrs. 10 minutes.

We have now, almost at mid-year, carried out a total of 3,400 launches for just under 500 hours. One important event to be recorded is the recent engagement between George Thompson, our C.F.I., and Barbara Cartwright whose high soaring ability and natural attractiveness make her a desirable spouse for the keenest of glider pilots. We wish them all the best and hope that all their thermals will be big ones.

M.S.H. and G.E.T.

DERBYSHIRE & LANCASHIRE

The two months after Easter saw a continuing increase in the number of flying hours over last year (itself a good one) and there have been some notable wave and cross-country flights. In spite of the rather discouraging nature of the terrain within 15 miles of the club, more flights have been attempted even when conditions did

not appear particularly good. To encourage still further the competitive spirit, the Chairman is organising a task competition over the year, details of which will be available very soon.

On Sunday, April 29th, Mick Kaye set off early in an Olympia, hoping for Gold "C" distance; in this he failed, but he made a very good flight of some 135 miles to Cuffley, south of Hatfield.

Saturday, May 12th, turned out to be an excellent wave day. Mick Kaye first contacted it soon after 1300 hrs., and got quite rapidly to Gold "C" height, reaching over 10,400 ft. above take off. He first went up in a hole in the cloud to 3,200 ft., when the hole closed over, and he descended into clear air at 2,500 ft. Deciding that it was a strong one, he positioned himself over the valley and went into cloud at a steady 40 knots on a compass course of 230°. Cloud was cleared at 4,000 ft. and enterprise was rewarded as already mentioned. Later he flew again in company with Ken Blake (in Olympia and Skylark II respectively), at 1830 hrs., and both got to about 8,500 ft. over in the direction of Buxton. By now the strong W.N.W. wind had abated somewhat and it seemed that the best of the wave might be over; but it persisted quite late, and John Tweedy in a Sky got to 10,100 ft., Alec Baynes in a Skylark II to 9,700 ft. and George Whitaker in an Olympia to 7,500 ft., these heights being reached at about 2115 hrs., by which time things were looking rather dark down at ground level. As well as the two Gold "C" heights, the day also produced Silver "C" height and duration for Zita Paddon in the club Olympia.

On Whit Sunday, with a light W. wind, about 5 knots, Ken Blake made a goal flight to Ingoldmells, distant about 87 miles, in 2 hrs. 40 mins. in a Skylark II, finding pleasure flights going on steadily there in a brisk Easterly sea-breeze. (Moral for pilots doing cross-country flights ending at the coast.) The same day Stanley Armstrong flew 100 miles to Downham Market, near King's Lynn. Whit Monday, wind S., 10 knots, saw the arrival from Coventry, on a goal flight, of their C.F.I. George Thompson. (Distance about 70 miles.)

On Saturday, May 26th, L. R. Robertson declared Exeter as goal, and after a long and difficult flight in his Olympia, during which his maximum height was only some 4,500 above take-off, reached his goal. Distance 195½ miles, time about 7 hours. Reward—Gold "C" distance and Diamond. The same day Bryan Jefferson reached Dymock, near Gloucester, a distance of about 97 miles. He and his retrieving crew were intrigued to see an Olympia soaring the Malverns; it turned out to be Michael Hunt from Coventry, who had flown across country to the Malverns where he hill-soared to complete his five hours. Also on the same day Graham Elson completed his Silver "C" with a flight of 42 miles from Camphill to near Stafford.

On Sunday, June 10th, there was wave over the Mam Tor valley and Bernard Thomas and Mick Kaye had good flights there. On Wednesday, June 13th, Roy Illidge completed his Silver "C" with a 70 mile flight to near Boston.

In spite of a very active and successful start to the season we have been dogged by a succession of accidents to machines. We hope that we have had our ration for the time being, and that our new Ground Engineer, Eddie Kenworthy, will for a change have time to sit back and take a look round.

A.H.B.

GAMECOCK

OUR Club at Bramcote, near Nuneaton, is a branch of the R.N. Gliding & Soaring Association and was formed early in 1954. It was not, however, until several months later that we were in a position to acquire equipment, but by January, 1955, we owned three Kirby Cadets and a Ford V-8 truck, and had the loan of a winch and a primary S.G.38 from R.N.G. & S.A.

By March all this equipment was serviceable and flying commenced. The 1955 season showed a total of some 300 launches, 10 "A" and 8 "B" Certificates, achieved, however, not without some damage to the Cadets, which gave plenty of work for the Winter. The C.F.I. for 1955 was C.P.O. John Osborne, and with the noble assistance of C.P.O. Perrells, our ground engineer, all equipment was made serviceable by the early Spring of this year.

The season is going well. One Cadet has been fitted with instruments and C. of G. hook, and was soared for 24 mins. on Whit Sunday by C.P.O. Osborne—much to the annoyance of those members who had taken Whitsun week-end away. The new C.F.I., Commissioned Airman Gunter, has already produced 5 "A" and 2 "B" Certificates, and



C.P.O's. Osborne and Perrells with the Gamecock Club's Red Cadet at Bramcote.

our launches up to the end of June were close on 500. We fly in the evenings on Mondays, Wednesdays and Fridays, and would welcome any visitors. Finally, we have to thank our quota of "gliding widows" who regularly bring tea and sandwiches to the airfield and without whom we should never fly at all.

J.E.O.

ISLE OF WIGHT

By kind permission of our hostess, Miss Mary Wilkins, the Club operates at Sandown Airport. In one way it may be likened to the legendary Phoenix, which rose from its ashes and presumably became airborne again, as two other Clubs have tried to get going since 1945, but without success.

The present Club first flew on January 30th, 1955, and in May this year became a limited company. Phase I, from inception to August 30th, 1955, covers the period when solo training was in force, the number of ground slides and launches with two Cadets totalling 350.

On August 30th, 1955, Phase II commenced with the arrival of our T.21b. by aero-tow from Lasham. Flying time increased rapidly, and by the end of June, 1956, nearly 1,500 launches had been achieved. Last November a Grunau IIb was bought, and one of the Cadets modified to higher standard by our members. To date 4 "B" and 3 "C" certificates have been gained, and the club membership remains at about 40.

The 2-seater has allowed nearly 100 passenger flights, and the Club is proud to have flown the Island's M.P., Sir Peter MacDonald, and Gp. Capt. Douglas Bader. Sir Arthur Gouge, F.R.Ae.S., Vice-Chairman of Saunders-Roe Ltd., has agreed to be President of the Club.

Although the Island contains many ridges there are none within reach of a launch from the airfield, so that all soaring has been with thermals. An expedition with the Grunau and trailer to the mainland is planned for September.

P.W.

KENT

May 12th saw the opening flying day at Detling, and although the weather conditions were not good, a large crowd turned up. Geoffrey Stephenson and John Furlong rigged their Skylark III and flew it impressively, and the R.E. Club's Prefect was kept busy. On the following day Stephenson soared back from Detling to Dunstable, going Northabout London against a moderately strong head wind.

The Club now has 70 flying members, and until further facilities exist the list for new entrants is closed. A Slingsby T.21b has been ordered, and should have been flying for some weeks by the time these notes appear. For launching a Chris Wright winch has been acquired.

On the accommodation side a 5-roomed flat in the near neighbourhood has been rented, and Bar facilities are expected shortly when a licence has been granted.

Up to the end of June launches totalled 600 and several first solos had been flown. Ian Abel soared to Silver "C" height, and E. Day also gained his height leg in the Slingsby Sky which he owns jointly with M. Forman.

G.H.

LONDON

Over the Whitsun week-end Bentson took the Grunau to Didcot getting over 5,000 ft. on the way. Whit Sunday saw some six machines from the Lasham Centre circling over us before starting back. Monday was, however, our best day; Spicer, on his second ever cross-country declared Camphill as his goal, and actually landed at Ashdown, near Derby, in the blue Olympia, having been unable to locate the Derby & Lancs. site. John Furlong and Noel Anson completed the 100 km. triangle, and Furseman nearly got round.

Whitsun also saw the rebuilt Kite II, on which Doughty has spent so much effort, flying again to gain 6,000 ft. in a cloudless sky.

More recent cross-countries include Roger Pollard to Redbourn and Sawbridgeworth, H. Kuntze to Chipping Ongar, Bentson to Panshanger, and a trip of over 5 hours almost round the 100 km. triangle by Charles Ellis.

Our A.G.M. was held on June 16th and the new Committee now consists of Godfrey Lee as Chairman with Dan Smith, Roy Williams, Peter Fletcher, Philip Ramsden, John Hands, John Jeffries, Charles Ellis, Hugh Wheatcroft and Ron Anson. Dan Smith remains our C.F.I.; we are all very sorry that he had to give up being Chairman as well, due to pressure of work, and thank him for all the time and energy that he has given to the Club over so many years.

P.F.

MIDLAND

THE period covered by this report is rather longer than usual, due to the lack of notes in the last issue, but it includes some new "highs" in the club's history.

During the last few months we have had few West winds, but a large number of good thermal days. The Skylarks have really shown up well with their ability easily to reach our East slope, and thus utilise the excellent thermal conditions existing over there.

The long awaited super winch has yet to arrive, but it should be operating by August. Meanwhile the transport committee stalwarts consisting of John Knots, John Anstey, Pat Macnaughten and others, press on with the twin V8 engined winch.

On March 5th Charles Green flew to Bromsgrove (37 miles) to complete his Silver "C", and on March 18th E. Stowe arrived from Oxford (85 miles) at a speed of 48 m.p.h. On March 23rd and 24th the East slope was soarable all the way from Church Stretton to Plowden in a S.E. unstable airstream.

From March 30th until April 3rd we held our usual Easter Rally. Frank Irving with a group from Imperial College visited us during April, and on the 28th Wilbur Wright flew to Chepstow and David Lowe to Brecon in Red Skylark, Ted Stark in Blue Skylark landed at Hereford. On April 29th Ted Sheppard did a 28 mile triangular flight, and Ted Stark reached his goal at Morton Valence 58 miles, making 3 Silver "C's" completed during this week-end.

On Whit Saturday Ron Rutherford flew the Red Skylark to Nympsfield to join Doc Cotton and Charles Green who had flown there on May 17th. On Whit Monday Doc Barry Jones flew the Blue Skylark back from Nympsfield in 1½ hours. Whit Tuesday, May 22nd, was also excellent for thermals, but rather hazy. P. Bisgood of ETPS got to 8,600 ft. in the Sky. May 23rd rather amazingly came along with a light West wind, and Bisgood made Yarmouth in 4 hrs. 10 mins. with the Sky, which collected the 300 km. record besides earning him a Diamond. Roger Austin in an ETPS Olympia reached Lowestoft and so gets a Gold "C" distance leg.

May 27th provided soaring over the East slope with good blue sky thermals—a rare condition in these parts. On June 10th one pilot had the rather pleasant surprise of climbing out of an extremely rough thermal straight into a wave of extreme smoothness, and this in a North wind. On June 11th Doc Cotton got 9,500 ft. in a sizeable Cunim and went as far as Hay—40 miles. On this day the wind sock acted rather like a propeller, but eventually settled down to West, making hill soaring possible until 2200 hrs.

June 13th must easily win as the most successful day the club has ever enjoyed. Ted Stark and Steve Wiltshire reached their goals at Leiston in Suffolk, 190 miles. Doc Cotton, aiming for Yarmouth, landed at Southwold after 7 hrs. 20 mins. in the air and covering distance of 194 miles. Overshadowed by these flights was a good Silver "C" distance and height by John Marrison who flew to Long Marston near Stratford-on-Avon (69 miles) getting to 8,500 ft. en route. In all 60 hours flying was done during the day from only 32 launches.

J.H.

NEWCASTLE

MAY and June have seen great activity at Usworth including the first cross-country flights from this site. The club duration record of 3½ hours, set up by Alan Pratt in the blue Kite I, was broken by Harry Oxman's flight of 5¼ hours in the Olympia on Whit Sunday which gained him the duration leg of his Silver "C" and would

have gained him his height also had he carried a barograph.

Not to be outdone, Ian Paul was launched in the Kite II and came down from 5,500 ft. 1½ hours later with his height leg well and truly logged.

On Whit Monday we made the first away landings. Ian Paul found strong and numerous thermals on his way to the disused airfield at Boulmer on the coast near Alnwick until he reached Newbiggin at 4,800 ft., after which they vanished and he flew the rest of the trip in a straight glide arriving at Boulmer with just 300 ft. Distance 35 miles, average speed 31.7 m.p.h.

Malcolm Sanderson in the Silver Kite I also tried for Boulmer, but having started later he found reduced lift and had to land 9 miles short. There was much local flying at Usworth, the T.21 climbed on Whit Monday in company with the Kite II and an A.T.C. Sedbergh to 5,600 ft. Andy Coulson took the Olympia to 5,000 ft. on June 3rd.

The A.G.M. was held at the town H.Q., Lovaine Place, on May 28th and was well attended. The Chairman, Pat Miller, reported that the membership had risen from 172 to 199, the proportion of flying members having risen by over 80 per cent. The year ended December 31st, 1955, showed a total of 2,210 launches and 207 hours flying. 13 "A", 9 "B" and 4 "C" Certificates had been gained. The loss of £144 had now been written off. Miss Dorothy Hales was elected Secretary and Douglas Collinson Treasurer in place of Miss Anne Gray and Alan Crawford, who were both thanked, together with Les Scott, on their retirement from the Committee, for the sterling work they had all done for the club.

L.A.C.

Right: Ian Paul with the essential barograph recording his Silver "C" height at Usworth on Whit Sunday.

Below: Harry Oxman enjoys a meal after 5¼ hours in the Olympia.

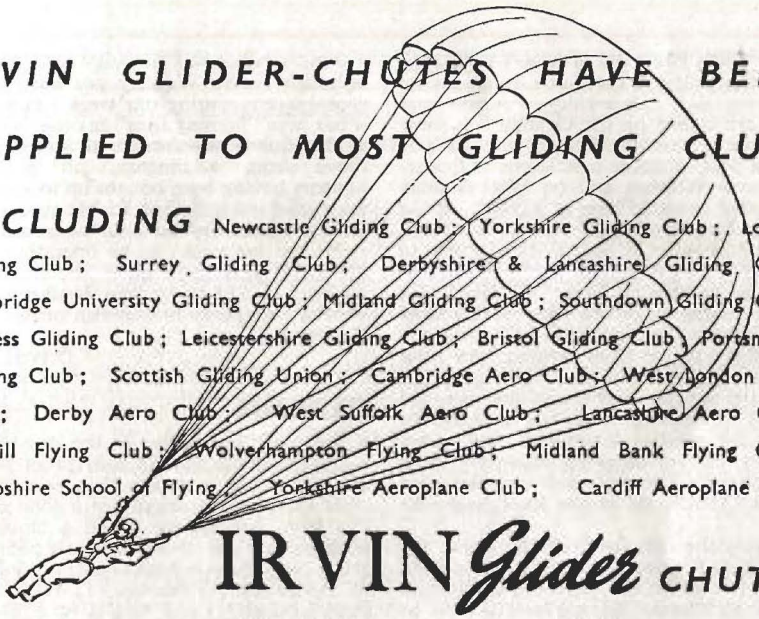




OXFORD

THE latter half of April saw a flight of 2½ hours duration by Anita Schmidt in her Grunau, and a welcome week-end visit to Kidlington by members of the Surrey Gliding Club complete with Olympia and caravan.

Professor George Varley's Olympia became the Club's property early in May and Raymond Salisbury Jones qualified for his "C" certificate with a seventeen minute



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flight. Chris Hurst did likewise with a fifty-three minute trip in the Club Grunau on the following day. Speechley, Pearson and Courtney soloed on the Grunau this same week-end.

Don McColl made a welcome reappearance over Whitsun and on Whit Sunday proceeded to cloud base at 5,000 ft. in the T.21 on his second flight. By way of encore on Whit Monday he soared the Olympia to 6,700 ft. during a flight of nearly four hours duration, gaining his Silver "C" Height leg before having to return early to London. Mr. Sainsbury achieved his "C" with a ½ hour flight in the Club Grunau and John Smoker qualified for his "A" and "B". Also the writer of these notes screwed Anita's Grunau up from 600 to 6,000 ft. minus (of course) barograph and warm clothing, having departed ostensibly on a quiet circuit. The week-end was concluded with a Club Social at the local Begbroke Hall.

During the remainder of the week, the Schmidt G.B. syndicate visited Nympsfield together with R.A.F. Bicester's Olympia crewed by "Jamie" (now a leading light at Bicester as well as remaining a member of the Oxford Club), F/O. Frank Smith, F/O. Derek Ellis and John Gibbons. Derek Ellis gained his Silver "C" duration leg with a five hour flight in the Olympia. Although we were unlucky with the weather during the rest of the stay, apart from a little frontal soaring, the hospitality afforded us by the Bristol Club and also the local inn made it a most enjoyable visit.

June weather was not very co-operative, although David Woolley got away on a cross-country during one week. However, it has been "flaming June" in other respects as the Club is now faced with an imminent move from Kidlington, all available hangars having been bought up to augment the motor industries' insatiable appetite for storage space. By the time these notes are published we expect to be operating from temporary quarters nearby and hope that we shall also know by then whether or not we will be able to re-establish ourselves at Kidlington.

D.W.H.R.

PERKINS

SINCE our last report in the April issue, the club has made steady progress and about a dozen members have now gained their "B" Certificates out of a total of 55. We have successfully leased a clubhouse building and use of runways and perimeter track from the Air Ministry, and are flying at Polebrook Aerodrome, 12 miles from Peterborough. Launching is by converted balloon winch mounted on the back of a lorry.

P.H.



W./Cdr. Morgan Griffiths, A.F.C., Chairman of the Perkins G.C. and marine sales manager of the Perkins diesel engines, is briefed for a flight in one of the Club's Cadets. He was formerly a test pilot with the Bristol Aircraft Company.

SOUTH AFRICA

BORN in or about 1936 with the help of Wolf Hirth, the Border Gliding Club flourished for a short time in East London and then migrated to King William's Town where it operated with success until 1939.

The B.G.A. announces

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the best selling book by Philip Wills which will be available shortly, price 5/-.

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Attempts to revive the Club in 1946 were unsuccessful, but in 1955 the club was re-born at Collondale Airport, East London, using a home-made winch to launch a Grunau primary and a Kirby Cadet.

Conditions at Collondale are not easy, as being only four miles from the sea the wind direction changes frequently. Each change involves re-siting the winch and re-laying the telephone cable. The average flight time is low, as the solo method of training including groundslides and low hops has to be followed. On 41 flying days during the year the total of launches is 1,411.

Lots of determination and hard work saw the club produce £1,000 last year, including a subsidy of £400, and this amount was sent off to the Wasserkuppe where it was exchanged for a 2-seater Ka 2 "Rhödnschwalbe" which arrived at the end of April. In May, Ken Brown, formerly of the Dublin Flying Club took delivery of a Tiger Moth, and has been kept busy on aero-tow every week-end since.

Our local magazine "Outspan" published in May a long account of Goodman Houshold's attempts at gliding in Natal back in 1871, which, if they could be substantiated, would give to Africa the credit for man's first gliding flight.

B.G.P.

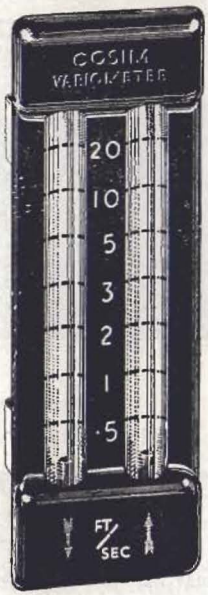
SOUTHDOWN GLIDING CLUB

NORTHERLY winds and dry weekends have given us plenty of soaring along the downs and included a successful cross-country by David Parsey, C.F.I. of the club, who took off from Firle about 10.15 a.m. and landed at West Meon near Petersfield about 2.30 p.m. a distance of 54½ miles. The going was pretty tricky at times, especially crossing the Shoreham Gap, where he was forced down to about 50 feet, but a lucky updraught helped him over and the rest of the trip was easy. The new hangar is in course of erection which will give us valuable flying time and accommodation for several aircraft. Accommodation for members and visitors is being improved and an excellent service of meals can be had from the farmhouse. A non-

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members course is being run this month under the supervision of John Simpson of the London Club. H.W.H.

SURREY, ARMY & IMPERIAL COLLEGE

MAY was our best month so far this year and during it we made just under 3,000 launches. The Whitsun weekend, when we held a rally, was particularly good and 393 launches produced 2,889 miles. The rally itself was won by David Ince flying the Olympia IV with which he gained top marks on all three days in spite of having competition from Philip Wills and Nick Goodhart in their Skylark IIIs.

Also over Whitsun Peggy Lane, Ann Procter, Bruce Sinclair, Martin Seth Smith, Stephen Wills and Ron Willbie gained their Silver "C's", Martin's and Stephen's distances both being over one hundred miles. The week after, John Williamson flew the Weihe to St. Davids to gain his Gold "C" and Diamond for goal, but David Kerridge unluckily landed 6 miles short, following the same route across South Wales.

As a result of increasing costs the winch and motor tow launching charge for club gliders has been put up to 4/-, but this includes the first 16 minutes. The launching charge for privately owned gliders stays at 3/-.

Daisy, our eldest T-21, suffered her first major damage recently, when she was blown over while being ground handled, in spite of the fact that there was a member in the cockpit. She should be back by the time these notes appear, but it is a most unnecessary loss of use of a club aircraft.

H.T.

ULSTER

ALTHOUGH we have not been "in the news" for some time, our activities continue with the Club Tutor and a privately-owned Gull. Our site is very dependent on winds and tides, as we tow off from a beach to reach the ridge, soaring on which requires a Northerly wind. Average cloud base is about 2,400 ft., but the hills are not usually free of cloud until after midday, so activity is limited, but in good conditions we have 4½ miles of magnificent soaring, which compensates for the 70-mile journey from Belfast. If you are lucky to be launched just before the tide is fully in, you may stay up until it goes out again.

Tracey attended the Easter Course at Scottish G.U. which he much enjoyed, and back here in April gained his "C" with a flight of 25 minutes. Best height attained in April was 3,100 ft., and Beck, Heaslip, Liddell and Rountree all had good soaring flights during April and May.

On June 17th, Rountree had a quiet ride at 1,200 ft. for 1½ hours, but when he landed the wind had dropped. On June 24th, as forecast, the clouds were down on the cliff top until 3 p.m., but later Rountree and Tracey flew. A clear sky and N.W. wind on June 25th tempted Liddell from work in Belfast and for 3½ hours he soared the Gull in crystal clear air with a magnificent view West over Donegal, South to the Sperrins and North-East to Rathlin and Jura. We claim there is no lovelier site in the whole world.

W.L.

WESSEX R.A.F.

THE R.A.F.G.S.A. clubs have an annual competition of their own, for their allocation of funds depends on their achievements during the previous year. Last year we of the Wessex were new at Andover and training was paramount, but this year we have a little experience as well as lots of enthusiasm, and there aren't many weekends when the retrieving truck lies idle.

May was particularly good. On the 6th, everything that went up seemed to stay up and the Secretary, disconsolately kicking a divot, was smartly strapped in the Mark I and despatched heavenwards, where he circled up to 3,600 feet and set off for anywhere 50 kilometres North. He now knows all about penetration and the downs that lie between the ups.

On the 12th the Treasurer, Frank Allen, did his 5 hours at Inkpen, a fine site we are increasingly visiting, and Andy Gough, flying out to keep him company in the Grunau, amused himself out there for an hour or so and then on the way home decided to deliver her to Gosport to have some defects put right. You can do this sort of thing when you are an Andy Gough apparently, flying where you will and only coming down for supper. However, he ran out of lift over Eastleigh, decided at 450 feet that a football pitch was a fine thing to have handy, but then found zero sink and circled madly round over a milkman for 20 minutes to gain a hundred feet. This must have been a very hot milkman indeed, for

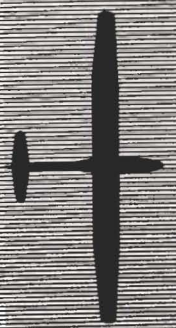


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he eventually got up to 4,000 feet again, and of course made Gosport with height to give away.

On the 19th, Air Commodore Lane and Arthur Braybon both got their height and distance, and Jim Brimfield his height, to add to his "purely accidental" distance to Weymouth on a training flight the previous month. Two "B" certificates and an "A" were also harvested on this day, which was also memorable for a visit we had from Philip Wills in his Skylark III. "Give me a good fast launch" he said, paid his money, and disappeared swiftly into the blue.

On the 20th, Roy Padgam flew his distance to Kenley in the Olympia and Jock Brown to Frinley Green, where he landed in the recreation ground and somewhat disconcerted the fire brigade and ambulance who had been called out to "rescue" him, by photographing their smart arrival and then popping off to phone for the trailer.

On the 21st Andy did his Gold "C" distance to Yorkshire, a flight which he found easier than the writing of an article on it. We are as happy about this as a club should be which owes so much to his industry and talent, and we think the Olympia is a pretty good sailplane, too!

After Whitsun, Secretary Lezemore, Jim Brimfield and Tony LeRoy took a Grunau down to Nympsfield for three days, where they were very appreciative of the Bristol Club's hospitality, under Pete Collier, but the lift expired as soon as they arrived and the only event of note during the camp was a first landing below the hill by Jim B, who, determined to show there was lift on the S.W. ridge, flew all the way there, fluttered up and down for 15 minutes, and then disappeared below the horizon.

R.B.L.

YORKSHIRE

DURING the last two months we have at last had some excellent soaring weather at Sutton Bank and heights of over 4,000 ft. have been reached on several occasions.

The outstanding event of this period was undoubtedly Keith Moorey's flight on Tuesday, May 15th, when, according to his altimeter, he reached 9,300 ft. in a Tutor. Keith had been hill-soaring, along with one or two others, in the hope of contacting a wave, and this he did beyond Boltby Reservoir. The wind was from the North-West and the wave formations were exceptionally good. Only the previous Sunday, May 13th, he obtained 4,600 ft., also in very good wave conditions, but without a barograph. Mention must also be made of Dave Rennison's flight on May 23rd in a Tutor when he reached over 4,000 ft., mainly by using thermal lift, and the flight on May 27th, a very hot, almost calm day, when Bob Swinn and a passenger in the T.21 circled to 3,250 ft. in one thermal.

On Sunday evening, June 10th, the wind was N.E. and there had been only a little flying (circuits) during the day. However, in the early evening our old friend the N.E. wave appeared, standing some distance to the West and South of the hill, and by 7.30 it seemed very active indeed. Chris Riddell decided to try his luck in the Skylark and at 7.40 p.m. he took a launch on the long N/S runway and made straight for the wave, downwind, reaching it quite easily. Bob Swinn and Bob Wilkin then took off in the T.21 and also reached the wave without difficulty. The two-seater soared for about 30 minutes and reached a height of 2,400 ft. In a flight lasting just over an hour, Chris Riddell reached a maximum height of 3,100 ft. and was able to explore the whole length of the wave, approximately 11 miles, from Upsall in the North-West to Ampleforth College in the East.

Bob Swinn reports that the wave continued to work until mid-day the following day; the lift was very steady and regular and Tutors and Cadets could have soared in it quite easily. From his observations, it seems the wave forms and works best in very stable conditions, when there is no convection at all and when there is warm moist air coming in from the sea to the North-East, causing very low cloud to roll across the moors and down the Southern slopes. Previous attempts have been made to reach this wave, but, although it is a fairly frequent phenomenon when there is a N.E. wind, it has been contacted only on one other occasion.

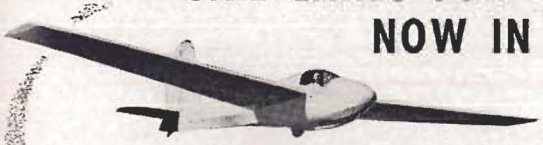
Our only social event of the last two months took place on June 9th, when a party of about 25 members and friends visited the works of Blackburn & General Aircraft Ltd., Brough, near Hull, and spent a very interesting and enjoyable afternoon in the factory. The highlight of the visit was an inspection of the huge "Beverley" freighter, and the tour was completed to our inner satisfaction with tea and biscuits.

M.H.L.

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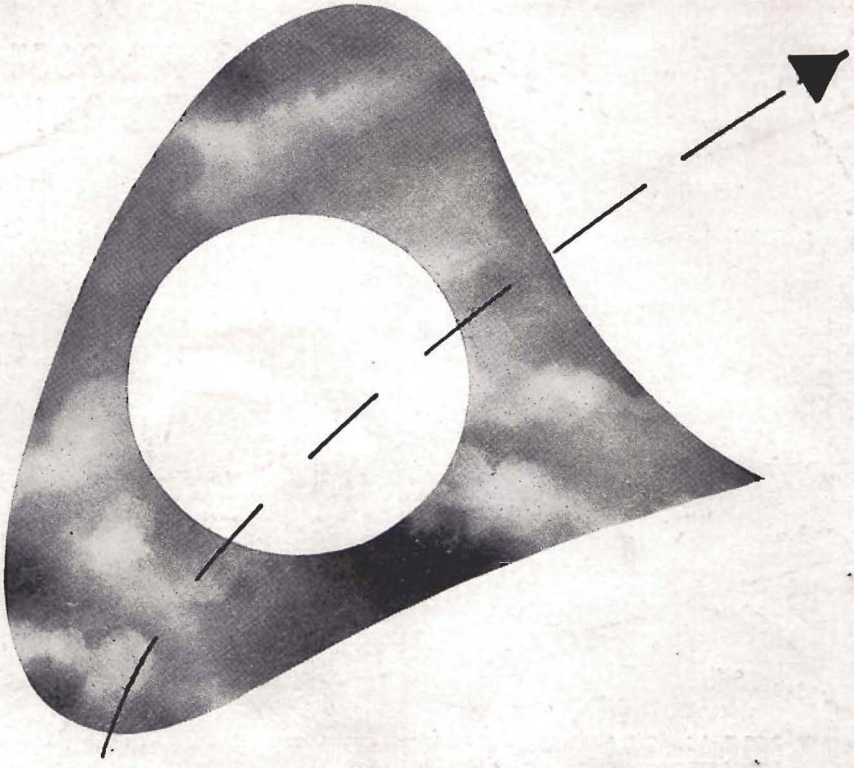
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