Sailplane and GLIDING

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OCTOBER 1957



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SAILPLANE AND GLIDING

OFFICIAL ORGAN OF THE BRITISH GLIDING ASSOCIATION

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COVER PHOTOGRAPH.—Tony Goodhart flying the EoN Olympia 403 *during the National Championships, in which he finished* 3rd *in League* 1.*—Photo by Charles Brown.*

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AN APPRECIATION
OF A GOOD JOB — WELL DONE

Slingsby Sailplanes Ltd. congratulates the Gliding Fraternity of Britain for the splendid organisation of the 1957 National Gliding Contests and the high standard of flying displayed by a record entry.

INCIDENTALLY: 44 of the 71 entries were
SLINGSBY SAILPLANES

From Jamboree to Championships

WAY back in 1930, the first meeting which could be called in any sense a National Contest took place on the South Downs, and the winner managed to stay airborne for 4 mins. 47.6 secs. in a prolonged glide which must have carried him at least two miles. Compare that with the imposing results of this year's highly sophisticated Championships at Lasham. By what steps has the change come about?

In an article by Philip Wills in this issue of SAILPLANE & GLIDING, he traces how contest flying developed through the intervening years from one extreme to the other, with special emphasis on 1933, when thermal flying was first added to slope-soaring as a means of getting around without power, and 1937, when a marking system was introduced as a result of the first participation by a British team in an international contest a month before our own.

What needs to be emphasized, in considering this aspect of gliding history, is that the growth of club flying, the improvement of British gliders and equipment, and the state of technical and operational progress of the British gliding movement have all along keyed in with our developing standards of contest flying. We cannot know how good are our pilots and aircraft until we measure them against those of other countries, and there is no standard of measurement other than Championship flying.

So, while in one sense the development of Championship flying has been a development in the science of measurement of relative pilot skills, in another it has been an essential ingredient of our present splendidly successful gliding movement.

And all along we have had to work under the stern discipline of economic facts. In the absence of outside financial subsidy we have had to produce pilots and aircraft at prices which people can themselves afford to pay, and we have succeeded in matching and even outclassing countries basking in the beneficence of large Government support. Who can doubt that our movement is the healthier for it?

The formula for a successful gliding movement is—a standard of self-discipline high enough to justify complete freedom from official control. This is of far more importance than a financial subsidy. Let us so continue to act as to retain the confidence and the support of the public, the Ministries, and our political masters. We can, if left to do so, look after our own destiny better than anyone else—Lasham 1957 is another proof of that.

LATE NEWS:—Pilots chosen to represent Britain at next year's World Championships in Poland are, in order of seeding:- Commander Nicholas Goodhart, R.N.; Lieut.-Col. A. J. Deane-Drummond; Mr. Philip Wills; Commander Anthony Goodhart, R. N.

The 1957 Nationals in Perspective

by Philip Wills

THE 1957 Championships mark so great an advance on any previous ones that my thoughts turned back to previous milestones in British contest soaring—milestones which have led us to our present heights.

In 1930, Ditchling was before my time. Although flying consisted almost entirely of descents from hill-top to valley, it did seem to spark off a wave of enthusiasm of which the greater proportion proved, alas, premature and short-lived.

The first meeting I attended was a mere week-end one at Sutton Bank, on 7th-8th October, 1933. It rained the whole of the Saturday, but Sunday gave us a fine day and a south-westerly wind, and the most successful day's flying which had ever been had.

Twelve aircraft flew, and by fortunate timing Mungo Buxton and I scooped the pool. As soon as the weather cleared (11.00 hrs.) I went off in our Scud II and won the height prize with a climb to 800 ft. (!); then as soon as I came down Mungo leapt on board (13.05 hrs.) and took the duration prize with a flight of 2 hrs. 39 mins. Whilst he was doing this, the local club lent me its Professor, in which I flew the prize out-and-return flight of 5½ miles each way. On landing, Buxton also came down, I jumped in the Scud again (16.00 hrs.) and flew north along the ridge, landing 12.7 miles away for the distance prize. One has to do rather more to achieve the headlines these days.

But this meeting aroused immense enthusiasm, and led directly to the eventual acquisition and equipment of Sutton Bank as a high-performance soaring site, where we held two further meetings, lasting each for 8 days, in 1934 and 1935. Then Camphill took over the 1936 meeting, but the next really big step took place in 1937. In that year we sent a British team to the first International Competition held at the Wasserkuppe, and for the first time experienced the impact of a marking system, designed to enable the relative skills of competing pilots to be more accurately measured.

We came back to England just in time or the 1937 Camphill meeting, and with remarkable boldness imposed a marking system at the last minute on the unsuspecting competitors.

The result was immediate and remarkable. Prior to 1937, it was not possible to classify our annual events as more than a mere meeting or jamboree, but now it suddenly became a competition. In the eight days the 19 aircraft did 238 launches, flew 292 hrs. and covered 1,489 miles in cross-country flying. Competition flying had arrived.

1939 passed, then came the war, the first post-war Competitions at Bramcote, the first post-war Internationals at Samaden in 1948, and on to Oerebro in 1950. Still we seemed stuck—somehow there was still an implicit acceptance of mediocrity. The F.A.I. had gradually developed increasingly accurate methods of pilot-skill measurement, associated with the flying of specific tasks set the competitors on each day. But still a large number of British pilots resisted the imposition of a sterner discipline and a keener competitive standard in our annual meetings.

Eventually, in 1950, the meeting was persuaded to fly one task, a 73-mile goal race from Camphill to Boston, during the week, and at the end of the competitions a meeting took place at which, after much discussion, it was agreed by a narrow majority that next time tasks would be the order of the day. And so, at last, in 1951 the National Competitions became the National Championships—and we have never looked back. In 1951, 34 aircraft flew 809 hrs. from 456 launches and covered a total of 7,028 miles. After this I wrote: "Ladies and gentlemen, I have much pleasure in declaring that this stone, engraved 'Contest Flying, the Cinderella of the British Gliding Movement', is at long last well and truly laid".

* * * *

In 1952, at Madrid, we produced the best aircraft, the best teams, and the best equipment, of any of the 19 competing nations. Could we hold this pre-eminent position, or was it a flash in the pan? Lasham, 1957, has shown the answer; the largest meeting the world has ever seen, perfectly run, in a splendid spirit of highly competitive but friendly sportsmanship. No doubt the

figures of mileage covered and so forth will be given elsewhere in this issue, but they must be astronomical.

The meeting started in a blaze of glory, and what in my humble opinion was a triumph. We gave our Patron, the Duke of Edinburgh, a welcome which was both highly informal in the best gliding sense and yet well-organised. It was a wonderful day for us and for the huge crowd of spectators, and we believe it was a memorable day for our gracious visitor.

Then—wonder of wonders—came 7 consecutive days of thermals. It is possible to say that they were all rather basically similar, so that the Championship became a measure limited to the relative competence of our pilots in anticyclonic conditions, but that was a minor complaint indeed.

The two-league system worked very well indeed, and the practice of giving one league a long task and the other a short one on each day, with separate briefings for each at 09.00 hrs. and 11.00 hrs. daily, meant that the unbroken seven days' stretch of flying was completed without undue fatigue. We have learnt so much about contest flying in the last 20 years from the F.A.I. that this is one lesson I should like to filter back to them. The arbitrary limitation of 8 days' flying in a 14 days' World Championship I consider most undesirable. There should never be a rest day for both classes unless it is imposed by impossible weather conditions.

Amongst other outstanding impressions of our 1957 Championships I should mention the work of Control, and the task-setting. Malcolm and Kitty Laurie and their crew worked unbelievable hours in Control with unbroken good humour and impeccable accuracy. I organised and ran our Operations Room system in Air Transport Auxiliary during the war, doing a very similar task, but there we had trained staff and all the money and facilities we needed, whilst Malcolm and Co. had to run up a system to operate in a tent for one week only on 3 telephone lines to control 72 aircraft and their retrieving crews. It was a miraculous success. I never heard of one crew losing its pilot, and the marks were up on the board with the minimum of delay every day.

How to get "SAILPLANE AND GLIDING"

Owing to increased postal rates and rising publication costs, the Association regrets that postage must now be charged in full. From the date of this issue new and renewal subscriptions obtained through the Association will be 17s. ($3.00) per annum, both home and abroad. The price of the magazine remains unchanged at 2s. 6d.

"Sailplane and Gliding" can be obtained in the U.K. at all Gliding Clubs, or send 17s. (post free) for an Annual Subscription to:—The British Gliding Association, Londonderry House, 19 Park Lane, London, W.1. Single copies and most of the back issues are also available, price 2s. 10d. post free. Enquiries regarding bulk orders of 12 or more copies, at wholesale prices, should be made to The British Gliding Association.

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The task-setting was done mainly by Ann Welch, with the advantage of remarkably accurate weather forecasting by Wally Wallington. The combination of the two was a triumph.

Another big advance was in the presentation of the meeting to the visiting (and paying) public. It is difficult to make a spectacle of a gliding Championships held on a flat aerodrome, but by skilful siting of the public enclosures, by unbroken joy-riding, and by occasional aerobatic and parachuting displays, our spectators were noticeably more interested and enthusiastic than before. It is a good omen for the financial aspect of future meetings.

I come now to the only flaw in the crystal. There was too much crashery. Fortunately there was only one case of pilot injury, but the number of aircraft broken, some badly and some only slightly, was larger than warranted in the fair weather conditions and the comparatively easy country over which we were flying for most of the time. Time was when there was an outcry at the suggestion that we should make a Silver C the minimum qualification for a Championship pilot, but now we have it and I suggest it is no longer enough. We should consider raising our standards before our next Championships.

* * * *

I will finish by running briefly through the usual headings of my competition reports.

AIRCRAFT.—The only new aircraft was the long-awaited Olympia 403. I flew this briefly on the last day. As it has not yet passed more than its minimum tests to obtain a permit to fly, it is much too early to report on it, except to say that it is quite obviously a machine of great promise. But the outstanding first impression is the extraordinary silence of its cockpit in flight. Even with the clear-vision panel open there is only a whisper, and with it shut you are flying in almost total silence, which will clearly greatly reduce fatigue on long flights.

EQUIPMENT.—I was flying with the prototype electric variometer system designed by Harry Cook (of compass fame), connected to total-energy blisters, with a cruise-speed ring designed to avoid any parallax errors. It was enormously more sensitive and had much less lag than any previous instrument I have used—this produced one unexpected burden in that I found it possible to go on struggling for lift down to previously impossibly low altitudes, and being possible, it had to be done. But it is very hard and wearing work; my best—or worst—success was to get up again from an altitude of 150 ft. over a farmhouse. It took 45 mins. to get away, and I came to know the colours of the accusing eyes of each hen in the farmyard.

PILOTAGE.—As I have said above, the tests were restricted in range to the skills called forth by British anticyclonic conditions, but there can be no doubt that the leading pilots proved themselves up to World Championships standards.

There may be others who came out lower down in the list, but the evidence is not there, as it is in fact not possible mentally to equate the skill required to put, say, an Olympia into 20th place against that needed to come out 4th in a Skylark 3.

It would be wonderful to do as the French, and give all competing pilots Skylark 3's for the meeting, but one can hardly see that particular dream coming true.

But the experience of the last 10 years has led to one unexpected conclusion. A sailplane pilot may expect to reach the height of his powers, not in the early twenties as was first thought, but rather in his middle thirties or even later.

ORGANISATION.—As reported above, quite excellent. The aero-tow launches, at 1½ min. intervals at times *selected by each pilot* (which has never been achieved at a World Championship using aero-towing), were beautifully run, and personally my actual times were each day between 30 seconds and 3 minutes *early*—and this by a band of amateur light-aeroplane pilots without any previous practice! All praise to them.

The most important conclusion which emerges from this is that there appears to be no operational or financial difficulty in running an even larger Championship in future—up to 90 aircraft would have been little more difficult to handle, providing the size of the two classes were approximately equal. One can in effect run two parallel Championships staggered as was this one for little more than the cost and effort of one. May we hope this will be another lesson we may communicate to the F.A.I.?

MARKING SYSTEM.—Although the F.A.I. have abandoned it, this year we again em-

ployed the system of dropping each pilot's worst day's marks after 4 days flying. There are many points to be said for and against this system; I personally am on balance strongly in favour.

Knowing one can survive a mistake is a constant encouragement to set one's daily target high—in fact, the system spurs all competitors to attempt a higher standard of effort. It also reduces the factor of luck, though this still has a large importance, and most of us would regret it if it were ever completely overcome, because in it lies some of the maddening fascination of our sport.

And so to my last heading—THE FUTURE. Oh, the future! I would not have missed the past 25 years for anything in the world—but I would like to be 25 years old again!

Flying in the 1957 Nationals

by A. J. Deane-Drummond

(BRITISH GLIDING CHAMPION, 1957)



Lieut.-Col. Tony Deane-Drummond, who flew his Skylark III to victory in the Championships.

(Courtesy "Aeronautics")

THE week of the 1957 Nationals will long be remembered by those lucky enough to take part. Anticyclonic conditions developed which gave good competition weather to test all the pilots, but the thermals were not particularly easy and were rarely strong enough to use before mid-day. There was also usually a lid on top of the upcurrents at about 4-5,000 feet above sea level, which was fortunately high enough to allow small amounts of cumulus to form.

The ground organization coped marvellously and great credit is due to all those who gave up their spare time and holidays to make the week a success. I always seemed to be launched at the time I had asked for, and once in the air I was never worried by over-congestion in the thermals. Having left Lasham, it was always a rather pleasant surprise to see another glider on the same course.

My own personal rival was Nick Goodhart. From the first day we were scoring nearly identical marks. On almost every day afterwards our times or distances were slowed down by meeting poor conditions at one point or another along the course. An example was the 65-mile goal race to Nympsfield in which I was 1 minute slower than Nick. We had both lost about 15 minutes getting very low when south of Swindon. A scratch time for this day might have been about 1 hour 20 mins., whereas we both took about 1 hour 36 minutes.

The task for Thursday, 1st August, was a "distance along a set line" with the line drawn through a point in North Cornwall. Conditions were extremely hazy—it was rather like flying in pea soup—and visibility downwards was limited to 2 or 3 miles. It was not possible to make a great deal of speed and I was overjoyed to see Nick on

the ground near Okehampton, whilst David Ince and I were still above 2,000 ft. I led the way to another vague wisp of cumulus but unfortunately I was now down to only a few hundred feet. David had an extra 500 feet in hand and this enabled him to go furthest and score a well-deserved 100 points for the day.

Nick turned the tables on Saturday, 3rd August. He was one thermal ahead of David Ince, Philip Wills and me, and this gave him the height to reach much better weather that seemed to stretch from Derby northwards.

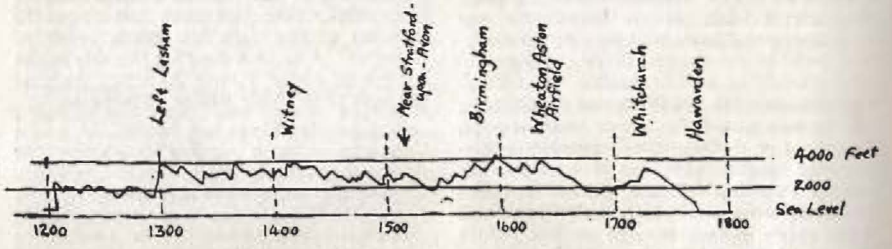
It was clear that something drastic was required, and quite a groan went up when the task for Sunday was announced as a "pilot selected goal". As it enabled me to win the Championships, perhaps I should not say too much against it, but the principal skill is bound to lie with the accuracy or otherwise of the met. forecast.

On this occasion (like all the previous days during the Championships) the met. was practically spot on. There were large patches of medium cloud over the whole country, but a wide clear band was predicted from Lasham to the north-west. I declared Hawarden Airfield near Chester, as I noticed it was only 29 ft. above sea level. I thought it should be possible to reach this area provided I left Lasham at 1.15 p.m.

We could see the medium cloud approaching Lasham from the south-west and this frightened us all into the air about an hour too soon. I took off just after 12, only to find that the thermals were still restricted to a low-level inversion at about 2,000 ft. above sea level. It was just possible to stay airborne, but it was not until 1 p.m. that the thermals suddenly broke through and pushed four of us up to near 4,000 ft. I left Lasham with only fifteen minutes in hand to get to the goal. Just before 1 p.m. I had seen Nick land and I guessed that he was re-declaring a closer-in goal. This was to be my chance.

The band of blue sky and small fair-weather cumulus could be seen stretching off downwind to the north-west. All went well until we had reached a point a few miles east of Stratford-on-Avon. Here a wide tongue of medium cloud stretched across my route, although more cumulus could be seen about 10 miles beyond. We had to glide through this dead area to a point just south of Birmingham. The medium cloud seemed to be moving in rather faster here although there was still plenty of cumulus to the north-east. North of Birmingham I had the best thermal to cloud base and this took me quickly to just west of Wheaton Aston airfield, when another, even wider, band of medium cloud again barred our track. I could see sunshine in the distance near Market Drayton, but unfortunately we were down to 1,600 ft. before the faintest whisper of a thermal came along. During the next 30 mins. we climbed 600 ft., when suddenly it took on a new lease of life, and at a rapid 2 ft./sec. we reached just over 3,000 ft. This left me just short of Whitchurch, and from here there should be enough height for a straight glide to the goal with 400 ft. to spare.

In fact, we arrived with 1,000 ft., having achieved a still-air gliding angle of 1 in 37, or about 1 in 48 allowing for a 12-knot tail wind. When I reached Hawarden I was horrified to see some gliders on the ground in the distance, and I wondered who could have got there first. To my relief it turned out to be the A.T.C. Gliding School, who looked after me right royally. We were back at Lasham by 4.15 a.m., thanks to a very efficient retrieving crew.



4th August 1957. Lasham to Hawarden Airfield

MY FIRST "CHAMPS"

by Edward Day

The winner in League 2 of the National Championships, who was taking part in a competition for the first time, has recorded detailed descriptions of each of his flights, and from these we reproduce his account of his outstanding flight to Swansea on 31st July and of the final flights which put him into the lead and kept him there.

On Wednesday, 31st July, we were set a free distance. The Met. made it clear that sea breeze, backed up by a south-east wind, would soon kill the lift in the Cornish peninsula, and advised us to go west-north-west. I was uncertain whether to go to South Wales or up the side of the Welsh mountains towards Chester. I left it with the crew that I would make for Nympsfield and inform them over the radio which way I was going on reaching there.

I optimistically declared St. Davids as a diamond goal, and booked the earliest launching time I expected to be able to stay airborne. I cannot stress too much the importance of starting early on a free distance, and at once started to get on as fast as possible. There are only a limited number of hours in the day to soar, and when these have passed, down you come. The arrangement on the radio was that I would give position, altitude prospects, and intention every quarter-hour on the quarter, and assume the message had been received even if no reply was forthcoming.

Wednesday was a day with plenty of cloud and quite the strongest day of the week. I carried my batteries for the first time, but soon found that the time spent getting an extra 500 ft. out of weak cloud was not worth the candle, and, switching everything off, remained below base.

I crossed Nympsfield, after a sticky patch around Swindon, in good time at 1.30 p.m. I told the crew that I was going to South Wales and headed out across the Severn. A period followed after crossing the river when the visibility at cloud base was not good, and I had not the slightest idea of my position. I kept 260° on the compass, and after a while found myself just north of Newport. Here, I found the sea breeze from the Bristol Channel had killed all the lift and the sky was clear. I still had 3,500 ft., so fled northwards towards the hills, where there were some hopeful-looking clouds.

It was evident, however, that I had had the best of the day, and the next hour or two were the most interesting of the week.

The Rhondda valleys are not, repeat not, happy gliding grounds. The hills are rock-strewn and craggy and the valleys are filled with coal slag heaps, pylon wires, houses and factories. There is one field in each valley which, seen anywhere else, would not be given a second thought. I found myself dodging out of one valley into the next, clearing the hill between at 500 feet. I encountered only marginal lift, and decided that when it finally ran out, I would head down one of the valleys into the lower country and hope to find a field there. It is useful to remember that, in hilly country, a level field can usually be found along a railway or river.

I finally ran out of lift over the high ground at 3,000 ft. and glided down the length of one of the valleys, hoping to make Fairwood Common aerodrome, Swansea. It was soon obvious that I was not going to reach it, and I found myself over a basin about 5 miles square at 800 ft. All around me were railway lines, slag heaps and power lines, except the cricket field and an adjoining grass field. I liked the level of the cricket field better than the steep slope of the grass field and made an approach on it—or tried to. I was hopelessly high but not high enough to go round again, so I put the brakes in and headed for the grass field.

I had been airborne for 5 hrs. 40 mins. After a long flight and prolonged periods high up, it is easy to overshoot a field, the ground looking closer than it really is.

The crew arrived two hours later, and we were back in bed by 4 a.m.

By Friday night our excitement was running high, as we had crept up into second place.

Saturday's task was a goal race to South Cerney aerodrome near Cirencester. This was a straightforward flight in marginal

conditions and only half a dozen of the higher performance machines made it.

I had brought home to me on this flight the following three principles:—

Firstly, when circling in a thermal with other gliders, by all means keep a look-out for any other machine that is outclimbing you in stronger lift, but do not attempt to follow it. Use this information to supplement your own variometer readings, and to enable you to shift your circles in the right direction, but still work on your own instruments.

Secondly, time and again during the week, I have found it advantageous to leave a thermal before reaching the top. I am sure that it does not pay to hang around in the flattened top of an inversion-trapped thermal for that last 200 ft. Much better to leave it when it no longer gives 5 up, and push on to the next. Many times have I done this, and have seen planes of similar performance still struggling to reach the top when I have been half-way up the next one.

Thirdly, do not be stampeded into setting off from a thermal in a direction you know to be wrong, just because two or three others may be doing it. It makes you think when you want to go one way and everyone else is going another. This was brought home to me on the South Cerney flight. I was at an altitude and position from which my glide angle and map said I could just reach my goal. Three other gliders were with me and promptly set off in a direction 30° to starboard of my intended track. It needed a strong will to set off in a final glide for South Cerney which was as yet out of sight fifteen miles away. I finished my run into the finishing line at 10 ft. and 70 kts. and nearly bought it doing a stall turn back into wind for the landing.

We took the lead after this task, and this served as a stimulus for all of us, as the excitement and lack of sleep were beginning to tell.

On Sunday, we were set a "Pilot selected goal"—that hateful task!

I much prefer being told where to go or to go as far as I can. This "pilot selected" business is like going into a cafeteria with an empty stomach. You invariably order more than you can eat with the subsequent penalty. Just so with pilot selected goals. My position in the league at this time was such that it would pay me to select a safe goal and reach it rather than be over-ambitious. So after first declaring Defford I altered my goal to Little Rissington. The weather was dodgy with large patches of cirrus blotting out the sun. There were, however, patches of blue sky and we had to get away in these.

On the third attempt I had to set off. The thermals proved to be very strong when you could find them, and they were giving 15-20 up—an incredible rate of climb for dry thermals. Some of the time I was travelling in 3 ft./sec. up along invisible dry "cloud streets". The cirrus, however, had crept across the sun before I noticed it, and after spending a little time over Abingdon town searching for lift, I landed at Abingdon aerodrome.

All the way back to Lasham we saw gliders in fields and trailers rushing madly about. Others had been caught out too. Happily our nearest rivals had not done much better and we still held on to the lead.

Monday turned out to be a very trying day indeed. We were set a small triangle race finishing at Lasham, but the weather was almost impossible, and after two attempts to get away I was tempted to call it a day. However, the pilots lying second and third continued to try, and at 3.45 p.m. one of them took his final tow.

The pointing at this stage was such that if either of them went 10 miles and I stayed at home and the day was declared a contest, I would be well and truly beaten. Therefore at 3.50 p.m. I took off and told the crew that I would go away and try to do 10 miles.

The tug pilot conveniently placed me over the starting "gate" at 2,000 ft. a.s.l. and I cast off and set sail, rounding the first turning point at 900 ft. to the accompaniment of much waving from the observers, who had seen very little go round all day. Happily a field hove into view and I went straight in with only 10 ft. to spare.

We arrived back at Lasham in the middle of the Prizegiving, only to find that it had been declared a "No Contest Day" and I had only gone 9½ miles anyway.

To sum up, I learned more about the finer points of gliding during that week than I have in the past year, as all the time we were dealing with a fairly strong anti-cyclonic inversion which made it hard work and called for accurate flying.

The impeccable organisation displayed by the B.G.A. and organizing Committee and the friendly atmosphere of the whole "Champs" made it a very enjoyable and memorable week.

THE NATIONAL GLIDING CHAMPIONSHIPS, LASHAM

27th July to 5th August

Note.—We are indebted to Mr. C. E. Wallington, chief meteorologist at the Championships, for the daily weather charts and accompanying notes on each day's weather given in this report.

GRAND totals of flying times and distances covered during the nine days of the Championships (i.e. excluding the practice day, 27th July) were:—

	Hrs.	Mins.	Miles
League 1 ..	618	18	13,819.5
League 2 ..	843	25	13,313.2
Total	1,461	43	27,132.7

So the 26 entries in League 1 covered just a little more ground than the 44 in League 2 but did so at 31% greater average speed.

League 1 had to include any pilot who had flown in World Championships or been one of the top five in the last three National Championships; 10 pilots came in this category: Bisgood, Deane-Drummond, Foster, A. Goodhart, N. Goodhart, Ince, D. A. Smith, Stephenson, Welch, Wills.

League 2 had to include any pilot who had not flown in Championships before, had not a Gold C, and was not in a team with one of the above; Ted Day, the winner, was one of those who came into this category.

Anyone else could enter in either league, except that the organizers could prevent too many people going into one league. The tasks set for League 1 were chosen to give serious training for World Championships.

The Entries

SINCE the official programme, which was included in our last issue, gave the full entry list, we need not use up many valuable pages in giving it again. But certain late corrections should be made to bring it up to date:—

LEAGUE 1.—No. 29, Flt. Lt. R. A. Mann flew the R.A.F. Gull IV instead of Flt. Lt. K. C. Fitzroy, and was transferred to League 2. No. 75, Tony Goodhart's entry cancelled, as he flew No. 73, the Olympia IV. No. 76, Ken O'Riley, with Olympia, did not arrive.

LEAGUE 2.—The following additional pilots took part in the Team Championship: No. 24, Flt. Lt. A. T. Morgan in the R.A.F. Kranich; No. 33, A. R. Aldridge in the private Skylark II from Bristol; No. 35, C. Dorman in private Skylark II from Lasham; No. 39, W. Kwasny in the Polish Air Force Association's Olympia. No. 71, Surrey Club's Olympia, H. Hilditch did not fly.

Practice Day, 27th July

PRACTISING on this first Saturday was not confined to the competitors, for the tugs had practice, too, and proved that they could take gliders off the runway at one a minute, well within the 1½ minutes allowed by the organizers. There were at least 14 of them operating most of the time during the meeting: nine Tiger Moths, four Chipmunks and a Gemini.

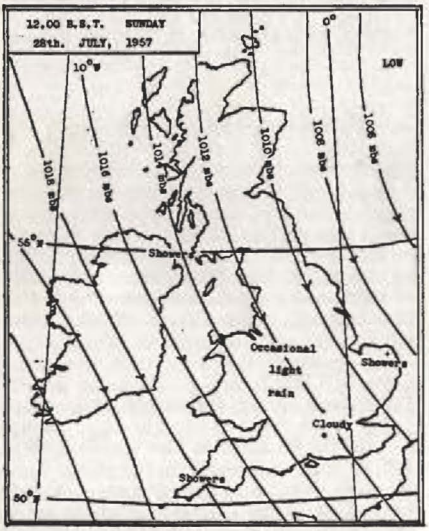
An overcast sky with complete cloud cover at 1,000 ft. and partial cover at only 700 did not prevent the advertised aerobatic competition from going through, though not all the 25 entrants had launches. Flg. Off. D. Ellis won it with the R.A.F. Olympia from Bicester, and Derek Piggott continued to give aerobatic displays all afternoon in the Eagle with members of the public as passengers at 30s. a time (one of them had never been in the air before).

Then at 9 p.m. came a briefing for a briefing; that is, everyone was told the form for the Duke of Edinburgh's arrival next day to attend the morning briefing and open the championships.

Opening Ceremony, 28th July

PROMPTLY at 10 a.m. the Duke of Edinburgh arrived in a naval helicopter, under an overcast sky producing intermittent drizzle. Ragged cumulus clouds had already grown large by 6.30 a.m.—a bad sign—and by 8 a.m. the sky had been nearly covered. But the rain held off as the Duke was escorted to an outdoor platform and introduced to the assembled company by Philip Wills, who announced that our distinguished visitor had come to see how gliding people live. He explained that on the ground we live rough, at a standard rather below that of Western Civilization. But how we live in the air—that was different: the air is a strict taskmaster, and our lovingly maintained aircraft had to come first. In fact, we are a band of people who are united in our love for the air, and this, like all love, is quite irrational (noises signifying agreement).

The Duke of Edinburgh's first remark at the microphone was that he didn't think



SUNDAY 28TH.—*The cool north-westerly airstream covering the British Isles was unstable enough at low levels to produce some small cumulus, but an almost unbroken cover of stratocumulus at 5,500 ft. shut out the sun's heating so much that thermals were weak and scattered.*

speeches and gliding went together very well. He did not profess to know much about gliding, but as patron of the British Gliding Association he knew that it runs itself and is no bother to anybody else. The reason was that gliding people are sensible and responsible, and, he added, "if more people were sensible and responsible, we wouldn't need quite so much government." This produced an explosion of laughter, and Mr. Airey Neave, Parliamentary Secretary to the Ministry of Transport and Civil Aviation, who was sitting in the front row, was watched to see whether he joined in. He did.

There had been yet another preliminary briefing to get through some of the duller detail so that this one, which the Duke listened to, could be made snappy. Ann Welch announced a race to Hamble for League 2, and promised an afternoon task for League 1 if the weather turned out good enough—but it didn't. "Wally" Wallington forecast a continuation of cloud and rain for most of the day but with some gaps, and Sqn. Ldr. "Bunny" Austin described the race procedure.

Then came the inspection. It had been calculated the night before that, if all 70 gliders were lined up side by side with their wings overlapping, the Duke would have to walk half a mile. So they were divided into 16 groups varying in size from the 14 Surrey Club entries to the single representatives of the Crown Agents and the Polish Air Force Association. Each group had its gliders lined up one behind the other, and the most striking display was by the R.A.F. contingent; their pilots and crews were all in spotless white overalls, suddenly produced from nowhere, much to the surprise especially of the Army and Navy, who had not thought of that one and remained in normal gliding costume.

Next on the programme was a flight with Derek Piggott in the Beagle, and just as the Duke took off, handling the controls on his first aero-towed launch, one of Wallington's forecast gaps appeared in the cloud layer, and thermals started carrying the pair up nearly to cloud base on a flight which lasted 20 minutes and finished with a high-speed beat-up of the crowd—Piggott being at the controls this time. Thereafter the Duke disappeared into the clubhouse for cocktails and lunch, at which all the Club chairmen present were included in the party.

Pitt-Roche had the first championship

launch at 11.40 a.m. and others in League 2 followed. Sqn. Ldr. Scorer, who made up in dash for what his R.A.F. Grunau lacked in performance, was soon away in the N.W. wind, but only made seven miles S.S.E. instead of the 25 miles S.S.W. to Hamble. It was some time before anyone else thought it worth trying, but thermals improved later and nine went away. Ron Dodd, with 14 miles to the S.S.E., did best in League 2, but John Williamson, though in League 1, had an unofficial go and managed 17½ miles, landing only two miles to leeward of course.

A slightly "away" landing was made by Cambridge's "Bluebell", which undershot Lasham airfield into rough ground; then, while the first championship prang was being examined, a low-flying tug came over and its cable hooked off a piece of Bluebell's aileron.

Finally, "No Contest" was declared.

Monday, 29th July

LEAGUE 1: Goal Race to Hawkinge, 95 miles.

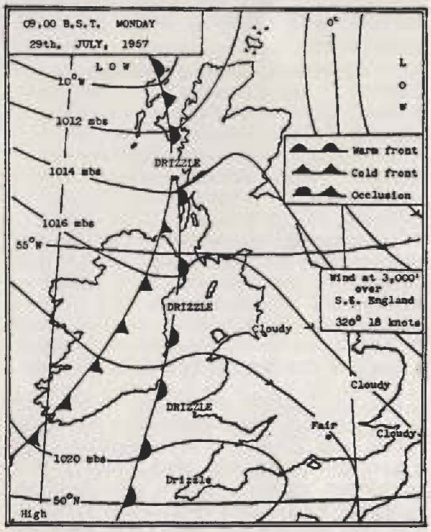
LEAGUE 2: Goal Race to Firle (Southdown Gliding Club), 55.6 miles.

Distance was not the only difference between these two tasks, for there was a 20-knot N.W. wind, and whereas League 2 had a S.E. by E. course, almost down wind, League 1 had to go due east on a cross-wind track. But this was not why League 1's goal, unlike League 2's, proved out of reach; the reason was a "clamp" over Kent which persisted till too late. At Lasham, on the other hand, early strato-cumulus was vanishing by 10.15 B.S.T., and Scorer with his Grunau was again to the fore with a launch at 10.40, though he got nowhere that time.

The two leagues were given alternate launches. Three League 1 pilots who booked starts between 11.30 and 11.36 did not get far, and the best launching times were between 12.18 and 13.18, to judge by results. By 14.00 everyone was in the air, and hardly anybody came back for another try.

In the control room at Lasham, landing-points were marked by numbered pins on a huge map. By 16.15 most of League 1's pilots were shown as distributed along two lines, one directly on course and the other 15 degrees to the right of it. By 17.00 the space between was also filled in but a new feature appeared: nobody had got further east than a line running due north from Eastbourne. That "clamp" was to blame. But Philip Wills had not yet been heard of.

Then at last news came: Wills had landed at 16.55 after staying in the air over an hour longer than everybody but Tony Goodhart, and had gone further than all the others by (1) noticing that the edge of the "clamp" was receding slowly eastward, and waiting for it to get a move on, and (2) being able to do so in virtue of a "secret weapon", the prototype of Harry Cook's new electric variometer, which enabled him to stay between 1,100 and 1,500 ft. in zero or feeble lift for nearly two hours around Robertsbridge, on the edge of the "clamp".



MONDAY 29TH.—*Subsidence associated with high pressure to the south-west of England dried out the air aloft so effectively that the warm front approaching from the west was marked by cloud at low levels only. Thus, with no medium or high cloud spreading ahead of the front, insolation was sufficient to break up most of the stratocumulus over S.E. England. Small cumulus capped weak to moderate thermals in the neighbourhood of Lasham, but a large patch of stratocumulus over Kent did not disperse until late afternoon. Near the south coast the sea breeze "front" sandwiched between north-westerly winds inland and south-westerlies from the coast provided a few bands of weak but useful lift.*

Next best distance was by Bernard Thomas, 65.1 miles compared with Wills' 68.5. He managed this by deviating right down to Firle and picking up a line of sea-breeze lift along the South Downs, shown by wisps of cloud at 1,000 ft. above the hill-top. It remained strong as far as Eastbourne and then gradually petered out, but he carried on along the coast to within 3 miles of Bexhill, passing through no more than an isolated piece of "clamp".

Since no one reached the goal, League 1 competitors were marked for distance, so Wills started these Championships as he finished the last ones—in the lead; and, as any deviation from the line to Hawkinge did not matter after all, Bernard Thomas came second.

League 1, Leading Positions

Pilot	*Landing*	*Distance*
Wills	Bodiam	68.5
Thomas	Cooden	65.1
A. Goodhart	Crowborough	58.7
Gough	Wilmington	56.8
Ince	Framfield	53.2
D. Smith	Laughton	52.1
D-Drummond	Uckfield	50.4
N. Goodhart	Edenbridge	50.2
Irving	Marsfield	50.0
Tonkyn	Beddington	48.7
Stephenson	Lingfield	45.1
C. Ellis	W. Hoathly	44.9

Aggregate distance, League 1, 1,122 miles.

LEAGUE 2 made more use of the Sea Breeze; in fact, this phenomenon has never before been given such serious attention at a gliding contest, and after today it was mentioned regularly in the met. briefing, probably for the first time in any country. The "sea breeze front" was found by those who used it to lie along the top of the South Downs, leading conveniently to Firle.

Landing points were distributed pretty evenly all along the route to Firle, but they showed it to be a crooked route, starting southwards and then following the Downs escarpment, or rather the low ground at the bottom which was more accessible to trailers. Pilots made for the Downs either, like Mackenzie, to catch the sea breeze front, or, like Ted Day, expecting the best thermals from high ground; nobody mentioned slope lift. Day (Sky) and Torode (Petrel), having landed 7 miles short in the same field, were surprised when another machine, passing overhead with enough height to reach Firle, threw it all away and landed beside them; its pilot had assumed that where two or more gliders are gathered together, there must be the goal.

The day's Press story (there had to be one every day or the papers would have ignored us) concerned Aldridge (Bristol Club), who heard a rat-tat-tat as he came in to land near Storrington and "thought a woodpecker had caught up with him", till he found himself down in the next field to a rifle range. It was the local Press that caught up with him, and within a few minutes, so that "hail of bullets" stories came floating in to Lasham until he finally got back at 9 p.m. to explain that it was his car, not himself, that had needed surgical attention.

Seven reached the goal, the winner being Brian Jefferson (Derbyshire & Lancashire Club) with 1 hr. 43 mins.; but only the first three were officially observed to cross the starting line, so the other four had to be timed from take-off and must have gone faster than their official speeds. Best of the unsuccessful ones were Lastowski, who landed a mile south of the goal, and Roger Dickson, Flt. Lt. Allen, Douglas Jones and Alwyn Sutcliffe, all landing near Lewes.

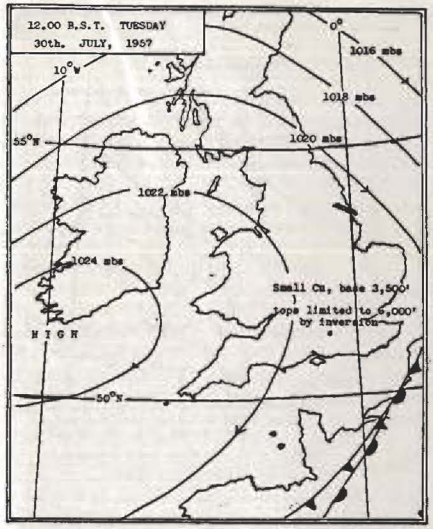
League 2, Goal Reached

Pilot	*Sailplane*	*Speed m.p.h.*
Jefferson	Skylark II	35.6
Kerridge	Olympia	35.2
Knotts	Skylark II	33.4
Mann	Gull IV	31.5
Hands	Skylark II	25.7
Garrod	Olympia	24.1
Mackenzie	Olympia	21.3

Aggregate distance, League 2, 1,531 miles.



Bernard Thomas, Derbyshire and Lancashire Club, is introduced to the Duke of Edinburgh.
(Courtesy Kemsley Picture Service)



TUESDAY 30TH.—*After a cloudy night with some drizzle, S.E. England was left in a light northerly airstream. The morning strato-cumulus layer dispersed quickly, but thermals were not easy to use; until midday they were only weak, and even during the afternoon, when thermals were stronger and more plentiful, their cores of maximum updraught were usually narrow. An inversion limited the smoke haze, and most of the convection, to 5,000 ft. above M.S.L.*

Tuesday, 30th July

BOTH LEAGUES.—Triangular Race via Thruxton and Welford, 70 miles.

The long spell of westerly winds and fronts gave way to a period of anticyclonic weather with the usual inversion to limit the growth of cumulus. The course for the three legs went first W., then N.N.E., then S.E., so the light northerly wind should have made the second leg the hardest, whereas actually the first gave nearly all the trouble. From Lasham, the sky looked no worse in Thruxton direction than anywhere else, but, to quote Lorne Welch, "there was no rhyme or reason which bit of which cloud" was going to work.

He had wandered south to Micheldever in search of lift, and some other pilots explored as far south as Winchester, thus traversing two sides of a right-angled triangle instead of the hypotenuse. Others preferred to stay near the beaten track where, as Ted Day found, "every thermal for miles around was marked by a glider or two." But Andy Gough, having reached Thruxton at 600 ft., had to go 5 miles back to Andover and spend 50 mins. there before working up enough height to go on.

Anson, who started rather late, found the last leg nearly as bad as the first, but was much helped on the second leg, as were other pilots, by a burning haystack 6 miles beyond Thruxton (it is hoped the farmer did not suspect sabotage); bits of burning hay were starting subsidiary fires around it and helping to stoke up the thermal. When Coulson reached the second leg, after a sticky first one, he found it so hard to believe that soaring conditions had suddenly become as good as they really were, that he continued to play safe instead of pressing on. He also made the interesting observation, in one of Mr. Wallington's forecast "narrow cores", that a slow T-21 turned in tighter circles than he could with all his laminar flow.

In the matter of tight circles, the low-wing Short Nimbus was enjoying itself this day, for the aerodynamicists, Godfrey Lee and Alan Yates, had put two metal strips on each wing near the root to "blow off the turbulent layer." The result was that the Nimbus could now be circled tightly at 48 m.p.h. and 60° bank without tail-buffet, whereas yesterday's limits had been 30° and 55 m.p.h. However, it circled no further than Andover—just enough to earn a distance mark.

First to arrive back, at 15.15, was Nick Goodhart, who also made the best speed, 39 m.p.h. At 15.35 three more League 1 pilots whistled in, Deane-Drummond overtaking Stephenson in the process and being closely followed by Tonkyn. All but two pilots in this league finished the course, and 17 of them exceeded the fastest speeds of League 2.

League 1, Shortest Times

Pilot	*Sailplane*	*Hrs.*	*mins.*
N. Goodhart	Skylark III	1	32½
Deane-Drummond	Skylark III	1	56
Wills	Skylark III	2	08
Stephenson	Skylark III	2	15½
Ince	Skylark III	2	16½
Tonkyn	Skylark II	2	21
Cotton	Skylark II	2	22½
A. Goodhart	Olympia 403	2	22½

Foster, Warminger, Williamson, Welch, Minton, C. Ellis, Gough, Kahn and Piggott also exceeded League 2's best.

League 1, aggregate mileage, 1,866.

In League 2, 18 out of 41 starters finished the course, and the winning machine, the Petrel, was no more designed for speed than the two Sedberghs which took over 5 hours to get round. One of these, the London Club's "Dragonfly", flown by John Everitt with Peter Dirs, was launched at 12.24, crossed the starting line at 13.19, and finished at 18.24—six hours airborne! Flt. Lieut. Frank Allen had the misfortune, after going 40 miles, to hit the ground hard with the R.A.F. Gull I; he was taken to Newbury Hospital with both collar-bones broken and facial damage.

League 2, Completed Course

Pilot	*Sailplane*	*Hrs.*	*mins.*
Martlew	Petrel	2	46
Palfreeman	Skylark II	2	46¼
Mann	Gull IV	2	47¼
Day	Sky	2	53

Followed in order of speed by Bentson, Anson, D. Ellis, Mackenzie (all Olympias), Scott (T-42b), Rutherford, Scallon (both Skylark II), Sinclair, Parkes (both Olympias), Blake (Skylark II), Brett-Knowles (Navy Kranich), Kearon (Olympia), Everitt and R. Jones (both T-21b Sedbergh). Ron Dodd missed by 5½ miles and Charles Green by 7 miles, the latter making the latest landing at 19.05.

League 2, aggregate mileage, 1,829.

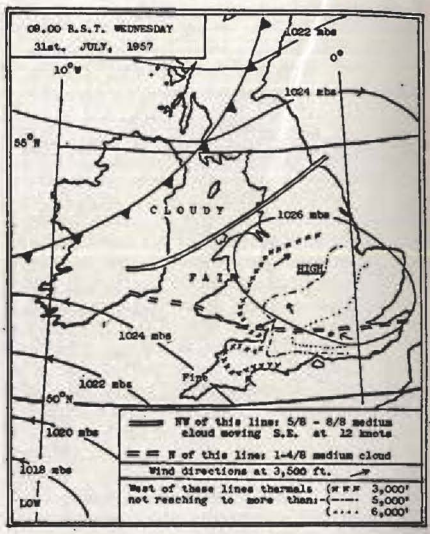
Leading Totals, 2 Days

League 1		League 2	
Wills	186	Mann	186
N. Goodhart	162	Blake, etc.	169
D-Drummond	159	Bentson & Garrod	157
A. Goodhart	157	Mackenzie	149
Ince	149	Martlew, etc.	132
Gough	145	Day	127
Tonkyn	138	Green, etc.	127
Stephenson & Furlong	134	Palfreeman, etc.	112
Irving & Minton	132	Anson	111
D. Smith	132	Simpson & Kerridge	108

Wednesday, 31st July

League 1: Triangular Race via White Sheet Hill (5¾ miles E. by N. of Shaftesbury) and South Marston aerodrome (9 miles N. of Swindon), 130.4 miles.

League 2: Free Distance.



WEDNESDAY 31ST.—*With the small anti-cyclone from the west now over Central England, thermals were mostly dry and limited in height by a pronounced inversion. The height of this inversion decreased gradually towards the north-west and west of Lasham. Local phenomena such as sea breeze effects across the north and south coasts of Somerset and smoke haze in lee of large towns, coupled with the paradox of having tail winds on flights towards medium cloud approaching from the north-west, made flight planning difficult.*

With a very light E. to N.E. wind, the course for the triangle lay first W. by S., then N.N.E., then S.E.—practically parallel to yesterday's, but nearly twice the size. Some massive-looking early cumulus could be seen rolling away to the S.W. horizon, but it was neither forecast nor encountered by the pilots.

In League 1, 18 of the 26 completed the triangle, all of them having crossed the starting line between 11.38 and 12.33, with the single exception of Wills, who delayed his crossing till 12.50, three-quarters of an hour after the Goodharts. Nevertheless the four fastest, Deane-Drummond, Nick and Tony Goodhart and Wills, all took within a few minutes of 4 hours. The longest time was 6 hrs. 24 mins.

Nick Goodhart described the thermals as

strong but difficult, being "bitty" and quite impossible to centre in. Twice he was down to 900 ft. above ground and took a long time to get back up. He was first to finish at 16.01, but Deane-Drummond made the fastest speed, 33.4 m.p.h. The most exciting spectacle came when Bisgood, Warminger, Neilson and Kahn crossed the finishing line at 17.25.50, 17.25.51, 17.25.56 and 17.25.59 respectively. And Charles Ellis only just made it by sliding across the finishing line on his skid. Furlong, Neilan and Tonkyn missed the finish by only 5 miles.

A new British National record, two-seater speed round a 200 km. triangle, was set up for the first time by Derek Piggott in the T-42 Eagle, with 5 h. 50 m. 36 s., averaging just over 22 m.p.h. But Brennig James, who officially took 5 mins. longer, had not been observed crossing the starting line, so had to be timed from release.

League 1, Shortest Times

	Pilot	*Hrs.*	*min.*	*sec.*
1.	Deane-Drummond	3	54	29
2.	N. Goodhart	3	55	31
3.	A. Goodhart	4	00	26
4.	Wills	4	05	57
5.	Ince	4	13	15
6.	Williamson	4	17	31
7.	Neilson	4	52	32
8.	Warminger	4	55	14
9.	Irving	4	56	43
10.	Gough	4	57	33
11.	Breeze	5	01	10
12.	Foster	5	01	23

Followed in order of speed by Bisgood, D. Smith, Kahn, Piggott, James and Ellis.

League 1, aggregate mileage, 3,070.

With such a light wind, LEAGUE 2 had all the points of the compass to choose from, but actually the choice was limited by the nearness of the sea to south and east, and the gradual descent of the inversion to the north and west—in Devon and Cornwall it was actually sitting on the ground. Then there was the sea breeze, which caught up with some pilots. The four longest flights just exceeded the distance round League 1's triangle.

Moving systematically round the compass we start with Mackworth-Young's 90 miles to the N.E., to Fenstanton in Cambridgeshire. Then we have a large mass of flights to the north, led by the R.A.F., with Flt. Lieut. Mann making the best distance of the day with 134 miles to Newark in a Gull IV, and Flg. Off. D. Ellis with 131 miles to Cranwell in an Olympia. Anson, with another Olympia, made third best distance in this direction—111 miles to Loughborough. Ellis took 7 hrs. and was down to 400 ft. near Newbury, with a further sticky patch around Oxford; Anson took 5 hrs. 20 mins. and nearly landed three times, once being at an estimated 150 ft. above a farm by Benson aerodrome.

Another favoured route was across the West Midlands to Shropshire, and here Mackenzie led with 132 miles to Shawbury, where he arrived at the same time as the sea breeze coming in from Liverpool Bay. It came suddenly; the wind sock was limp as he passed over it, but he touched down in a 13-knot tail-wind blowing from N. by W., while the ground temperature fell from 76° to 64°F. Midland Club members were attracted towards their home ground; Charlie Green made 126 miles to Atcham on the Severn, and Ted Stark 119 to Church Stretton. Flt. Lieut. Morgan actually landed the R.A.F. Kranich on the Long Mynd (123 miles); he was below the top of the plateau when he found his last thermal, but it lifted him 1,000 ft. above the clubhouse. His arrival there was rather fortuitous; he had taken off from Lasham with no idea where he was going, but just followed the lift where it looked best.

Roger Dickson, on his landing approach, guided his Gull IV between the Rugby wireless masts below their tops, but it was safe enough, because all the rigging has knobs on for the birds to see. Pitt-Roche, in an awkward landing near Worcester, knocked both wings off his Sky and was thereafter out of the contest.

Now for South Wales, towards which the highest contour of the inversion conveniently bulged. Only two managed it: Burton, in the Petrel, 107 miles to Crickhowell, near Brecon, and Ted Day, the third best distance of 132 miles to a point near Swansea. Day has described his flight in a separate article, but he does not mention that, when he advised Lasham Control that he had landed at Gwern-Llwyn-Chwyth, the voice at the other end said: "Tibet is out of bounds, old boy!"

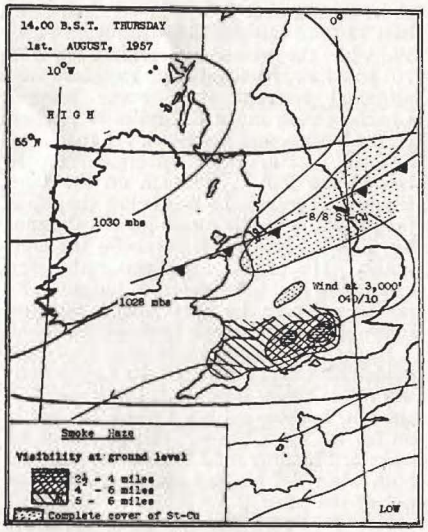
In the remaining two directions the Air Training Corps were well to the fore with their Sedberghs: Garner took one 79 miles to Somerset, and Allan, the only pilot to go S.E., nearly reached the sea near Bognor.

Aggregate distance: League 2, 3,290.7 miles; both Leagues together, 6,360.7 miles

—probably the highest daily total for a British contest.

Leading Totals, 3 Days

League 1		League 2	
Wills	281	Mann	286
N. Goodhart	262	Mackenzie	248
D-Drummond	259	Garrod & Bentson	243
A. Goodhart	254	Day	222
Ince	240	Green, etc.	220
Gough	222	Burton, etc.	208
Smith	208	D. Ellis	205
Williamson	202	Baynes, etc.	193
Warminger	190	Anson	191
Foster	189		



THURSDAY 1ST.—*The small anticyclone which had moved east across the British Isles had now collapsed, but another high-pressure system was developing west of Scotland. The inversion over southern England was now only 4,000 ft. above M.S.L. Thermals were mostly dry and rarely easy to locate, but the biggest problem to be dealt with over the triangle race was that of navigation in the smoke haze.*

Thursday, 1st August

LEAGUE 1: Distance along a line to Park Head, on the North Cornish Coast.

LEAGUE 2: Triangular race via Andover aerodrome and spot height 974 ft., 2½ miles S.E. of Inkpen, 53.8 miles.

Park Head, which nobody had heard of, is just beyond Padstow and St. Merryn R.A.F. airfield; it is 182 miles W.S.W. of Lasham and 42 miles from Land's End. Technically, in a task like this, competitors can go beyond the point named; but, as Ann Welch warned them at the briefing, high tide was at 3.30 p.m. Also, the coast at this point turns S.S.W., so it would be little use going further, because one's additional "projected" distance would be cancelled out by one's deviation from the line.

Anyway, it didn't matter, because nobody got as far. Thermals were forecast to give out soon after 18.00, and David Ince and Tony Goodhart, who put up the best and second best distances, had not reached Park Head by the time they had to make the latest landings of the day at 18.40.

Ince found the stickiest region 50 miles out at White Sheet Hill, yesterday's turning point; after that, conditions became very good, with 10 ft./sec. lift inside a cloud at Shaftesbury. But then, nearing Exeter, he had to save himself with a wind-shadow thermal, and after that stayed as high as he could for safety. His last two thermals were off a wood; in the first he saw Deane-Drummond 200 ft. lower down (apparently too low to be useful, for D-D landed at 17.50), and in the second he took half-an-hour to climb 1,500 ft. He reached the coast at Tintagel, while Tony Goodhart in the Olympia 403 entered by Elliotts of Newbury, and Paul Minton in the Skylark III entered by Slingsby's, came next best, landing west and east of Launceston respectively. Tony had found it slow going to Salisbury, then quite good, until near Exeter it became "miserable" and after that he was just "scratching". But he reached 5,800 ft. in cloud, well above the forecast inversion.

Deane-Drummond mentioned that the haze, which was a notable feature of this day and restricted visibility to 2 or 3 miles, did not prevent him always knowing his position. He encountered no bad patches; yet Bisgood found it difficult all the way, doing 12 miles less but staying in the air 35 mins. longer.

Philip Wills's sudden drop to 5th place this day was due to his taking a risk which didn't come off. Having heard Wallington's forecast that the sea breeze would start coming inland all along the south coast from noon (B.S.T.), he pushed off south

and, sure enough, found a thick line of cumulus-like cloud marking the edge of the sea air, about 12 miles inland. So he steamed along this belt of lift at high speed, a lot faster than those who were plodding from thermal to thermal further north. But, alas! Where the coast veers to the right towards Bridport, the cloud bank deceptively kept straight on, and Wills suddenly found himself surrounded by sea air; he turned north in the hope of reaching the thermals, but was still in sea air when he landed at Beaminster.

Hickling tried the same thing later after following the conventional route till the thermals gave out; he made off south for Lyme Regis and the sea breeze but failed to catch it—evidently the thermals had ceased sucking the sea air inland. But Welch, after landing 9 miles inland from the North Devon coast at 17.12, was told by the farmer that the N.E. wind had only been disturbed by an occasional puff of sea breeze, which came from S.W., not N.W. as would be expected.

In the following table, the adjusted distances for marking (projected distance minus deviation from line) are given in brackets.

League 1, Distances

Pilot	*Landing*	*Miles*	
Ince	Tintagel	168	(160)
A. Goodhart	Launceston	152	(151)
Minton	Launceston	143	(143)
D-Drummond	Ashwater	147	(141)
Gough	Holsworthy	148	(138)
N. Goodhart	Okehampton	137	(134)
Bisgood	Okehampton	135	(130)
Williamson	Okehampton	132	(129)
D. Smith	Ottery St. M.	113	(108)
Welch	Yarnscombe	93	
Tonkyn	Crewkerne	82	
Allen	Taunton	78	
Shepherd	Wootton Fitz P.	87	(78)
Hickling	Charmouth	85	(76)
Coulson	Petherton	77	(75)
Piggott	Petherton	77	(75)
Wills	Beaminster	79	(73)
Tweedy	Lyme Regis		(72)
Warminger	Beaminster	79	(72)
Kahn	Sherborne	68	
Cotton	Sherborne	68	
C. Ellis	Cerne Abbas	69	(56)
Foster	Henstridge	59	
Furlong	Wool, Dorset	63	(36)
Kaye	Wool, Dorset	63	(36)

League 1, aggregate mileage, 2,380.6.

LEAGUE 2 found their task impossible, not only because of poor thermals, but because of the haze, which was at its thickest in the region of their triangle. Mackenzie missed completing it by only 7 miles; Ted Day, who made next best distance, found it fairly easy to Andover but came down on the next leg. Peter Scott was third best.

League 2, aggregate distance, 1,264.1 miles; average per pilot, 32.4 miles.

Leading Totals, 4 Days

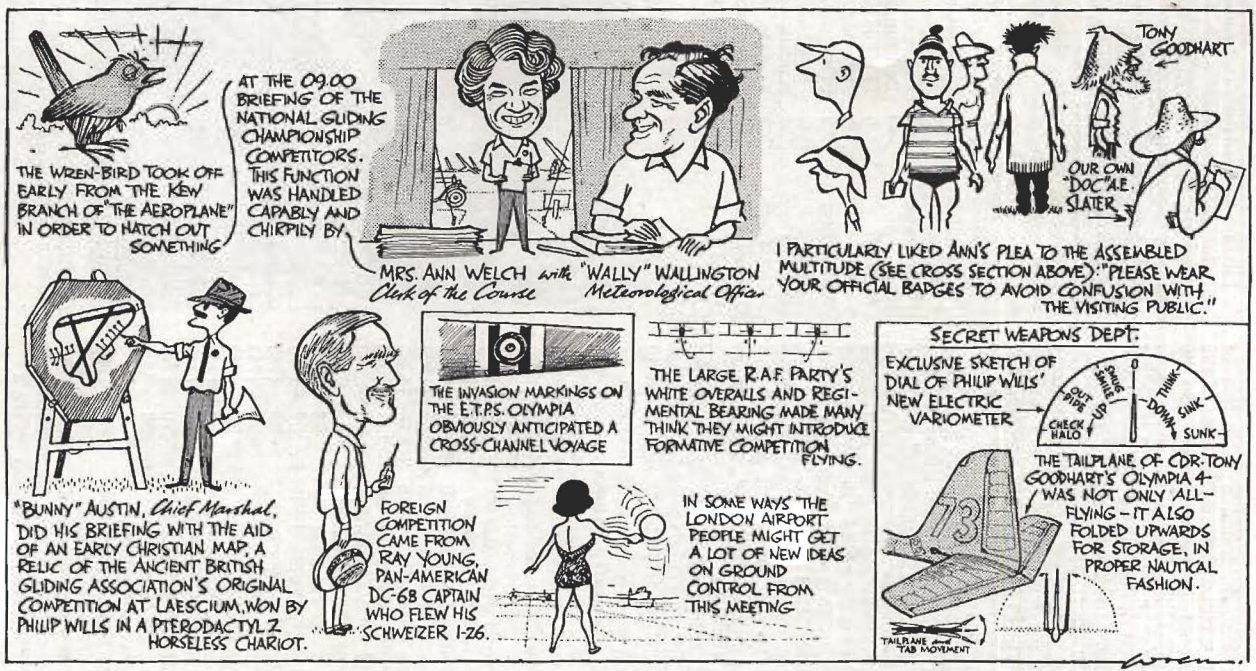
LEAGUE 1		LEAGUE 2	
A. Goodhart	348	Mackenzie	348
D-Drummond	345	Mann	319
N. Goodhart	344	Day	299
Ince	340	Bentson, etc.	289
Wills	320	D. Ellis	264
Gough	308	Jefferson, etc.	252
Williamson	280	Scott, etc.	231
Smith	264	Anson	225
Bisgood	256	Knotts, etc.	225
Minton, etc.	245	Torode, etc.	224
Warminger	227	Hands, etc.	218
Tonkyn	220	Palfreeman, etc.	192



Commanders Nick (left), and Tony Goodhart in a concentrated moment.

(Photo, Betsy Woodward)

"Wren's" Eye View of the Championships



Courtesy "The Aeroplane."

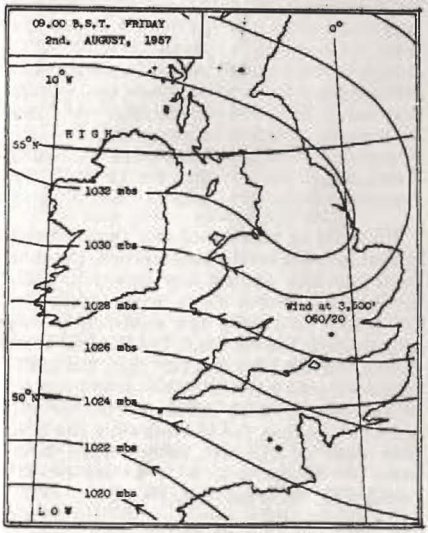
Friday, 2nd August

LEAGUE 1: Race to Nympsfield (Bristol Gliding Club), 65.3 miles.

LEAGUE 2: Distance along line to Park Head, N. Cornwall.

With a 15-knot wind from E.N.E. at cruising height, and a course leading N.W. by W., League 1 had a cross-wind with a small favourable component. But what bothered them most was a sticky patch two-thirds of the way to the goal, between Swindon and Chippenham, over ground at about 400 ft. a.s.l. between the Cotswolds and the Avon valley.

Considering how many pilots, even the most expert, were nearly sunk there, it is rather surprising that all reached Nympsfield—24 by air, and one, John Cotton, on foot, having landed a mile short and damaged his machine against a concealed manhole-cover in a field (what was it doing there?). Nor did all the successful ones escape damage on landing: Foster broke his rudder-post on a rough bit of the ground, and Stephenson knocked off a piece of wing-tip against a winch. Dan Smith was temporarily out of the contest as the result of an up-hill landing the day before.



FRIDAY 2ND.—*During the night a weak cold front had moved S.S.E. across the country and had left South-East England in an air mass with an inversion at about 4,000 ft. above M.S.L. Cooling during the night had also produced a shallow low-level inversion, and although dry thermals were available by mid-morning, they did not extend to more than 2,000 ft. until after midday.*

Some stratus overcast had to clear away first, after which the night inversion had to be eliminated; even when the thermals got well going, there were very few cumulus clouds to mark them. All crossings of the starting line were made between 13.48 and 14.45.

Frank Foster won the race with his Skylark II, taking 1 hr. 30 mins. 4 secs. at an average speed of 43.4 m.p.h. His technique was to soar along each line of hills and then dash across the low ground. Tony Goodhart, with 41.5 m.p.h. in the Olympia 403, avoided the worst bits by keeping north of track; but towards the end of his carefully calculated glide-in, he was unable at first to find the Nympsfield ground, never having been there before, and arrived below the hill top. So he soared up the side of a valley in the hope of finding an extra bit of lift at its top, and sure enough it just heaved him over the trees into the club ground.

James in the Gull II also kept north to avoid the bad patch and was rewarded by a good thermal off Swindon railway works. Both he and Nick Goodhart found the lift to be arranged in short "bars" running E. to W., so one entered each at its right-hand end and then turned half left to go along it. Deane-Drummond was down to 1,000 ft. over the bad patch, but Wills descended to only 150 ft. (above take-off?) and, he said, was only "spurred on by the contemptuous look in the eyes of some chickens."

First arrival at Nympsfield was Stephenson at 15.25; last was Charles Ellis at 17.40.

League 1, Race Times

Pilot	*Mins.*	*Pilot*	*Mins.*
Foster	90	Tonkyn	122
A. Goodhart	94	Kahn	126
N. Goodhart	96	Irving	128
Warminger	96	Tweedy	130
D-Drummond	97	Piggott	130
Ince	99	Pickup	130
Stephenson	100	Wills	136
Bisgood	107	Neilson	137
Neilan	114	Breeze	144
Williamson	114	Lee	171
James	114	C. Ellis	175
Gough	115	Coulson	192

League 1, aggregate mileage, 1,624.



Ted Day, Kent Gliding Club, who flew his Slingsby Sky to victory in League 2.
(Photo: "Flight")

LEAGUE 2, given League 1's task of the previous day, did not get so far towards Park Head but kept closer to the line, which this time lay along the wind direction. Also there was less haze. As for the sea breeze, so far from anyone being tempted towards it, Ted Day, the day's winner, kept north of track to avoid it, and only when it finally caught him, he says, did he make a final glide south to get back on track. Day's distance, 115 miles, was actually beaten by Anson with 118, but 8 of these miles were deducted for being too far north.

Two pilots, at least, nearly bought it on the first glide down from the starting line. Col. Benson was down to 800 ft. before finding lift but continued for 63 miles; and Morison in the Nimbus, after going 10 miles, was turning in to land with his hand on the brake, to join a Sedbergh in a field, when the green ball popped up again. Riddell found the lift scrappy everywhere below 1,500 ft.

The following table gives the number of miles for scoring, after deductions for divergence from the line, if any. The machines flown by the first 10 pilots are, in order: Sky, 3 Olympias, Skylark II, Army Kranich, Petrel, Olympia, Skylark II. Well to the fore are three Sedberghs flown respectively by Sqn. Ldr. Hart (A.T.C.), Air Cmdre. Paul (R.A.F.) and Flt. Lt. Jones (A.T.C.). Sqn. Ldr. Scorer flew a Grunau.

League 2, Longest Flights

Pilot	*Landing*	*Miles*
Day	Crediton	115.0
Anson	Crediton	110.0
Mackenzie	Exeter	105.9
Kearon	Sidmouth Jn.	102.6
Rutherford	Cullompton	102.4
Morgan	Cullompton	102.0
Martlew	Honiton	100.1
Parkes	Cullompton	98.8
Dodd	Honiton	96.7
Hart	Upottery	93.0
Lastowski	Honiton	92.9
D. Ellis	Chard	86.0
Paul	Ilminster	85.4
R. Jones	Crewkerne	82.3
Collier	Evershot	69.6
Hodgson	Sherborne	68.2
Scorer	Sherborne	68.2

League 2, aggregate mileage, 2,678.7.

Leading Totals, 5 Days

LEAGUE 1		LEAGUE 2	
A. Goodhart	443	Mackenzie	439
N. Goodhart	439	Day	399
D-Drummond	436	Mann	347
Ince	429	D. Ellis	333
Wills	293	Bentson, etc.	323
Gough	386	Anson	320
Williamson	385	Martlew, etc.	308
Bisgood	358	Dodd, etc.	299
Warminger	338	Collier, etc.	282
Foster	320	Blake, etc.	280
Irving, etc.	317	Benson, etc.	271
Tonkyn	315	Morgan, etc.	253

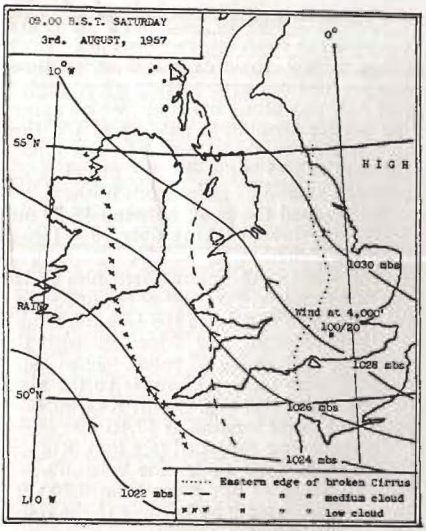
It should be mentioned that these official figures give the total points earned, but that from the fifth contest day onwards, each competitor's worst day's score could be subtracted. Actually this subtraction was only made at the very end, but if it had been done from the fifth day onwards, the competitors would have seen their true position in relation to each other. The leading scores in League 1, counting only the best four days of the five, would then have been: N. Goodhart, 375; Deane-Drummond, 373; A. Goodhart, 366.

Saturday, 3rd August

LEAGUE 1 : Free Distance.

LEAGUE 2 : Race to South Cerney (Cirencester), 52 miles.

With cirrus approaching from the west along a line running north to south through the middle of England, and thickening



SATURDAY 3RD.—*With the anticyclone receding towards the east, broken cirrus and medium cloud heralded the approach of a low-pressure system from the south-west. However, the eastward movement of the cirrus was very slow, and this upper cloud was sufficiently well broken to allow moderate insolation over the eastern half of England. Thermals in this region were often moderate in strength up to* 4,000-5,000 *ft.*

downwards to medium cloud further west, League 1 pilots had the problem of going northwards along the edge of this cloud while the east wind was trying to blow them under it. Moreover, its shadow crept eastwards faster than the cloud while the sun sank lower in the west, as Tony Goodhart found when he had to do his last five miles at about 300 ft.

Really workable thermals were not expected till after 1.30 p.m., but the morning stratus dissolved sooner than expected, leaving a clear sky. So when the Navy's Kranich took up the editor's assistant for a joy ride at 11.30, nobody expected it to run into thermals; but it found such a good one that Wills and Nick Goodhart came up and joined it, far in advance of their intended launching times. Nick was rewarded by making the longest flight of the day—more than 25 miles further than the next best, and landed only ten miles from the Derbyshire & Lancashire Club at Camphill. North of Burton the sky contained cumulus, but his nearest rivals just missed reaching it. So, though Nick Goodhart kept going till 17.40, Deane-Drummond and Ince came down at 17.00, Wills at 16.20 and Tony Goodhart at 16.50.

Foster, who had been up nearly all night repairing his Skylark's tail, had it ready for take-off by 2 p.m. and managed 75 miles, which gives an idea what the others might have done if they had stuck to their original starting times.

Most of the more distant landings were between N. and N.N.W. of Lasham. But there were two exceptions, who pitted themselves against the overcast. John Williamson made the second best distance, seven miles short of the Midland Club at the Long Mynd, in a Weihe—the only machine among the first eight which wasn't a Skylark III—and the latest landing of the day at 17.50. And Sgt. Gough penetrated into South Wales below the overcast, making use of his own "secret weapon", a standard pair of dark glasses with which he could see the hazy tops of the thermals. Opinion in the R.A.F. was that he had gone



P. C. "Bunny" Austin, Chief Marshal, with his invaluable marshalling gadget.
(Courtesy "The Aeroplane")



Mrs. Rika Harwood, wife of our Club News Editor, was the only woman pilot in the contest.

to the mountains in search of Gold C height in waves, which, however, had not been forecast. Anyway, at Abergavenny, where the high stuff begins, he started losing height, and had to land on Brynmawr Rugby football ground, seven miles further on, with mountains all around.

League 1, Scoring Flights

Pilot	*Landing*	*Miles*
N. Goodhart	Buxton	144.7
Williamson	Craven Arms	119.3
D-Drummond	Ashby de la Z.	111.8
Ince	Tamworth	110.6
Gough	Brynmawr	103.0
Wills	Hinckley	96.7
Warminger	Bramcote	92.3
Coulson	Bramcote	92.3
A. Goodhart	Coventry	88.5
Kaye	Rothwell	83.4
Irving	Braunston	77.7
Foster	Evesham	75.5
Neumann	Moreton in Marsh	63.2
James	Banbury	61.6
Ellis	Northleach	56.2
Neilan	Finmere	55.7
Kahn	Chipping Norton	54.2
Stafford-Allen	Burford	53.0
Hickling	Wootton Bassett	40.6
Tonkyn	Abingdon	32.1

League 1, aggregate mileage, 1,655.4.

League 2 had to race north-westwards towards the overcast, but instead of thickening evenly towards the west, it threw out an offshoot across Hungerford region, just half-way along the route, which caused ten people who were passing at the time to come down there: nine of them landed between 15.35 and 15.52, at distances between 23 and 27 miles from Lasham.

Six reached the goal, between 15.29 and 16.38, the slowest taking only 30% longer than the fastest, who was Ted Day. This second win in succession lifted him to the top of League 2. Furthest of the unsuccessful ones were Everitt in the London Club's T-21b (Sedbergh) and Morison with the Nimbus, each doing 47 miles. Then came Garrod, who landed 12 miles to the right of the course, and Wg. Cmdr. Kearon, who made the latest landing at 17.10.

Of those who suceeded (see list), Rutherford said he kept under the "clamp" and scraped along at not more than 2,200 ft., and Scott avoided it by keeping to the right.

League 2, Race Times

Pilot	*Sailplane*	*Minutes*
Day	Sky	98¾
Rutherford	Skylark II	107¼
Cochrane	Skylark II	107¾
Stark	Olympia	114
Cockburn	Olympia	125
Scott	T-42b	128¼

League 2, aggregate mileage, 1,214.5

Leading Totals, 6 Days

League 1		League 2	
N. Goodhart	537	Day	499
D-Drummond	510	Mackenzie	445
Ince	502	Scott, etc.	358
A. Goodhart	498	Garrod, etc.	356
Gough	452	Mann	347
Wills	448	D. Ellis	333
Williamson	438	Rutherford	331
Warminger	378	Anson	329
Foster	362	Hands, etc.	320
Irving, etc.	361	Burton, etc.	316
Bisgood	338	Baynes, etc.	302
Kahn	310	Green, etc.	292

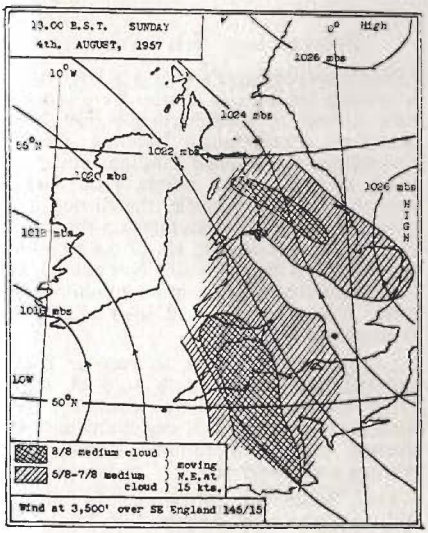
Note: if each pilot's lowest day's score is subtracted, A. Goodhart would have come 3rd, Wills 5th, Williamson 6th and Bisgood 9th; and, in League 2, Mann 4th, D. Ellis 5th, Rutherford 6th, Burton 9th and Green 11th.

Sunday, 4th August

LEAGUES 1 and 2: Flight to goal selected by the pilot. Bonus for landing at goal: 30% of distance marks.

Again the country was clamped over to the west with high and medium cloud, but this time the clamp had a wavy edge, with a wave-length of 170 miles between two "crests" crossing the Bristol Channel and the Wash, and between them a "trough" of clear air stretching from the West Midlands into North Wales, having moved slowly north-eastwards since the morning. But at soaring level there was an easterly wind drifting towards the clamp, as yesterday.

The choice of a goal was most difficult, and only two goals were reached in League 1 and four in League 2, including a safe



SUNDAY 4TH.—*Another day on which a pilot would not normally contemplate a long cross-country flight. Wide belts of medium cloud and thundery rain were moving from the south-west, but between two of these belts there was a narrow lane of well-broken cloud. In this lane thermals were weak to moderate and smoke haze was still apparent, but the real test of flight-planning lay in assessing average speeds of cross-country flight and making due allowance for the predicted speed of movement of the lane.*

22-mile one at Andover which John Holder reached with 3,000 ft. to spare. Several pilots, after finding conditions different from what they expected—usually worse—came down again and changed their goals. Contrary to the usual custom, all goals were made public on a blackboard for each competitor's rivals to see.

The furthest goal, Rhyl, declared by Ince and Wills, proved unattainable; it was Wills's second choice, his first one having been Sleap, north of Shrewsbury, which he eventually passed over while gliding down from his last thermal to a landing at 17.45. This was also the landing time of Deane-Drummond, who not only made the longest flight of the day, 162.8 miles, but reached his goal at Hawarden, just over the Welsh border from Chester, and thereby gained the lead which won him the Championship.

Tony Goodhart made the second longest flight, to a landing near Wrexham at 17.35, by overflying his goal at Halfpenny Green, near Wolverhampton, by 47 miles, of which the last 21 miles gave him more points than he would have got by landing at the goal. Unlike Wills, he passed east of Birmingham and found better weather. Oddly enough, only 40 miles out from Lasham, he shared a thermal with his brother, and at a lower height; yet this proved to be Nick Goodhart's last thermal, as he had to land near Oxford after "fiddling" with low thermals from gravel pits, small villages, cornfields and airfield runways all the way from Harwell—and all the time there was clear sky overhead. "Somehow," he said, "it didn't seem to be my day." He had already, after a first abortive take-off, reduced his goal from Hooton, N.W. of Chester, to Halfpenny Green, a 107-mile goal which Bisgood also gave and actually reached.

Third best was Piggott in the T-42 Eagle, four-fifths of a mile further than Wills. He made the latest landing at 18.00; in fact, the leading four, with Stephenson, who landed at 17.38, kept going about an hour longer than anybody else in either league, excepting Rutherford (17.00).

In League 2, the two highest scorers attained their goals: Mike Hodgson from Bristol Club, in a private Olympia, landed there at Nympsfield; and Sqn. Ldr. Scorer reached Kemble in the R.A.F. Grunau Baby. The next best goal flight was by Morison in the Nimbus; after an abortive launch at 2.30 he had changed his goal from South Cerney to Wanborough aero-

drome, near Swindon, before a final start at nearly 3 p.m. He reached the neighbourhood with the help of a 10 ft./sec. thermal and then spent an hour looking for the aerodrome, only to find at last that it had been ploughed up.

League 1, Landings and Distances

Pilot	*Landing*	*Miles*
D-Drummond	*Hawarden*	162.8
A. Goodhart	Wrexham	153.9
Piggott	Nantwich	150.9
Wills	Overton	150.1
Bisgood	*Halfpenny Green*	106.8
Foster	Leominster	99.7
Shepard	Castle Bromwich	99
Stephenson	Stourbridge	98.6
Ince	Kidderminster	95.5
Coulson	Birmingham	91.1
Gough	Solihull	91
D. Smith	Redditch	90.6
Breeze	Defford	79.9
Tonkyn	Bristol	72.3
Neilson	Chipping Campden	67.6
Thomas	Moreton in Marsh	63.3
C. Ellis	Northleach	58
Minton	Chipping Norton	57.4
Williamson	Chipping Norton	57
Pickup	Burford	47.5
Warminger	Faringdon	47
Hahn	Brize Norton	45.2
N. Goodhart	Stanton Harcourt	41.6
Welch	Lambourne	29
Lee	Welford	25

Goals reached are given in italics.

League 2, Longest Distances

Pilot	*Landing*	*Miles*
Hodgson	*Nympsfield*	65.2
Scorer	*Kemble*	55.5
Rutherford	Cheltenham	65.7
Torode	Cirencester(?)	64
Kearon	Moreton in Marsh	63.3
Kerridge	Sherborne	56.9
Sutcliffe	South Cerney	52
Palfreeman	Bicester	52
Robinson	Witney	49.2
R. Dickson	Down Ampney	48.5
Morgan	Down Ampney	48.5
Anson	Burford	47.9
Morison	*Wanborough*	38
Everitt	South Marston	41
Oliver	Swindon	40.7
Lastowski	Swindon	39
Day	Abingdon	36.8
Dorman	Abingdon	36.8
Scott	Wantage	33.8
Gee	Lambourn	32.0

Goals reached are given in italics.

Aggregate distance: League 1, 2,084.1 miles; League 2, 1,351.1 miles; total 3,435.2 miles.

Since no marks were earned on the final day, the following list shows the total points earned during the contest *before* each pilot's worst day was deducted to obtain the final scores for the Championships, which are given on another page; it should be interesting to compare the two lists. In League 2 there is no difference in the order of the first 12.

Leading Totals, 7 Days, League 1

D-Drummond	610	Gough	490
A. Goodhart	570	Williamson	458
N. Goodhart	549	Foster	408
Ince	543	Bisgood	397
Wills	518	Warminger	393

Prizegiving, 5th August

The final Monday's events started with a briefing for League 2, who were given a race round a short triangle via New Alresford Pond and Farnham Castle. Questioned on whether landings could be made at the turning points, Ann Welch said that, as to the castle, the Bishop had given permission for landings on the lawn. But no-one got as far; six pilots rounded the Pond and that was all. Not enough of them exceeded the ten miles minimum to make it a contest. And their aggregate mileage was 87.5.

League 1, given time to recover from yesterday's retrieves, were told at their 11.30 briefing that there would be no contest. Up in the sky, castellatus clouds showed there was thunder about, but nothing useful arrived.

Lord Brabazon, introduced by Philip Wills as "the most helpful Vice-President we have ever had," made a characteristic speech before giving away the many prizes, which are listed separately. He referred to gliding as "the only sport left in aviation to-day," and said that flight did not come about by the efforts of scientists, but by the enthusiasm of fools. Finally, Philip Wills, summing up "the most successful meeting we have ever had," paid tribute to all who had worked at ground level: nine-tenths of an iceberg is below the surface, but without it the iceberg could not exist!

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National Championships Results

League 2

	Pilot or Pilots	Sailplane	Contest Day 1	2	3	4	5	6	7	Final Total
1.	E. Day	Sky	32	95	95	77	100	100	28	499
2.	J. K. Mackenzie	Olympia	61	88	99	100	91	6	6	445
3.	R. Rutherford	Skylark 2	4	77	52	20	87	91	76	403
4.	J. E. Torode, G. Burton, D. Martlew	Petrel	32	100	76	16	84	8	74	382
5.	P. Scott, P. Collier	T-42b	2	84	74	71	51	76	23	379
6.	N. P. Anson	Olympia	22	89	80	34	95	9	46	366
7.	M. P. Garrod, C. W. Bentson	Olympia	67	90	86	46	34	33	5	356
8.	N. W. Kearon	Olympia	6	60	70	29	87	33	72	351
9.	D. Ellis	Olympia	19	88	98	59	69	—	17	350
10.	R. A. Mann	Gull 4	87	99	100	33	28	0	2	349
11.	J. N. Cochrane, K. R. Aldridge, B. J. Palfreeman	Skylark 2	12	100	75	5	0	91	52	335
12.	J. M. Hands, S. R. Dodd	Skylark 2	71	36	76	35	81	21	5	320
13.	J. L. Bayley, A. T. Morgan	Kranich	13	0	90	64	86	4	47	304
14.	J. B. Jefferson, K. W. Blake, A. H. Baynes	Skylark 2	100	69	24	59	28	22	13	302
15.	G. Benson, C. Green, J. Knotts	Skylark 2	93	34	93	5	46	21	0	292
16.	J. D. Jones, M. J. Hodgson	Olympia	33	23	52	31	51	5	100	290
17.	A. O. Sutcliffe, J. M. Hahn, T. R. H. Parkes	Olympia	33	70	16	20	83	21	53	280
18.	N. J. Dickson, R. C. H. Barber, E. Stark	Skylark 2	21	1	87	5	50	85	0	249
19.	D. Kerridge, J. E. Simpson	Olympia	99	9	20	20	30	0	59	237
20.	C. S. Scorer	Grunau 2b	12	0	48	25	51	0	77	213
21.	R. J. Cockburn, A. Bowman, G. C. Wilkinson, M. S. Goodfellow	Olympia	0	21	74	0	38	77	0	210
22.	B. E. Lastowski, W. Kwasny	Olympia	39	20	14	5	77	26	32	208
23.	R. Brett-Knowles, E. J. Robinson	Kranich	7	64	20	35	23	0	49	198
24.	R. C. Jones, W. Verling	Sky	4	56	52	0	66	16	0	194
25.	P. Hart, Ladley	Sedbergh	22	0	0	64	77	22	0	185
26.	J. C. Everitt	Sedbergh	10	56	21	0	25	34	36	182
27.	R. D. Dickson	Gull 4	36	4	57	0	13	6	47	163
28.	G. W. Mackworth-Young, C. G. Dorman, E. A. Moore	Skylark 2	0	7	51	44	18	0	28	158
29.	J. C. Riddell	Skylark 1	27	0	43	27	36	5	10	148
30.	B. Sinclair, G. R. Paddick	Olympia	10	72	59	—	—	—	—	141
31.	P. Hampton, D. Scallon	Skylark 2	22	75	0	0	24	6	—	127
32.	J. Oliver, Garner, Naylor	Sedbergh	29	0	53	0	0	6	35	123
33.	S. Morison	Nimbus	15	1	0	0	26	34	39	115
34.	Mrs. R. Harwood	Olympia	11	7	23	0	12	9	17	79
35.	J. V. Inglesby	Olympia	32	1	0	5	37	0	—	75
36.	G. J. C. Paul	Sedbergh	0	0	4	0	69	0	0	73
37.	Hayter, Allan	Sedbergh	0	0	8	0	37	25	—	70
38.	H. A. Pitt-Roche	Sky	0	4	65	—	—	—	—	69
39.	F. Allen	Gull 1	35	15	—	—	—	—	—	50
40.	J. H. Holder, D. Snodgrass	Olympia	0	0	40	0	5	0	4	49
41.	J. H. E. Edwards, A. A. McDougall	Sedbergh	0	0	9	0	0	26	11	46
42.	M. C. Jackson, M. I. Gee, G. R. Whitfield	Olympia	10	0	0	0	11	0	20	41
43.	M. Jobling	Olympia	0	0	21	—	—	—	—	21
44.	R. A. Young	SGS 1-26	0	4	0	0	0	0	0	4

NOTE.—Zero indicates that the pilot did not go far enough to score. Absence of a figure indicates sailplane under repair.

The figures in the last column are the totals after discarding each entrant's lowest day's score.

League 1

	Pilot or Pilots	Sailplane	Contest Day 1	2	3	4	5	6	7	Final Total
1.	A. J. Deane-Drummond	Skylark 3	63	96	100	86	91	74	100	547
2.	H. C. N. Goodhart	Skylark 3	62	100	100	82	93	100	12	537
3.	G. A. J. Goodhart	Olympia 4	80	77	97	94	95	55	72	515
4.	D. H. G. Ince	Skylark 3	68	81	91	100	89	73	41	502
5.	P. A. Wills	Skylark 3	100	86	95	39	66	62	70	479
6.	A. Gough	Skylark 3	76	69	77	86	77	67	38	452
7.	J. S. Williamson	Weihe	39	73	90	78	78	80	20	438
8.	P. L. Bisgood	Sky	36	62	77	79	82	0	61	397
9.	A. H. Warminger	Skylark 3	36	76	78	37	93	58	15	378
10.	F. Foster	Skylark 2	37	76	76	28	100	45	43	377
11.	F. G. Irving, P. Minton	Skylark 3	62	70	25	88	70	46	20	361
12.	A. D. Piggott	T-42a	37	68	67	39	69	0	71	351
13.	W. N. Tonkyn	Skylark 2	60	78	38	44	73	10	28	321
14.	D. B. James / G. H. Stephenson, E. J. Furlong	Gull 2	0	60	66	41	77	33	43	320
		Skylark 3	52	82	40	13	92	0	41	320
16.	W. A. H. Kahn	Olympia	36	69	73	34	71	27	14	310
17.	D. A. Smith	Sky	66	66	76	56	0	0	38	302
18.	C. A. P. Ellis	Olympia	52	69	62	28	56	29	21	296
19.	G. S. Neumann, P. J. Neilson	Skylark 2	19	63	79	2	66	35	26	288
20.	A. Coulson / D. M. Kaye, F. Breeze	Skylark 3	29	56	35	39	53	58	39	280
		Skylark 2	35	23	76	13	63	51	32	280
22.	J. C. Neilan, L. Welch	T-42b	4	71	39	52	78	29	5	274
23.	J. Tweedy, B. Thomas	Sky	93	21	17	38	69	0	23	261
24.	A. Pickup, J. H. Hickling	Skylark 2	15	63	11	40	69	17	15	219
25.	G. H. Lee, R. C. Stafford-Allen	Olympia	4	56	29	41	57	26	3	213
26.	J. C. Cotton	Skylark 2	31	77	7	34	40	—	—	189

Awards and Prizes

THE KEMSLEY CUP.—J. K. Mackenzie, Surrey Gliding Club (highest club placing in either League).

THE LONDONDERRY CUP.—A. J. Deane-Drummond (winner, Individual Championship, League 1).

THE L. DU GARDE PEACH TROPHY.—F. G. Irving & P. Minton (winners, Team Championship, League 1).

THE FURLONG TROPHY.—E. Day (winner, Individual Championship, League 2).

THE FIRTH VICKERS TROPHY.—J. E. Torode, G. Burton & D. Martlew (winners, Team Championship, League 2).

THE EON CUP.—J. K. Mackenzie, Surrey Gliding Club (highest placing of Olympia in either League).

THE SLINGSBY TROPHY.—R. C. Jones & W. Verling, Air Training Corps, R.A.F. (highest placing of Sedbergh).

THE PAN AMERICAN AIRWAYS TROPHY.—A. Gough, R.A.F. Gliding & Soaring Association, Wessex Club (organization with greatest aggregate score).

League 1

1st.—A. J. Deane-Drummond.
2nd.—H. C. N. Goodhart.
3rd.—G. A. J. Goodhart.
WINNING TEAM.—F. G. Irving and P. Minton.

League 2

1ST.—E. Day.
2ND.—J. K. Mackenzie (Surrey G.C.).
3RD.—R. Rutherford (Midland G.C.).
4TH AND WINNING TEAM.—J. E. Torode, G. Burton and D. Martlew.
5TH.—P. Scott and P. Collier.

Special Prizes

HORS CONCOURS ENTRY.—R. A. Young.
BEST WOMAN COMPETITOR.—Mrs. R. Harwood.
MOST MERITORIOUS TWO-SEATER FLIGHT.—A. D. Piggott & C. Tippitt.
CROWN AGENTS' PRIZE.—E. Day.
PRIVATE OWNERS' PRIZES.—A. J. Deane-Drummond (League 1); E. Day (League 2).
AEROBATIC CONTEST.—D. Ellis.
BEST SEDBERGH (T-21B) FLIGHTS.—(1) J. C. Everitt & Crew; (2) R. C. Jones & Crew; (3) P. Hart & Crew.

VOLA A VELA IN ITALIA

by Michael Pertwee

(Reproduced by courtesy of "Lasham Gliding")

THE following diary of events may prove of interest to anyone contemplating a little gliding in the vicinity of Rome.

On arrival you make enquiries amongst your friends and hear, with delight, that there is a gliding school on the outskirts of Rome. You leap into your car and drive straight out there—ten minutes at the most. There, in a hangar, are gliders galore—Spatz, Cangarus and tubby little side-by-side two-seaters under construction, with a helpful little engine and propeller tucked in the back. Here, too, is the Italian champion, Commandante Mantelli, who greets you charmingly but with the news that it is a Military Unit and it will be quite impossible for you to fly. There is, however, a club at Rieti some fifty miles away in the mountains. Amid coffee and a mountain of barograph records of exciting winter-wave flying, Mantelli telephones the club and tells them to expect you.

You leap into your car again and drive out to Rieti, which takes something over one-and-a-quarter hours. It is a lovely spot nestling in a wide valley between mountains, the highest of which is Monte Terminillo. Anyone who wants to know how high it is can look it up in their atlas.

Here you are greeted by Signor Rovesti, who can best be described as the Bill Gotch of Rieti. He is delighted to see you and delighted to do everything possible for you to fly. But first you must approach the *Ministero Della Difesa Aeronautica—Direzione Generale Aviazione Civile e Traffico Aereo* in Rome. Anyone who wants to know what that means can look it up in their dictionary.

You leap into your car and drive hell-for-leather to the M.D.D.A.D.G.A.C.E.T.A. (see above), which is situated outside Rome, in the marble Palaces erected by Mussolini for the 1942 exhibition, which sprawl elegantly over many acres of land. Here you discover that practically no one knows how to find the M.D.D., etc.

At last you find it and are led into an office where you meet a severe-looking civil servant who would be just as happy in Whitehall. He tells you that permission may be granted but first you must carry out a few little tasks. Here they are.

(1) A stamped sheet of paper to the value of Two Hundred Liri on which, in Italian, you must make application to fly.

(2) A stamped sheet of paper to the value of One Hundred Liri which you must bring back but leave *utterly blank*.

(3) Go to the Post Office and obtain an orange form (*Ricevuta di Versamente*) which I think must be the equivalent of a Postal Order. This to the value of Three Hundred and *Eleven* Liri. Since no one has seen *one* lira for about twenty years, I am not sure who did who in the transaction. Nor do I know why it was 311 and not 310.

(4) A *complete* translation in *Italian* of your Gliding Certificate. This is extremely difficult, even if you have friends who speak both languages. The charming girl who did mine for me was completely stumped by having to put into Italian such words as Brabazon of Tara and Yvonne Bonham—to say nothing of Fédération Aéronautique Internationale which started by being French.

(5) And here is the rub. A guarantee of *Good Morals* by the British Embassy. This frankly terrified me. My skill as a pilot is a byword. But what of my morals? Had news of my behaviour at Lasham leaked through to Rome?

I decided that this should be my first task. Without the guarantee of Morals (Good), what use the blank sheet of paper and other things? So I leapt into my car and headed for the British Embassy—in normal times a ten-minute drive. But here a word of advice to all would-be applicants. *Always* go to the

British Embassy when President Coty of France is arriving in Rome. It makes it *much* more exciting. A dull, ten-minute drive is spread into one-and-a-half glorious hours' motoring through narrow streets you didn't even know existed. You see angry motorists fighting with policemen. You travel far into the country down old Roman Roads unused for centuries. There are so many One Way signs that time and again you are sent in a circle and back to the spot from which you started. At last you arrive and are greeted by a charming man in a blue serge suit who tells you that you shouldn't have come to the British Embassy at all but should have gone to the British *Consulate*, which is exactly three minutes' slow walk from your point of departure one-and-a-half happy hours before.

I do not think that it is any evidence of corruption in high diplomatic circles, but I got my Certificate of Good Morals for the cost of some 500 liri.

NOTE (a) The 200 and 100 liri forms are obtained from Tobacconists, *not* the Post Office.

NOTE (b) The orange postal order has to be obtained to the account N.1/25965.

NOTE (c) The British Consulate is in the Piazza Di Spagna. Ignore the British Embassy altogether except, of course, when President Coty is visiting Rome.

NOTE (d) Signor Rovesti is most helpful about supplying the correct form of application.

Finally, armed with all this, you return to M.D.D., etc., where the same gent eyes your translation of Brabazon of Tara with frowning suspicion—but within one hour you have your permit—actually typed on the mysterious blank 100 liri form.

NOTE (e) If you want to come again next year, you must do it all again—including the report on your Morals which, they claim, might well have deteriorated in the meantime.

Finally, may I say that it is all well worth while. Until the middle of June few people fly at the club. It has a pleasant bar and a *real* W.C. with push-button control. All launches are by aero-tow. The scenery is magnificent. The thermals are huge and gentle—a solid seven to ten up. There is soaring against the mountain side whether the wind is from north or south. I spent two wonderful hours at a steady six thousand feet and, when I decided to come down, was still going gently up with the brakes full out. To sum up, "*e meraviliosa*", and anyone who doesn't know what that means can look it up in their dictionary.

CHRISTMAS CARDS

Photograph by Charles Brown of

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H.R.H. THE DU
OPENS THE



Philip Wills greets the Duke of Edinburgh after he has flown to Lasham by helicopter.
(Photo: Kemsley Picture Service)



(Above) A Royal A
A. Gough (right), w
Paul on the extrem
as they are inspect

(Below) Lasham as s
Duke's inspection o



At briefing the Duke sits between Mr. Airey Neave, M.P., Parliamentary Secretary to the Ministry of Transport and Civil Aviation, and Philip Wills; immediately behind and to the right are Mr. and Mrs. F. N. Slingsby and Mr. and Mrs. B. A. G. Meads.
(Photo: Wing Features)



KE OF EDINBURGH CHAMPIONSHIPS



Air Force team, pilot—Sgt. ith Air Commodore G. J. C. ie right, stand to attention ed by the Duke.
(Photo: Kemsley Picture Service)

seen from the air during the f gliders and competitors.
(Photo: Charles Brown)



(Above) The Duke about to take off on his glider flight with Derek Piggott; John Neilan adjusts the straps, with Ann and Lorne Welch behind.
(Photo: Keystone)



CALIBRATING VARIOMETERS

by Nicholas Goodhart

In the past few years there has developed an increasing interest in flying for maximum cross-country performance using a table of air-speeds based on variometer readings. To use this table successfully it is necessary to have a variometer whose readings can be interpreted reasonably accurately, and this certainly cannot be said for many variometers in use, particularly after modifications for total energy have been made.

Figure 1 shows the relevant parts of my own instrument panel which are:—

(a) A standard 0-35,000 ft. Mk. XIV sensitive altimeter.

(b) A Kelvin Hughes KB 220/02, 10-130 knot, airspeed indicator.

(c) A "Memphis" variometer. This is a sensitive short-lag American instrument with pointer presentation similar to a Horn. It is not "total energy". It is graduated in knots from 20-up to 20-down.

(d) A Cosim variometer, which has been re-calibrated to read in knots. The capacity is provided by a thermos flask and by—

(e) a total energy device consisting of 2 standard industrial copper bellows suitably mounted in a casing which is fed with pitot pressure.

In order to check and calibrate the above panel the following rather elementary test rig was developed. It has proved so successful that it may be of interest to others who wish to calibrate their own panels.

The calibrator consists of an old paint tin (2 gallon) with a screwed airtight cap through which it can be filled with water. At the top a pipe is soldered on, which is led to the instruments under test via a T-piece. The third leg of the T-piece leads to a short length of pipe with a clamp on it which is used for controlled flow of air into the system. The bottom of the paint tin is led via a four-foot length of hose to a cock discharging into a bucket. The principle of use is equally simple and consists of letting the water out at a controlled rate, thus

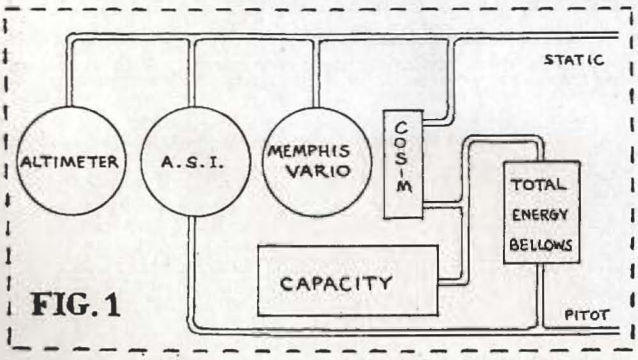


FIG. 1

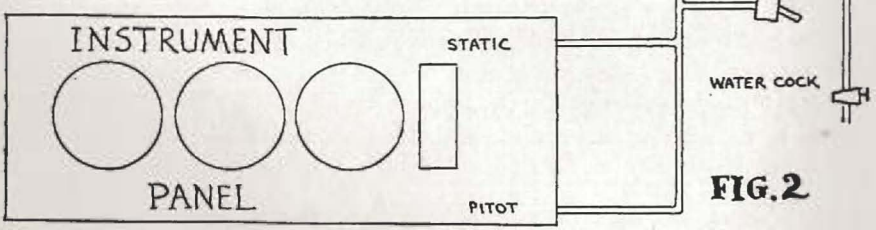


FIG. 2

progressively increasing the depression in the top of the tin. If an altimeter and variometer are connected to this depression, rates of climb can be measured by timing the altimeter over a range of a few hundred feet while observing the indication of the variometer. Rates of descent are achieved by closing the water cock and *carefully* opening the air venting clamp. It is essential that all movements be made carefully to avoid getting indicated rates of climb in excess of the capacity of the instruments. It is recommended that all testing be done in the range 0-500 ft. on the altimeter to reduce the risk of damage to any instrument; it is also a good plan not to fill the tank to more than about three-quarters full so that there is always a good air space capacity.

Figure 2 shows the calibrator connected for the testing of my panel. Note that the pitot and static lines are both connected to the calibrator. The first test consists of a leakage test. The cock is opened until, say, 200 ft. shows on the altimeter; the cock is then closed and both variometers should return to zero and the altimeter should remain steady. If this does not happen, the leak can be found by squeezing off various pipes and watching the instruments.

When *all* leaks have been removed, test 2 is a calibration run on the variometers. Calibration can, of course, be made in ft. per sec. or ft. per min. or anything else one prefers, but my own variometers are calibrated in knots. This may seem a curious unit to choose; however, it means that one can make direct glide-ratio calculations, e.g. speed 50 knots, rate of sink 2 knots—glide-ratio=25; it may seem an even less curious unit when it is realised that 1 knot=100 ft. per min.—for all practical purposes. For this test the water cock is opened until some steady reading is obtained on one of the variometers, say 500 ft. per min. (5 knots). This reading is kept steady by small adjustments of the water cock while the altimeter is timed over a range of, say, 400 ft. A similar descending run is then made. By doing a series of runs, a calibration can be produced for both variometers.

Test 3 is a check on the total energy set-up. For this test the pitot line is disconnected from the test rig, which is now fed only into the static system while the pitot line is left open to atmosphere. The effect of this is to produce an apparent increase in airspeed at the same time as the height increases; this deludes the total energy system into believing that the aircraft is gaining kinetic energy as well as potential energy, and a little calculation shows that the net result is a total energy variometer reading which is exactly double that timed on the altimeter. For those who are interested, the mathematical reason for this is added as an Appendix. If the A.S.I. is connected while carrying out this test, care must be taken not to exceed its limits. On my own panel I do not exceed 500 ft. on the altimeter, which gives 105 knots on the A.S.I. Incidentally, should there be any doubt on the calibration of one's A.S.I. the test rig can be used to calibrate it from the altimeter. For all practical purposes the correct reading of the altimeter for a given A.S.I. reading can be calculated from

$$\text{h ft.} = \left(\frac{\text{V (knots)}}{1.48}\right)^2$$

Appendix

A total energy variometer does not in fact show the rate of change of total energy of the aircraft, but rather shows the rate of change of the sum of actual height plus "kinetic height"; this latter term is coined to mean the kinetic energy divided by the aircraft weight, and its units are feet.

In the case of test 3, the kinetic height (h_k) is given by

$$h_k = \frac{V^2}{2g} \quad \ldots\ldots (1)$$

where V ft./sec. is the apparent airspeed.

But this apparent airspeed can be obtained from

$$p = \tfrac{1}{2}\rho V^2 \quad \ldots\ldots (2)$$

where p is pressure applied to A.S.I.

But in this case the same pressure is applied to the altimeter; hence

$$p = \rho gh \quad \ldots\ldots (3)$$

Therefore from (2) and (3) we get

$$\rho gh = \tfrac{1}{2}\rho V^2$$

or $V^2 = 2gh$

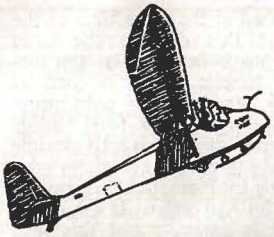
Substituting this in (1) we get

$$h_k = \frac{2gh}{2g}$$

i.e., $h_k = h$

Since the T.E. variometer shows the rate of change of $h_k + h$, it will in fact show the rate of change of 2h, or more simply, twice the rate of change of h.

(I am sure this is all painfully obvious and could be written in about two lines but I had to write it to prove it to myself!)



ITS - ALL - YOURS

For and About Instructors



IT is difficult to think about writing this page when on holiday looking over the pale blue North Atlantic—calm for the first time for ten days. The most interesting part of weathering a gale in a caravan perched on the cliff top is that one has a superb opportunity to watch gulls, and buzzards, soaring. If only it were possible to arrange demonstrations of such beautifully controlled flying to those pupils who think that gliders are kept aloft by sheer physical strength!

This part of North Devon, Morthoe and Woolacombe, would be a good place to explore with a Silver C standard expedition. There should be good and constant hill lift over the hills above the 2½ mile long Woolacombe beach, and often in the early evening there are rather surprising cumulus formations along the west-facing coastline when the sun is low. At the end of June and early July this cumulus has been observed up to 8,000 ft. or higher. Apart from the excellent surfing laid on for such a gliding expedition, there is a Lycoming Auster with a hook at Chivenor, as well as a met. station. (Puffin Aero Club, Braunton 435.)

I am not just rambling rather vaguely about holidays. There is some purpose to this suggestion of expeditions to new places. The National Championships showed up a certain inability to land in fields and bring back a whole glider every time. Even in proportion to the number of field landings too many gliders were broken. Broadly, damage when landing a glider in a field occurs in the following ways:—

(1) Getting too low over bad landing country, or leaving the thought of landing until the glider is so low that there is little or no choice of field.

(2) Inability to assess the field correctly.

(3) Inability to fly the glider well enough to make a properly controlled approach.

(4) Having the glider damaged by unseen holes or obstructions. (Note: Such impedimenta will usually be seen and avoided by an experienced cross-country pilot.)

Now, landing in fields is an essential part of gliding, and the ability to teach pilots how to do this properly is the responsibility of every instructor. Most clubs today have good soaring gliders, and pilots want to do more cross-country flying; it is, therefore, essential that much more effort is made to teach people to land properly in fields. To begin with, no instructor can do this until he has himself landed in several different fields under varying conditions, no matter what his book learning.

Secondly, pupils need more than a verbal briefing if they are to be trained effectively, as against picking their experience up out of hedges and ditches.

Surely the winter, and not the summer, is the time to go in for organised field landing training. Borrow a new field from a farmer, and send future cross-country pilots into it, either from aero-tow or from the top of the slope lift. Then, a few weeks later, do it all over again with a more difficult field. And so on. Have an instructor in the field to watch and comment on each pupil's efforts. Training of this sort should go a long way towards helping pilots to avoid unnecessary breakages. At least, it will tend to discourage the annual hibernation of many Olympia pilots, who reappear blinking in the spring sunshine and expect to be allowed to soar into the distance on the first cumulus.

THE ADVENTURES OF JOE

At last Joe was getting on with his training, although every time he started to make up his log book he got muddled as to whether the total of 40 somethings was circuits or instructors.

Soon after he had given up counting, as he had lost his log book, he was having some dual in the club's Advanced Two-Seater, a tandem affair with gull wings and a deep dark hole at the back for the instructor to sit in. Joe was to be taught stalls. "To recover," came a muffled voice from the back, "push the stick forward until you feel pressure on it—then return to level flight." Joe did this, shut in his perspex canopy, and although the whole glider was large and strange, the formula seemed to work.

Later that day, it was Joe's turn to fly the solo Mark I. "You were taught stalls this morning with what's 'is name," said the instructor i/c, "so go and do one now by yourself."

Joe climbed well on the launch and got 750 ft.

He stalled.

He pushed the stick forward, but no pressure was felt; so, being an obedient youth, he continued to obey.

Another pupil heard a shrieking noise. "Oh, look," he said, "Joe's flying upside down."

And so he was—at 350 ft.

Somehow Joe felt something must be wrong, although he had done exactly what he was told. Suddenly he took fright, and clutched the stick to his tummy. So surprising; there was Joe, with just enough height for a quick flat turn and a landing beside the instructor i/c, who was looking rather pale.

"Is something wrong?" asked Joe. "Please, I only did what I was told."

A.W.

NEW INSTRUCTORS

E. J. Robinson, Royal Naval G.S.A., July 1957.

B. G. Gunter, Royal Naval G.S.A., August 1957 (Provisional).

KEN MACHIN
C.F.I.—CAMBRIDGE UNIVERSITY GLIDING CLUB



Dr. Machin taking luncheon — Camphill 1954

It is no coincidence that the hero of "The Card" was a man called Machin.

The present incumbent (Ken) started three-dimensional travel early in life by riding on top of a mine-cage. His father was a mining engineer. In 1944, as a (very) Junior Scientific Officer Somewhere Near Malvern, he pushed around scenery (for revues), buttons (for stage lighting), and actors (illuminated by same) for the Establishment's Theatrical Society. It certainly never occurred to him to climb the Malvern Hills—I doubt if he consciously saw them. Then he read "Soaring Flight," and that, in the language of the modern cross-country, was the Turning Point.

Two years later, he joined the Cambridge Club—he was studying sunspots at the time. Almost on the day he joined, he found a Very Senior Instructor (aged 19) experimenting with an Angle of Attack Indicator made of glass tube and fluoroscien. The Very Junior Pupil saved him in the nick of time from allowing the fluoroscien to creep into the A.S.I. capsule. Thence flows Ken's reputation for green fingers with instruments, for tact, and for being a good committee man.

In 1950 he became C.F.I. of the Club

after an extraordinarily small number of flying hours. Nevertheless, he has held down the job ever since.

The B.G.A. has had a Co-ordinator of Radio for some time, but until 1952 the job was for Machin one of virtual self-integration. In April 1952, his lone voice crying in the wilderness was joined by another at 5,000 ft. and 30 miles away, saying "Jolly good show, Ken, it works!" Since it happened to be the voice of Lorne Welch, this meant that Radio Had Arrived.

Few people in Gliding except the *cognoscenti* are familiar with the Test Groups, and in particular with No. 2. It exists, nevertheless, and Ken is its prophet. It is said that the performance tests of the Sky (for which he was largely responsible) set a new standard: in truth there had previously been no standard. Furthermore, despite furious arguments with other members of the Group and with Sling, he produced a masterly Report on the tests which has the distinction of being incomprehensible to all except its author. Reference may be made to articles in SAILPLANE AND GLIDING under his pseudonym of "K. E. Machin, M.A., Ph.D., A.M.I.E.E." for comparison. For lighter reading, the articles under his usual name are to be preferred.

"*Si*" said Sir Christopher Wren, "*monumentum requiris, circumspice*". Ken's monument as a telephone engineer is a rapidly-disappearing slot 6 ins. deep by ¼ in. wide by 2½ miles long round Cambridge Airport, dug with a Machin Mole-Plough, and containing a variety of a.c. and d.c. voltages, all working simultaneously on one pair of wires. As a physicist, Ken finds his niche in the Zoological Laboratory, Cambridge.

Withal, he succeeded for years in keeping on the roads—even as far as Council Meetings at Londonderry House—Malcolm III, the most disreputable car in Gliding. Now Malcolm is no more (and not before time) and is replaced by a pre-war Lancia, to the delight of his son Gordon, whose grandfather once lived in Trieste.

One day, the fruits of Ken's labours will be high honours, and he will have to design himself a Coat of Arms. He cannot do better than to take for the motto a passage from the Lancia's instruction book: "*In caso negativo, provedere con mezzi di fortuna.*"—If the device doesn't work, any convenient botch will serve.

L.A.



R.A.F. TEAM PAY TRIBUTE TO VENNER ACCUMULATORS AT LASHAM

From: Air Commodore G. J. C. Paul, C.B., D.F.C., Vice-President Royal Air Force Gliding and Soaring Association.

Dear Sir,

I am writing to thank you on behalf of the Royal Air Force Gliding and Soaring Association for the loan of the two silver-zinc batteries for the National Championships at Lasham. As you may know the R.A.F. team achieved some very satisfactory results including a team award —the Pan-American Airways Trophy.

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(signed) G. J. C. Paul.

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BOOK REVIEW

Cloud Study: by F. H. LUDLAM, D.I.C., F.R.Met.S. and R. S. SCORER, M.A., Ph.D., F.R.Met.S. To be published by John Murray, London, on 21st October 1957. Price 12s. 6d.

MOST published collections of cloud photographs have been produced by amateurs, who have observed clouds meticulously but picked up the physics of the subject from scientists who have never had the patience to watch an individual cloud through its life-history.

How different is this book! Dr. Scorer and Mr. Ludlam have made spectacular advances in our knowledge of cloud physics and behaviour in the last few years, much of it in collaboration with glider pilots, whom so many earlier "experts" would not deign to consult. The result is an exceptionally up-to-date book which every glider pilot should study, because the information can be found nowhere else collected into a single volume. It consists of an introductory dissertation on cloud physics followed by collection of 74 cloud photographs, four of them coloured, and each accompanied by an explanatory lecturette, showing how to apply the physical principles of the introduction to real clouds.

The photographic section is drawn from sources ranging from the classics of Clarke and Cave to Charles Brown of the present day, with R.A.F. aerial photos and one by Betsy Woodward from a glider at 21,000 ft. Perhaps the most magnificent photograph of all is No. 63, showing a curved wall of cumulo-nimbus surrounding the "eye" of a hurricane like the sides of a huge saucepan.

The familiar *castellatus* cloud has been changed by the authors to *castellanus*. They are philologically right: only the latter word is to be found in a Latin dictionary; but it means "relating to a castle". The Latin for "castellated" is given as *turritus*.

A. E. SLATER.

PUBLICATION 21st OCTOBER

Prepared under the auspices of the Royal Meteorological Society

CLOUD STUDY

A PICTORIAL GUIDE

By F. H. Ludlam and R. S. Scorer
D.I.C., F.R. Met.S. M.A., Ph.D., F.R.Met.S.

Foreword by R. C. SUTCLIFFE, O.B.E., Ph.D., F.R.S.
President of the Royal Meteorological Society

This is a new and authoritative guide, suitable for the novice yet indispensable also to the more expert reader. It is the work of two authors who have taken a leading part in the post-war research which has so greatly improved our understanding of clouds. It is illustrated by 73 photographs (six in full colour), each accompanied by a full descriptive caption.

Size $9\frac{1}{4} \times 6\frac{1}{8}$ *ins.* 80 *pages* 12*s.* 6*d. net*

JOHN MURRAY, 50 ALBEMARLE STREET, W.1

INADVERTENT EXPORT

by Commander Tony Goodhart

(The author's crossing of the English Channel was only the fifth to be made by soaring flight)

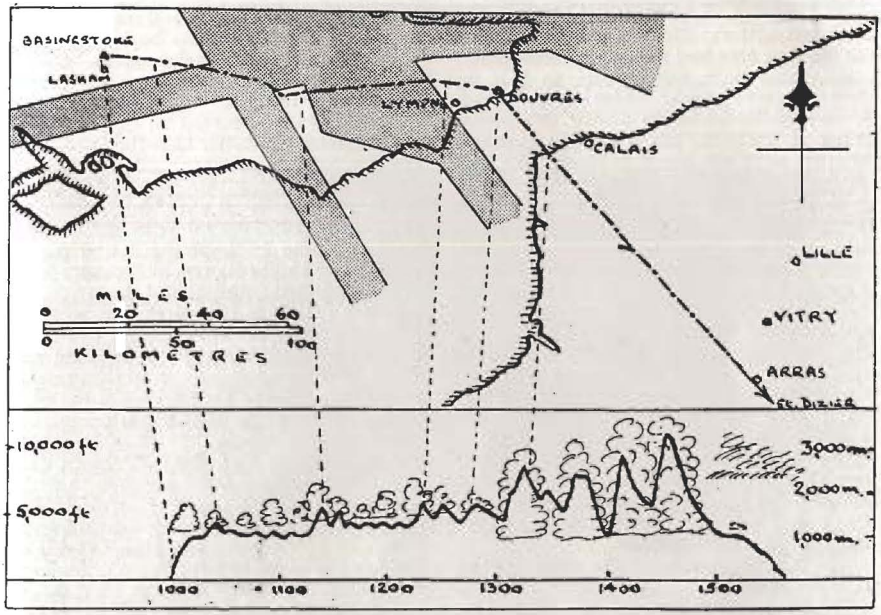
TUESDAY, 11th June, was clearly going to be more than averagely good; the 0755 forecast offered N.W. winds with variable cloud (the B.B.C.'s "general public" version of four to six-eighths cumulus) so Nick and I set out from home at Inkpen for Lasham, discussing on the way what flight to try. As there seemed a good chance of the wind swinging North during the afternoon, we agreed that an out-and-return to Dover and back might be possible.

As Nick definitely had to be back at his Air Station that evening, he very sportingly suggested that I should attempt the flight in his Skylark 3. We reached Lasham at 09.20 and the Goodhart organisation (see GLIDING, Summer 1952 issue, page 65) went straight into action, so that by 10.00 Nick was towing me off behind his Auster.

I let go in good lift near Basingstoke under a growing cumulus into which I went to check the horizon, turn-and-slip, etc.—all well. Cloud base was a bit low to start with, about 3,000 ft. a.s.l., but the whole sky was boiling cheerfully and there was no difficulty in going from beneath one cloud to the next, and by the time I got to Dover at 12.30 cloud base had gone up to 5,000 ft. There had been a considerable cross-wind component which needed watching, but I found I could keep on, or at any rate near, course fairly easily. Except for the first twenty and last twenty miles to Dover the route lay continuously in various airways or the London Control Zone so I dutifully flew in V.M.C. (I trust everybody knows what that means: I only heard of it the other day), and noted a variety of airliners ploughing in amongst the cumuli.

Having declared Dover as my turning point, I had to take its photograph before starting back and this I did (twice) from 4,000 odd feet. I caught a thermal a few miles west of Dover on my way back and took it into cloud, where I must have spent rather longer than I should, for, to my considerable consternation, I found myself rather more than several miles out to sea south of Folkestone. It appears that the wind had, unnoticed by me, swung right round to the north and increased in strength. Therefore when I set course north in one of those horrible downdraughts one always meets when one least wants them, I quickly found myself not making much headway at all, while the altimeter unreeled at an alarming rate. Had I had Tony Deane-Drummond's gliding angle calculator I would probably have been happier—but I hadn't—and I made a hurried decision to go back to my thermal rather than to go swimming, and try for better height; it must have been the thermal's dying gasp which took me to 5,000 ft.—and no higher. This time there was nothing for it but to turn south and hope that the French "plage" was more landable on than the "white cliffs". The French coast was easily visible, though some way off, but the gliding angle *with* the wind and *without* the downdraught seemed a lot healthier. Calculation from the Per





Avia barograph afterwards gives a still air gliding angle of about 1:35.

About half-way across I realised that the large and apparently active cu., which I had thought was over France, was in fact a few miles back over the Channel towards me. I flew into its side and soon struck good lift which quickly took me to 9,000 ft., with the result that, having left Dover at 5,000 ft., I crossed the French coast near Cap Gris Nez at 8,500 ft.! Having burnt my boats in going across, this great height was too good to be thrown away and I decided to go on in a generally south to south-easterly direction with 500 kms. in mind.

The weather over France was very different from that over England—great towering cu., very low cloud base about 2,500 ft., and a lot of showery rain. Lift in the cu. was excellent though somewhat turbulent, and I stayed well above cloud base for nearly two hours reaching 11,000 ft. on one occasion and achieving over 700 f.p.m. rate of climb on several occasions.

I could see that I was gradually catching up a blanket of medium cloud, and considered trying to go south round it, but it stretched south-west and I would have had to go right in amongst the Paris Control Zone and attendant airways, so decided to go on and hope for the best.

On my way down from 11,000 ft., at about 14.40, I found myself in a snow storm which turned to rain when I got below freezing level. It then became apparent that I had caught up with the rain area that had plagued Southern England on Whit Monday and that I could hope for no more thermals.

From the height in hand, about 6,500 ft., I could have glided another 50 miles, but it didn't seem worth plodding on with no hope of making 500 kms. (consultation afterwards of a suitable map showed that St. Dizier was my target) and there was another small matter in mind. Where was I? Having been in and out of cloud and well above cloud base since crossing the coast, I had not had a chance to fix my position since Cap Gris Nez.

Rather to my surprise I was able quickly to locate myself as being over Arras—I wish English towns would copy the French habit of writing their names in large letters on the roofs of prominent buildings.

In order to minimise "nausea" with the French authorities, I decided to make for

Lille-Lesquins, which I knew to be a customs airport. However, the wind close to the rain area had freshened considerably and swung more northwards, so that my feet unreeled by the thousand while we made a very few miles to the north. We passed Vitry at 3,000 ft., but it became apparent that we were not going to reach Lille, and after a couple of unsatisfactory attempts to gain height in patchy lift, we settled on Vitry-en-Artois airfield just five and a quarter hours after releasing at Basingstoke.

The airfield at Vitry is used by the Douai Flying Club and little else, but it has a caretaker who advanced upon me with much talk of regulations and insisted on ringing the gendarmerie before I was allowed to ring Lasham. There seems to be a hoodoo on telephones at Gliding Centres when calls from away landings are expected. The Lasham lines were first of all said to be engaged and then out of order, and it was not until nearly one-and-a-half hours after landing that I got my message through. By this time I was involved in making a statement to the gendarmerie.

"Is it that you have the need for an interpreter?"

"Is your interpreter young and beautiful?"

"No, she wears glasses and has a moustache."

"I have not the need for an interpreter!"

By the time the statement was completed and the caretaker's wife had filled me with eggs and *vin ordinaire*, the sky had cleared and it was once again a glorious gliding day with towering cu. away to the west.



Soon afterwards a "Black Maria"—or rather a grey one—drew up alongside the Skylark and a posse of no less than ten *douaniers* tumbled out of it to surround me, the Skylark and anybody else who happened to be handy. They proceeded to search the glider with some care, peering into the dive-brake gaps in the wings and under the seat and even unwrapping my barley sugars to make sure they *were* barley sugars. One of the more bawdy members of the Douai Aero Club, to whom I had explained the use of the various panaceas, suggested that the douanier had better taste the contents of the h.w.b.—but he wasn't all *that* a dumb douanier!

When this was all over, the Captain of the Douane officially informed me that my aircraft would be impounded and placed under guard until he received orders from higher authority, but that I had freedom within a radius of ten kilometres.

After hangaring the Skylark, I was taken in hand by the Aero Club and wined and dined in no mean fashion, and then put up at the best hotel in Douai. I was not even allowed to consider that I was completely francless.

Next morning the Captain of the Douane advanced upon the hotel at 06.30 to make sure that I hadn't eluded him, and after breakfast we all, Douanerie, Gendarmerie, Police de L'Air (who had been left out of the fun the night before), Aero Club, etc., foregathered at Vitry and got the Skylark out and lined up nicely in time for Derek Goddard to arrive in brother Nick's Auster.

The Captain of the Douane had excelled himself in having convinced his superior authority that all was in order, and even obtained special authority for Vitry to be a Customs Airport from 11.00 to 12.00 so that the Auster could clear customs straight back to Lympne (much to Derek's disgust—he had hoped to fill up with cognac).

At Lympne there was some discussion with the customs as to a suitable procedure. At one time they seemed inclined to turn a blind eye, but then decided to seek advice from a bigger and better "Customer," with the result that I had to complete a form headed "Re-importation of Merchandise", sub para (h), which demanded "Reason for re-importation". The best answer I could think of was the title of this article: "Inadvertent export."

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221	J. C. Neilan	Surrey Gliding Club	23.6.57
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THIS GLIDING

Those Champs

Competitor overheard explaining to V.I.P. how the starting-board works: "Pundit finds all starting-times booked around the time he wants to start; so hangs his label on a starting time an hour or so later. Whereupon all the others, thinking 'pundit knows best,' take up their labels and hang them around his. Pundit then transfers his label back to the starting time he originally wanted."

* * *

Retrieving party, passing a church, noticed a "Wayside Pulpit" board with the following welcome message: "VERY FEW OF US GET DIZZY BY DOING TOO MANY GOOD TURNS."

On Course

The member of the Kent Gliding Club who, while flying around Detling, proposed to a girl in a car down below, with whom he was in radio contact, has already received publicity in a London daily paper. Since many readers will have seen this over-dramatised account, it is only fair that we should give them the correct version, which we are glad to do here by permission of the pilot:—

On 13th July, on a local soaring flight, he was reporting at regular intervals over the R.T. to the girl, who was in the car with one or two others. After being airborne for half an hour, he asked her if she was alone in the car, and she replied "Yes". He asked again: "Are you sure?" and she shooed the assembled company out. After that it went something like this:—

"Red Sky to Mobile: will you marry me?"

Deadly silence.

"Red Sky to Mobile: do you read?"

Pause . . . "5 by 5."

"I said, will you marry me?"

"Yes, please."

"Was that 'yes' you said?"

"Yes, please."

After staying up for a further half-hour and doing the odd loop to celebrate, he landed back.

A few days later, an elderly relative of his was heard to remark: "Huh! Something different from the bunch of flowers, clasped hands and bended knees that young men used in my day."

* * *

Local enlightenment

Perranporth taxi-driver delivering course member:—"I den knaw 'bout any gliden—all they du es tu git up jest fur tu drop that there parshute—durn near sayme place every toime tu."—*From Cornish Gliding (and Flying) Club.*

* * *

Painful

"HER SOAR FEAT."—"*Lincolnshire Daily Echo*": *headline to report of Anne Burns's Channel crossing.*



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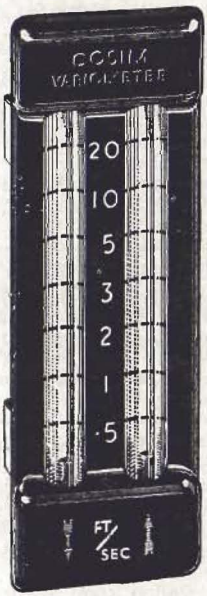
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Glider Maintenance—3

by R. C. Stafford-Allen

GLUES AND TIMBER REPAIRS

ALL the wooden parts of a glider are held together by some sort of glue, so we might well begin this chapter with a dissertation on glues and their properties. First, let us realise that a properly made glued joint is actually stronger than the wood that it is holding together. This is true of all Approved glues and, of course, you must use no other. This means that if you make a test joint, and then tear it apart after the glue has set, the joint will not break in the glue line but will tear away the wood fibres from one side of the joint.

Now, to get this strength from a glue joint the glue has got to be used properly. Glue must always be used in shear, and never in tension. Fig. 3 should make this clear.

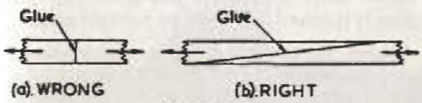


Fig. 3

In Fig. 3(a) the glue line is in tension, i.e. is tending to be torn apart, and a joint made like this is hopelessly weak. In Fig. 3(b) the jointed pieces of wood are not so much being torn apart, but more trying to slide one over the other. The glue line is in shear and its strength is enormous. Also please note that in the latter method we can make the area of the glue surface as big as we like by making the slope shallower and therefore longer.

Glue must always get right down at the wood, so the joints must really fit properly before gluing up. Equally important, the wood surfaces must be clean, and this does not simply mean scraping off any paint. It means that, after sanding the surfaces, you must not touch them even with clean hands. The perspiration from even clean fingers will be left on the joint and the oiliness will interfere with the proper penetration of the glue. Lastly, the joint must be so held or clamped so that no movement is possible until the glue has set.

Aircraft glues, in the U.K. at any rate, are of two main types: Casein Glues and Synthetic Resin Glues.

Casein Glue is a white powder and is made from milk by a chemical process. Mixing instructions are always included with the powder and should always be followed exactly, since the different makes of glue have slightly different mixing techniques. A typical mixing method is: mix the powder and cold water to a thick creamy consistency, allow to stand for 20 mins. and the glue is ready for use. Three hours (or sometimes four, depending on the make of glue) after mixing, the batch must be thrown away and a new batch mixed. Casein glue does not simply dry out like a gum, but it sets by chemical reaction. It is an excellent glue if properly used. It is not "gap filling", and in consequence the workmanship and cleanliness of surfaces must be of the highest order. In use, it is spread evenly over both surfaces of the joint, which are then clamped together with as much pressure as possible, short of damaging the timber fibres. Setting time varies with different makes and the ambient temperature, but is of the order of 24 hours.

Casein glue is waterproof, but it has one serious disadvantage. If it gets wet, it is liable, being an organic substance, to fungus attack; and once this starts, the glue joint is rapidly destroyed. To guard against this, casein glued aircraft are usually sprayed internally with a light coat of shellac.

Casein glue is not much used these days, but there are quite a number of older gliders still flying which are casein-glued throughout. In case of repair, it is better to use the same type of glue as was used in the original structure, so these machines should be repaired with casein glue.

The most widely used Synthetic Resin Glue, in the U.K. at any rate, is Aerolite. This is really a plastic which has been arrested in its hardening and so remains liquid. The hardening process can be started by bringing the glue into contact with a catalyst or Hardener. In consequence, this is what is called a Double

Application Glue. In use, the glue, a whitish treacly liquid known as Aerolite 300, is spread evenly on one piece of wood, and the Hardener, a liquid usually stained with a dye to assist identification, is spread over the other piece, the surfaces having been carefully prepared. When all is ready, the two pieces of wood are brought together and clamped in position while the hardener-treated surface is *still damp*. This last point is most important. The clamping pressure need not be anything like so great with this glue; in fact, the best joint is ensured when the pressure is only just sufficient to guarantee that the surfaces are in proper contact all over the joint. This glue is said to be gap-filling, but this must not be made an excuse for inferior workmanship.

Setting begins immediately the glue touches the hardener, so the two must never come into contact except as above described. Setting times vary enormously with temperature, and, if suitable heat can be applied, may be reduced to an hour or so. Times also vary depending on which speed of hardener is used. This is made in three speeds, "Rapid" (coloured amber), "Medium" (coloured green), and "Slow" (coloured violet). The last two will be found the most useful for glider repairs, and it is a good rule to use the slower hardener if you have a choice, since this allows more time for tacking or clamping up. The available times for this are quoted on the manufacturer's instructions sheet. These hardeners can be obtained undyed, or colourless, but their use is not recommended. The purpose of the dye is to prove, conclusively, that the hardener has been used. The makers of this glue, Messrs. Aero Research, Ltd., of Duxford, Cambridgeshire, supply, with every batch, full instructions for use, and temperature/setting time tables for the various speeds of hardeners. When using this glue, some form of artificial heating must be used if the temperature is below 40°F. This can usually be quite easily arranged, a favourite method being to fix ordinary electric light bulbs with some form of reflector around the joint. It is quite surprising what a lot of heat can be applied in this way. Hot water bottles will also be found useful on occasions.

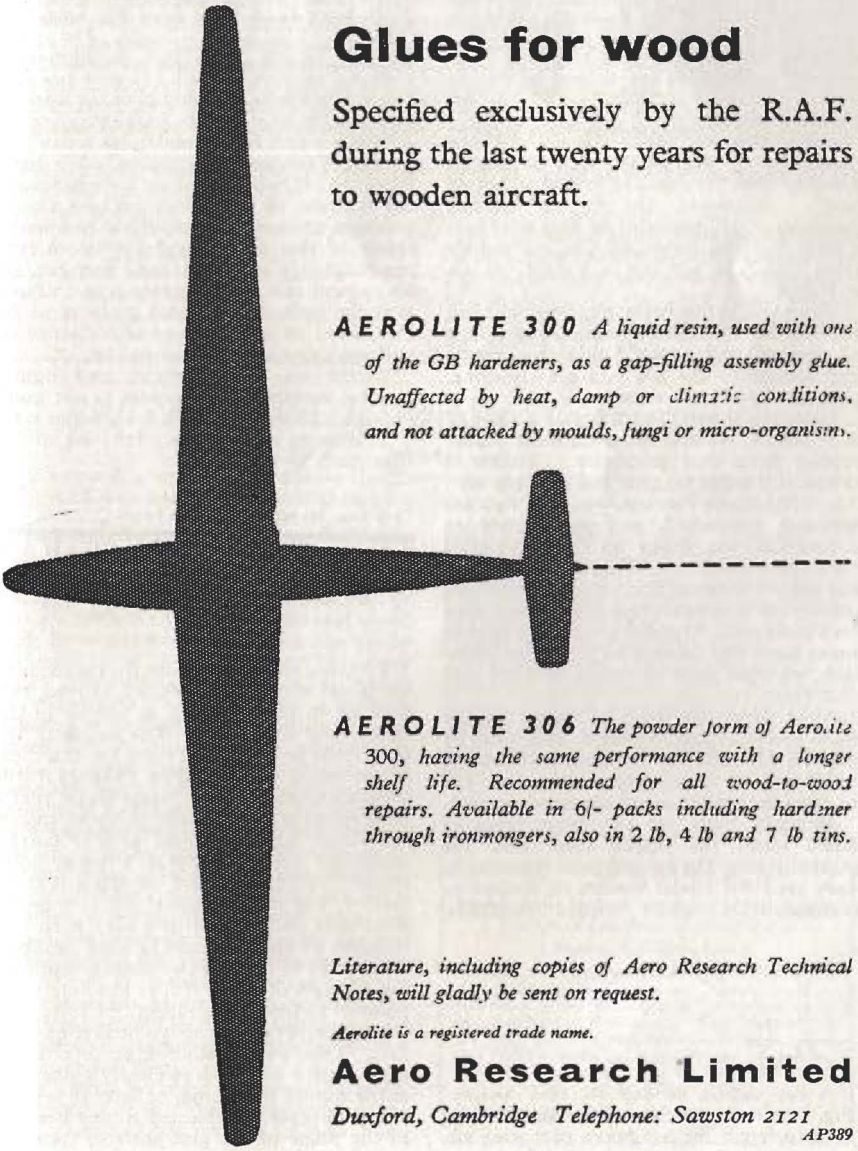
Being a plastic, the glued joint is unaffected by moisture, fungus attack, or anything else. However, in its liquid form, Aerolite 300 does tend to harden very slowly and for this reason the store life of the glue is three months from date of manufacture. After this period the glue must be thrown away, or, at any rate, not used for aircraft work, though it may be quite good enough for trailer repair and suchlike. The hardeners have an indefinite store life.

The makers also produce the same glue in powder form. This is known as Aerolite 306, and when mixed with water, in the correct proportions, forms Aerolite 300. The advantage of this is that, in powder, the glue has a store life of two years, so that batches of glue can be mixed up as required. This is a very convenient way of using Aerolite, but make sure that the mixing is done in the correct proportions and that all air bubbles are removed from the glue before use. This may take one or two days in an airtight jar, or a skin will form on the surface. This skin will not re-dissolve and must be removed.

Finally, do keep the glue and hardener apart at all times. If one drop of hardener accidentally spills into the glue pot, that glue is infected and must be thrown away.

Aero Research, Ltd., also make another glue known as Aerodux. This is not often come across, but it is an excellent glue. It is a Synthetic Resin, but has one snag from our point of view. It is very slow setting—in fact, its full strength is not developed until about seven days after the joint is made. This does not matter much from the constructional point of view, but it is a serious drawback when considering repairs. This glue is a red treacly liquid and the hardener is a white powder. When required for use, the correct amount of the hardener powder is stirred into the glue. The glue is then ready for use and remains usable for a few hours depending on the temperature. This glue is applied to both surfaces to be joined, and the joint is clamped up in the usual way. This glue has much to recommend it when building a large component or repairing a spar, since the time element is much less critical. Initial setting is fairly quick—a matter of a few hours, but final hardening to produce full strength as stated above is rather a lengthy business. This glue is used fairly widely in the manufacture of rotor blades for helicopters, and other high-duty applications.

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Timber Repairs

It will help you enormously if you can obtain a copy of A.P. 2662A entitled "Standard Repairs to Airframes". Although it bears on its cover the statement "Promulgated for the information of all concerned", someone has decreed that this is a "Restricted" publication and cannot be bought by the public. It may be difficult for ordinary intelligence to see quite how the Queen's enemies might benefit by the possession of this book; but, as we all know by now, "the man in Whitehall knows best". However, the British Gliding Association will probably be able to obtain a copy for you, provided you can satisfy them that you are not a lunatic, or an anarchist.

There are, in this book, many worked-out schemes for the repair of almost every type of damage, and if you follow the scheme appropriate to the job you are repairing, you can hardly go wrong.

However, if you cannot obtain a copy of A.P. 2662A, we had better consider timber repairs from first principles. Timber is joined to timber by glue and nothing else. Any odd tacks, or screws, you may find are virtually unstressed, and were fitted to ensure that the gluing up of the original joint was satisfactory. This, of course, does not apply where you find a metal component screwed to a wooded one, e.g., a skid shoe on a main skid. Therefore, when we have to make good any damage to a wooden structure, we must do it by means of wood and glue alone.

Most gliders are built of spruce for the main load-carrying members, with birch or gaboon plywood for skinning and bracing bulkheads, or forming spar webs, etc. Let us consider repairs to spruce members first.

Basically there are two main types of glued joint; the lapped joint and the scarfed joint. The lapped joint is normally only used for trivial repairs or repairs to comparatively lightly loaded members.

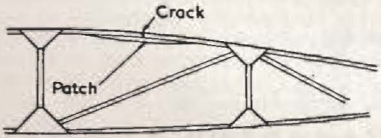


Fig. 4

Fig. 4 shows a patch repair using a lapped joint to repair the top boom of a wing rib. In this case the patch piece must be of the same dimensions as the original boom, the ends must be chamfered down to a slope of at least 5 to 1 and the parallel portion of the patch piece must be at least ten times the thickness of the original boom. The patch piece is simply glued into position and cramped or clipped until the glue has set. For this purpose, bulldog clips, or spring-type clothes pegs, will be found very useful.

This is a very simple and quick repair but its disadvantages are obvious. We have made the job heavier, and we have increased the stiffness of the boom. These disadvantages are not very important in a small repair of this nature, and the boom is a comparatively lightly stressed member, so we can call this a satisfactory repair. Note that the ends of the patch piece must be chamfered to avoid the sudden change of stiffness there would otherwise be.

Except on trivial repairs and lightly stressed members, this system is not good enough, and we must look for a better way.

This better way is the scarfed joint, and is illustrated in Fig. 5.

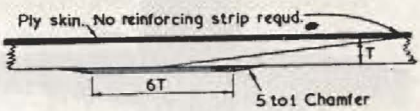


Fig. 5

To make the scarfed joint the two ends of the pieces of wood are planed, shaved, and filed down until they fit as shown in the figure, and then glued. The length of the scarf must be at least 12 times the thickness of the wood, but should be 15 times if it is possible to make it so. Never forget that a long splice is much easier to make than a short one, and the glued area is correspondingly greater so that a better joint results. A 12 to 1 scarf, or splice is satisfactory, but the individual scarfs must fit absolutely perfectly. It is a very good rule to make all scarfed joints in solid members to slope at 15 to 1 for this reason, and only use the 12 to 1 slope if it is absolutely impossible to use the full length of 15 to 1.

One further point needs a little consideration. This is the feather edge, or point of each scarfed piece. It is clearly vulnerable either during the gluing, or later in service. If the member is subjected to any bending in the plane of the glue surface, then any

tendency for the feather edges to lift will cause a crack to try to creep in and force the scarfed surfaces apart. To prevent this, it is a good plan to glue, over the feather edge points, a reinforcing strip. Now, A.P. 2662A shows reinforcing strips made from spruce. In general on gliders our repairs will be made on much thinner sections than is usual on Service aircraft, and ply reinforcing strips are quite satisfactory. The strip should be at least 6 T long on the parallel portion (T being the thickness of the repaired member) and the ends must be chamfered down to a slope of at least 5 to 1 as shown in Fig. 6.

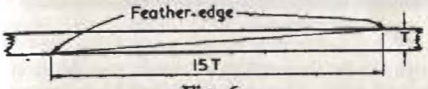


Fig. 6

If one side of the scarf is glued against a ply skin, as shown on the upper side of the scarf in Fig. 6, then of course no reinforcing strip is needed, since the skin performs this job. The grain of the strip must run, on the outer veneers, parallel to the grain in the scarfed member. As regards thickness of strip, $\frac{1}{16}$ in. ply will serve for members $\frac{3}{8}$ in. square to about $\frac{5}{8}$ in. square, and proportionately, though above $\frac{3}{4}$ in. square sections it is probably better and easier to use spruce reinforcing strips of a thickness of $\frac{1}{4}$ T where T is the thickness of the member.

Do not let the fitting of a reinforcing strip be an excuse for inferior workmanship. Its purpose is solely to prevent the possibility of the points of the scarf from working open. The strength of the joint must be in the scarfed joint itself.

An Accurate Integrating Variometer

by D. Brennig James

(This new instrument is installed in the Gull 2 with which Dr. James this year set up British and U.K. two-seater speed records round a 100 km. triangle and to a 100 km. goal.)

ORDINARY variometers such as the Cobb-Slater or Horn type are very useful for centering in a thermal; however, they do not give a very accurate indication of *average* rates of climb. Since the best speed to fly between thermals is determined by the average rate of climb, this is an important ratio. The standard method in use is that of stop-watch, note-pad and altimeter; however, it requires time and concentration, which can ill be spared in competition flying. A more convenient way of doing the same thing is to seal the vent of the altimeter with a rubber pad which can be lifted by a solenoid controlled by a clock giving out an electrical impulse every minute (a suitable clock can be obtained from H. Franks of New Oxford Street, for 62s. 6d.).

When working, the altimeter gives an occasional jump corresponding to the rise or fall during the previous minute. If the instrument is mounted adjacent to the variometer one can readily measure the rate of climb without undue concentration as the jump is readily observable from the corner of one's eye.

The results are often instructive, since the integrated rate of climb which this instrument gives is often wildly different from one's expectations from watching the variometer; also since 100 ft./min. is a close approximation to 1 knot, the ratio between sink in knots and airspeed in knots gives the gliding angle through the air (a useful though often disappointing ratio).

The instrument can also be used as the altimeter, particularly if a short-circuit button is fitted to give an instantaneous reading when required so that there is no great need for an unmodified altimeter as well.

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Again in this issue only two more headings can be shown for the design competition, which, however, is now drawing to a close. In this issue, also, we are asked to publish a correction to the statement appearing inadvertently in the August issue—Jill Walker disclaims being the first New Zealand woman Silver C pilot, as this honour belongs to Helen Georgeson.

The December, 1955, issue of this magazine was the first in which the present Club & Association News Editor began the gratifying task of assisting the Editor-in-Chief by collating gliding news from clubs in every quarter of the globe. This issue thus completes a round dozen spread over a period of two years; a period which has seen very considerable advances in every aspect of our Sport, and one in which many new clubs have come into existence, while the older ones have gone on from strength to strength.

Doubtless the next two years will see at least an equal rate of rise in the variometer of Gliding, with more new clubs in being and more members in each club. It is therefore with great regret that, just at this most interesting epoch, the present Editor finds it necessary to vacate the Editorial chair. He consoles himself, however, with the knowledge that he has met, either in person or through correspondence, more good friends in gliding than he could have hoped to meet in other circumstances—his main regret being that time and other duties have not permitted him to visit more Clubs up and down the country.

A tribute of sincere thanks is accordingly offered to the Magazine Committee for collaboration, and no less to all the club officials who have kept the present Editor punctually supplied with news and pictures. The new Club News Editor, COLIN MOORE, takes over immediately. He needs no introduction to many readers of this magazine, being a prominent member of the Kent Gliding Club. All contributions for the December and subsequent issues should be sent to him c/o S.E. Ambulance Station, New Cross Road, London, S.E.14.

Please note the closing date for the December issue will be first post on 22nd October.

GODFREY HARWOOD,
Club and Association News Editor.

AVRO

DURING the club year the T-31 made 1,258 launches for a total of 83 hrs. flying time; the Tutor 296 launches for 21 hrs.; and the Skylark 220 launches for 35 hrs. Nine more pilots have now been converted onto this aircraft, which has been fitted with blind-flying instruments for cross-country work.

Our annual general meeting was held on

10th June, when it was disclosed that the club had paid off several large items of equipment, resulting in a position where the assets consisted of capital equipment rather than cash. As for most of the year one glider has been out of action the position was deemed to be very satisfactory.

C. Christianson has had, for private reasons, to give up the post of C.F.I., and W. Parker has been elected to succeed him. J. Orrell has been re-elected as Chairman.

G.C.

BELGIUM

BELGIAN pilots will long remember 28th May, as five flights of over 300 km. were made that day. The flights were as follows:—d'Otreppe in a Schleicher Ka-2b flew 512 km. from Temploux to a goal at Avrille in France; Lafosse in the Ka-6 achieved his goal by flying 325 km. Temploux to Dreux; Meulemans in his Spatz flew 570 km. free distance Grimbergen to Le Feuillet; Debauche in a Ka-2 and Vermeiren in a Rhoenlerche 350 km. and 320 km. respectively into France.

During August three gliding camps were held in the Campines (Kempen), in the northern part of Belgium. In spite of bad weather the amount of soaring proved that this region has very good thermal conditions, which seems to justify the hope that a gliding centre will be established in this part of the country. It is good news that from 1st August until the end of 1957, Belgian gliding clubs are entitled to a subsidy; this amounts to 200 Belgian francs for every aero-tow made by a club member not over 25 years of age.

A. VAN I.

BLACKPOOL AND FYLDE

THE past few months in our gliding calendar have been fairly uneventful, apart from the gliding display at the S.S.A.F.A. Air Pageant in June, which was given by Gordon Bleasdale. This display in our Eon Baby was said by many people to be one of the highlights of the afternoon.

The majority of our flying members come from as far away as Liverpool. This, plus being moved to much smaller accommodation on Squires Gate Airport, is holding up work on our trailer, which, together with our second portable winch, is already nearing completion. These we hope to be using on a hill-site in the not too distant future. Operating on an aerodrome gives one an ideal basic training in gliding, but many of our B's are now becoming more ambitious.

Our two-drum winch continues to operate very satisfactorily, and we are thinking of experimenting with solid cable on the half length nearest the drum. This, we hope, will greatly reduce our expenditure as our last drum of stranded cable only lasted about four months.

S.C.

BRISTOL

ON 23rd June, Derek Stowe became the first club trained pilot ever to gain a Gold C leg, when he flew the Olympia round his goal of Lands End, and subsequently landed at St. Just. While Derek went South-West, Harry Daniels went 40 miles South-East towards Lasham, and Mike Garnett went East in a 140 miles flight to Tring and return. A week later, on 1st July, Peter Scott in the T-42 gained a second Gold C leg for the club, when he climbed to 12,500 ft. a.s.l. in a local cu-nim. The T-42 now sports oxygen to encourage Peter to even greater heights in the future.

This year we entered four aircraft and teams in the Nationals and, whilst our overall places were not spectacular, we were very pleased when Mike Hodgson in the Red Olympia, and Bernie Palfreeman in the Skylark, each collected a daily prize, and Peter Scott was awarded the Kronfeld Cup for finishing 5th.

Normal club flying seems almost mundane after the above exotic achievements, but already this year the hours flown exceed 700, our previous best. How much of this is due to the weather, how much to the improvement in our site from Lulsgate, and how much to the increase in the standard of piloting, only time will tell.

A spell of North-Westerlies in July enabled Pete Etheridge, Jim Tudgey, and Ted Chubb each to do 5 hr. legs to complete their Silver C's, and as Keith Aldridge also completed his with a 60 mile flight to White Waltham, we now have 25 Silver C's in the club. Of the up and coming pilots we would single out two—Ted Chubb who completed his Silver C within thirteen months, and Rosemary Storey who is the first of our feminine pilots to reach Olympia standard by obtaining a Silver C leg beforehand.

M.G.

CAMBRIDGE

INSTEAD of our usual club camp at the Long Mynd last June, we took the Olympia and Skylark to Bill Crease's hunting grounds in the Clwyds. A dozen or so members thoroughly enjoyed themselves in this delightful countryside, which, with Bill's exuberant welcome thrown in, will attract all of us back very easily.

A start was made prospecting bungey sites. Bill said that the Clwyd range was out for that day, so we set off for Conway valley, forty odd miles away, at ten o'clock on the Monday morning. We found a good site and were rigged by six in the evening. Bill being shot off the hill by auto-bungey in the Olympia closely followed by Dave Martlew in the Skylark. Amazingly enough they both stayed airborne till nearly dusk in practically no wind, maintaining some 3,000 ft. The local inhabitants, to say nothing of us, were duly impressed.

Tuesday, at first, saw us back there with no wind, not even in the wrong direction. So off we pressed to Llandudno and the Great Orme, this time accompanied by Ric. Prestwich and his Skylark. Mike Gee spent a glorious hour over the sea in a strong wind in about the right direction for the Orme. Ric. pressed off across the ocean to the range at the top of the Conway valley and landed at Penmaenmawr in one of the only two fields for miles.

Wednesday in the Conway valley site gave us good ridge soaring conditions, and Gordon Stevens and John Griffiths both had two hours flying down to Bettws-y-Coed in the South and nearly to Conway in the North. On this day Ric flew to his sister's farm on Anglesey, no doubt much to her surprise.

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On the Friday, our last flying day, George Whitfield and Bill Crease were launched out of Bill's chicken-run—"turn right round the telegraph pole and follow the road until . . ." I am sure not many people have a bungey point, albeit an auto one, in their back garden!

So that was our first Club Clwyd camp and I am sure not the last. David Carrow in a Skylark III has been up there since and reached 9,000 ft. in the local wave, from which we assume they must have had bags of wind in the right direction! There is no doubt that the Clwyds and adjoining ranges are wonderful soaring sites and deserve even more attention than they have been getting.

Since June we have had not such good weather, and our results accordingly suffered. The President's ladder, introduced this season, is proving a great spur to competition type flying. Peter Neilson heads the list closely followed by Siegfrid Neumann. These two entered the Skylark in the Nationals and finished nineteenth.

Being out of term, weekday flying has been a bit curtailed but at weekends plenty has been going on and the hangar now has a roof over 99% of its area, and doors are said to be imminent. We are looking forward to a successful new club year starting next term with a fresh intake of new members.

B.H.S.

CAPE PENINSULA

FISANTEKRAAL, a disused military aerodrome with concrete runways about 24 miles from Cape Town is the site of this club, which can aptly be described as international. Belgians, Germans, Dutchmen and Swedes; members speaking English and Afrikaans all foregather there. Soaring conditions are not ideal, due to the proximity of the two oceans; but the club spirit is good and there is lots of enthusiasm.

Scarcity of thermals, however, does not mean an entire absence of soaring, as there is the standing wave over Table Mountain to be contacted in winter. Even beginners can be aero-towed into it in the two-seater with safety, as the maximum height attainable appears to be 18,000-20,000 ft., and several aerodromes are within easy downwind reach.

The mountain chain stretching from Somerset West towards Port Elizabeth is,

in places, much higher than Table Mountain and lenticulars at 35,000 ft. and over have been observed. The first long-distance flight in South African waves was made in August 1956 by Heinie von Michaelis, who managed to cross the 20-mile gap between the Table Mountain wave and Somerset West, and continued on for 153 miles further, being forced to land only because the wind dropped.

The aerodrome bomb store at Fisantekraal has been transformed into a comfortable club-house, and forms the centre of a rapidly developing sport.

H.M.

CORNISH

MEMBERSHIP now totals 120; launches 1,310 and hours 112. Nine members have gone solo, two having gained their C's. During June and July we ran two courses for visitors and a few members, and the average number of flights per pupil was 28 for each period of 5½ days.

Soaring has been good in North-West winds of 12-15 knots, giving lift up to 600 ft. and even 800 ft. above the field. Even the T-31 has made flights of 20 to 30 mins. with two up. Since we have as yet no trailer no cross-country flights have been attempted, but our increasing experience is reflected in more tows per cable, lower fuel consumption, and less trouble with burnout clutch plates.

Subject to confirmation, our Assistant C.F.I., L. S. Phillips, has gained the duration and height legs of his Silver C. On 15th August he flew for 5 hrs. 14 mins. in a wind of 25-30 knots in the Olympia, maintaining height between 1,600 ft. and 1,800 ft. He eventually found one small area of lift which enabled him to climb to 4,000 ft., and thus achieve an ambition of 10 years' standing.

On the domestic side the Social Committee is pressing on with the conversion of a cottage into our Club house, and we are hoping to take over another part of the building of which our hangar forms part, thus doubling our hangarage space and giving us an extra room in addition.

Cornwall being noted for mild winters, we visualise being able to continue flying right through the winter months, which will not only help financially but will maintain the interest shown by large numbers of the general public, who watch in their thousands from the beaches at Perranporth and St. Agnes as well as from the road bordering the airfield.

E.J.T.

COVENTRY

AT Baginton and Edgehill, C's and Silver C legs have come along steadily. J. Neal, A. Findon, R. Wicks, P. Martin, R. Holmes, L. Venus, J. Ferguson, and P. Walker have gained C's. On 2nd May, Derick Chell reached a height of 6,300 ft. in a Tutor, thereby gaining his first Silver C leg. Grace Tarver achieved her height on 10th May at Baginton with 5,000 ft., and Louis Glover on the same day at Edgehill reached 4,500 ft. Several Silver C's have been completed. Ivor Tarver flew 40 miles from Baginton to Thrapstone on 2nd June. A fine Tutor flight was made by Douglas Cunningham, 70 miles to White Waltham on 10th June. He arrived at 5,000 ft. but landed to avoid the London Control Zone. His arrival during an air display caused disappointment amongst the spectators who expected a display of aerobatics.

The club is very proud of its first lady Silver C pilot. Sheila Gregg, daughter of the club's chairman, achieved this honour by flying an Olympia 40 miles to Little Horwood, near Dunstable. This was her first cross-country attempt.

Vic Carr flew his Olympia 190 miles to Mevagissy, Cornwall, from Edgehill on 30th April, thus qualifying for a Gold C distance. Mike Stather-Hunt has also flown his Gold C distance of 190 miles to Liskeard turning at Gillingham, near Shaftesbury.

The Viking is now well on the way to repair and the Olympia is flying again, thanks to Gerry Harrison and his right

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hand man Louis Glover, also the many club members.

During our summer camp, from 20th July to 18th August, only five days were lost through bad weather. On 15th August, six aircraft flew 43 hours and on 5th there were 138 launches, helped by the 2-drum winch now in full operation. On five days 100 launches were exceeded. Total flying time for the camp was 350 hrs. from 1,900 launches. J. Greenway, W. Woodhams, G. Turner, J. Ellis of the Oxford club and Howard Greenway flew their 5 hrs., Howard achieving it in a Tutor. We had no course members this year and the enthusiasm of locally resident monthly members made up for any financial loss caused by not running a course. Our newly acquired T-31B is proving a great boon, and should step up our training programme considerably as well as allowing more two-seater joy riding.

B.H.T.

DERBYSHIRE AND LANCASHIRE

SINCE our last Club notes we have taken delivery of a new Prefect and a second-hand Prefect in place of the two EON Babies. These are proving very popular and we hope they will give the same sterling service as the EONS.

The entry of four machines in the National Contests caused a flurry of activity and some trailers which were built five years ago have now been completed. Brian Jefferson, Ken Blake and Alec Baynes did well to be placed 11th in League II and to bring back a Daily Prize. If the other teams did less than they hoped, this could only be expected in view of their lack of competition experience. It was a most enjoyable week and the Lasham Centre are to be congratulated for their organisation.

José Neumark and Dorothy Woolley each gained a C Certificate in August. We now have fourteen women pilots flying regularly, ten of them qualified. They have appropriated the "office" for a bunk room and pushed the Committee out, which is more than the members have been able to do for the last twenty years. They are now threatening to upholster the new Prefect in Taffeta.

23rd June was the best cross-country day. D. M. Kaye reached Hawkinge at last to the great relief of all including his father, Cyril Kaye. Michael now holds the fifth Gold C at the Club and the third diamond. Walter Neumark reached Southend and B. Thomas landed at Lasham.

After the National Contests one has been inclined to wonder if the hill site has had its day. We were, however, particularly heartened on Sunday, the 18th August, to see every available machine, Club and private, soaring on the Edge at the same time. The T-31 was in the workshop and the other thirteen were flying.

B.T.

'FOUR COUNTIES' R.A.F.

AS nine copies of SAILPLANE AND GLIDING have gone to Press since the Four Counties Club was formed at R.A.F. Wittering in March 1956, we thought it was about time we told others how we are coming along.

During our first year we flew over 200 hrs. in 2,550 launches. Fg. Off. Don Ross is our C.F.I. and after being on his own for some of the winter months is now assisted by five others. We have recently lost Michael Coton who was a founder member of the Club, and outstanding in his progress from pupil to C Class instructor.

We now have a fleet of four aircraft; T-31, Sedbergh, Tutor and Grunau Baby II. The last has now taken part in two competitions, the R.A.F. Championships at Upavon in August 1956, and the 1957 Nationals at Lasham, when Sqn. Ldr. Scorer flew it and put up a very creditable performance by coming 20th out of 44 in League II, thus beating a number of Olympias.

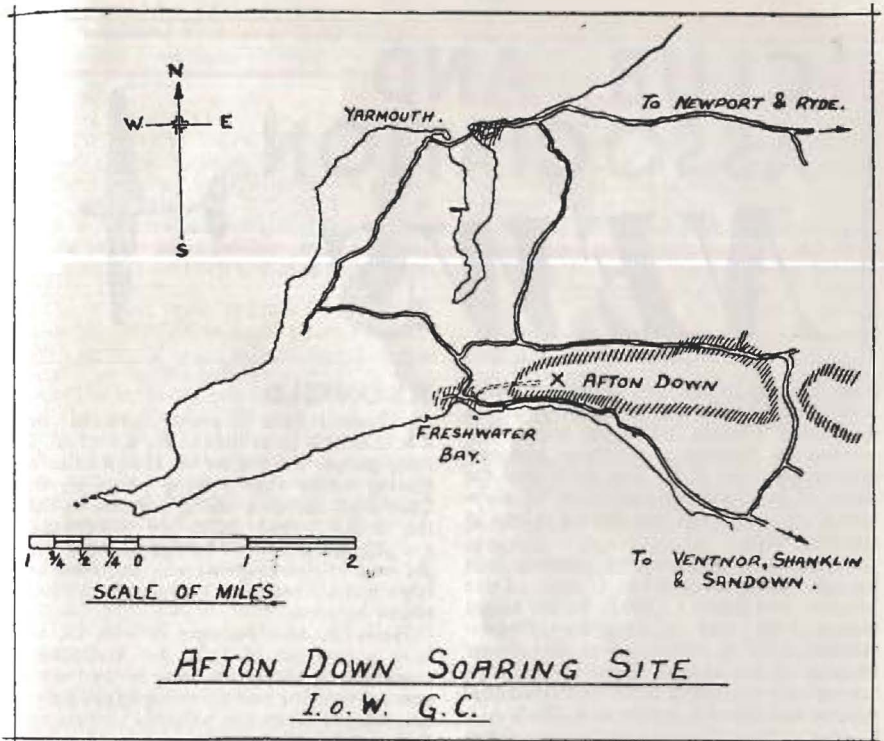
We have recently been given a barograph and are hoping to see our first Silver C leg from Wittering soon.

T.J.B.

ISLE OF WIGHT

WITH this issue it was hoped to announce our first soaring flight from Afton Down, but many petty delays have cropped up. The accompanying map gives the location of Afton Down, and the route from Yarmouth—visitors please note!

Two more C certificates have been gained, Eddie Morris flew the Grunau to 2,500 ft., but after 35 mins. had to abandon the flight with five green showing, due to the hardness of the board covering the parachute compartment!! The writer elected to spend a



AFTON DOWN SOARING SITE
I.o.W. G.C.

week at Lasham and gained a C the easy way —i.e. no sea-breeze effect to contend with.

This year we again welcomed Pat Whelan from the Dublin club; Mr. Sykes, Chairman of the Northampton club; and Mr. and Mrs. Ken Machin from Cambridge who paid their first visit to us. Leading an insular existence does mean that we see very little of members from other clubs unless they happen to be on the Island on holiday; however, their infrequent visits are very welcome and give us a feeling of 'belonging'.

One visitor to the Island was Noel Anson from Dunstable. His appearance over Bembridge filled us with delight, followed later by disappointment. The disappointment was due to the fact that Sandown had not been declared as the goal. For the pilots who may declare the Island in the future, all of whom we shall be pleased to see, it should be pointed out that aero-tows are quite feasible out of Sandown—the prototype 'Eagle' being extricated from there last year.

Recent events lead a few thoughts to Silver C requirements. No doubt Ann Welch's comments, in the last issue, under the heading of "It's all Yours", will add some weight to the arguments put forward by the pilots favouring the 50 km. triangle. For whilst Lasham is the required distance plus a reasonable margin, the lure of being able to do a triangular course on the Island and not having to pay for aero-tows is making itself felt.

P.W.

KENT

THE Nationals have given us at Detling quite a kick with Ted Day's win in League II. Ted, flying the Sky, was the club's only entry, as unfortunately Ken O'Riley had to scratch. This was Ted's first attempt at competition gliding.

Ted has also found gliding to be romantic he being, I should think, the first glider pilot to propose over the radio. Whilst flying

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CLUB AND ASSOCIATION NEWS

from Detling in the Sky he was in radio contact with his car which was being driven by Shirley Francis, when she was rather startled by hearing a marriage proposal coming over the R.T. Her reply had the effect of producing a succession of aerobatics, by which one can assume it was in the affirmative.

Flying at the club site recently has brought forth more Silver C legs. Dave Muscott flew the Sky 5,600 ft. for his height during May, and in June Roy Hubble reached 6,100 ft. Previous to this Roger Neame on his second flight in the Sky, having only converted from the Prefect that day, gained Silver C height at 4,300 ft.

After an hour these two pilots were called down by radio which gave rise to a subtle protest from Roy as he was heard over the R.T. saying, "He couldn't hear a thing as he dropped his ——— headset on the floor of the cockpit". Nevertheless he landed ten minutes later!

On 6th July some 50 or so members attended the first Annual General Meeting of the club. Ian Abel was unanimously elected as Chairman.

Hugh Gardiner, who had resigned, thanked everyone for the support he had received during the year in getting the club going. Eric Clegg was elected to take over from Ian as Treasurer. After the meeting a general dicsussion took place and was followed by a film show.

Club membership is steadily increasing, and in spite of a small number of resignations flying membership totals 117, and will soon have to be limited until more club aircraft are available.

C.M.

KRONFELD

ALTHOUGH the Summer months are usually a quiet time at the Kronfeld, as most people are keener on the practice of gliding rather than talking about it, the Club itself serves a useful purpose in that the B.G.A. send down on Wednesday evenings quite a lot of foreign visitors, who are keen to visit English clubs, and these are introduced to members of the various Clubs round London.

However, now Autumn is with us, we have a new list of Talks for Wednesday evenings and Monday is being revived as the general working and titivating night, so we are only too pleased to welcome visitors and slaves on Wednesdays and Mondays respectively.

We are still keen to get hold of a table tennis table and if anyone knows of such a thing going for a reasonable or nominal sum, as we have plenty of room for one in the large lecture room, any information please to The Hon. Secretary, Basement, 74 Eccleston Square, S.W.1.

H.T.

THE LAKES

STEADY progress can be reported, for, in the first month of operations, approx. 150 launches were booked, all with the two-seater "VENTURE". Apparently the Summer has been unusual in that the normal South-Westerly wind has been markedly infrequent, thus the full possibilities of the region have as yet, only been tested instead of fully exploited. However, Thermal, Hill and Wave Lifts have all been experienced. The local weather too has been kind, there being only one wet Sunday since the official opening.

Six members have gone solo to date, respectively Messrs. Young, Askew, Ellefsen, Lucas, Allen and Bird—all in the TUTOR.

Though two of the TUTORS have recently been sold to the Saxon Flying Club, improved ground facilities etc., have enabled us to remove temporary restrictions, and of the total membership at present of 80, at least 50 are now accepted for flying tuition.

The Earl of Lonsdale has accepted Presidency of the Club and maintains a keen interest in its progress.

The August Bank Holiday weekend was successful, though brought to an untimely finish on the Monday with an unserviceable winch, part of the gearbox contents having elected to move out instead of round. Under the able guidance of Engineer Jack Paley, the winch is now being dismantled and rebuilt to take two cables, thus a general speed-up in the ground organization is expected. In the meantime, if any other club has a second-hand winch to dispose of, we shall be pleased to hear from them.

Finally, it has been gratifying to hear encouraging comment from the occasional visitors from distant clubs, and it is hoped that their next visit will see still further progress.

J.W.A.

LASHAM

APART from the National Gliding Championships, which we imagine may be mentioned elsewhere in this issue, the two most interesting flights during the last three months have been John Williamson's climb up to 29,000 ft. (with barograph) and Ann Burns' trip across the Channel. Another member who has done very well is Brennig James, who led for a number of days during the French Nationals.

We are very sorry indeed to be losing Derrick Goddard, who is taking a three-year flying appointment in India, and we wish him every success and are most grateful to him for all his hard work in helping to make Lasham tick.

Our Christmas Party will be held on Saturday, 21st December, and we hope to welcome many visitors from other Clubs.

H.T.

LONDON

WE have been having a very good cross-country year. So far there have been 3 Gold C distance legs and 2 Diamond legs, all done on the 23rd June 1957, by Dan Smith in the Sky and Mike Garrod in the Skylark II to Plymouth, their goal, while "Chuck" Bentson did Gold C distance to Tetcott. This was quite a day—Noel Anson got to Bembridge, I.O.W., his goal; Archie Erskine to Exeter, Dudley Hiscox to Keevil, and John Furlong to Gloucester and return (140 miles). Frank Foster broke the 100 kilometre triangle record at 47 m.p.h. Charles Ellis made a 100 kilometre triangle; while nearer home there were no less than 18 flights from our neighbouring motor-tow site which exceeded Silver C height. This day produced 1,261 miles cross-country flying, and to date we have done over 4,500 miles and 12 completed C's.

A newcomer to the Club is the Petrel, to be operated by Mike Russell and Roger Bradford, thus making 28 sailplanes now based on our site.

On the domestic side the bar has been very ably redecorated by Vic Ginn and Dudley Hiscox, while considerable re-painting and cleaning-up operations are in progress. Our Gazette, which has had considerable printing delays, is now to come out regularly and will be mailed to all Clubs.

On 22nd September we held our first Annual Sailplane Aerobatic Contest, with aero-towing for all entrants and judging by members of the Lockheed International Aerobatic Contest Panel. Results will be published in the next issue.

P.F.

MIDLAND

THE arrival of the T-42B "Eagle" by air from Slingsby's on 3rd August marked an important milestone in our club's history. The members who have flown it are very enthusiastic, and think we are almost justified in spending this fabulous amount of money. Instructor-training is taking priority at the time that these notes are being written and, quite naturally, members are "champing at the bit" a little. A big Autumn Wave is hopefully anticipated.

Teddy Proll, our ever-cheerful G.E. is pressing on with the construction of the third Olympia, forecast several months ago, and, with a slice of luck, it should be flying by Christmas. We can then start to think about putting in some cross-country miles in club aircraft—a side of our activities which has been rather neglected to date, particularly in the current year.

Flying hours are creeping up towards 2,000 again, and the average flight-time per launch is ½ hr. The totals are slightly behind last year's, but every effort was made on 18th August to put right this deficiency, with 73 hrs. in the bag, after an enthusiastic start at 05.30 hrs.

J.H.

NEWCASTLE

THE main news this month concerns that recurrent nightmare which bedevils all managements—the Annual General Meeting, which took place at City H.Q. on 1st July and had an almost record attendance.

The Chairman's report was read by Mr. Pat Miller who said that the picture provided by the Treasurer was a rather gloomy one. The meeting was asked, and agreed, to sanction an increase in subscriptions: for flying members from 4 to 5 guineas per year, and for the Observer and Associate members to 1 guinea per year. Pat Miller observed during the debate that the increase was made to enable the club to be run without having to depend on the toil of a few devoted members who had, after all, joined the club to fly.

At the time of the A.G.M., membership was 187 (82 pilots, 9 country pilots, 14 observers and 82 associates) and for the year to 31st December the number of flying days was 116; number of launches 3,055; and number of flying hours 305. This was exclusive of flying by private owners.

In 1956 31 certificates were gained: 16 A, 12 B, 2 C, and 1 Silver C and three Silver C legs. This compares very favourably with 1955 when a total of 26 certificates were gained (13 A, 9 B, 4 C).

The club fleet still stands at 4 aircraft; Cadet, Tutor, T-21 and Olympia; but the private owners' fleet has increased to 7, and now consists of a Skylark III, a Kite II, two Kite I's and three Tutors.

The prospect of a soaring site at Hutton Moor is rather forbidding as it is still a water catchment area and, although it now only supplies a few houses, it may always have to do so. A site at Elsdon, which the soaring site committee had investigated was forbidden us by the National Trust. There is, however, a site about 27 miles from Newcastle which, although it is a flat site, is large enough for launches to 2,000 ft. and, in favourable conditions, is within reach of a range of hills. The exact location of this site was not divulged however as negotiations have not yet commenced.

The recent flying has mostly been of the up, round and down variety. There was one month (July) when not one soaring flight was done from Usworth, although, during a visit to the Long Mynd, Ian Paul put in over twenty hours in his Kite II and Eric Vissenga and Hetty White endured five hours each in their black and yellow Tutor. Eric also took the Tutor up to 5,000 ft. during the course of a flight lasting 1 hr. 10 mins. on 12th June but the old refrain was heard again: "If only I'd had a barograph".

Other flights of note were Malcolm Sanderson's cross-country flight to Bowes, which gained him his Silver C distance. He has since completed his Silver C at Sutton Bank. The Skylark was able to stay up for phenomenally long times with Andy Coulson at the controls. On 3rd June he took it up to 5,000 ft. and was airborne for 1¾ hrs.; on Sunday, 18th August, he did the fifty miles to Sutton Bank. It was also on this day (the first good soaring day there has been for quite a while) that Alan Crawford was airborne in the Olympia for over an hour and Joe Beckwith gained his C certificate with a 10-minute flight in the Silver Tutor.

L.A.C.

OXFORD

SINCE the end of June, club activity, although vigorous, has not produced many outstanding flights. We have, however, managed some soaring most weekends.

Bill Rowley and Ray Harrison soloed on the Tutor, whilst Ken Nicholls soared this machine up to 4,900 ft. to qualify for his C. 'Adge' Smith also won his C in another good flight in the Grunau.

Fred Rawlings now has his Silver C height leg, whilst Larry Parrott took the Olympia round a 60 kilometre Triangle. Ron Courteney and Joy Taylor have been 'converted' onto the Olympia and Barry Baker has been passed out to fly passengers in the T-21B.

During the last two months, Anita Schmidt started operating off aero-tow launches from Kidlington. She has been unlucky not to have gained her 5 hrs. duration, coming very close to it on three occasions. The Gull syndicate has been operating with the Coventry Club at Edgehill, where John Ellis succeeded in doing his 5 hrs. We understand that Nick Hughes

has gained his 5 hrs. at Long Mynd which completes his Silver C.

We congratulate John Gibbons our C.F.I., and Betty Wigmore, one of our long standing members, on their marriage on 24th August.

D.W.H.R.

PERKINS

OUR principal news is that our winch has been fitted with a Perkins P6 Diesel engine instead of the petrol V8. This not only provides more power and the smoothest launches that can be imagined, but enables us to achieve a launching rate of about 11 to the gallon.

Gordon Cornell and Colin Donald have recently returned from a fortnight at La Ferté, where the latter achieved his Silver C distance leg and Gordon nearly flew the Gold C distance. The C. of A. on our Tutor, including re-covering the wings, was completed some weeks ago, and it has been improved by the addition of a large streamlined windscreen.

An extensive area of woodland approaches one side of our flying field. During the high summer months flying over this in the afternoon produced little joy in the way of lift, but now with the approach of Autumn we find abundant areas of 'no sink'.

S.W.H.

SCOTTISH G.U.

FLYING at our new site at Portmoak began on 23rd June, with two 2-minute circuits in no wind. Since then flying has been going on regularly, and to date six Courses have been completed. As the site is at present, it is not practicable to send Course members solo, which we rather regret as we were quite proud of our record of Course certificates. Next year we shall have things in better shape.

Club Week, from 4-10th August, was a big disappointment. East winds throughout the week dashed our hopes for bags of hill-soaring. In the second half of the week the weather broke and we finished up with the rather miserable total of 157 launches for only seven hours flying.

On 17th-18th August, however, a fine S.W. wind produced ample lift on Bishop Hill, and the entire Club fleet was hardly ever on the ground. Over the week-end we achieved over 20 hrs. flying for 40 launches. John Pinkerton got his C on the Sunday, the first to be gained at Portmoak.

We are waiting for some crops to be lifted before beginning our second runway. When this is complete, we shall have only the new Clubrooms to build before settling back to enjoy the full fruits of our toil.

Our new Prefect arrived recently, and will no doubt be putting in some useful flying when we can find the money to put some instruments in it.

D.B.

SOUTHDOWN

UNUSUAL sights at Firle have been provided by Dickie Reed testing aero-tow 'impossibilities' in his Tiger Moth, and by Ron Walker in 'The Banana' looking down from 3,000 ft. on a well-known Skylark III as it whistled by on an out and return flight from 'the 'Ub'.

Ian Agutter also went to over 3,000 ft. in 'The Banana', followed by George Constable and Jack Austen in the T-21b. Ian, together with Len Lennard, is now on our instructing strength.

Our teams at the Nationals happily achieved a better performance in flying this year, if not in publicity. With four club aircraft in service and both yellow and red winches operating together flying has greatly increased, and if we get our share of northerly winds the figures should be the best yet at Firle.

R.M.

ULSTER

SINCE 19th May (July was a blank month, the beach was crowded) we have soared 20 hrs. on five possible days. In June, Carl Beck flew "over the full tide" for four hours, then he slipped off to his first love "The Mynd". In August we were visited by W. Fitzsimons of the Irish Aviation Club and by Solve Fasth of Alleborg, Sweden. He saw the Tutor, in a strong wind, soaring between the cliff top and an 800 ft. overcast and was duly impressed. On 11th August after a damp day, Liddell flew his Gull. It was sheer boredom "pole squatting" in a strong wind for an hour. At 9 p.m. he flew the five miles to a completely cloud covered Binevenagh (1,200 ft.). All at once things happened. The Gull went up like a rocket, through the complete overcast, and at 3,500 ft. was still rising at 20 ft. per sec. The sun had set behind Donegal and it took spoilers and the lot to get down and back to Downhill before complete darkness. Undoubtedly this was a wave caused by the Donegal hills and maybe

those days on which our hills are covered in cloud can be made profitable, but it was a bit frightening so near to darkness and a nearly full tide.

W.L.

WESSEX R.A.F.

APART from the week of the "Nationals", the only gliding of any note during the last three months was almost entirely during June.

The most outstanding flight was Jim Brimfield's when he soared to 12,000 ft. in the Olympia, and so became the third Member of the Club with a Gold C leg. A week or so later he set off westwards in a Grunau and landed near Exeter, having flown about 100 miles—a worthy effort by any standard except gold.

Andy Gough in our new Skylark 3 and Paddy Kearon in the Olympia accompanied each other on a 100 km. triangular flight, Lasham—Reading—Andover, on 23rd June in preparation for the Nationals.

Also during June were flights by Lt. Cdr. Dimock and P.O. "Topsy" Turner who flew to Thorney Island and Ford respectively—Silver C distance in both cases and a complete badge for Topsy.

We are, of course, more than pleased with Andy, for his efforts during the Nationals when he took 6th place in League I and collected the Pan American Trophy for us; also with Paddy Kearon who finished 8th in League II. Frank Allen was also doing well in League II until a tree grew up too quickly in front of the Gull I. However, his friends will be pleased to know that his collar bones and other injuries are now mending fast—although he regrets that the same cannot be said of the Gull!

F.W.A.

YORKSHIRE

OUR recent absence from these pages does not mean that we have ceased to function; we have merely been very busy. We have had a large number of new members and both Sutton Bank and Sherburn have been pressing on with instruction. Holiday Courses are going very well with Henry Doktor in charge. Recently, one of these courses was the subject of a B.B.C. feature "Let's go Gliding".

The ladies have also been very busy, and as a result the lounge now has a "New Look". We have acquired a Land Rover, which is proving invaluable, especially for transport on the courses, as both our beavers are suffering from old age.

In April, Keith Moorey climbed into a Tutor and proceeded to fly 51 miles to Hoyland, near Barnsley. This got him his Silver C. Also in April Chris Riddell took an aero-tow in the Skylark I from Sherburn and flew to Finningley—25 miles. This was the first cross-country from Sherburn. In May, Chris again took a tow in the Skylark and flew to Squires Gate—77 miles in 2½ hrs.

A small party of members paid a visit to the Mynd in July, taking the Kite II and a syndicate Tutor. This trip was a great success. A few of us from Sherburn were able to get down to Lasham for the opening of the Nationals. This was due to the kindness of Mr. Riddell, Sr., who flew us down in his Rapide.

In the last few months we have gained about a dozen B's and six C's—Dicky Evans, Arthur Sample, Joe Provins, Peter Sheppard, Ron Helliwell and Vic Wright. Harry Sowden and the writer have converted to the T-21.

E.H.

LASHAM

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