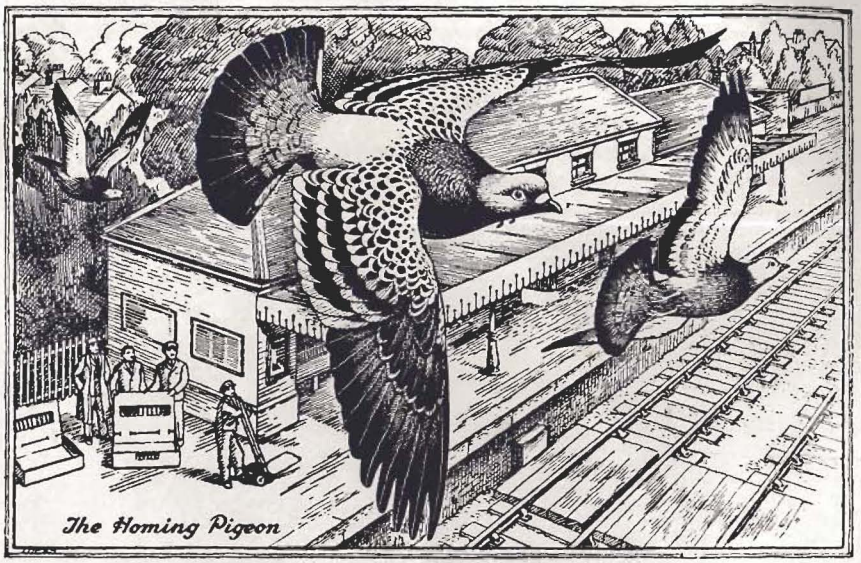
Sailplane and GLIDING

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OCTOBER 1955



Problems of flight

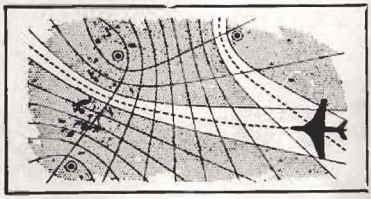


ON THE BEAM

By flying down a beam pilots can come into an airfield they cannot see and could not possibly find. With this invaluable technique man has rediscovered a gift he may once — long ago — have had: one that many creatures have in highly developed, highly efficient form.

Butterflies cross seas and make safe landfalls; the Chinook salmon swims oceans and returns, infallibly, to the very pool of the very river in which he was born; a pair of finches divide their year, season after season, in a particular bush in an English garden and another in a North African orchard. Most astonishing of all, the homing pigeon can be taken in any direction, for any distance, and after a turn or two in the air will fly unhesitatingly straight for home.

How does the pigeon do it? We do not know. We may never know. It is not sight, nor smell. If it is sense of direction, this must be developed to a degree of sensitive infallibility which puts it clear beyond human understanding. We can only say that—like hundreds of kinds of migratory creatures — the pigeon feels some mysterious, unmistakable pull towards home: that he senses some "radio beam" that gives him his direction.



Though we may never know the mechanics of the homing pigeon's "beam", we imitate its effects. Landing under any but the best daylight conditions can be difficult indeed without this navigational aid we have copied from Nature.

Pilots who come in to land on a beam or off it, have come to value, at all Britain's major airfields, the excellent and helpful service of the Shell and BP Aviation Service.

SHELL and BP AVIATION SERVICE

Shell-Mex and B.P. Ltd., Shell-Mex House, Strand, London, W.C.2
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SAILPLANE AND GLIDING

Edited by Alan E. Slater, M.A., F.R.Met.S.
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Directors : Philip Wills, C.B.E., Ann Welch, M.B.E., Jacques Cocheme, A.F.C., Charles Ellis.

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Cover photograph.—Olympia in flight, by Charles Brown.

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Two become One

IN this issue we say goodbye to our old friend SAILPLANE and GLIDER and welcome instead a new magazine, a combination of SAILPLANE and the B.G.A. GLIDING. By this merger we save you the cost of buying two magazines and ourselves the double cost of running them, and we hope that in our new format you will welcome us both.

Speaking personally for a moment, I have immensely enjoyed my two years in the Editorial chair, and, thanks to the magnificent help given me at all times by Ron Bishop, it has been no burden. But it is high time I made way for someone younger—we need a new slant from time to time and fresh ideas.

However, my interest in the international aspect of gliding is as keen as always and I hope now to have more time to follow this up, either by travelling or by collecting world information and passing it on to you all. That has been SAILPLANE'S policy for many years and I would not like to break the tradition.

Please wish us luck with our new venture and write and tell us how you like it.

VERONICA PLATT.

Whilst no doubt many readers of each magazine will feel sorry that in future there will only be one gliding paper published in this country, they will no doubt realise that two such magazines have been a luxury, and luxuries are things which, even today, the gliding movement cannot afford.

Our intention clearly is to retain the best features of each. The new magazine will be bi-monthly, being published in February, April, June, August, October and December, and we intend it to be actually available for despatch on the 25th of each month prior to the month of publication.

For the time being we intend to retain the old format of GLIDING, if only because, whereas possessors of SAILPLANE binders will be able to bind a small magazine in a big cover, the reverse would not be the case: but eventually the balance of opinion seems to be in favour of reverting to the old size of the SAILPLANE.

Dr. A. E. Slater remains our Editor, and we welcome Veronica Platt to our publications committee. The new paper will be the Official Publication of the British Gliding Association.

Outstanding subscriptions from readers of each magazine will, of course, be applied to sending each one copies of the new paper, but as we have to retain a selling price of 2s. 6d., whereas the SAILPLANE was only 2s., there may be a few odd sums for us to do. The future annual subscription will be 15s. post free, and should be sent to the B.G.A.

We hope all old readers of both papers will support the new one, and send us both constructive criticism and a constant supply of first-class contributions!

P.A.W.

THE 1955 NATIONAL CHAMPIONSHIPS

OPENED by Sir John Hunt on Saturday, July 23rd, the meeting began with fierce sunshine and plenty of thermals; but it was only a practice day—including practice for the aero-towed launches.

Sir John was taken up for his first glider flight by Derek Piggott and came down to make an excellent speech in which he advocated gliding not only as a safety-valve from the cares and worries of life, but as a preparation for it.

Next morning the site was in the clouds, and although cloud base lifted a bit later, it was still too misty for the Duke of Edinburgh to make his promised visit by helicopter, which arrived without him. The set task was distance along a line through Yeovil, but the low cloud refused to disperse till evening; the reasons for this



and for other vagaries of weather during the competitions are given in a separate article by Mr. Wallington, of the Meteorological Office, who was responsible for the met. briefing.

Monday, July 25th

With a moderate wind from E.N.E., both sections were given the same task of distance along a line through Exeter. "Daisy", the Imperial College Club's veteran entry in the Sedbergh Class, opened the ball by picking up the first thermal.

Wills reached Exeter and made the longest flight of the day; this was along his old familiar route, but he found one unfamiliar event when Blackmore Vale produced lift landed at 18.40 after arriving with 300 feet in hand. A later landing was by Bisgood at for a change. He averaged 34 m.p.h. and 19.20, twenty minutes after catching his last thermal which produced two ft./sec. lift. Latest to land was Ince at 19.25, after a third launch from Lasham at 17.17; he reported "generally wide areas of lift with narrow, choppy cores." Another quick flight from a third launch was by Cotton—63 miles covered between 17.22 and 19.02.

Alone among the Sedberghs, Allen of Christchurch A.T.C., got well away for 69 miles, though he spent the first half-hour below 2,000 ft. This flight earned him the Slingsby Trophy, but no points, as no-one else in the class scored.

Landings on July 25th

No.	*Name*	*Landing*	*Miles*
13	Wills	Exeter	109
30	Bisgood	Seaton	94
5	Foster	Chard	87
1	Ince	Lyme Regis	86
29	Fitzroy	Ilminster	86
9	Deane-Drummond	Yeovil	72
25	Morison	Dorchester	70
37	Allen	Sherborne	69
18	Whitfield		66
2	Cotton	Sherborne	63
21	Dickson	Stalbridge	60
33	Varley	Shillingstone	56
23	Fursman	Nr. Shaftesbury	55
17	Jones	Tarrant Rushton	50
12	Kerridge	Ashbourne	50
35	Lee	Nr. Blandford	50
31	Bruce	Douthead	48
6	Welch	Anstey	47
16	Macey	Rockbourne	39
10	Ellis	Salisbury	31
32	Stephenson	West Grinstead	31
3	Coulson	Salisbury	30
19	Hookings	West Dean	28
24	Jordan	Romsey	24
14	Piggott	Micklemarsh	24

(NOTE.—Only flights of over 15 miles included).

Tuesday, July 26th

The total of 3,688 miles flown this day was a record for a single day in the British Isles. Wills made the longest flight of the meeting —169 miles, and the only one to end in Cornwall. It took him five hours 49 minutes, including an hour's hold-up by poor conditions around Bridport on the Dorset coast.

The day's task was free distance for both sections, but the direction was not all that free, because a cross-wind blew everyone towards the south coast. Latest landing time was 19.10 by Kerridge; Foster and Wills kept going till 18.50. There were some huge cumulus masses to the west, and two pilots, MacDonald and Bedford, reached 10,000 ft. The biggest was over Dartmoor, and Deane-Drummond thought anyone who reached it could have made Land's End.

Fifteen pilots out of the 39 flying exceeded 100 miles, and every machine but one Sedbergh scored points. Wills still led in the Individual class with 200 points; Foster had 158, Ince 156, Deane-Drummond 142, and Bisgood and Blake of the Empire Test Pilots led in the Team class with 138 pionts earned by their Sky. It was the first official contest day for the Sedberghs; Williams brought the Detling School's entry to the lead, and Pickup of the Midland Club was close behind.

Landings on July 26th

No.	*Name*	*Landing*	*Miles*
13	Wills	Fowey	169
5	Foster	Robrough	144½
9	Deane-Drummond	Plymouth	144½
12	Kerridge	Plympton	144
1	Ince	Halwell	141
2	Cotton	Mordbury	138
8	Smith	Aveton	137
6	Welch	West Charlton	135
35	Yates	Avonwick	133
22	Tonkyn	Derbury	125
34	Warminger	Paignton	122
28	Gough	Exeter	114
11	Kahn	Exmouth	111½
21	Rivers	Exeter	109
33	Stafford-Allen	Exeter	109
30	Blake	Sidmouth	101
19	Machin	Sidmouth	99½
10	Ellis	Bovey Barton	97½
29	Wells	Seaton	95
25	Sanders	Axmouth	94
31	Bedford	Lyme Regis	91½
14	Piggott	Morton Hall	88
32	Furlong	Lyme Regis	87½
16	Dorman	Lyme Regis	86½
18	Alexander	Burton Bradstock	82
36	Williams	Burton Bradstock	82
41	Pickup	Bridport	80
27	MacDonald	Sutton Cheyney	78
3	Coulson	Dorchester	75½
37	Hayter	Weymouth	73½
17	Hahn	Dorchester	70
4	Dowdall	Tolpuddle	62½
7	Inglesby		58
20	Neilson	Nr. Rushton	52½
38	Padgam		48½
40	Martlew	Old Sarum	33
23	Simpson		30
26	Keiron	Romsey	29
24	Snodgrass	Chilbolton	18

Wednesday, July 27th

The Sedbergh class was briefed first for distance along a line through Yeovilton, 71



miles to S.S.E. Jones got there with the Detling machine; Verling from Hornchurch made 67 miles; Redshaw from Barrow 51½; Hickling of the Midland Club 39, Allan from Christchurch 30½; and Murden of Imperial College Club 29.

The rest were given a 34-mile race to Old Sarum, starting not before 14.00 hrs., as they needed a comparative rest after their two long-distance days. The shortness of the distance gave chance a considerable part to play, as the best thermals did not always coincide with the release point. Wills made easily the fastest speed of 54 m.p.h. and remained in leading position with 300 points; Ince went 2.3 m.p.h. faster than Foster and overtook him with a total score

of 230 to Foster's 228, and the Empire Test Pilots' Sky, still at the top of the Team class, rose to 4th place in the Open section with 224 points.

On the previous day the Surrey Club's Olympia, No. 25, had been damaged by rocks in a sea-shore landing, but its pilots were allowed to-day to carry on semi-officially with another Olympia.

Speeds on July 27th

No.	*Aircraft*	*Pilot*	*M.P.H.*
13	Sky	Wills	54.0
30	Sky	Bisgood	47.6
6	T-42 "Eagle"	Welch	46.5
32	Sky	Stephenson	45.5
27	Olympia	Harcourt	42.6
8	Sky	Smith	41.8
9	Skylark III	Deane-Drummond	40.8
1	Olympia IV	Ince	40.8
33	Olympia	Varley	40.0
4	Olympia	Dowdall	39.3
5	Skylark II	Foster	38.5
11	Weihe	Kahn	38.5
21	Olympia	Dickson	37.8
12	Olympia	Kerridge	37.0
10	Olympia	Ellis	37.0
29	Gull IV	Fitzroy	36.4
2	Skylark II	Cotton	34.5
14	Olympia	Piggott	32.8
7	Olympia	Inglesby	30.8
18	Skylark II	Neumann	30.3
34	Olympia	Gou'd	30.3
31	Olympia	Bruce	29.4
28	Olympia	Gough	28.6
20	Prefect	Pollard	27.1
23	Olympia	Fursman	28.6
22	Skylark II	Scallon	23.6
16	Skylark II	Ball	23.0
17	Olympia	Stowe	21.1
25	Olympia	C. Wills	19.8

Thursday, July 28th

Another good distance day resulted from the Open class being given a course along a line through Yeovilton, while the Sedberghs, at first given a 51-mile race to Tarrant Rushton, had their task changed an hour later to that of a pilot-selected goal.

Although this was the second best day of the contests, many pilots were bothered by high or medium cloud sheets at various places along the route, and in particular there was extensive cloud cover over Devonshire, described variously as cirro-stratus and alto-cumulus, which brought down all who reached it, at whatever time they arrived.

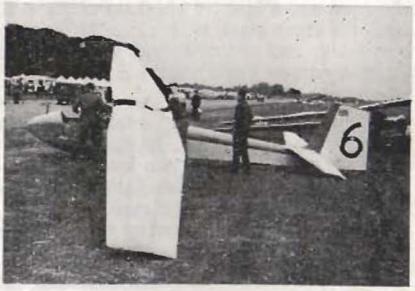
Thus Wills, Deane-Drummond, Ince and Kahn all landed in Devonshire at about 16.15, whereas Bisgood at 17.22, Smith at 17.55 and Piggott at 18.15 still found the "clamp" there, though it began to clear soon afterwards. Ince found the cloud base 1,000 feet lower there than elsewhere and thought the air must have come from the industrial Midlands.

The two best Sedbergh performances were 82 miles by Verling (Hornchurch) and Williams (Detling), but whereas the former reached his goal on Bridport golf course, the latter went 17 miles beyond the goal he had declared.

Wills, having won for the fourth day in succession, finished with 400 points, and Ince was still second with 316. The E.T.P.S. Sky was brought by Bisgood up to third place with 313, followed by Deane-Drummond with 305 and Foster with 282. Detling still led in the Sedbergh class.

Landings on July 28th

No.	*Name*	*Landing*	*Miles*
13	Wills	Plympton	139
8	Smith	Widdecombe	128
9	Deane-Drummond	Buckfastleigh	126



30	Bisgood	Buckfastleigh	126
1	Ince	Totnes	122½
14	Piggott	Bovey Tracey	122
11	Kahn	Ottery St. Mary	102½
25	Morison	Honiton	94
34	Warminger	Nr. Worthington	93½
28	Gough	Lyme Regis	87

7	Inglesby	Lyme Regis	85½
5	Foster	Lyme Regis	84½
21	Rivers	RAF Merrifield	84
2	Cotton	Nr. Ilminster	82
16	Shephard	Crewkerne	80½
6	Welch	Bridport	80
22	Tonkyn	Nr. Bridport	79½
29	Fitzroy	Bridport	79
18	Whitfield	S. Tetherton	78
23	Simpson	Dorchester	74
12	Kerridge	Yeovil	72
32	Furlong	Yeovil	72½
17	Jones	Yeovilton	71
27	MacDonald	Yeovilton	71
19	Clayton	Mudford	70
3	Coulson	Nr. Weymouth	70
4	Dowdall	Dorchester	67
10	Ellis	Dorchester	67
20	Neilson	Nr. Cerne Abbas	67
35	Lee	Nr. Shaftesbury	57
33	Stafford-Allen	Zeals	56
31	Bedford	Nr. Blandford	51
24	Snodgrass		35
26	Scorer	Nr. Salisbury	31
36	Williams	Bridport	82
38	Verling	Bridport (goal)	82
41	Pickup	Nr. Blandford	60½
37	Hayter	Nr. Bere Regis	57½
39	Redshaw	Nr. Salisbury	30½
40	Murden	Nr. Romsey	20½

Friday, July 29th

The usual early stratus cleared away immediately after briefing, in accordance with instructions there received, but returned again later to spoil the chances of both the Open class, with a race to Romsey and back, and the Sedbergh class, with a 32-mile race to Ford naval aerodrome.

In spite of the clamp, there were a few weak thermals, which enabled Roger Dickson to reach the Romsey turning-point, 25 miles away, in two hrs. 56 mins.—a feat which nobody else came anywhere near performing. He had started at 10.51, more than three hours earlier than anyone else except the Cambridge Prefect.

In the Sedbergh class one machine got three miles from a launch at 15.32.

We had several visitors on this day. Mr. John Profumo, Parliamentary Secretary to the Ministry of Transport and Civil Aviation, attended the morning breifing, and so did Captain K. J. G. Bartlett, President of the F.A.I. Later in the day Colonel Marakazov and two of his staff, from the Russian Embassy, called and were given two-seater rides by Betsy Woodward of the U.S.A. Col. Marakazov was so delighted by the hospitality shown him that, in return, he invited a number of gliding people to a most entertaining cocktail party a few weeks later.

Saturday, July 30th

The thermals, though still not good enough to make a contest day, were a bit better than the day before. The task for the Open class was a triangular race of 62½ miles (just over 100 km.), via yesterday's turning-point at a railway junction near Romsey and Thruxton aerodrome.

Three pilots got round: Kerridge (Surrey Club Olympia) in three hrs. 13 mins., Deane-Drummond (Skylark 3) in four hrs. one min., and Rivers (Derby and Lancs Club, Olympia) in four hrs. 36 mins. Kerridge was down to 700 ft. on the second leg when he got in at the start of a cloud thermal and rose to 5,500 ft., popped out of the side of the cloud at 5,200 ft. over Thruxton and went back into it, so that he only needed a bit of lift from one last thermal just at the end.

As less than a fifth of competitors got round, it was not a contest day; nor was it one for the Sedberghs, though Redshaw (Barrow) made 21 miles and Jones (Detling) 20½ on an attempt at the day's task, a 25-mile race to White Waltham.

Sunday, July 31st

A race to Greenham Common Aerodrome and back, 17 miles each way, was set for the Open class and, owing to the short distance, seventeen pilots got there and back twice, and Kerridge three times.

Because of good soaring conditions, the speeds of the more expert pilots tended to show the racing performance of their machines, and because the soaring deteriorated slightly, their second tries tended to take a bit longer, in contrast to other pilots who learned from experience the first time and got round faster the second time. For instance, Deane-Drummond took 49 mins., then 50; Wills 53, then 57; Foster 54 and 57; Cotton 66, then 56.

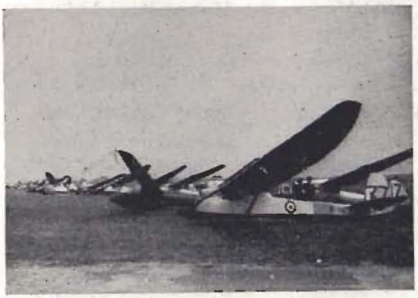
The Sedberghs were given goal flights. That from Christchurch, flown by Allan, reached its goal at Cheddar, 74 miles; the

others made distances of between 43 and 54 miles without reaching their goals.

At the end of this day, Wills was so far in the lead that no-one could have overtaken him on the remaining day; Ince, Foster, Smith and the E.T.P.S. followed him in that order in total points.

Speeds on July 31st

No.	*Aircraft*	*Pilot*	*M.P.H.*
9	Skylark III	Deane-Drummond	40.7
13	Sky	Wills	37.7
5	Skylark II	Foster	37.0
1	Olympia IV	Ince	37.0
2	Skylark II	Cotton	35.6
30	Sky	Bisgood	35.0
29	Gull IV	Fitzroy	33.2
16	Skylark II	Dorman	32.7
28	Olympia	Gough	32.7
34	Olympia	Warminger	30.2
21	Olympia	Dickson	29.8
8	Sky	Smith	28.1
14	Olympia	Piggott	27.3
22	Skylark II	Tonkyn	27.0
33	Olympia	Stafford-Allen	26.6
31	Olympia	Bedford	26.2
11	Weihe	Kahn	25.9
4	Olympia	Dowdall	25.3
19	Olympia	Hookings	23.8
27	Olympia	Harcourt	23.2
25	Olympia	Sanders	21.9
32	Sky	Furlong	21.4
10	Olympia	Ellis	21.0
12	Olympia	Kerridge	20.8
17	Olympia	Hahn	16.5
35	Olympia	Lee	14.8
26	Olympia	Kearon	13.3
3	Kite IIa	Coulson	12.3



Monday, August 1st

The Open class had a 68-mile triangular race via Romsey and Fosbury Camp, on the Wiltshire Downs; the Sedberghs a race to Fosbury and back. It was exciting, and heights of up to 10,300 ft. were reached, but there was little opportunity to get details of the flights afterwards; however, the accompanying table shows how everyone performed.

The day finished with the prizegiving ceremony; in addition to the cups and trophies, Daily Prizes were given to the two leading pilots in each of the three classes.

The meeting was a great success and the organisation superb, due to an enormous amount of voluntary work put in by a great number of people, far too numerous for mention here.

Speeds on August 1st

No.	*Aircraft*	*Pilot*	*M.P.H.*
32	Sky	Stephenson	27.2
1	Olympia IV	Ince	26.8
30	Sky	Blake	26.4
9	Skylark III	Deane-Drummond	25.6
5	Skylark II	Foster	23.8
14	Olympia	Piggott	23.1
8	Sky	Smith	21.8
2	Skylark II	Cotton	21.2
28	Olympia	Gough	20.5
31	Olympia	Bedford	20.3
12	Olympia	Kerridge	19.9
6	T42 "Eagle"	Welch	19.7
35	Olympia	Yates	19.7
29	Gull IV	Fitzroy	17.2
18	Skylark II	Neumann	17.0
33	Olympia	Varley	16.7
34	Olympia	Warminger	15.6
17	Olympia	Stowe	15.6
19	Olympia	Scorer	15.5
16	Skylark II	Shephard	14.5
19	Olympia	Machin	13.9
23	Olympia	Simpson	12.5

Trophies and Awards

KEMSLEY CUP: R.A.F.G.S.A. Moonrakers.

LONDONDERRY CUP: P. A. Wills.

THE L. DU GARDE PEACH TROPHY: Empire Test Pilots' School (pilots P. L. Bisgood and E. D. Blake).

THE FIRTH VICKERS TROPHY: P. A. Wills.

THE EON CUP: Mrs. and Mr. D. O. Burns (pilot A. D. Piggott).

THE FURLONG TROPHY: No. 36 A.T.C. School.

THE SLINGSBY TROPHY: P/O J. C. Allan.

FINAL PLACINGS:

OPEN SECTION

Place	*Total for 5 best days*	*Competition No.*	*Aircraft Type*	*Pilot or Pilots*	*Entrant*
1	492	13	Sky	P. A. Wills	P. A. Wills
2	440	9	Skylark III	A. J. Deane-Drummond	F. N. Slingsby
3	438	30	Sky	P. L. Bisgood E. D. Blake	Empire Test Pilots' School
4	430	1	Olympia IV	D. H. G. Ince	H. G. C. Buckingham
5	404	5	Skylark II	F. Foster	F. Foster
6	394	8	Sky	D. A. Smith	London Gliding Club
7	357	2	Skylark II	J. L. Cotton	Dr. O. J. C. Cotton
8	344	14	Olympia	A. D. Piggott	Mr. & Mrs. D. O. Burns and the *Junior Mirror*
9	334	29	Gull IV	K. C. Fitzroy S. Wells	R.A.F.G.S.A. Moonrakers' Club
10	329	28	Olympia	A. Gough	R.A.F.G.S.A. Wessex Club
11	328	32	Sky	E. J. Furlong G. H. Stephenson	E. J. Furlong
12	323	12	Olympia	D. C. Kerridge	Surrey Gliding Club
13	321	34	Olympia	A. H. Warminger B. T. Gould	A. H. Warminger
14	313	6	T-42 "Eagle"	L. Welch F. G. Irving	Hulton Press Ltd.
15	303	33	Olympia	G. C. Varley R. C. Stafford-Allen	G. C. Varley and R. C. Stafford-Allen
16	302	11	Weihe	W. A. H. Kahn	Surrey Gliding Club
16	302	21	Olympia	P. Rivers R. D. Dickson	Derbyshire & Lancashire Gliding Club
18	283	16	Skylark II	C. G. Dorman E. G. Shephard D. Macey P. W. Bell	Army Gliding Club
19	275	31	Olympia	A. W. Bedford W. Bruce	Empire Test Pilots' School
20	264	18	Skylark II	A. L. L. Alexander G. S. Neumann G. R. Whitfield	Cambridge University Gliding Club

21	260	35	Olympia	G. H. Lee A. H. Yates	A. H. Yates and G. H. Lee
22	256	22	Skylark II	W. N. Tonkyn D. P. L. Scallon	Imperial College Gliding Club
23	238	10	Olympia	C. A. P. Ellis	D. A. Smith and G. H. Stephenson
24	236	19	Olympia	K. E. Machin D. R. Clayton D. D. Carrow G. A. Hookings	Cambridge University Gliding Club
25	235	17	Olympia	J. M. Hahn J. D. Jones D. Stowe	Bristol Gliding Club
26	234	27	Olympia	C. M. Harcourt D. A. Macdonald	R.A.F.G.S.A. East Midlands Club
27	217	4	Olympia	C. W. Dowdall	C. W. Dowdall, W. A. H. Kahn and D. Scallon
28	198	23	Olympia	J. E. Simpson S. H. Fursman	London Gliding Club
29	182	3	Kite IIa	A. Coulson	A. Coulson
30	142	7	Olympia	J. V. Inglesby	J. V. Inglesby
31	136	26	Olympia	P. Kearon C. Scorer	R.A.F.G.S.A. Wessex Club
32	124	20	Prefect	G. C. Hudson P. J. Neilson V. S. Pollard	Cambridge University Gliding Club
33	50	24	Olympia	W. F. Jordan D. C. Snodgrass J. H. Holder	Southdown Gliding Gliding Club

Sedbergh T-21B Section

1	361	36	T-21b	R. C. Jones R. Williams	Home Command Gliding Instructors' School
2	338	38	T-21b	W. Verling F. R. Padgam	No. 142 Gliding School, A.T.C.
3	272	37	T-21b	F. R. E. Hayter J. C. Allen	No. 89 Gliding School, A.T.C.
4	247	41	T-21b	J. H. Hickling A. Pickup	Midland Gliding Club
5	149	39	T-21b	L. Redshaw R. Porter	No. 188 Gliding School, A.T.C.
6	80	40	T-21b	P. Murden P. Minton D. Martlew D. Stevens	Imperial College Gliding Club

LASHAM WEATHER LOG

by

C. E. Wallington

GLIDING championships always provide a few lessons in meteorology, and this year's nationals were no exception. First of all, let us take a look at the daily met. maps illustrating the championship weather. Notice that throughout the whole nine days the general pressure systems changed only slightly—in fact, every day it could be said that Lasham was on the south-east side of a belt of high pressure. Yet the actual weather at Lasham ranged from persistent low stratus to thermally active days of Cu and Cu-Nim, from days of light winds and haze to days of fresh, comparatively clear easterlies. The lesson here is: don't draw too many dogmatic conclusions from the broad-scale pressure distribution.

The variability of weather was due partly to slight changes in the path of the air as it flowed from the continent across the North Sea, and partly to the more general air-mass changes. The first effect gave rise to short term moistening or drying of the air at low levels; the second effect was strictly frontal, but the fronts concerned were so weak that they could rarely be traced as they wound their way around the tops of the slow-moving high-pressure cells. Description of weather situations was best achieved by talking in terms of cloud sheets and their probable boundaries; to call such boundaries fronts would have led to unjustifiable implications. Thus lesson two is: the word front (and many other terms such as trough, convergence or upper front) cannot always be used with precision in meteorological practice—it may often be wiser to refer simply to weather as weather and cloud as cloud.

Other lessons gleaned from accumulated pilots' reports are more in the nature of confirmation of previously held ideas. For example, there was abundant evidence of wind shadows and sun-facing slopes acting as good thermal sources.

Several competitors found good lift on the up-shear sides of cumulus, but the shear was never strong and pilots often reported the association of thermals with cloud structure to be somewhat haphazard. In fact, emphasis laid upon the variability of thermal structure supported the current trend of opinion that, though we may talk and write of "ideal" thermals, it is rash to call any particular thermal "typical".

Now for the record, and to supplement the memories of individual achievement or otherwise, here is a brief summary of the championship weather:

Sunday (24th).—Early morning sunshine at Lasham was soon cut off as low stratus spread south-westwards from the East Anglian coast. With a base of 600 feet and top 1,800 feet above the airfield, this cloud persisted until 6.30 p.m., when drier air arrived to give a fine evening.

Monday (25th).—Once again the morning met. charts revealed a tongue of cloud stretching from Norfolk to the Isle of Wight and Dorset; but this time the cloud was fairly thin (about 800 feet in depth) and by 2 p.m. the sun had broken through sufficiently to encourage westbound pilots into the air. With an 070-degree 15-knot wind and fair-weather Cu sprinkled liberally about the sky, soaring conditions looked almost perfect, but patches of the stratus lingering on over Wiltshire and Dorset temporarily damped down thermals and no doubt shattered many Gold C hopes.

Tuesday (26th).—Still a fresh north-easterly airstream but drier air and no low stratus to worry about to-day. Cumulus developed quite early and by mid-afternoon it extended from about 4,000 feet up to 10,000 feet; the associated thermals appeared plentiful and strong. There were minor but singularly appropriate hazards to the westward trek. First, a tongue of cirrus moving west damped down thermals just sufficiently to cause a take-off dilemma. Was it worth trying to race on ahead of the cirrus? Or would it be easier to skirt its southern edge? Of course, that would mean a stiffer cross-wind component along the coast. Perhaps it would be best to wait—but not too long lest the sea breeze brought its peculiar effects.

Whatever their initial decision, most pilots found themselves battling across a 20-knot NNE'ly along the south coast. Out to sea a line of healthy-looking Cu stretched conveniently to the south-west—but its

distance from the coast was rather embarrassing; it was just close enough to put ideas into the heads of the ambitious, but just too far to reach with safety. Further to the west Cu-Nims towering over Dartmoor and Exmoor presented the final problem, in that they almost certainly would have provided excellent lift, but they were isolated and may well have been surrounded by wide areas of sink over difficult country.

Wednesday (27th).—Almost a repitition of Monday's weather. The morning stratus cover broke up quite early and fair-weather Cu from 5,000 feet to 10,000 feet drifted steadily south-westwards at 15 knots throughout the afternoon.

Thursday (28th).—Yet another day of early morning low cloud and vigorous afternoon Cu. Some of the cumulus tops reached up to 12,000 feet, but patches of high cloud foiled some of the competitors who landed within 80 miles of Lasham. Further afield, towards the west, the Cu base lifted steadily to 6,000 feet while the tops were progressively limited by stability aloft. Eventually, nothing but erratic, though strong dry thermals up to about 6,000 feet faced those who reached the clear blue sky over Devon.

Friday (29th).—Upset the morning-stratus/afternoon-Cu routine by bringing a more persistent cover of strato-cumulus across much of England during the afternoon.

Saturday (30th).—The strato-cumulus cover broke up just sufficiently to allow sporadic cumulus developments in the hazy 10-knot airstream from the northeast.

Sunday (31st).—Shallow, pearly white fog on a summer's morning is often followed by an afternoon of light winds and fair-weather Cu. To-day lent some support to this rough and possibly optimistic rule. The morning fog was dense but not deep; the afternoon cumulus made soaring rather easy, although an occasional spreading-out of Cu to form patches of strato-cumulus provided a few obstacles on the high-speed path to Greenham and back.

Monday (1st).—With strato-cumulus associated with a warm front gradually closing in on southern England, Lasham was luckily centred in the one area of fine and clear weather over the British Isles. Abundant, vigorous cumulus from 4,000 feet to about 11,000 feet enabled most competitors to penetrate the 12-knot north-easterly wind encountered at most flying heights.

An Open "Thank You" Letter

Sir,

May I, on behalf of all of us who enjoyed the "Champs" at Lasham, say a special "thank you" to our many friends who made the event such a happy and successful one. Without their help the meeting would have meant so very much more work for us and less enjoyable for you.

There is Mr. Firmin, himself a glider pilot, "EVER READY" to give us his fine batteries—so reliable and vital in these days of highly instrumental gliders. SHELL, whose sponges and dusters were used to good effect by pilots dreaming of more miles to each wipe-over. GESTETNER, who trusted us with a magnificent piece of equipment with which we were able to flood the press with stories (both fact and fiction) about gliding—and with which we were able to produce very many copies of the now famous "Bull chases Glider—Brewer Son of Baronet Croons to it but Bull does not Swoon to it" within a very short space of time.

There were the REDIFFUSION people who, with Lawrence Wright's masterly commentary, kept the crowds amused and happy. The ROVER CAR Co., who lent us three Land-Rovers which proved their worth many times over—especially when the competitors' cars broke down (they always seem to at Championships). LANCING BAGNALL, the makers of those fascinating little trucks one saw pulling enormous winches along with consumate ease. "Easier to drive than the Motor Tutor" was the boast. Every club should have one!

The GRUNDIG Tape Recorder, which was used so effectively to record some of the highlights of the meeting (and some of the low ones, too).

And last, the angel i/c the weather who let us down on that—Oh sooooo vital morning—but served us well after that. We can't thank Wally Wallington as he is a member of the Surrey Club—not in print, that is.

Thanks, everybody. Everyone agreed that "it worked".

WALLY KAHN.

THIRTY SEVEN THOUSAND FEET AT BISHOP

by Commander Nicholas Goodhart

Commander Goodhart has already described in our Spring issue how he climbed to 30,500 feet in the famous Sierra Wave at Bishop, California, on January 9th. But he did not exceed Mr. Philip Wills's height of 30,400 feet, attained on December 29th last, by the five per cent needed to establish a new British record. So he tried again—and succeeded.

IT'S comparatively easy to get big altitudes at Bishop provided:

(a) You are there when the wave wind blows.
(b) You have an adequately equipped sailplane.
(c) You are qualified in oxygen and know your limitations.
(d) There is a towplane available.

The problem of course is to get all these events to come to pass at the same time, and the odds are fairly strongly against it. As an example, Bill Ivans has been ready for several years to make an attempt on the world goal record using waves, but so far has just not had everything right at once, and he lives only 400 miles from Bishop.

For me condition (a) was satisfied by the chance of a west wind and by dredging deeply to find five days' leave. Condition (b) was satisfied by the generosity of Bill Ivans who again lent me his superbly equipped Schweizer 1-23. Condition (c) . . . ? I did a compression-chamber run about nine years ago and did not get the dreaded "bends" then, and anyway I had firmly resolved not to go much above 40,000 ft. As far as oxygen went, I had practised with the mild pressure-breathing available from the equipment in the 1-23 and was fairly confident that I would remember to keep on breathing. Condition (d) was well satisfied as, in addition to Bob Symons' aircraft which towed me last time, there was a BT-13 on the field expressly for towing, which had been doing all the towing for the Sierra Wave Project.

The Project has been in progress since the end of March in charge of Dr. Kuettner, using a Pratt-Read and the Schwezer 2-25 which had been repaired since its encounter with a Derbyshire fence in the '54 Internationals. However, by the time I arrived at Bishop the Pratt-Read was no more: in trying to descend in front of the roll cloud it had encountered a shift in the wave-cloud system which had caused it to be engulfed in a small piece of roll cloud and had subjected it to such turbulence as to tear one wing, the nose and the tail off. The unfortunate pilot, Larry Edgar by name, was subject first to positive "g" sufficient to black him out and then to negative "g" sufficient to burst the bloodvessels in and around both eyes, before finding himself blind and descending trapped half in and half out of the now severed nose. His right arm useless, he managed to pull the rip cord with his left hand and the shock of the 'chute opening jerked him free of the nose, leaving his boots inside. All this happened at about 13,600 ft. As he descended, some of his vision came back, and he landed semi-conscious with no further damage.

Memo: Keep out of the roll cloud.

I am told that Edgar has completely recovered from this startling experience.

On the day of my flight there was a weak west wind at altitude but it did not seem to be strong enough and no wave indications had appeared. After hanging around the met. office till after lunch I decided to go off for a thermal soaring trip. Throughout the week there had been good thermal soaring and on one occasion I had got up to 20,000 ft. after encountering cloud base at 17,500 ft. Conditions like this are, after all, pretty rare, so I was not going to miss it waiting forever for the wave to blow.

About 4.45 p.m. I was taking pictures from about 10,000 ft. when I suddenly saw the beginnings of a wave cloud. I had neither barographs nor warm clothing on, and so headed steeply back to the airfield, landing at 5.00 p.m. Clearly speed was of the essence, as there is no provision for night landing and complete darkness was soon after 8.00 p.m.

By 5.30 I was strapped into the cockpit

again, barographs ticking and clad in the inevitable multiple layers of wool. The canopy was closed and taped up and the brilliant sun was beating inexorably in on me as I steadily melted—the ground temperature was 75°F. Just before I could stand it no longer, the towplane was hooked up and we started to roll. With the dashboard ventilator wide open and blowing straight in my face, I began to solidify again as we steadily climbed up, keeping in the middle of the valley away from the turbulence.

On tow I had nothing to worry about, particularly since I was being towed by the genial Al Langenheim, manager of Bishop Airport, who knows the wave well and had been doing all the towing for the Project. With time to relax, I could look around and study the general picture; there was undoubtedly some wave activity as evidenced by a lenticular band, but there were only a few very small patches of indefinite roll cloud and consequently considerable doubt as to whether it would be possible to get away. Another bad sign was the lack of turbulence—in fact, as we progressed in towards the mountain face the maximum "g" meter reading never exceeded 1.4 in pleasant comparison to the 3.5 indicated on my last trip.

The wave pattern was clearly different from my previous encounter with it. This was shown by a patch of wave lift about one mile *behind* a patch of roll cloud; however, this was ignored and weak lift was encountered at about 13,500 ft. in the usual position in front of the wave cloud.

Release was at 13,600 ft. indicated, and since I had kept on tow right through the best lift I immediately turned down-wind and went back until the peak of lift was passed, when a quick 180° brought me into the best position.

At once the reason for the lack of turbulence in the tow was apparent. The wave lift was weak, being not much more than 200 ft./min., though of course it had the traditional absolute smoothness which is such a contrast with the noise and general hurly-burly of the tow.

Immediately, I started to make calculations. The aim was 40,000 ft.—say 27,000 ft. to gain at five mins. per 1,000 ft. = 2



The wave cloud over the Sierras that made Commander Goodhart realise he should be trying for the height record. He took this photo while flying near the top of the White Mountains, looking south-westwards



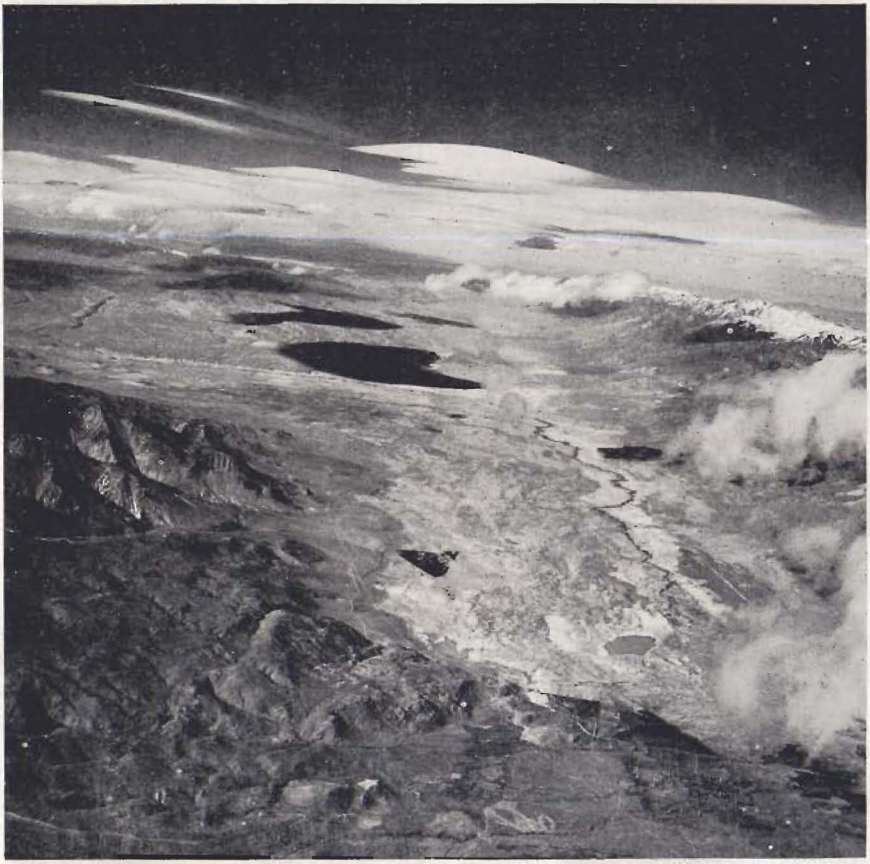
Commander Goodhart before setting off on his record flight. The Sierra range is on the right, and the huge wave cloud in its lee is seen overhead.

hours and 15 minutes even if the lift continued the whole way up. Already it was after 6 p.m. and it would be dark in about two hours: allow, say, half-an-hour for the descent and the sums just didn't add up.

Discussion on the radio with Dr. Kuettner revealed that conditions about 10 miles to the south looked better, and while I was loath to leave the lift area I was in, it was clear that drastic steps must be taken, so at about 21,000 ft. I put up the speed and started to sidle south along the wave. At times height was lost, but after a while I began to enter an area of better lift and soon, under the most promising piece of wave cloud, the lift increased encouragingly to nearly 1,000 ft./min. Rapidly, 25,000 . . . 26,000 . . . 27,000 ft. went by as I went up in front of the very high roll cloud which was by now well defined and active. Overhead the lenticular cloud was becoming increasingly dense and well formed. It was also noticeably further forward than the roll cloud.

28,000 . . . 29,000. I put the oxygen to 100 per cent and switched on the electric socks, being almost instantly rewarded by a glow of warmth around my toes. Cold, so far, had been no problem whatever, despite the outside temperature, which was already down to —40°. Presumably this was due to the short time I had been at altitude, and also to having started with everything really warmed up in the baking sun on the ground.

30,000 . . . 31,000 . . . 32,000. Just about enough to break the British Absolute Altitude record and still 500 ft./min. up indicated. Close overhead, the lenticular cloud arched forward in front of me. According to the rules, the best lift is close in front of the lenticular, but it just was not so today and I switched on the turn-and-bank as the first greyness closed in around me. The absolute smoothness continued in



Photograph taken from tow plane at 22,000 feet. The White Mountains are on the right.

the cloud and I was able to keep the turn needle perfectly centred—this is not surprising, as I then discovered I had not plugged in the battery lead on the dash-board. With this rectified, I recovered my position, and a couple of minutes later was out again on the top of the lenticular, into the dazzling brightness of the sun reflected from the brilliantly white, smooth surface of the cloud.

34,500. The climb had decreased but there was still 200 ft./min. available and the time was about 7 o'clock, i.e., I had about half-an-hour left. Flying at 45 m.p.h. indicated, which is about 80 m.p.h. true, I found I could maintain position whilst flying at 45° to the wind direction. This gives an estimated wind of 57 m.p.h., say, 50 knots, which is weaker than usual and no doubt accounted for the weak wave low down. Being able to fly at 45° to the wind, I could slide up and down the wave in search of best lift, and slowly but surely height increased until finally by tapping the altimeter I got a reading of exactly 37,000 ft.; the time was about 7.25 and I had decided that I must leave at 7.30. No more height seemed to be obtainable, and despite an outside temperature of —60°C I was comfortably warm, and very little misting

of the canopy had occurred. This last five minutes could be devoted entirely to the scenery—a picture so magnificent as to be entirely beyond my powers of description.

Far to the west the sun was sinking towards a band of clouds on the horizon; already it had turned a deep red. Beneath and before me the High Sierras stretched an endless mass of tumbled peaks snow-capped still and glowing a wonderful pink on their western faces. Below and behind me the Owens Valley was already in deep shadow, and I could just make out the neon lights as they began to come on in Bishop. But mainly the scene behind me was dominated by the great white wall of the lenticular, whose crest was just about level with me, and whose whiteness would make the Persil people green with envy.

I looked at the clock and suddenly realised that it had stopped at 7.28. The time had come to go. With an indicated speed of 100 m.p.h., say, 190 m.p.h. true, I soon moved forward out of the lift area and was rewarded with a fair rate-of-sink. The spoilers were frozen in—not by ice but by differential contraction of metal—so could not be used. By 24,000 ft. the spoilers became operable again and at the same time I moved through a weak area of the wave system into the downwind side of the valley in hopes of more sink.

At 8 p.m., just as twilight was beginning to fade, I touched down on the airfield, having lost 33,000 ft. in 30 minutes.

A quick check of the barographs revealed that the master one had made a trace all right, but that the clock has stopped at altitude despite its heating coil. However, the trace was readable and will, I hope, be homologated for a British Absolute record.

WESTWARD (NEARLY) HO!

by David Ince

So many of us sweated and gyrated endlessly along the same routes from Lasham at the end of July that it seems pointless to catalogue the wanderings of an individual aircraft. For all that, there is so much to be gained from contest flying that it would be wrong not to discuss the valuable experience which it provides and—if one were honest—the lessons which it drives home!

The Aircraft

Olympia IV and I started practice beforehand in rather uneasy alliance—she because I had done little soaring of the type she expected during the last three years—I owing to her predeliction for a rather high circling speed.

My doubts, which took the form of low-altitude cockpit panic at least a thousand feet higher than normal, were gradually overcome until, on the final day's triangular race, we operated almost exclusively in the 1,500-3,500 ft. band. An aircraft with this sort of a performance (minimum sink 2.3 ft./sec. at 45 kts., sink rapidly increasing with decreasing speed) requires careful handling but, except in weak lift very low down, does not appear to be at any disadvantage. On the other hand, it is very comforting, particularly when the hour is late and one's morale low, to find that Lasham to Salisbury with a light following wind absorbs only 4,300 feet.

Thermals

The important thing about thermals is that although differing daily they follow substantially the same pattern throughout the useful soaring period of any particular dav.

Much has been written on geometric methods of centring in thermals—little about their daily pattern and the fact that they are not necessarily even symmetrical.

This daily pattern is presumably a complex function of wind, temperature and humidity at all levels—not forgetting the direction of the sun as it affects cloud shadows. As such, its variations are so numerous that any attempt at tabulation would be of little practical value. What is important is that the sailplane pilot should attempt to recognise the characteristics peculiar to the day and record them in his mind perhaps thus: "Thermals very rough and moving on an axis slightly south of downwind at all levels but particularly

marked from 2,500-4,000 ft. Lift in cloud has the same characteristic and is generally just inside the up-sun edge where new cloud is continually forming." This "moving on an axis" is an attempt to describe the effect as experienced by the pilot who continually finds himself falling out of one side of the lift when flying apparently symmetrical circles! Although on some days the sort of difficulties indicated above do not occur, I have found this technique to be generally most helpful, particularly when racing.

Having classified the day in his mind, the pilot is in a much better position to run up on and centre each thermal without delay whilst continuing to note the slowly changing pattern throughout the day.

Races

Racing is undoubtedly the most instructive of all contest flying tasks; it also puts one's ego very firmly in its place. It is unnerving in the extreme to land back after an out-and-return race and, on greeting one's crew, to be told: "that wasn't fast enough; you've 49 minutes to beat—go and do it again!" The point is that one does do it again—and, although the 49 minutes remain unbeaten, one learns.

In particular—that unless strong lift occurs in a particular height band one must abandon the luxury of height-in-hand and select only the strongest thermals. The better the day and the shorter the course, the more important does this become. Deviations from track must be kept to an absolute minimum. One must frequently steel oneself to plunge ahead into a gap in the knowledge that, either thermals are developing there already, or one can comfortably reach the other side. When one does deviate, it is usually found to be both unnecessary and a waste of time. It is vitally important to establish the thermal pattern for the day as early as possible in order to save time during each climb.

Route Weather

For many of us the famous route to the west was a new experience. I think we found Blackdown Vale every bit as damp and inhospitable as Philip Wills had warned us; and Dartmoor beyond, a roadless and forbidding barrier.

In spite of what he has been told, it is the remarkable change in conditions about 30 miles beyond Salisbury that takes the newcomer by surprise. Should he recover in time and take appropriate action he will find improved conditions over the high ground around Honiton and along the coast of Lyme Bay; but his reprieve is unfortunately short-lived—from the Exe westwards across Dartmoor is a sailplane pilot's nightmare.

From my own experience on July 26th and 28th, and considering the position of other landings on those two days, I believe that much of the trouble (where it is not partly geological as in the case of Blackdown Vale) is due to the fact that under these conditions the overlying air mass has previously passed over the industrial Midlands, Bristol and South Wales, in addition to travelling across the Bristol Channel towards the end of its journey. It would be interesting to make a more detailed study using information obtained from all competitors who landed in Devon on these two days.

As personal examples: on July 26th I flew to just west of the northernmost end of Dartmoor through 35 miles of completely stable and gloomy air; during the last few miles visibility improved rapidly and wind-shadow thermals, each marked by cumulus, were obviously rising continuously out of the southwest-facing gulleys. These, unfortunately, were terminated shortly after my arrival by an unfriendly layer of cirrus!

On the 28th I found myself in the middle of the afternoon floating miserably over Newton Abbott, which was bathed in brilliant sunshine, at about 1,200 feet. A more perfect thermal source with river, power station, streets and houses all lying in a bowl of hills can hardly be imagined. Some minutes later I had started my approach only to run into a strong and very turbulent thermal which took me rapidly to 2,300 ft. and then fell off equally rapidly to nothing.

As I had been scouring the whole area for some time, I am sure that this thermal had only just started, and equally, that it had ceased to be useable at about 2,500 ft. Earlier on the same day I had climbed to 7,000 ft. over Salisbury Plain and to about 4,000 ft. a few miles east of the Exe, and other people's experiences were similar. Does the explanation fit?

Whether it does or not, I expect we shall go back there again—perhaps in competition or, more likely, because we are fascinated by the problems, the barriers, and the distant goal—Land's End.

LONG MYND EASTER RALLY

MIDLAND Gliding Club was favoured with westerly winds throughout its Easter task-flying rally. Competitors were: Philip Wills with his Sky, Fred Breeze from Derbyshire with his Gull IV, an Olympia from Cambridge Club, another Olympia and two private Skylarks from Midland Club, and from Lasham the T-42 "Eagle" and a private Kite I ("Druid") and Kite II (Frank Irving's). Fred Worley from Gloucester brought his Kite II without competing.

Flights to goals of the pilot's choice were set for the first competition day, Saturday, April 9th. Many pilots were helped on their way by a huge cloud street originating over some Welsh mountain to the west and extending eastward into the murk around Birmingham.

The outstanding flight of the day was done by John Williamson and David Kerridge, flying the T-42, who reached their goal at Cambridge, 132 miles away, thereby putting up a British national goal flight record for two-seaters, as well as U.K. local speed records for 100 and 200 km. Their average speed for the flight, which took them from 11.49 to 15.35, was 35 m.p.h. They entered cloud for the only time over the site, came out of it above Wenlock Edge, and were slope-soaring for some time at only 100 feet above Brown Clee before shifting south to the more rugged Titterstone Clee, from which a thermal took them away.

Another competitor to reach Cambridge was Richard Prestwich, in his yellow Skylark II, taking three hrs. 20 mins. He stuck to the big cloud street, which the T-42 did not, and it took him as far as Birmingham. But on reaching Cambridge, he evidently caught up with some "clag" which had crossed the Mynd earlier and now put his goal at Leiston, on the Sussex coast, out of reach.

These were the first soaring flights ever made from the Midland Club to the Cambridge Club. The first flight from the Midland to the London Club was also made the same day by Philip Wills, who had given Dunstable as his goal. Unlike all the others, who used thermals and never got above 5,000 ft., Wills started with the help of two waves, recognising the first as such because he got lift before reaching the cloud, and climbing in it from 3,300 ft. to 5,600 ft. (above launch). After the second wave, well-defined cumulus took him the rest of the way.

Other flights this day were: 86 miles each by Fred Breeze, who overshot his goal by three miles owing to the multiplicity of aerodromes around Turweston, and Owen Storey in a Skylark, who landed at Northampton on the way to Cambridge; 37 miles each by Roy Procter in the Kite I and John Hickling in the Midland Olympia, and 25 miles by Gordon Hudson in the Cambridge Olympia.

On Easter Sunday cloud base was low and the only hope of getting away was to contact a wave and dash off. Four pilots got about 20 miles in attempting the set task of going as far as possible on a bearing of 100 deg. true; they were John Hickling, Ronald Rutherford, Alan Pickup and John Williamson.

Monday was no better for cross-countries, with a low strato-cumulus overcast, and the only entries to score were the T-42 again, with 100 points for a 27-mile flight to Halfpenny Green, near Wolverhampton, and the Cambridge Olympia, in which George Whitfield made 15½ miles, mainly by soaring all along Wenlock Edge. The task was a goal race to Coventry.

Since the T-42 had by now advanced more than 100 points beyond its nearest rival, Prestwich's Skylark, it was already the unassailable winner and the Long Mynd Cup was presented to its alternative pilots. John Williamson, David Kerridge, John Jeffries and Christopher Wills, without waiting for Tuesday, which was anyway a poor cross-country day on which the T-42 got furthest with 14 miles to Ludlow.

Final leading scores: T-42, 295; Prestwich's Skylark, 137.7; Rutherford's Skylark, 129.1; Midland Club's Olympia, 112.3

(*Condensed with permission from* THE AEROPLANE.)

Lectures to attend

A course of twenty University Extension Lectures on "Man and the Weather" by R. S. Scorer, M.A., PH.D., and F. H. Ludlam, D.I.C., lecturers in Meteorology at Imperial College, will be given on Thursdays, beginning September 29th, 1955, at 6.30 at Huxley Building, Exhibition Road, South Kensington. Tickets obtainable at lecture.

A Flight in a Thunderstorm

by Derek Piggott

(Reproduced from WEATHER for September, 1955.)

In this article Derek Piggott, Chief Flying Instructor at Lasham, describes a flight on July 14th in which he soared to the greatest height yet reached in a sailplane in Great Britain.

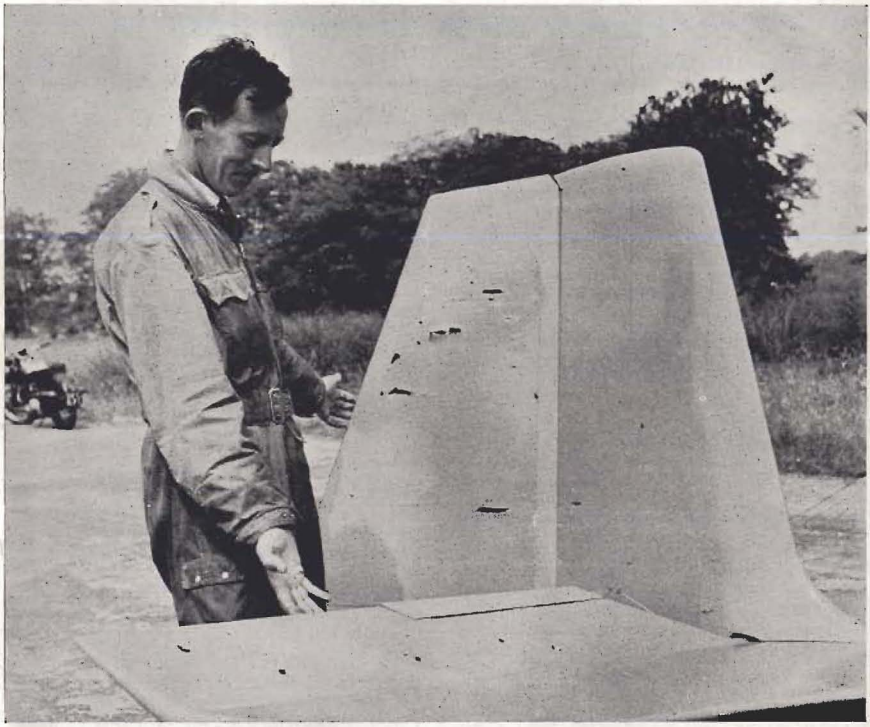
Cumulus was well developed and tops had reached 14-15,000 ft. by 2 o'clock. A Hunter pilot reported isolated tops to 38,000 ft., and a beginner at the Club had already made a climb to 10,000 ft. Winch launches had to be stopped because of the risk of lightning strikes down the cable, and so at 4 o'clock I was towed off by a Tiger Moth in the Skylark II belonging to Imperial College. Torrential rain was falling in a clear-cut line to one side of Lasham aerodrome, so heavy that it was impossible to see to drive a car through it, and there were lightning flashes which were timed to be between one and two miles to the north-east. I released at 1,800 ft. under some spreading-out cumulus with base at about 3,000 ft. To one side it was raining and there were fragments of cloud below my release level. I approached the rain belt to a place where the lift was strongest just outside the rain, planning to climb through cloud, steer north-east to come out on the far side and then glide back downwind to Lasham.

Cloud was entered and I began to fly on instruments at just below 4,000 ft. From there the climb to 11,000 ft. took only five minutes. The lift was very strong and smooth over a large area, and the variometers showed 15-20 ft. per second up all the time. There was very little turbulence, and no precipitation of any sort.

At somewhere around 14,000 ft. I ran into really violent turbulence. There was no rolling or upsetting and no difficulty in controlling the glider; it was like a violent shaking of the glider as a whole, so bad that I even considered the possibility of it breaking up. It was the worst and most violent turbulence I have ever met in several climbs in cumulo-nimbus. It was not exaggerated by speed, because I was flying fairly slowly. The scratches up and down the chart made by the barograph pen can be seen in the picture.

Shortly afterwards, while still circling, I entered a region where the storm was mainly electrical, and as far as I can remember the turbulence died down. First of all I got small shocks from the controls; these became progressively worse until they became violent—like holding on to the 230-volt main and being unable to let go. One flash appeared as a blue flash ½-¾ inch in diameter from one side of the nose by the rudder pedals to the other and I got a shock through my feet. The glider was struck four or five times round the cockpit in a few minutes. Most of the others appeared as bright flashes outside, and because I heard no thunder I wonder whether they might have been minor strikes of some sort. The shocks were so bad that I shouted out in the cockpit. The effect of the shocks was so unpleasant that I became frightened of being struck again and again, and I decided to straighten up and fly out of the lift.

By then I was at 17-18,000 ft., attempting to straighten up on a course to the north-east. In retrospect I realised that I must have been suffering from lack of oxygen, because this course took me right through the centre of the storm. It would probably have taken me only a few minutes to come out by flying southwards along the course by which I had entered. I also suffered from slight vertigo, probably through lack of oxygen, and I had my hand out of the window to scoop in cold air to prevent early anoxia through breathing stale air. At about this time I also noticed that the cock-



Holes in the rudder caused by hail or broken ice.

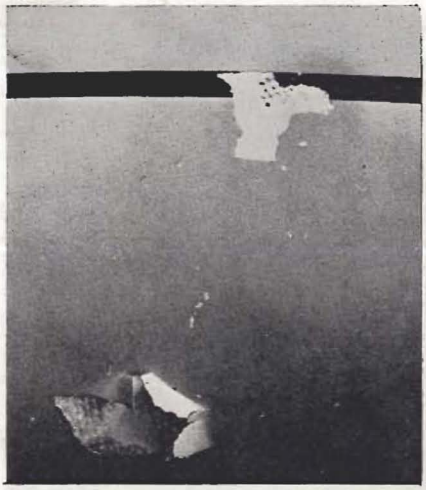
pit and my knees were covered with small white hail or hard snow about ⅛ inch in diameter. I am not sure whether I went through any heavy hail during the violent turbulence.

Icing was now apparent. The cabin and leading edge of the wing had about ¼-inch of ice and I had to break the ailerons loose by brute force on the control column. The air-brakes did not ice up. After this I had no further trouble with icing of the controls. I had some difficulty in straightening up and suspected instrument trouble: this I interpreted at the time as being due to anoxia.

Eventually I reached 20,000 ft. indicated and decided that it was as high as it was safe to go. I settled on a course towards the north-east with the air-brakes open, still going through the storm. Although I did not see more than 20,000 ft. indicated on the altimeter, the barograph chart shows such an excess over that height that I must have been higher and overlooked the indication.

After descending several thousand feet in sinking air with the air-brakes open, I again flew into strong smooth lift. I was unable to resist the temptation, and climbed again for a few minutes before deciding definitely to descend.

The descent was so rapid that on looking at the barograph chart I think I may have been only semi-conscious during most of it. If so, it is surprising that I did not have to recover from a spiral dive which would almost certainly have resulted from leaving the controls alone. The descent was straight and more or less on heading. At 16,000 ft.



Lightning damage in the nose.

on account of anoxia I was mildly amused by the look of the 10,000-ft. hand on the altimeter, since I had not seen it before and wondered whether I was in fact at 16,000 or 6,000 ft. I can recollect deciding that it was anoxia that I was suffering from. Since I had lost height at about 2,000 ft. per minute, even with the air-brakes open, I must have been in rapidly sinking air. This was in cloud in fairly smooth air.

It was difficult to say exactly when I came out of cloud, because either rain or ice crystals were falling from an anvil of some sort. At 10-12,000 ft. the ground became vaguely visible. I came out just north of a town I thought was Alton, but even though Lasham is only three miles away I was unable to make a clear decision as to which way to turn for Lasham, and after four or five attempts I went back to Alton and flew visually at 4-5,000 ft. When I arrived back it had just stopped raining and the hangar and aerodrome were almost flooded by the cloudburst. I made two loops before coming into land in my exhilaration, but this gave way to a feeling of depression lasting for about a week afterwards.

The damage to the glider was considerable. The leading edge of the wing was dented as though by hail between $\frac{1}{8}$ and $\frac{3}{16}$-inch in diameter. This is interesting because the leading edge was covered by a layer of ice during the climb at about 14,000 ft., and so the damage was done either earlier in the climb, possibly during the very turbulent part, or during the descent after the ice had melted. This is the first case I know of in which a glider has been damaged by hail in this country, but this may in part be because of the construction—the leading edge is carved from solid spruce for the front two or three inches, covered with fabric, instead of the usual birch plywood, which is harder.

The nose is made of fibreglass a little more than $\frac{1}{16}$-inch thick covered with fabric. At points where the lightning struck there were burn marks on the paint and a pin hole was made through the fibreglass. The fabric had been exploded off and peeled back for about an inch all round the pin hole. There was also strikes by my shoulder along the cockpit canopy and another inside the fuselage by my leg. On the rudder a strike had gone forward from the tip and exploded open a splint of ply and spruce about $1 \times 1\frac{1}{2}$ inches in section, leaving a burn mark inside.

The top surface of the elevators was seriously shattered either by hail or ice breaking off during the descent. The fabric is very tough indeed, but it was torn in strips about $2 \times \frac{1}{2}$ inch every six inches all over the elevator. Only the top surface was damaged, apparently because the glider was nose-heavy through icing and so the elevator was held up, the airflow thus striking only the top surface. The right side of the rudder was similarly perforated and there was also some holes in the 2-mm. plywood on the leading edge of the rudder. The tips of the rudder and tailplane were badly dented, in this case by hail apparently about $\frac{1}{8}$-inch in diameter or slightly more.

The total time of flight was one hour 15 minutes and the freezing level was 11,000 ft. Several gliders flew in cu-nim that day, and the Mayor of Basingstoke saw a piece of ice two inches long by half an inch wide fall from the sky in front of him; this was probably ice breaking off a glider.

[EDITORIAL NOTE.—Several other pilots from Lasham reached notable heights in cumulo-nimbus on the same day: see the Club News section.]

Photographs by kind permission of "Junior Mirror".

Gliding in Japan

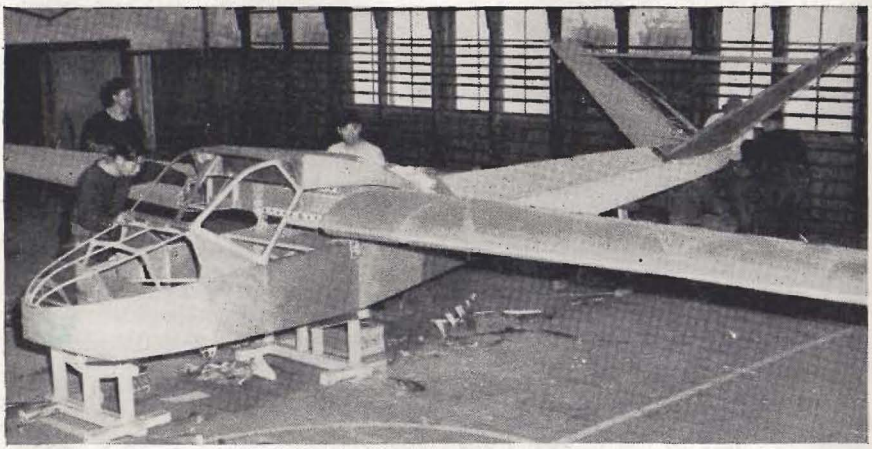
by Lieutenant-Colonel N. J. Dickson, D.S.O., Army Gliding Club

I WAS sent from Korea to Tokyo on duty for three days, and I felt it would be a good opportunity to find out all I could about Japanese gliding. Time was very limited, but the secretary of the Japanese Gliding Federation, Mr. Kazuo Asami, and other members of the Federation, having been warned I was coming, did everything possible to help me find out all I could. Unfortunately the flying they had arranged for me, particularly as I wished to try out their latest sailplane, had to be cancelled as I was suddenly recalled to Korea to my unit at very short notice. However, I will attempt here to give as much information as I could glean.

The Japanese produced their first glider in 1927 in Osaka—a primary. From then on interest grew and several other Primaries and secondary-type machines were produced in Tokyo and Osaka, and in Kyushu island. From 1931 the gliding movement grew rapidly, and in Kyushu Professor Hirushi Sato began a large research movement to investigate everything to do with gliding, soaring, and construction of gliders and sailplanes. He designed many aircraft, his best being a machine which was very similar to the Rhönsperber, both in design and performance. In 1935 the first Gliding Federation of Japan came into being with a membership of approximately 30 clubs. Between 1935 and the outbreak of war, gliding grew in popularity, and by 1940 there were well over 3,000 members and upwards of 40 clubs. Once the war started, the Government realised how important the movement was for training young pilots, and sponsored gliding immediately. As a result many young men became glider-minded.

After the war the Allied Forces prohibited all flying until April, 1952, so quite naturally the clubs had to go into "suspended animation". However, as soon as the Peace Treaty was ratified in 1952 interest was aroused once more and most of the old clubs were revived. There are new clubs in many places in Japan and over 100 machines are flying at week-ends in one location or another.

The emphasis has been on the Primary and secondary types, the most popular secondary being a machine of the Grunau pattern. Lately there has been a marked increase in interest in the advanced type of sailplane and there are about seven such machines flying at the moment and more



A Tondai LBS-1 under construction



A Toudai SA in Flight

being developed. However, due to the type of terrain, long-distance flying in Japan is not really practical, and only the very expert pilots even attempt such flights. The best sailplane in use at present would appear to be the Touhi Sa. Briefly, the span is 14 metres, aspect ratio 15, minimum sinking speed 0.7 m/s., gliding angle 23, and best cruising speed 62 km./h. The designer and maker of this machine, Mr. Kei-So Yo, of the Tokyo Light Plane Laboratory, took me round his workshops where I saw this machine and others under construction. Mr. Kei-So Yo is an absolute soaring fanatic and I could have spent many enjoyable days with him if time had permitted it. He is now in the process of producing a later mark of the Touhi Sa with a best gliding angle of over 30. The prototype of this machine should be flying before very long.

The only other aircraft of interest were the Koizumi Primary (single-seater) trainer, an excellent machine where dual training is not possible, and reputed to be almost fool-proof; the Toudai.LBS-1, a two-seater trainer, easy to handle and with a good performance. The tail is of the butterfly type with no central rudder. It is the most popular training machine in Japan and the equivalent of our T-21. Finally I saw another primary, the Toudai Ma, which, I would say, was in the same class as the Tutor, but with small spoilers on the upper wing surface.

I hope my account has been sufficient to show the interest taken and the development going on in Japan. I am sorry circumstances prevented me flying the machines, when I could have given more details.

Before I left Japan I was asked to attend a conference in Tokyo of most of the leading sailplane pilots and designers, where I was bombarded with questions for nearly two hours on the British methods of training. I was fortunately able to give them a reasonable idea of our system, particularly now we have adopted the dual method. It was interesting to note that many of my listeners were doubtful as to the dual method being better than solo; that they were intensely interested in auto-towing with piano wire and just did not believe it a safe or sound proposition, and that the

parachute attachment to the launching cable was quite new to them and would be tried immediately. I was also asked if I would come and be the first to be launched with piano wire and they were most surprised when I agreed. Unfortunately (or fortunately!) I was unable to take advantage of the offer.

Finally, as this article may be read in Japan, I would like to thank Mr. Kazua Asami for his help given to me so willingly —and also to Mr. Tadao Shizuru (one of the most experienced of Japanese gliding enthusiasts) and Mr. Kei-So Yo, the designer and producer of the Touhi Ma and Sa, for the time they devoted to showing me all they could. I am indeed most grateful.

INTERNATIONAL AFFAIRS

At a meeting of the C.V.S.M. (Commission for Motorless Flight) of the Fédération Aéronautique Internationale, held in Paris on June 20th-21st, a number of decisions were taken.

Sporting Code.—The following major changes were made. (The numbers before each item refer to the relative paragraph numbers in the Code: copies of the English version of this Code are available from the British Gliding Association, price 2s.).

1.1.(f) Duration records were abolished.

1.1.(g) Two new additional records were created: for speeds over triangular courses of 200 km. and 300 km.

4.4.2(b) The requirements that a 360° circle must be flown around turning points on out-and-return or triangular races was abolished. Instead, the pilot must turn over the vertical or around the turning point.

8.4 & 8.5. The margin by which a new gain of altitude or absolute altitude record must exceed the previous record has been reduced from five per cent to three per cent.

Annex A.—World Gliding Championships. A number of further steps were taken along the line of further definition of the framework of a standard marking system.

Art. 2.5.6, laying down that, if there are five or more days' flying in a Championship, each pilot shall cancel his worst day's marks, was deleted.

Next World Championships.—France's offer to hold the 1956 World Championships was confirmed; definite decisions as to place date, etc., will, it is hoped, be promulgated by October 1st.

They desire to limit the entry to 50 aircraft, so invitations will be for each nation to enter two single-seaters and one two-seater. If this does not produce a full entry, they might later extend invitations for a further aircraft per nation. As, however, Czechoslovakia and other Eastern European countries seem very likely to participate in 1956, this is clearly an unlikely possibility.

Restricted Class.—Being very anxious to reduce the cost of competing in the World Championships, the C.V.S.M. has asked O.S.T.I.V. to prepare a specification of a cheap competition sailplane with minimum instrumentation, with the eventual aim of having a new restricted class of single-seaters. (NOTE.—This is *not* a proposal for a one-type contest).

Government Restrictions.—In view of the many complaints from various countries of onerous and unnecessary restrictions placed on gliding, the C.V.S.M. recorded their view that no governmental restrictions of any kind should be placed on our sport, except those necessary for the protection of Third Parties. This would merely place it on a par with all other sports.

Many delegates expressed admiration and envy for the fact that in Great Britain only we have almost achieved this aim, without any ill results—in fact, quite the reverse, as our flourishing movement shows.

Two Gliding Stories from Switzerland

DURING the 1950 World Gliding Championships held at Oerebro in Sweden, "Pirat" Gehriger of the Swiss team landed near a remote village. A yokel approached and addressed him, not in Swedish, English, French or German, but in a very local Swiss Bernese dialect! It transpired that this man's hobby was the Bernese dialect.

Moral: A little learning may be very useful.

The retrieves during the Jugoslav National Contests in 1953 were by aerotow. Flying a borrowed Weihe on the last day, Gehriger was on tow during the retrieve when two other tug-glider combinations flew up alongside and were flying in formation the last 100 miles back to base. Ann and Lorne Welch were in one of these. They would arrive in good time for the grand farewell party. Gehriger lit a cigarette and threw the match out of the window—he thought. Shortly afterwards the cockpit began to fill with smoke and some research revealed that the feather cushion on which Gehriger was sitting was on fire. The smell was appalling and the smoke thick, but feathers are difficult to extinguish. With the stick between his knees, Gehriger tried to crush the flames by hand, using a supply of dried fruit left over from lunch to smother the smouldering feathers.

In the meantime the evolutions of the centre glider in the sextet of aircraft were remarkable, but the other glider pilots saw no signs of the fire. Gehriger realised that the sensible course was to release and land—and miss the party. He decided to take a chance. Nearer home the smoke began again—this time from somewhere further down or behind. If the bottom of the fuselage were on fire the metal stick should be getting hot. Gehriger's hands were, however, too burnt to be able to detect any warmth. The seat of the new fire soon revealed itself when Gehriger's parachute straps suddenly pulled away, smouldering.

Before anything more serious happened the base was in sight and the gliders pulled off. It was early evening and the other two circled lazily, but Gehriger's Weihe—brakes out—went down steeply to land. The parachute had been destroyed and there were two large holes burnt through the sides of the fuselage. Gehriger thinks it lucky that the other pilots didn't notice these or he might have been signalled to pull off and miss the party!

Moral: *He who smokes in bed must lie in it.*

A.H.Y.

The Kronfeld Club

THE interest in gliding and light flying has been growing steadily in recent years. Although the clubs and groups have been able to provide all facilities for their members during the week-ends, there has not been a central meeting place for the young pilots in London.

With this in mind, the British Gliding Association and the Poplar Flying Association have encouraged the formation of a club by enthusiasts.

The aim of the Club is to provide a Centre where members of the various organisations can meet to exchange ideas on the different aspects of their sports. The Club will also provide facilities for those potentially interested in gliding and ultra-light flying. It will be non-profit-making, with the subscription kept as low as possible, and will be run by the members.

The Club premises, which are located at 74 Eccleston Square, S.W.1., just behind Victoria Station, consist of three large rooms and usual offices, and were formerly a basement flat.

In recognition of the great work done for the gliding and flying movement by the late Robert Kronfeld, his widow has kindly consented to the Club being called the Kronfeld Club.

Before the Club can be opened, the target date being September 30th, a considerable amount of repair and decoration will be needed. The work has already started and will progress steadily during the summer after business hours.

The cost of the materials needed for the repairs and decoration has already been promised by several of the prospective members, but the main problem confronting the Organising Committee is how to raise the £400 required to furnish the Club. Anyone interested in the Club or who can offer help should write to the Secretary, Hugo Trotter, D.F.C., 56, Victoria Street, S.W.1. (Tel. VIC 6056).

The French Nationals at St. Yan

by Geoffrey Stephenson

SAINT Yan is the name of a small French village situated approximately half-way between Nevers and Lyons. Until recently it had seen no gliding, but it is known affectionately to French aeroplane pilots for its famous school of aerobatics. It is here that the genuine pre-war, low-speed, low-altitude, negative-*g* aerobatics are incessantly practised.

It is at St. Yan that the French intend to hold the World Championships next year, and it is for this reason that they held their National Championships there this summer. The Nationals were extended to include foreign visitors so as to form a dress rehearsal for the Internationals next year, and so it was in the role of a well-treated foreign guinea-pig that I was privileged to attend.

The competition was, for practical purposes, run as one event with 33 competitors. For marking purposes, however, it was run as two distinct groups, one for the 23 French Championship pilots and one for all comers.

All the French pilots who were eligible for the Championships flew Air 100's, and two who were not eligible because they were flying Breguet 901's were, for marking purposes, treated as foreign visitors.

The aircraft, in addition to the Air 100's, are listed below in finishing order, together with the pilots and their nationality.

Aircraft	*Pilot*	*Nationality*
HKS-1	Frowein	Germany
Breguet 901	Lepanse	France
Breguet 901	Landi	France
W.L.M.	Dubs	Switzerland
Olympia IV	Stephenson	Gt. Britain
Sky	Van Norden	Holland
Sohaj	Svinka	Czechoslov.
Meise (Spec.)	Federsen	Denmark
Sohaj	De Kerchove	Belgium

Launching was by aero-tow, which was done by the aerobatic pilots, who flew Stampes. During competition hours they were constrained to fly the right way up, and in this position they acted as the most efficient and courteous tug pilots imaginable. The rate of launching was 33 in 24 minutes.

The airfield is probably ideal for gliding, being a very large grass field on sandy soil. It is on the edge of the sandy, fast-flowing River Loire. The terrain is fairly flat around St. Yan, which is itself 800 ft. a.s.l. As you fly east or south the ground rises so as sometimes to reduce one's ground clearance alarmingly. Some of the villages amongst the hills have a slight Spanish appearance, but the greenness and intense cultivation of the surrounding fields spoils the illusion.

Towards the west the ground is flatter and lower and resembles a very uniform patchwork of fields and woods with few useful landmarks except the rivers and sometimes the railways.

Since competitions are always held before the corn is cut, there was the usual very restricted choice of landing fields. The usable fields struck me as being a little on the small side, but since Frowein managed to land his HKS each time without mishap, I certainly cannot complain. However, there were several occasions when I was very glad that the Olympia IV has admirable airbrakes.

The tasks were the usual ones—races and free distances. In addition to these they had distance along a straight line, with a penalty for deviating from the line. One was allowed to land up to four kilometers from the line, but after that the deviation distance was subtracted from the distance along the line. This meant that an error of 45 degrees in direction flown produced no marks. I think this task is a very good one, particularly in a strong cross wind when it becomes an exciting test of skill. It also simplifies retrieving enormously by reducing the distance travelled and by reducing the area of search.

The marking system was based on simple proportionality to distance or speed, and all tasks were weighted equally in their contribution to the grand total. I will not deal here with the finer points of the system, but it is sufficient to say that it worked well and should not be disregarded by future reformers.

The weather behaved in a slightly irritating way during the competition. On



The Routine Distraction From Rigging

the day before the competition started I had a taste of French conditions at their best. It was my birthday and I cannot think of a more joyful way of spending it.

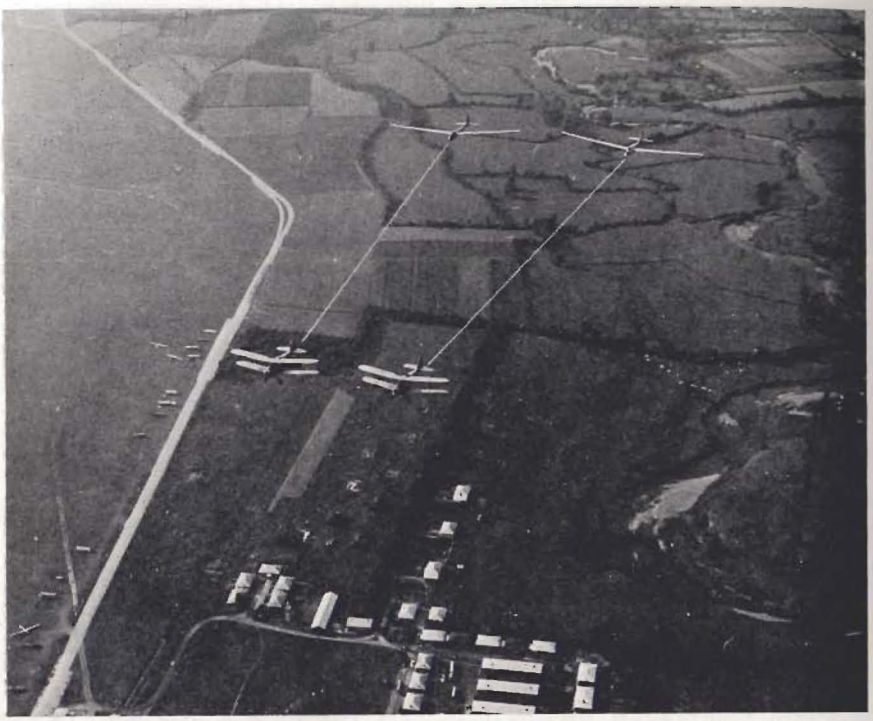
The weather on June 28th, the first task day, was what I called good, but the French pilots said it was not good. The task was a 200-km. triangular race, and 12 of us completed it. There were four pilots entitled to claim national records, since the F.A.I. had obligingly agreed to recognise the 200-km. triangle just before the start of the meeting. Incidentally, my speed was 27.4 m.p.h. to slide-rule accuracy.

The second day was to have been a race to Avignon, 300 km. away, but the weather was poor and we all landed about 100 km. away, except Pierre, who went 200 km. This put Pierre back in the running, for he had not done well on the first day.

The third day was a rest day and the conditions looked perfect! This was the first mistake of the organisers, who later were terribly apologetic. They assumed that the weather was very likely to be good at this time of the year, and decided not to hot up the pace too early in the contest. The weather played an opposing game and deteriorated just when good conditions were most needed.

On the fourth day conditions were fairly good and the task was free distance. The majority aimed north-east towards Strasbourg, because this gave the greatest distance without crossing borders and without running into cirrus. I got into trouble due to crossing high ground when I could have avoided it. This reduced my speed badly and I landed at half past five, only 230 km. away. More than half the competitors had done over 300 km. and Fonteilles in an Air-100 covered 380 km., a really remarkable performance with no help from the wind. Unfortunately, he broke his sailplane and put himself out of the contest.

The next day conditions were good, but it was declared a rest day. This was



The Two BREGUETS on tow above the camp

fortunate for Frowein, who was not seen for two days, having broken a spring of his trailer.

On the sixth day there were severe thunderstorms and the French, very wisely, have a fear of their own thunderstorms.

On the seventh and eighth days there were races which misfired because there was too much stratus.

The ninth day saw a slight improvement in the afternoon and there was a race to St. Etienne, which is 100 km. to the south. I found the whole flight a mighty struggle, and when eventually I arrived, with only 30 ft. to spare, about half the sailplanes were there already. Then they continued to arrive until all but six were there. It transpired that all those that sank back at the start and had another launch had done good time.

The tenth and last day brought good weather, but launching was delayed until after two o'clock. This was because there was to be a visit by the Air Minister, who could not arrive before then. The task for the day was distance along a 280-degree bearing, and as the wind was blowing at 20 knots from 040 degrees, it was quite a struggle to hold track. In spite of this, Frowein did 241 km. (about twice the average), thereby maintaining his lead over Lepanse and Landi, who were the two Breguet pilots.

The winner of the French championships was Lacheny, with Pierre second. Lacheny

was fourth and Pierre sixth in the International class. I had better mention here that my position was tenth out of 33 in the International class. Concerning this I am not sufficiently impartial to comment.

Of the French hospitality I cannot speak too highly.. The organisation was carried out by hard-working, friendly people, who somehow managed to retain a sense of humour at all times.

A few things that happened are hard to explain. For instance, I failed to see why it was necessary at one time to ingratiate the spirits by doing a ritual dance round a fire in the middle of the village street, or why one French crew found it advisable to illuminate another crew's dinner table by driving into the cafe with their headlights on.

But at St. Yan, where wine and petrol flow more freely than bathwater, many strange things can happen.

International Class Results

Place	*Pilot*	*Points*
1	Frowein	4198
2	Lepanse	4111
3	Landi	3722
4	Lacheny	3452
5	Dubs	3345
6	Pierre	3306
7	Didion	3220
8	Marchand	3207
9	Gasnier	3008
10	Stephenson	2974
11	Trubert	2917
12	Van Norden	2885
13	Fevre	2881
14	Rouvière	2840
15	Svinka	2758
16	Mandard	2629
17	Roman	2621
17	Perrin	2621
19	Cadet	2592
20	Barbera	2550
21	Charpentier	2546
22	Rousselet	2358
23	Perrier	2327
24	Brocart	2233
25	Biagi	2033
26	Fonteilles	1992
27	Federsen	1923
28	Costa	1614
29	Borgé	1279
30	De Kerchove	1129
31	Branswick	669
32	Favier	163
33	Abeille	

Correspondence

Sir,

On looking at the glider trailer built by Frank Foster for his Skylark II, it becomes apparent that too little thought has gone into the design and construction of trailers hitherto.

Cross-country flying becomes expensive merely because we insist on heavy trailers which necessitate large and powerful motor-cars.

Would you, through your columns, sponsor a competition for a trailer capable of carrying, say, an Olympia, Skylarks II and III, which can be built with ease and at moderate cost by both a commercial firm and enthusiastic though impoverished glider pilots. The prime essential is that it must be light enough for a 10 h.p. car and balanced so that our long-suffering wives can lift the tow-bar single-handed.

WALTER KAHN.

[Having obtained from a reader the provisional offer of a cash prize, we can say that the competition is on. Details will appear later.—ED.]

Training of Left-handed Pupils

Dear Sir,

I am frequently coming across left-handed glider pilots who have been allowed, if not encouraged, to learn to fly with the left hand in their training. I should like to draw the attention of gliding instructors to the significance of left-handedness, since it causes difficulty in flying any but the most elementary and old-fashioned type of glider.

Once trained to fly with one hand, it takes many flights and sometimes even months of flying for a comparatively inexperienced pilot to gain confidence and fly well with the other hand, while at the same time manipulating the air-brakes. In many cases they attempt to fly left-handedly in any difficult situation by changing hands at the last minute after closing the air-brakes—often with dangerous result.

Since all modern gliders have the air-brake lever on the left and the brakes are required for landings, it is essential that the glider is flown with the right hand on the stick *all* the time when the brakes may be required.

I, personally, insist that left-handed pupils fly from the first flight with their right hand, and tell them that unless they can do so, they will never learn to glide. It is surprising how well they manage after that, and I have never had a failure.

This seems to be the best way to tackle the problem, and I feel that instructors everywhere should be on their guard against this problem and point out the need and the reasons for using the right hand from the very beginning.

At Lasham we put our pupils in the right-hand seat so that both the release knob and spoiler lever must be operated by the pupil's left hand as in the Prefect or Olympia.

Perhaps other instructors have very different views on this matter, or on other points of instructional technique, which would make interesting reading to others.

Lasham Gliding Centre,
Nr. Alton, Hants. DEREK PIGGOTT

Book Review

The Soaring Pilot: by ANN & LORNE WELCH and F. G. IRVING. Published by John Murray, Albemarle St., London, 1955. Price 15s.

EVERY glider pilot whose ambitions include gaining a Silver, Gold or Diamond C, or who in any way feels there may be others more gifted than he in soaring wizardry, should buy this book and study it until he has thoroughly mastered everything in it, for it is, without a doubt, the most authoritative text book on advanced soaring techniques yet to be published.

The main purpose of the book can be briefly stated as unmasking a lot of what has been called the "art" of soaring, and defining clearly the scientific and logical basis of successful soaring. This it does by first of all discussing very fully the why's and wherefore's of sailplane design, and the mathematical formulae concerned in performance calculations, though there is not a surfeit of maths which would prove tedious to those whose minds are not conditioned to receive it. The testing methods currently in use to measure performance and assess suitability for soaring are also competently described.

Having thus carefully studied the machine and its characteristics, logical and excellent advice is given on how best to use it. Chapters in this section discuss thermal soaring techniques, navigation, parachutes, cross-country soaring, cloud-flying, hill and wave soaring, mountain soaring, two-crew soaring and championship flying.

All who have come into contact with them will agree that better authors for this book could not have been found, for they have all proved their competency for many years as pilots and instructors. This has naturally resulted in a first-class book which is worth much more than the 15s. which is all it costs. We confidently recommend it to all our readers.

J. C. NEILAN.

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Flying the Skylark III

by Tony Deane-Drummond

THE SOARING PILOT says on page 200 that "a contest is not the time to try out new aircraft . . ." I quite agree, but what glider pilot could resist the offer of flying Slingsby's latest, even if it only arrived eight days before the Championships started?

A lot had to be done. A minimum amount of test flying had to be carried out so that a "permit to fly" could be issued. TV dives, spinning and general handling were all completed with excellent results but took up the whole week-end. Installation of instruments, special light-weight oxygen provided by Normalair and some personal panaceas used up three more days and trailer fittings the rest of the week.

The Skylark III handles well with a remarkably good rate of roll for so large a span. The stall is very gentle and occurs at a slightly slower airspeed than the Skylark II, whilst its penetration at higher speeds appears to be better—how much it is very difficult to say. It is easy to fly and can be landed in the smallest of claptraps—as I found out on July 28th, when thermals ran out between Exeter and Plymouth.

All gliders are a compromise. Some are comparatively cheap, some go fast and some go slowly. The ideal is to have all three, and the latest Skylark is Slingsby's idea of what can be done for the top performance class. I am fairly certain that the future will show that once again he has hit the nail on the head.

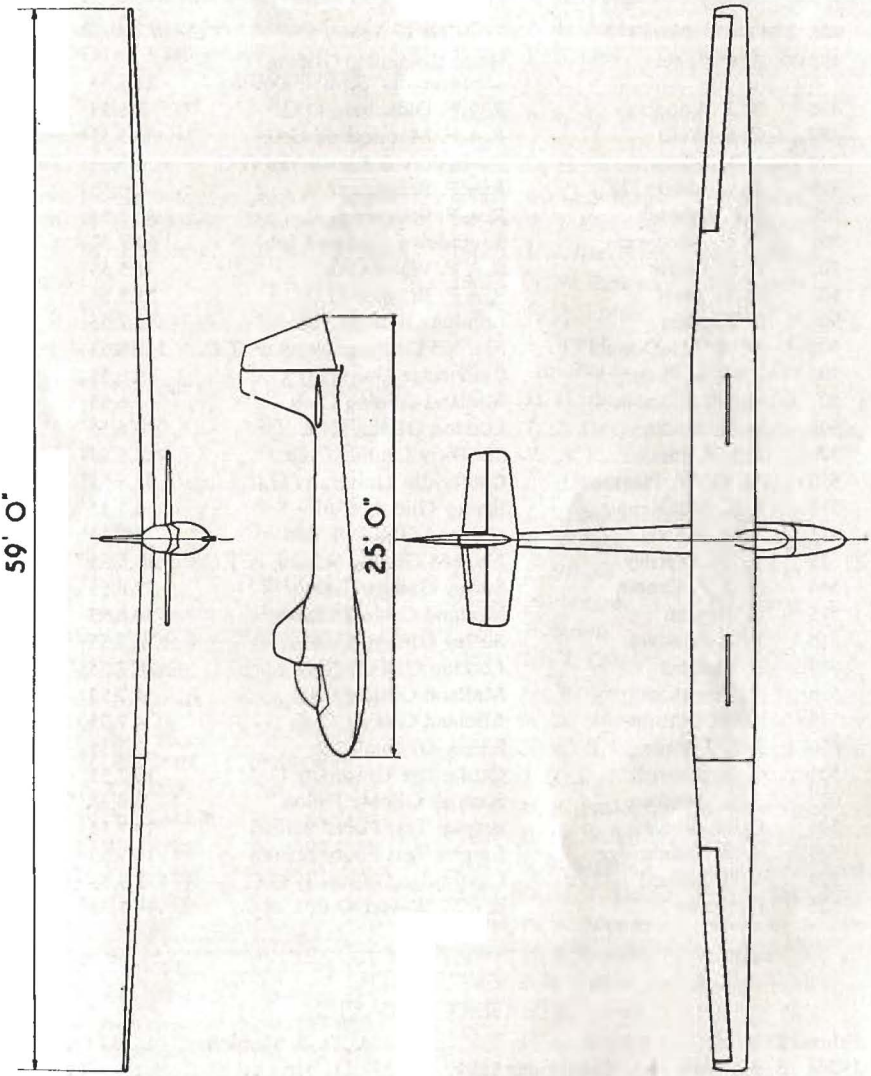
Every long-distance flight begins or ends in weak small thermals, and it must be possible to make use of them. The task for Saturday, July 29th, was a triangular race of about 60 miles, but the forecast was proved wrong and by midday the cumulus had spread out so that the sky was nearly 8/8 overcast when I released at 13.02. Cloudbase was only about 2,000 ft. above the ground, but by chasing from one small sunny patch to another it was possible to remain airborne. We touched down at Lasham after four hours' difficult soaring in very weak thermals, mostly in cloud. Unfortunately these hard-won points were not counted, as only two other gliders finished the course.

The next day, July 30th, was quite the reverse and provides an example of soaring under nearly ideal conditions. The set task was an out-and-return to Newbury and back, a distance of only 33 miles. By midday text-book fair-weather cumulus had formed, spaced three-five miles apart with bases about 4-5,000 ft. Wind was about five m.p.h. and nearly at right angles to the course.

I released from aero-tow at 1,700 ft. in a good thermal at 12.55. We were quickly whisked up to cloud base at an average rate of 350 ft. per minute, which allowed an inter-thermal air-speed of 70 m.p.h. (E.A.S.). One more thermal was used to reach the turning-point, and one a mile or so on the way back was taken up to 4,000 ft. (a.s.l.), which was sufficient height for the glide back at 70 m.p.h. with 500 ft. to spare (at this airspeed the gliding angle should be 1 : 23). At the five-mile point from Lasham we still had 1,700 ft. of height, which was about 600 ft. too much. Airspeed was accordingly put up to 80 m.p.h., which my ready reckoner showed would leave me about 100 ft. to spare. It did, and gave an average speed for the out-and-return of just under 41 m.p.h.

Students of racing technique might care to note that these tactics resulted in a saving of only about 30 seconds, compared with continuing the glide at 70 m.p.h. Had the last thermal been left at 3,400 feet, nearly two minutes would have been saved, but with practically no safety margin. Average speed in this case might have been 42 m.p.h.

There is no doubt that the Skylark III is a potential winner of even International Championships. When compared with the price of foreign gliders of similar performance it is almost cheap. I have no doubt that production versions of this glider will be in the top half-dozen in France next year. Dare we hope that it will repeat the Sky's achievements in Spain in 1952?


59' 0"
25' 0"

Gliding Certificates

SILVER C

No.	*Name*	*Club or School*	*Date of Completion*
495	R. C. Jones	Home Command Gliding Instructors' School, Detling	23.5.55
496	B. J. Woodman	R.A.F. Oldenburg G.C.	2.6.55
497	C. S. Wells	R.A.F. Moonrakers G.C.	30.5.55
498	J. B. Jefferson	Derbyshire & Lancashire G.C.	5.6.55
499	J. A. Abbott	R.A.F. Brüggen G.C.	2.6.55
500	J. P. Fabesch	R.A.F. Brüggen G.C.	30.5.55
501	D. C. Snodgrass	Southdown Gliding Club	31.7.52
502	D. Howarth	R.A.F. Wahn C.G.	31.5.55
503	D. E. Brett	R.A.F. Brüggen G.C.	31.5.55
504	L. Poulton	London Gliding Club	2.7.55
505	D. A. MacDonald	No. 125 Gliding School, A.T.C.	12.10.52
506	J. M. L. Jaeger	Cambridge University G.C.	24.6.55
507	H. W. F. Jones	Midland Gliding Club	13.6.55
508	D. B. Spicer	London Gliding Club	26.6.55
509	J. J. B. Joss	Coventry Gliding Club	25.6.55
510	M. G. W. Plaesance	Cambridge University G.C.	22.6.55
511	J. K. MacKenzie	Surrey Gliding Club	4.7.55
512	J. M. Knotts	Midland Gliding Club	5.7.55
513	K. W. O'Riley	No. 168 Gliding School, A.T.C.	15.5.55
514	A. J. F. Cronin	Surrey Gliding Club	27.6.55
515	G. Benson	Midland Gliding Club	30.6.55
516	E. Hargreaves	Surrey Gliding Club	4.7.55
517	P. Fletcher	London Gliding Club	16.7.55
518	R. Tringham	Midland Gliding Club	4.7.55
519	M. H. Wilson	Midland Gliding Club	4.7.55
520	J. E. Torode	Surrey Gliding Club	2.7.55
521	G. A. Cornell	Cambridge University G.C.	10.7.55
522	R. L. Stephen	Scottish Gliding Union	5.6.55
523	C. M. Bruce	Empire Test Pilots' School	14.7.55
524	S. W. Bainbridge	Empire Test Pilots' School	14.7.55
525	V. S. Pollard	Cambridge University G.C.	2.7.55
526	C. Scorer	R.A.F. Wessex G.C.	19.7.55

C CERTIFICATES

February

19268	S. M. Wills	Cambridge Univ.
19287	K. O. King	Cambridge Univ.
19290	R. A. Everard	Bristol G.C.
19319	R. D. Wiffen	Oxford G.C.
18354	D. P. Timperley	No. 42 G.S.
18537	L. Henckel	Surrey G.C.

March

19322	V. S. Gibson	Windrushers
19343	F. D. Hughes	HQ Home Comd.

3638	D. G. Hawkins	London G.C.
6929	I. M. Ross	No. 7 G.S.
16855	K. W. Haynes	Coventry G.C.
17020	W. D. Barrett	Oxford G.C.
18078	Dawn V. Reynolds	Southdown
16147	J. S. Stewart	No. 64 G.S.
17674	D. L. Page	No. 142 G.S.
18202	D. Hatch	No. 183 G.S.
18518	R. Poirrier	R.A.F. Wahn
19018	K. L. Moorey	Yorkshire G.C.
19074	M. S. Holtby	R.A.F. Brüggen

April

19390	F. P. Denman	No. 166 G.S.
19391	E. Stark	Midland G.C.
19408	D. M. Spiers	Cambridge Univ.
19409	F. J. Gill	Southdown G.C.
19432	R. V. Lea	Perak F.C.
19472	P. W. J. Cunningham	No. 84 G.S.
19473	A. Tate	Newcastle G.C.
19474	N. C. Bennett	H.C.G.I.S. Detling
19488	Ivy I. Corkett	Perak F.C.
19531	W. E. Hensby	Geilenkirchen
19546	C. E. Gould	No. 89 G.S.
6866	D. A. Childs	No. 143 G.S.
10004	A. C. Luff	No. 49 G.S.
11747	D. W. Knox	Scampton
12479	A. Clayton	No. 24 G.S.
13973	W. E. Shackle	No. 166 G.S.
14469	J. W. Taylor	No. 102 G.S.
14567	R. C. Pitchell	No. 102 G.S.
14570	D. J. Wolfe	No. 105 G.S.
15877	G. D. Woodford	Oxford G.C.
15952	R. N. Gregg	Coventry G.C.
16131	S. R. Gregg	Coventry G.C.
16300	B. Spires	No. 123 G.S.
16858	G. S. Stiles	No. 102 G.S.
17510	T. L. Hughes	Bristol G.C.
17594	Valerie P. Whitney	St. Athan
17629	F. L. Rivett	No. 143 G.S.
19363	B. A. Knight	No. 87 G.S.
19381	G. R. Roberts	Fassberg
19382	A. R. Tapp	Cambridge Univ.
2565	A. F. Becker	Fenland G.C.
11385	F. E. Ord	Moonrakers
11444	H. A. S. Stewart	No. 104 G.S.
19624	A. H. G. St. Pierre	Cambridge Univ.
19625	D. H. Ellis	Oldenburg
19629	M. C. Jackson	Cambridge Univ.
19630	R. J. Marshall	Southdown
19665	J. S. Blackburn	No. 130 G.S.
19673	A. W. Picking	Wildenrath
19675	R. A. Powls	Cambridge Univ.
19711	J. Brown	Wessex G.C.
19714	Ann Burns	Surrey G.C.
19715	D. O. Burns	Surrey G.C.
19725	J. D. D. Gray	Cambridge Univ.
19732	R. A. L. Arkell	R.A.F. Sylt
19740	C. B. O'Hare	Gütersloh
19749	J. K. MacKenzie	Surrey G.C.
19766	R. Wilkin	Yorkshire G.C.
19771	L. White	No. 142 G.S.
19779	M. Magee	Oldenburg
392	F. Smith	London G.C.
4548	M. T. Caiger	Coll. of Aeron.
12071	G. W. Davies	No. 68 G.S.
12091	R. A. Neaves	Wildenrath
13354	M. C. S. Apps	Portsmouth Naval
13518	J. Henry	Scottish G.U.
13616	B. R. Packer	R. N. Fulmar
14020	B. G. Beckwith	No. 106 G.S.
16084	R. B. Stratton	H.C.G.I.S. Detling
16284	D. H. T. Henry	R.A.F. Detling
16444	H. A. Moore	Bristol G.C.
16800	E. A. Brawley	Scottish G.U.
17563	J. B. Vidler	R.A.F. Wahn
17656	M. E. Brown	No. 125 G.S.
17747	D. A. Benton	No. 48 G.S.
17818	A. Lynch	St. Athan
17920	C. L. H. Clayton	No. 44 G.S.
17922	D. Lapham	No. 186 G.S.
18194	F. Workman	Bielefeld

17923	H. D. Speed	No. 186 G.S.
18015	Ruth H. Abramsohn	H.C.G.I.S. Detling
18317	D. I. Burns	No. 126 G.S.
18717	G. N. Harrison	Coventry G.C.
18915	W. G. Dunn	London G.C.
18978	G. Wells	St. Athan
18982	G. Berry	Scottish G.U.
19196	P. J. S. Tanner	Fenland G.C.
19337	Elizabeth Liquorish	Coventry G.C.

May

19602	B. R. Newman	Wessex G.C.
18362	A. B. F. McVie	Scottish G.U.
18488	J. M. Holbrook	Avro G.C.
18695	P. P. Rowlande	Fassberg
18807	B. R. Perkin	No. 23 G.S.
18924	W. D. Taylor	Bristol G.C.
18965	H. Britten	Kettering
19102	T. P. Docherty	Moonrakers
19247	D. A. Wilson	Moonrakers
19294	A. L. Samuels	Coll. of Aeron.
19327	J. I. Croft	Coventry G.C.
19580	D. A. Miller	No. 104 G.S.
19656	J. H. Conant	Fenland G.C.

Badges corresponding to the gliding certificates are:—"A", one white gull on dark blue background; "B", two gulls; "C", three gulls; "Silver C" (shown above), three gulls surrounded by silver wreath; "Gold C", the same with gold wreath. Diamonds are added to the Gold C badge at the centre of each gull.

Glassfibre and Polyester Resin Repairs

BY SLINGSBY SAILPLANES LTD.

Now that some 18 Skylarks have been manufactured with various components made in Glassfibre/Polyester resin, it is thought that a short article describing the repairing of the mouldings and of the materials would be useful.

The materials used in this new moulding technique are Polyester resin, Accelerator and a Catalyst which when used together in correct proportions present a resin which is capable of impregnating glasscloth glass-mat or glass woven roving by brush and setting at room temperature to give a laminated structure of extraordinary tensile, compression and impact strength.

Whilst with normal use there is little likelihood of damage to any of the mouldings on the Skylark it may happen that some damage can occur through accidents.

From experience on repairs to aircraft damaged through flying accidents most damage has been local, e.g., indentions in the nose cap, scrubbing on the wing tip fairings etc., which in most cases only removed the paint and slightly broke down the resin face of the moudlings. Continuous

abrasive action on resin/glass mouldings can do more damage than any impact load.

There are repair kits available from Messrs. Slingsby Sailplanes which consist of a quantity of polyester resin, a small bottle each of catalyst and accelerator and a supply of glass in the form of chopped strand mat, woven roving and glasscloth.

In effecting a repair the area to be treated must be cleared of paint and any wax polish that may be present. Sandpaper or file the area and then brush on two or three times a brush full of acetone. This will temporarily soften the face of the mouldings in readiness for the application of the patch.

The action of the acetone will only be active for about 15-20 mins. in which time the whole repair must be carried out.

The correct mixing of the resin, catalyst and accelerator is important and must be executed with care.

The formula for mixing the resin for cold curing is as follows:—

	Parts by weight
Resin	100
Catalyst	4
Accelerator	0.5-4.0

The catalyst should be dissolved thoroughly in the resin, and shortly before use the accelerator can be added and intimately mixed with the resin. The accelerator is of an oily nature so be sure to disperse it thoroughly into the resin.

Temperature is an important factor in resulting setting times, so judge your accelerator content from the following table.

Accelerator on 100 parts catalysed resin	0.5	1.0	2.0	3.0	4.0
Setting time in minutes at 20° C.	180	120	80	60	40

With your resin mixed ready for use, brush onto the area to be repaired a quantity of resin, over this lay on your selected glass medium, i.e., chopped strand mat, woven roving or glasscloth and thoroughly saturate. Build up as required.

It is thought that in most cases where no real fracture has occurred the use of the chopped strand mat will be the likely patch to use. After the resin has set the repairer will be able to file or sandpaper away the surplus material from the patch down to the correct profile. In order to prolong the life of your brush, it must be washed out immediately after use in acetone.

Where a hole has been made through the glassfibre moulding it will be necessary to have a backing piece to support the patch until it has set. Where the profile of the repair is of single or double curvature, a piece of aluminium faced with cellulose tape or cellophane can be shaped and strapped to the back face of the moulding to act as the support. It is advantageous to "V" the edges of the hole so that the patch will obtain a grip on the moulding from both sides. The repair procedure is the same as that for the surface patch.

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Club & Association News

Surrey. Imperial College and Army

As this issue contains a certain amount on the 1955 Nationals, there is little need to mention them here, except to remark that the aftermath brought us into contact with the habits of the untidy English, for when 60 of us solemnly paraded across the aerodrome in search of litter, we found plenty of it—still, we also found the tractor's starting handle, missing for months!

Our best day recently (talking vertically) was Bastille Day, when eight people from Lasham exceeded 10,000 feet; the C.F.I. as befits his rank, went highest, Stuart Morrison and "Sandy" Sanders in the Eagle reached 18,000 (two two-seater records), Chris Wills 15,000, Jack Karran 13,000 (twice), Aylett Moore 10,000 and two E.T.P.S'ians got to 15,000, while completing their respective five hours. Another high flight was Tony Deane-Drummond's 16,000 on the way to Exeter on August 12th.

We believe—for we keep no official record—that our local duration record was recently beaten. Roger Forse, a Swedish visitor, stayed up for over seven hours on his first Skylark circuit. The same day Gordon Gray did his five hours, also on thermals. Another Silver C leg was Hugh Mettam's first cross-country of 92 miles to Lympne.

All the male members of the Petrel (ex-Druid, Kite I) syndicate have gained their Silver C's. They have set the Club a real example of initiative and enterprise, and if prospective purchasers think that private ownership necessarily entails a Kemsley loan and a Skylark, they would do well to get the advice of these characters. As well as this, they are amongst the hardest of the Club's workers.

By the time that this is printed, Frank Irving, the Imperial College expedition and their Skylark should have returned from Yugoslavia. They intend to spend about three weeks there, visiting various Continental clubs on the way. With the Comps over, we also hope to run more expeditions to other sites in this country and, looking in the future, there is tentative talk of one to the Lake District next Easter, with an earlier reconnaisence at Christmas. If any reader has flown there or has knowledge of the local claptrappery, all information would be most welcome.

On the non-flying side we offer our congratulations to Lorne and Ann Welch, and to Tony and Evie Deane-Drummond on the birth of daughters. Other recent fathers include David Ince, Aylett Moore, Paul Blanchard and Peter Helson.

To end on a note of warning: our Christmas Party this year will be held on December 17th.

H.T.

Coventry

We have continued to make steady progress, and are at the moment busily engaged on a fortnight's course, the first one we have organised for the benefit of non-members.

June 5th was at first sight a fine soaring day: George Thompson set off in the Club Olympia to have a shot at Gold distance, but unfortunately the lift proved unreliable and he was forced to land just beyond Derby. Meanwhile, John Graham had made his Silver C height in the Viking and handed over to Michael Hunt, who also made Silver C height and then decided to have a shot at the distance, but undershot by a few miles. At the same time Dr. Gregg, flying his Olympia, made his Silver C height, starting at about 300 feet; also an unsuccessful attempt at his distance leg, landing at an airfield near Nuneaton now used for testing motor cars. The motoring authorities using the aerodrome have since raised Heaven and Earth to impress on us and all the world that such a "dangerous" situation shall not arise again.

June 25th proved to be an excellent soaring day, but unfortunately both the T-21 and Tutor were undergoing C. of A. Jimmy Joss, who needed only his five hours for Silver C, won the race for the Olympia and hogged it for six hours, taking it down to Dunstable in order to vary the monotony. He thus became our first pilot, trained from ab-initio in this Club, to win his Silver C.

On July 10th George Thompson paid a flying visit to the Long Mynd in the Viking. Unfortunately he didn't quite make the

Club's landing field, and those who went to retrieve him came back with gruesome stories of towing the trailer about on 45-degree hillsides.

Our first out-and-return was flown by Vic Carr who, on the 17th, took the Olympia to Edgehill and back, going via Rugby, a total distance of 64 miles.

On July 23rd Peter Folkes made his Silver C height and distance by following the groove down to Dunstable—or is it perhaps the Olympia which knows its own way back to its old stamping ground? This was its third visit to Dunstable since we collected it from there earlier this year.

On July 30th Michael Hunt, Club Secretary, flew down to visit the Oxford Club at Kidlington, thereby gaining his Silver C distance leg and also a prize of five gns. which had been offered by several members of the Coventry Club for the first flight between the two clubs. This made a total of three different gliding clubs visited by us during July.

The day after this, John Quick, our hard-working Transport Officer, gained his Silver C distance leg with a cross-country to a mysterious aerodrome, not marked on any map, somewhere near Swindon. The local equivalent of a control officer there first excitedly asked him what had gone wrong, and on hearing that, on the contrary, everything was all right, asked him when he would be taking off again!

The Club, still working with one single-drum winch, passed the 3,000 launch mark several weeks ago. The average time per flight, worked out over the year so far, is ten minutes. The two-drum winch is now nearly finished and should make a vast improvement in the launching rate, enabling us to open the Club to new members again, a temporary waiting list having been introduced in view of the overcrowding on the two-seater.

At the time of writing, our total soaring awards gained this year are 17 C and 18 Silver C legs; of the latter, 11 are for altitude, five for distance and two for duration (in thermals). This almost startling improvement on last year's score of only one C is due almost entirely to the enlargement of the Club's fleet of aircraft. The Tutor has been almost entirely responsible for our C badges and the Viking and Olympia have together supplied the Silver C legs.

M. STATHER HUNT.

Newcastle

THE daily round continues as usual at Usworth with the T-21 and Tutor still doing circuits and an occasional thermal flight to relieve the monotony. Launches have been much increased, however, by Wednesday evening flying during the long summer evenings—from 320 in 1954 to 459 in 1955 for the June-August period. We are considering converting our winch to operate two drums to cater for the increased flying membership, which now stands at 60.

While waiting for the Hutton Moor site, we are acquiring mobile equipment which can be used at Usworth as well as the soaring site—a balloon winch modified for solid-wire launching and mounted on a Bedford Truck. an Estate car for trailer towing, and a sailplane of type yet to be decided.

It is proposed to organise a series of "Gypsy" meetings for testing various soaring sites and providing soaring facilities for advanced pilots. These events will be open to non-members under special conditions, and camping and cooking equipment will be hired as required. The charge to members will be the sharing of the costs.

To return to Usworth: there have been five B certificates gained in the last month, and one C gained by Harry Oxman on August 1st. There have been no outstanding flights at Usworth, but Ian Paul and Dr. L. G. Kiloh took their Kite I to the Long Mynd and did 13½ hours soaring between them.

Ian Paul reports the existence of a curious wave at the Mynd which appears to rest over the slope instead of being out over the valley, and the Kite I stayed in it for 2½ hours. The other 6½ hours soaring was done in slope and thermal lift with an involuntary ascent into cloud and an attempt at Silver C height.

We are very sorry to record that Mr. S. C. O'Grady, who is well known in the gliding world, has suffered the loss of his wife after a long illness, and feel sure that his many friends will join with the Club in offering their sympathy.

After seven years as Magazine Secretary, Mrs. Driver has asked to be relieved of this duty, which has now been taken over by Mrs. Pratt.. We are most grateful to Mrs. Driver for the assistance she has given us in the past.

L.A.C.

Scottish

THIS year the Scottish Gliding Union celebrates its 21st birthday, and to mark the occasion a dinner was held in the Bridgend Hotel on July 29th. Nearly eighty members and friends were present, and among the guests of honour were many founder members, including the Hon. Alan Boyle, the Club's first president. Mr. Boyle, who learned to fly on an Avis in 1912 and holds aviator's certificate No. 13, did a tremendous amount for the Club in the old days, and it was a very real pleasure and honour to have him back with us. Johnny Gardiner, who was responsible for the amalgamation of the small groups in Scotland to form the S.G.U. in 1934, was also present, and has atoned for his long absence from his home ground by staying with us for a month.

Despite an unremarkable winter and a rather tame spring, we have made the year of our majority memorable by logging a record total of flying hours. In 75 flying days this year, on 30 of which soaring took place, we have recorded 220 hours' flying. This compares with a total for 1954 of 192 hours, our previous best. Record launching rates have also been achieved. In July 1,313 launches were carried out; on the 30th there were 130 launches.

A fortnight after the Krajanek returned from its winter-long C. of A., Bob Porteous took it 41 miles in a flight of three hours, without maps, to gain his Silver C distance leg. On the same day Bob Stephen did 34 miles in the Olympia to complete his Silver 'C'. Porteous obtained his final leg on August 1st with a 4,400-ft. climb in the Krajanek, and later in the day John Paterson, in the same machine, gained his height leg during a cold-front cross-country to Kincardine (20 miles). Hamish Reid reached 4,200 ft. in the Tutor, without a barograph.

On August 7th Andrew Thorburn attempted to cross the border, but failed by seven miles, coming down at Kelso. His straight-line distance was 60 miles, total flying distance 96. The flight lasted 3½ hours. Maurice Berry, on the same day, ground out a weary five-hour leg on Benarty, a rather small slope, but the nearest north-facing slope to the airfield; this is only the second time this slope has been used. The last time was in 1948, when a visiting pilot soared it in the late Jack Rice's Olympia.

By comparison, the Club's annual Holiday Week was unremarkable, although history was made when six machines were in the air at once. Charlie Ross kept going after the rest had stopped, to gain a very fine C with a flight of one hr. 19 mins. There was only local soaring throughout the week until the last day, when M. Berry set off in the Krajanek, but changed his mind and came back, landing on Milnathort golf course, a suspiciously short walk from one of the Club's favourite hostelries.

The Courses this year have been as popular as ever. The first four have yielded seventeen A's, ten B's, and a number of new members.

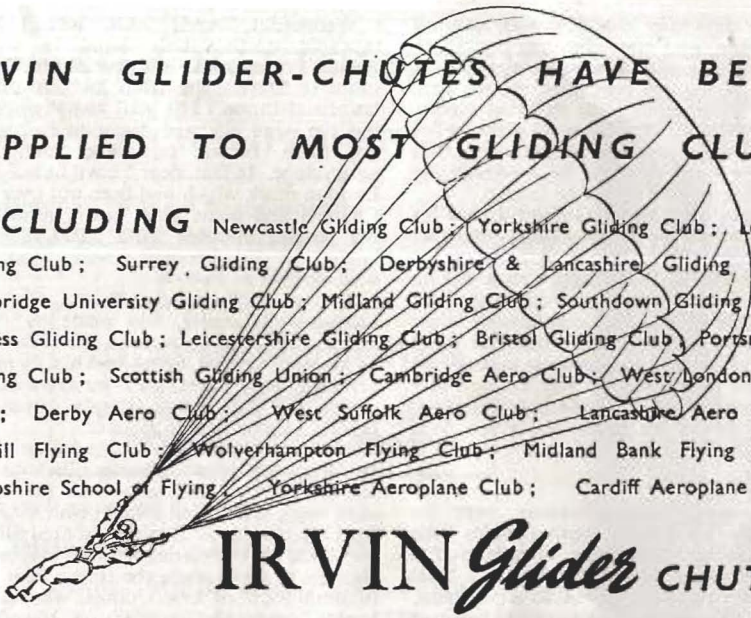
The Club's Chairman, Robert Parker, with Andrew Thorburn as navigator, recently won the Swiss Air Rally at—as the local papers were careful to point out—the age of 67. It is high time this ancient man gave up power flying—and did a bit more gliding.

Fenland R.A.F.

WE are now well on into our second year and membership is becoming more representative of the surrounding stations. By the end of the first year we had completed over 3,100 launches and 300 flying hours. Since the beginning of this year the Club has made 2,110 launches for 198 hours 25 mins. flying, and gained 15 A, 13 B, 13 C certificates and six Silver C legs, none of them duration legs.

The Club's fleet consists of a T-31B, Tutor, Gull I, and two Cadets, with a couple more Cadets in reserve. With this selection it has been possible to keep all our members interested, although a Prefect or Grunau is a badly felt need to fill the gap between Tutor and Gull.

On May 29th A. v. Becker decided after a little persuasion to have another flight in the Gull, and ended up by gaining his Silver C height and distance legs. Taking off just after 11 a.m., he climbed rapidly to 4,300 feet in a "blue" thermal, and seeing the Tutor above him transferred to its thermal. About this time the cumulus appeared and he hopped leisurely from cloud to cloud until he reached Henlow (47 miles), having topped 6,000 ft. on the way, and flown part of the distance within sight of an Olympia, presumably from Cambridge.



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A few days later Don Creswick took off after 4 p.m. and after climbing merrily to the north-west, disappeared. He eventually ran out of lift and landed at Holme Fen, near Peterborough. If he had had a map, he would have made Silver C distance, as he had flown across the 50 km. circle, but had come back again as he preferred the look of the field in which he landed.

On May 29th Eddie Godsell gained his Silver C height by climbng over 4,000 feet in the Tutor, being at one time above the Gull. Flying the T-31B solo, Crook was up for over an hour and climbed away from 450 to 4,200 feet to gain a comfortable Silver C height. This was a very creditable flight as our T-31B has no variometer in the front cockpit, and he had to rely on a rather insensitive aircraft rate-of-climb indicator. Christie gained his height leg a few days later in the Gull.

London

FIRST spring cross-countries were on March 20th, when both Charles Ellis and Geoffrey Stephenson went round a 46-mile triangle, John Furlong and Noel Anson did out-and-returns to St. Albans, Peter Fletcher reached Woburn and Norman Preston climbed 7,000 feet.

Easter brought westerly winds with two days of thermals. On Saturday, April 9th, three pilots set out for Southend (57 miles); Roy Williams reached it, John Jeffries in Scud II got there but could not find the aerodrome, and A. C. "Brandy" Hennessy got as far as Panshanger. A "task" to Kidlington (33 miles upwind) and back was attempted by G. H. Stephenson, who returned to Marsworth, six miles short, and by Frank Foster, who landed there. Philip Wills arrived from the Long Mynd, this being the first time anyone has flown to us from the Midland Club.

On Easter Monday the set task, to Benson and back, was not attempted, but Hennessy again had a try for Southend in the Club Olympia. After two hours over the hill he got a thermal to 3,500 ft. and went off. but was down to 500 ft. over Hadley Wood, where he searched for lift at this height for 15 minutes. Finally, in approaching the golf course very low, he unfortunately caught his wing-tip in a tree and dived in; he was taken unconscious to hospital where he died later. Thus did the Club suffer the grievous loss of one of its most valued and popular members.

Wednesday, April 14th, brought an unstable north-easterly wind in which Frank Foster took his new Skylark 138 miles to Devonshire from an aero-towed launch at Luton. His goal was Plymouth, but the wind changed direction before he got there, having circulated round an anticyclone. In fact, near Yeovil he ran into London murk which had been out over the Channel and come back again, rendering the ground invisible from 5,000 ft. He landed at Dunkerswell, near Honiton. Bridson flew to Benson.

A goal flight to the Bristol Club at Lulsgate, 100 miles, was made by Noel Anson in his Olympia on April 17th from an aero-towed start, taking two hrs. 49 mins. and using "dry" thermals as far as Swindon, where the first small clouds appeared. Dudley Hiscox flew to Booker.

On April 24th, Colin Richardson made a goal flight to Lasham, Charles Ellis took the Sky to Northampton and back (32 miles each way), and Frank Foster, who was due to give a display at Denham, soared all the way there after deviating 15 miles upwind to Henlow to while away the time. This feat is reminiscent of Eric Collins, who, some twenty years ago, was being towed to Maidenhead to give a display when the cable broke, so he soared the rest of the way and arrived on time.

During April our total flying was 410 hours—believed to be a record for a single month. About half of this was done at Easter.

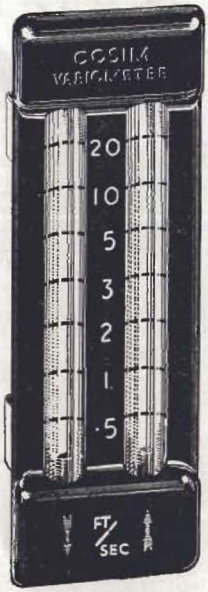
Grunau Baby was taken 45 miles to Billericay in Essex on May 7th by Ben Watson, completing his Silver C. Before starting, he lent the machine to Colin Richardson for half-an-hour to let him get his Silver C height, a feat which Colin performed, 3,280 feet up and 3,280 feet down, in 23 minutes. About this time Norman Preston made a round trip to Henley and then Amersham, 44 miles in 3¼ hours in Gull I.

Noel Anson gave Lympne as a goal on May 14th but, owing to a cross-wind, came down at Southend; otherwise he might have encountered the Channel flyers on their way out. That evening, Mr. W. O. Manning gave a most interesting lecture with slides, on the early days of aviation (pre-1914); curiously enough, most of the questions asked by his gliding audience concerned the technical details of the engines.

Next day, Geoffrey Stephenson went

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upwind to meet a cu-nim, in which he ascended to 10,000 ft.; a later, more powerful-looking front gave only feeble lift at 1,000 ft. in the rain. Frank Foster reached 6,000 ft. Peter Fletcher went 16 miles to Stevenage.

The 19th produced a flight to Hatfield in the Sky by Walter Neumark, and on the 29th Godfrey Lee landed at Henlow while trying an out-and-return.

On June 12th MacDonald flew the Grunau to Wethersfield, 45 miles, departing during an outsize thunderstorm, and on arrival he was pounced on by United States Security types who 'phoned the Club to check his *bona fides*. The storm was of considerable size and Peter Fletcher, John Currie and Geoff Nixon climbed up the side of it at 1,000 feet per minute, flying straight ahead with no circling.

The 25th produced Joss from Leicester Club in their Olympia after a nice flight down, and on the 26th David Spicer took the Grunau 45 miles to Braintree to complete his Silver C, while Anson landed at Potton; Fletcher, Arbon, Ramsden, Hiscox and Preston all managed from one to two hours above 3,000 ft. Charles Ellis flew almost round a 100 kilometre triangle in the Sky.

On July 2nd Fairman did his five hours and Poulten went 62 miles to Colchester in Blue-O to complete his Silver C. John Currie took his Meise to Elstree for a display of aerobatics. The 10th brought an A.T.C. Sedbergh from Cambridge, flown solo with ballast by Cornell, who completed his Silver C; Noel Anson set off to the west in his Olympia but had to land at Thame. On the 11th Pringle flew in from Cambridge in the Skylark; on the 16th Fletcher took the Gull to Oakington, 39 miles, to complete a Silver C. Next day Ron Watson flew the Gull to Booker and Langley, some 36 miles, and Alan Yates got his Olympia to 6,000 feet.

August 12th saw the departure of Frank Foster on the first 300 kilometre distance flight made from Dunstable; starting from a winch launch in his Skylark II at 12.20 to 650 ft., he got to his goal at Tideford, just beyond Plymouth, at 4.30 p.m. D. Brideson made Silver C distance to Stapleford Tawney on the 16th.

At the Annual General Meeting on April 30th the Dent Cup for the most meritorious flight was awarded to Alan Stagg, and the Derry Trophy to Peter Fletcher for his work for the Club. A.E.S. & P.F.

Cambridge University

At the end of the University term in June, the whole Club fleet was taken to the Long Mynd for a week's camp, which was much enjoyed, especially as we arrived just in time to find a member of another visiting club (complete with sailplane) fighting it out with a bunch of cows at the bottom; but perhaps the Club were just practising for the Comps! During this week 86 hours soaring were done, including six flights of over five hours duration—two people, Maurice Pleasance and Mike Jaeger, thus completing their Silver C. Mike Gee also gave a spirited performance in the Tutor, being 50 feet below hilltop level for 20 minutes before fighting his way back up to 400 feet and landing back on the top.

Shortly after returning to Cambridge, Ken King took the Olympia 39 miles to complete his Silver C and Vin Pollard remained aloft in the Skylark for 5½ hours over Cambridge, climbing to 7,400 feet to pass the time of day! This remarkable performance was the longest local soaring ever done here and also completed his Silver C, bringing the Club total so far this year to eight.

Other notable performances include John Pringle's climb to 13,000 feet in a cu-nim for Gold height, and Diamond goal flights by Gordon Hookings and Pip Gaskell in France, Gordon thus completing his Gold C, having got his height in New Zealand.

We were very pleased with the performance of the Prefect team at the Comps. Considering how much inferior its performance is to any other plane competing, finishing 17th out of 19 was a good show.

Altogether this has been a very successful soaring year and we have done 72 per cent more flying this year than last, so far.

In the line of extra-mural activities, the Drinking Sub-committee is flourishing and can be seen in action any Sunday lunch time at the Airport Hotel. It also put in much good work at the June camp, where a certain Cardinal Puff was guest of honour.

We are holding another camp at the end of September, thanks once again to the hospitality of the Midland Club, and in October, with the new academic year, training will start in earnest.

D.M.S.

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Salisbury (S. Rhodesia)

DAVID Ryland in his Super-Tutor recently cracked the Club duration record wide open by soaring for four hours 20 mins. over our flat site at Mt. Hampden. This was a magnificent attempt on the Silver C duration leg, both in view of his experience (he had less than 20 solo flights at the time) and the short period of daylight at this latitude.

A few weeks later, Maurice Pike, flying the Super-Tutor, had his starboard wing shortened by four feet by a stray native just after take-off by aero-tow. The native was sent home after examination and the Super-Tutor wing was taken to our Cranborne workshop after inspection. We are now making a determined effort to burn down the elephant grass and widen the grass runways.

Dave Bishop now has his own Tiger Moth. He has fitted an aero-tow hook and is in business with us.

Ken Newman called in at Mt. Hamden en route to England overland and brought with him wondrous tales from Johannesburg. The result is that Ryland, Pike, Harrold and possibly others are hoping to acquire an Olympia. It is also understood that there is a Spahlinger up for sale. Cape Town have imported the high performance Goevier two-seater.

Attempts are being made to bring the local light plane Clubs into closer co-operation with the soaring movement, and visits have been made by the Grunau to Gatooma and Marlborough (aero-tow with Dave Bishop) and the Grunau will be towed by Dave to the Gliding Club's Rally at Grand Reef around the end of September.

Pike and Ryland are trying to organise a party to visit the World Championships next year, and anyone interested in Rhodesia might like to contact them.

M.P.

Derbyshire and Lancashire

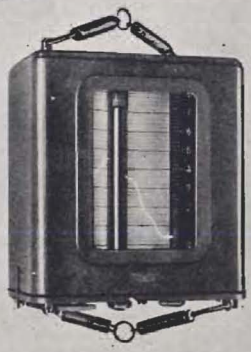
THE weather has continued kind at Camphill as well as elsewhere, with gratifying results. The ground has dried out for the first time for twelve months, and is recovering from the damage of last year. Flying figures, spectator attendances, membership figures and sailplanes have all been soaring, or, at any rate, going up.

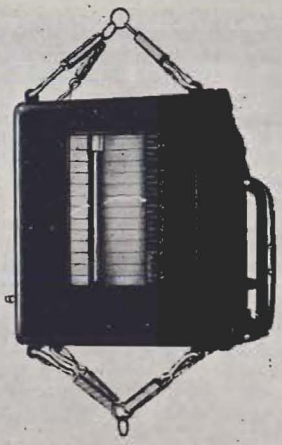
The outstanding event of the period was the flight by Bernard Thomas on Sunday, August 7th. Having declared Ferryfield as goal, he reached it (in the Sky of which he is part-owner) in four hrs. 43 mins. Taking the distance as 197 miles (our own rough and unofficial estimate), this gives an average of 41.77 m.p.h. It thus seems that, as well as getting his Gold C with one Diamond, he may also have set up a new U.K. local speed records for 200 and 300 kms. by quite substantial margins.

Other cross-country flights include a Silver C distance by Bryan Jeffefferson in a Skylark II on Sunday, June 5th, to Kippax, about 36 miles, and ditto by Ken Blake, also in the Skylark, on July 26th, to Llandegla, about 63 miles and only a few miles from W. Crease's place at Clwyd Gate, which he had hoped to reach. Both these pilots thereby completed their Silver C qualifications.

Two other flying days seem worth mentioning. On August 6th a local club record may have been set up when no fewer than seven five-hour flights were completed. Six of these were by visiting Cranwell Cadets, using only three machines; this will give some idea of how suitable a day it was for the purpose. The seventh was done in the Skylark II, which spent a happy time constantly overtaking Tutors and Prefects. Steady hill-lift was brightened up by thermal activity during the usual period, and this in turn was followed by a weak but typical "evening thermal" (wave) lasting at least until sunset.

Then on Sunday, August 14th, there was an interesting sequence of events. The wind had been light easterly all day, and it was hot and hazy. At about 3 p.m. a huge cloud, which had been building up to the east between here and Sheffield (perhaps three miles away) appeared to start influencing events on the site, and the wind went round to the west, becoming quite strong enough for hill soaring; and from the edge pilots were able to get back into the cloud, now extending over a vast area, and producing rain and thunder miles to the east of us. Stanley Armstrong did best, reaching 11,000 ft. in very rough conditions before coming out at the top of one of the "foothills" of the main cloud range. Five other pilots reached heights from 4,000 to 7,000 ft. (Ernest Martin thereby completing his Silver C.). By five p.m. the wind was again light and easterly, and no-one esle could reach the cloud. Its top must have been very high indeed.





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As for Club affairs in general, there have been so many new flying members that we have temporarily closed the list to avoid overloading the training programme; applicants are being offered associate membership with transfer to flying membership as soon as possible. This state of affairs, gratifying but embarrassing, should not last long. The eighth of the series of "Gliding Holiday" weeks, ten people at a time, is just starting; many applicants had to be turned away. The Air Training Corps are nearing the end of a series of five-week courses for relays of cadets, and for a fortnight a party of Cranwell cadets and officers camped here, also to get some hill soaring.

A.H.B.

Midland

THE Club has been presented with a standard airfield-type of anemoter with remote dials, as a memorial to our late President, Mr. C. Espin Hardwick. The bunkhouse accommodation has been doubled recently and we can now sleep 40 men and eight women, so Club members will no longer arrive at week-ends in the summer to find all beds filled with visitors.

Flying.—The period covered by this report has been very good, in that west winds have produced excellent wave and thermal soaring, while other winds yielded almost as good results. East winds, certainly as far as the Skylark was concerned, have allowed extensive soaring, both hill and thermal, on the Church Stretton side of the hill.

Cambridge Club had marked success during their March camp, particularly with west wind waves; Shepard made the best flight by climbing to 11,000 ft.

The Easter Rally was a very successful meeting and all credit is due to Williamson and Kerridge from Lasham, who brought along the T-42 and flew to such a clear victory.

The A.T.C. spent three weeks with us in May and enjoyed favourable weather most of the time.

Cross-country flying, other than during the Rally, has been much more extensive than any previous year. Machin, of Cambridge Club, flew to Usk, 58 miles, in March, and F/O Mann of the R.A.F.G.S.A. went 74 miles in a Prefect. Members completing Silver C's were: Shepard, who flew to near Camphill in the Olympia; Storey to Northampton, 86 miles, and Baslow, 72 miles; Anstey to Baginton (goal), 60 miles; and Dr. Jones to Defford (46 miles)—all in Skylark II's.

Prestwich completed his Gold C by flying to Great Yarmouth (192 miles) in his Skylark II.

At the time of writing, the Cambridge and Southdown Clubs are at the Mynd and the Club's first camp is over, having enjoyed reasonable weather and a small crop of certificates. Club camps are extremely popular again this year and were fully booked months ago.

J.H.H.

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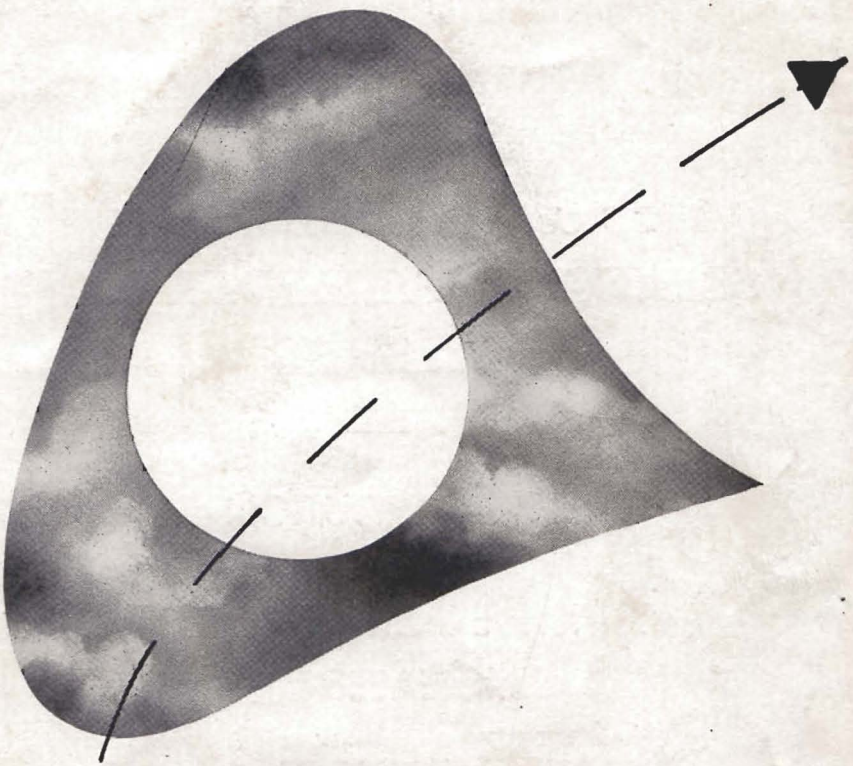
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