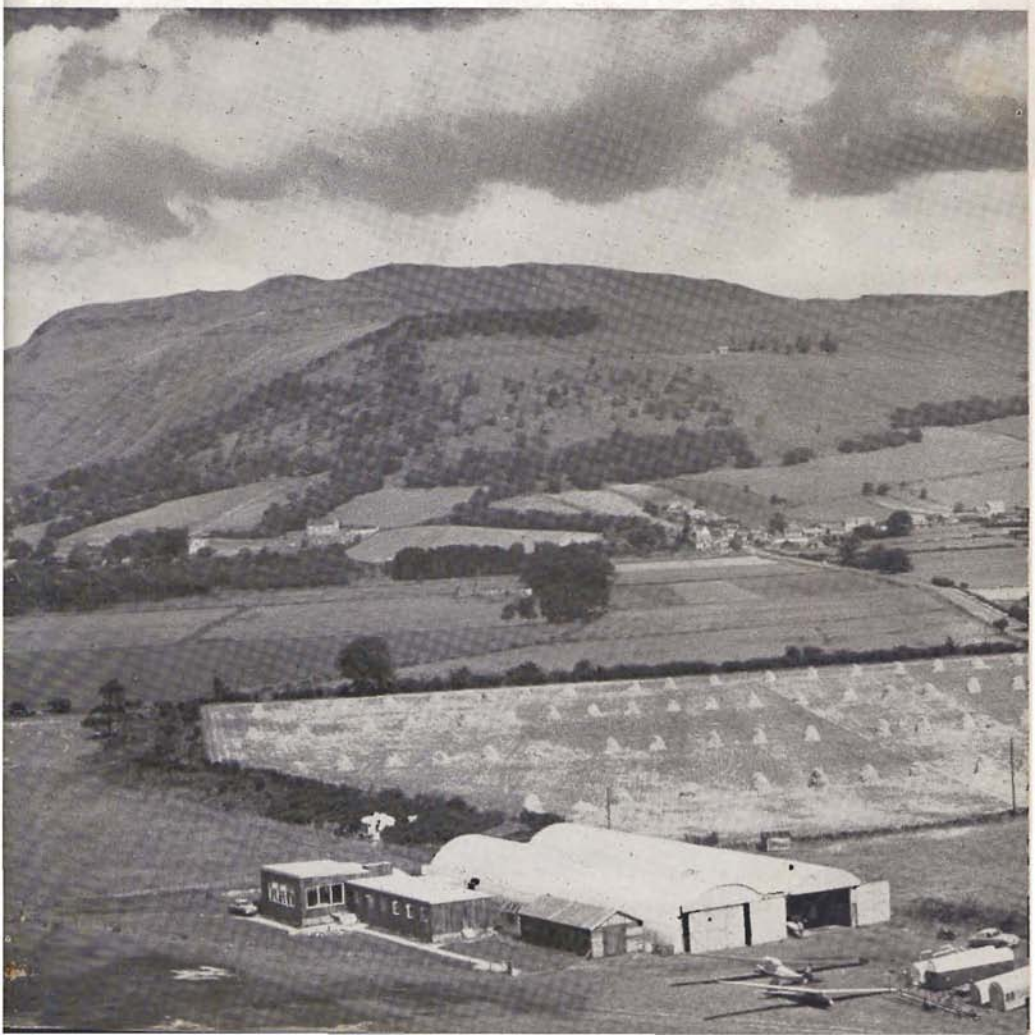
Sailplane and Gliding

3/-

October 1961



SAILPLANE AND GLIDING

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COVER PHOTOGRAPH.—Bishophill, Portmoak, Scotland, with club rooms and hangar in foreground.

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Lightning Strike

by Michael I. Gee

"Fear no more the lightning flash,
Nor the all-dreaded thunder-stone."
—Cymbeline.

IT was 15th July; I should have realised before take-off that there were more volts around than usual. When standing near my motor-car, I heard a strong buzzing noise coming from the five-foot radio aerial, and it occurred to me that this was not entirely unrelated to the black cu-nim hanging overhead. The noise stopped when the aerial was retracted but recommenced as soon as it was pulled out again—it was out again only for a moment though, since, as I remarked, I did not want my car to be melted!

About twenty minutes later, at 3.40 p.m., I was aero-towed off in "Pigs Rampant", our Skylark 3B. On tow, I noticed that from 1,000 ft. upwards the variometer was showing nearly double the normal rate of climb, and I felt sorely tempted to cast off; but, having been caught in this way too many times before, I stayed on tow until 2,000 ft. up (all heights above Lasham) when I released about ¾ mile N.N.W. of the airfield under a large and murky cloud. I found myself going up smoothly at about 3 knots, but by exploring was able to improve on this, and the lift had increased to about 8 knots soon after reaching cloud-base at 3,300 ft.

The lift continued to increase in strength and eventually both variometers were giving full-scale readings (18 knots on the Crossfell) for much of the time. The hail, which had started at about 9,000 ft., was continuous above that height, and at about 14,000 ft. the lift, which had been becoming less smooth, became moderately rough. This rapidly became worse until at about 16,000 ft. I was having to brace my feet against the side of the cockpit to prevent my legs being repeatedly thrown up against the lower edge of the instrument panel. I have been in several large clouds before, but this was certainly my roughest and gustiest so far.

It was at this time that I was reminded of this business of sitting there listening to the roar of the hail; nothing on this earth (or even just off it) could be louder, one muses. Then—suddenly—the noise *doubles* in volume!

It had become rather tricky keeping the Pig in a respectable attitude because this required frequent applications of full aileron, and this led repeatedly to the stick touching the inside of my knee where it caused a strong tingling sensation as a result of the static electricity present. Moving my knees outwards to avoid this produced shocks on the outer sides of my knees from the air-brake lever and trim lever respectively.

In fact, I was finding things difficult, but I knew that nearly everyone who gets to the top has to work for it (probably receiving shocks on the way), and as I was now in sight of a Diamond I felt that I ought to stick to it.

However, the Diamond must wait until another day because, when the indicated airspeed dropped from my target of 50 knots to below the stalling speed and then,

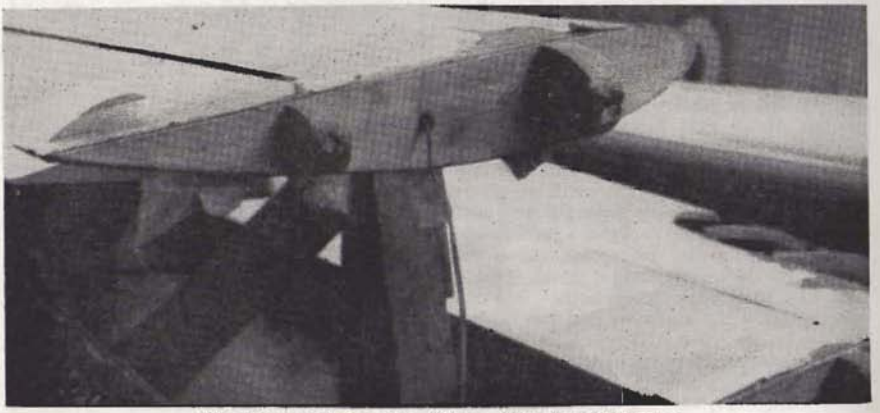
with a roar, shot up to nearly 100 (without any noticeable change of attitude), I decided that I was not really welcome there and, opening my brakes gently, straightened up and left the lift somewhere below 17,000 ft. at about 4.05 p.m.

After flying around, I went under another cloud at 4,40 p.m. at 2,300 ft. about 5 miles S.S.W. of Lasham. Lift was not strong at first but improved on reaching cloudbase. While I was flying towards it, this cloud had looked no higher than 8,000-10,000 ft., but it had appeared to be growing satisfactorily. Inside, lift at first seemed to be in fairly small areas, and only after I had lost it a couple of times did I appreciate just how tightly it was necessary to turn; this did not seem to be so important above about 8,000 ft., however. The hail, which started at about the same height as in the first cloud, was equally small in size, judging by the specimens I collected every so often through the clear-vision panel.

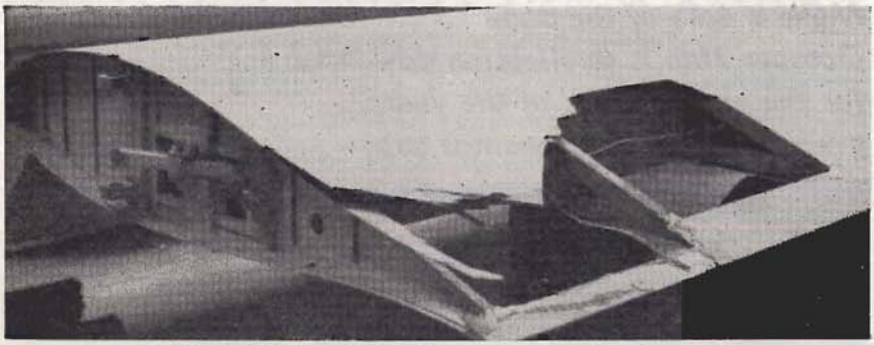
This cloud became rough above about 11,000 ft. and again I felt the electrical sensations from the metallic parts. They became considerably stronger as I ascended to the point where they would be better described as "stinging" or even "burning" rather than "tingling".

So there we were, approaching 14,000 ft., with the hail roaring away, the airspeed hopping about, and my knees playing tag with the stick and other pieces of metal, when to my astonishment there was an explosion and a brilliant blue flash between my feet. Once again, I thought that perhaps the time had come for me to be somewhere else, so I attempted to straighten up. In that turbulence I found it even more difficult than in previous cloud flights to steer a straight course, and on top of that I realised that I was still going up. Opening the brakes did not alter this until I pushed the speed up to over 60 knots. At nearly 15,000 ft. I was at last descending. However, I was considerably discouraged to see several forks of lightning flash across in front of me, and when I received a sudden strong electric shock as the glider was struck a second time I realised that it was taking what seemed to be an unconscionable time to lose even a thousand feet. I therefore gave another all-round check of the controls and, in a calm moment, tried a couple of stalls (these occurred at 40 knots but I assumed that this high stalling speed was due to the ice—perhaps half an inch thick—on the leading edges of the wings), and then, keeping the brakes open, eased the stick right back and applied full opposite rudder and ailerons with the intention of spinning down. I considered that even if I did this through turbulent air the speed would be restricted throughout, and that this wou'd be preferable to a more civilised method of descent which might well have prolonged my stay in the lightning area—and I did not want a third strike.

I cannot say whether the resulting manoeuvre was a true spin or merely some sort of spiral dive, but the Pig was rotating merrily in a fairly stable manner with the airspeed wandering between an indicated 50



The damaged wing-tips. (Photo Slingsby Sailplanes)



Some of the damage by lightning strike around the wing root.
(Photo Slingsby Sailplanes)

and 60 knots (but this may be rather misleading, when, as in the Pig, a pot-pitot is in use). Anyhow, it achieved the desired object, and with my ears popping happily I descended in this way from 12,000 to 6,000 ft.

Having straightened up, I noticed slight continuous buffeting as though there was some sort of turbulence round the controls, and on looking again at the wings was somewhat baffled to see the inspection panels hanging open beneath them. I could see nothing else unusual but, being unable to pinpoint my position, I picked a field and at 5.30 p.m. went in to land, approaching at 70 knots—the slight buffeting had made me suspicious of minor damage and I felt happier with plenty of speed in hand.

When I got out of the cockpit, I found that the wings had, in fact, been damaged and I was relieved that I had not realised this in the air; I had had quite enough to think about as it was. The fibre-glass wing-tip fairings had both been torn off and plywood had been stripped off both tips behind the spar. On one wing-tip, both top and bottom surfaces were missing, exposing three ribs. On the other, the bottom surface was still attached but carried two scorch marks several inches across. At the root of each outer wing-section there was a fair-sized hole near the trailing edge; the plywood seemed to have been blown outwards (likewise the inspection panels). The electrical flex running spanwise along each of the wing-sections was fused at both ends on each wing. Some of the fittings at the centre-section/outer-section junction were blackened and some showed signs of fusing. Also, some narrow patches of blue paint had been removed (burnt?) from the rudder, exposing the silvery paint beneath.

In short, the damage was not extensive, but nevertheless the very possibility of a glider being damaged by lightning is perturbing, and one wonders whether we might hear, from someone who has studied this, something about the way in which lightning works, especially in relation to wooden aircraft.

The essence of this report could have been put in a few lines but I have been asked to write fairly fully; I would conclude by saying that:

(a) in future I shall probably leave large clouds as soon as the electrical sensations from the stick, etc., increase to the stage at which they can be described as anything more than "tingling"; and

(b) this incident has, if anything, increased my confidence in our glider's ability to stand up to tough treatment in an emergency.

FOOTNOTE.—The main respects in which my second cloud differed from Derek Piggott's fairly similar one in 1955 (SAILPLANE & GLIDING, p. 115) are:

(a) the turbulence and the hail continued unabated in the electrical region;

(b) the ailerons did not freeze up;

(c) the turbulence was not only of the shaking-up-and-down variety but also of the rolling or upsetting type.

CONTEST FLYING AT THE NORTHERN COMPETITIONS

by A. E. Slater

FOR those competitors who arrived on Saturday, 29th July, the Derbyshire and Lancashire Club laid on their famous evening wave, with the accompanying bank of cloud showing against the sunset right round the western half of the horizon. All but two of the 25 entries turned up.

Sunday, 30th July

TASK: Race to Boston, 74 miles.

Low stratus blotted out the sky at briefing time, but Peter Wickham of the Met. Office assured us that the rest of England and Wales was clear, and we were just at the tip of a narrow "finger" of cloud coming down from a warm front over Scotland and Ireland. There was a light W.N.W. wind.

By noon a few holes appeared in the overcast and the sky improved until at 13.06 A. N. Watson had first competition launch in the Newcastle Swallow (but he only got away from a later launch). From the next two launches at 13.19 and 13.21 Chuck Bentson and Humphry Dimock both made Boston. Thereafter, there were alternating periods wherein either nobody or everybody got away.

Thus, from 13.24 to 13.48 no-one was airborne for more than eight minutes. Then, from launches between 13.51 and 14.37, everybody got away—two for five and eight miles and five to Boston (Mike Bird, Ken Blake, Chris Robinson, J. K. White and P. Goldney). But this period included a half-hour gap in launching.

The next Boston group to be launched were Alf Warminger at 14.47 and D. Innes at 14.54. Warminger, who won the race, found plenty of thermals once he got among them, and his only worry was finding any to start with.

From 15.17 to 15.32 another group of seven got away, including Chris Riddell and Stuart Morison to Boston on their second launches, K. H. Brown 66 miles to Coningsby, Harry Midwood 61 to Walcott, and Ritchie Pick 60 to Anwick.

The final group of launches leading to cross-countries were of Mackworth-Young and J. H. Blackmore, both 54 miles to Cranwell (the latter landing at 19.25), and two more, Geoff Nixon and Don Snodgrass, who both crossed the starting line at 16.34 but, after going well, had trouble finding Boston airfield; in fact, Nixon hung around until Snodgrass showed him the way in at 19.00 hrs.

Speeds to Boston

Pilot	*Sailplane*	*m.p.h.*
Warminger	Olympia 419	35.6
Bentson	Skylark IIIF	33.6
Innes	Skylark IIB	31.3
Snodgrass	Skylark IIIF	30.2
Nixon	Skylark III	30.0
Bird	Skylark IIIF	29.6
Morison	Skylark IIIF	28.4
White	Skylark IIB	28.1
Goldney	Skylark IIIB	27.5
Dimock	Skylark IIIF	26.6
Blake	Skylark IIIB	25.0
Riddell	Skylark IIIF	23.7
Robinson	Olympia IIB	17.8

Monday, 31st July

TASK: Free Distance.

Take-offs began at 10.15 for those who wanted to get away before the arrival of a cold front which stretched from Aberdeen to Anglesey. Its high clouds could already be seen along the N.W. horizon, and were visibly approaching, as their near edge was at an angle of 1 in 6 above the horizon at 9.30 and 1 in 5 at 9.50 (i.e., it should arrive overhead at 11.30). But nobody went away before the front arrived; it was hoped that the air following it would be more unstable, as per text-book.

The slope lift was not strong enough to soar in, and many thermals not wide enough to circle in, and then, after 11.30, a mixture of stratified clouds at all levels covered the sky. It brightened up again at 2.45 and eventually eight people got away, five of them exceeding the 15 miles needed to score.

Mike Bird made the day's best distance of 39 miles and raised himself into the lead, afterwards holding that position until just before the end of the contest. His best thermal took him to 2,800 ft. above start, between Chesterfield and Mansfield, after

which he made a long glide at reduced sink, steering over built-up areas and places where, by means of cheap coloured glasses, he could see the haze going up, till he came to earth just beyond Nottingham. Flg. Off. Hanneman went 34 miles; Maj. Ibberson and Alf Warminger made Hucknall, 30 miles, the latter steering over coalmines around Nottingham and finding nothing because the miners were on holiday.

Leading Totals, Two Days

	Pilots	*Points*
1.	Bird	181
2.=	Warminger	161
2.=	Hanneman and Morison	161
4.	Ibberson and Goldney	137
5.	Glennie, Innes and Holding	95
6.	Bentson	94

Tuesday, 1st August

TASK: Triangular Race via Bolsover Castle and Ashbourne, 66 miles.

"The cold front," said Peter Wickham, "has come to a grinding halt and the cloud associated with it is in a state of confusion." The only rain he knew of had been at Camphill. The proposed route had been chosen "between Manchester smoke to the west and Sheffield smoke to the east."

The task was not done.

Wednesday, 2nd August

TASK: Distance along a line through Folkestone.

With an unstable airstream from N.W. containing cu-nims, and a 20-knot surface wind at Camphill, lessening to the S.E., this proved the best day of the meeting, with everyone getting away and eight people landing in Kent. Total mileage: 2,366.

Alf Warminger declared a goal in France, having heard that air retrieves over the water would be allowed; but, to give himself time to get there, started too early and had to land just beyond Nottingham. Most pilots got away in two gaggles between 11.45 and 12.30.

Chuck Bentson made the longest distance, getting 9,000 ft. over the Thames and gliding it out from there to a field just outside Folkestone, after a 5½-hour journey of 197 miles. Mackworth-Young, however, gained the 100 points with his Eagle's handicap; he mistook Hawkinge for Lympne and landed north of Dover at 18.00, having made a late start.

Peter Goldney made his final glide from 12,000 ft., north of the Thames, and sank at two metres a second till he could get rid of the ice. He arrived over Hawkinge at 3,000 ft., having got no lift at all during the glide. But Stuart Morison, who had spent quite a time searching for enough lift to cross the Thames, got a thermal to 1,500 ft. at Rochester and another between there and Ashford; consequently he arrived at Lympne with 3,000 ft., enough to do a regulation circuit, much to the pleasure of the officials. But Chris Riddell arrived there later much lower down.

D. W. Corrick made his final glide from near Tilbury to Faversham, and Don Snodgrass landed near Sittingbourne at 17.45. Mike Bird, frustrated by not being able to use a cu-nim sitting in the newly-forbidden zone around Southend, glided to an apparently good cumulus 20 miles away,

but got nothing and had to land in the Isle of Sheppey, near Eastchurch; but he earned enough points to keep in the lead.

Three landed in Essex: Dimock at Rayleigh, the Yorkshire Swift near Chelmsford, and the Newcastle Swallow near Braintree.

Leading Totals, Three Days

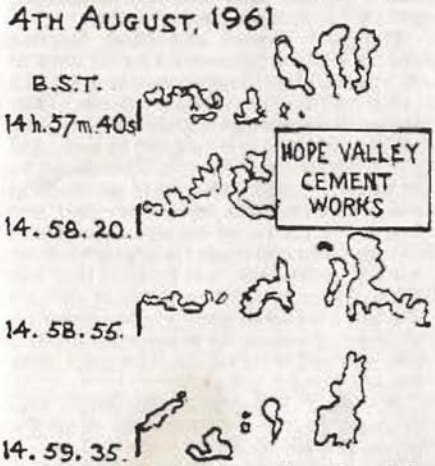
	Pilots	*Points*
1.	Bird	265
2.	Morison and Hanneman	253
3.	Goldney and Ibberson	232
4.	Bentson	190
5.	Warminger	172
6.	Snodgrass	165
7.	Riddell	159
8.	Dimock	146
9.	Corrick, Brown and Chubb	131
10.	Mackworth-Young	130

Next day was a Rest Day, with the sky mostly overcast and some rain, though slope-soaring was laid on.

Friday, 4th August

TASK: Free Distance.

With a 30-knot west wind at the surface, launches began at 2 p.m., when bungy launches were decreed as being safer than winch launches in such a gale, although many competitors had not tried them before. But when one pilot had bounced down the hill in response to the instruction "Don't pull back till the bungy has dropped off", and another employed a wing-tip holder



"The thermals were distorted . . .", and the cement works smoke agrees.

You have been warned.

who didn't know when to let go, it was decided that the winch was to be preferred after all.

The thermals were, as forecast, distorted and difficult to use. In spite of this, Humphry Dimock got up to 6,000 ft. near Boston and glided 40 miles to Wisbech to make the winning flight of the day—90 miles in a straight line.

Warminger, again one of the first away, got 3,000 ft. above take-off to start with, but lost 2,500 ft. of it on the way to Sheffield. He found the clouds worked well if one could get under them, but they were very turbulent inside. At Chapel St. Leonards, north of Skegness, after going 86 miles, only a sand dune hid the sea from him as he landed.

Mike Bird, trying like the others to work southwards across the wind, had a scrape until he reached a cloud street which gradually weakened, and he came down north of Boston, after 79 miles, in a seaside camp which turned out to be a Borstal institution.

For Harry Midwood the lift got worse throughout his 47 miles, and Bentson never got above 2,500 ft.

Leading Totals, Four Days

1.	Bird	348
2.	Ibberson and Goldney	276
3.	Warminger	267
4.	Hanneman and Morrison	253
5.	Dimock	246
6.	Bentson	231
7.	Snodgrass	168
8.	Riddell	159

Another Rest Day followed, clearing at 2 p.m. to give lift on the hill.

Keep the launching point clear!

Sunday, 6th August

TASK: Pilot-selected Goal.

A trough was expected to pass through about lunch-time, Peter Wickham said; before it the wind would be S. of W. with cumulus rising to 10,000 ft.; during it, cumulus to 25,000 ft.; after it, wind N. of W. and cumulus to 8,000 ft. Nobody attacked the actual trough, and only Snodgrass went away before it; he had declared Skegness but only reached Sandtoft, 40 miles. He got 9,100 ft. in his first cloud, then soared along the front edge of the trough, getting only 1 ft./sec. lift, then 4,500 ft. in a cloud in the trough, then nothing.

After the trough, 20 went away on distances varying from three to 83 miles. The 83 was by Stuart Morison, who first went north because the met. man said it would be better there, and sure enough got lifted by a cu-nim to 12,000 ft., 30 miles north of track; he glided back east of Lincoln but then had such a struggle, with cloud base only 2,000 ft. above ground, that he hit the coast eight miles north of Skegness, his goal.

Dimock, who describes his flight in a separate article, won the day by being the only competitor to reach his goal. The same goal, Boston (74 miles), was only missed by J. K. White by 1¼ miles, but his Skylark IIB's bonus helped him to score second highest points.

Harry Midwood, with 68 miles to Louth, took his Olympia 11 to 7,200 ft. in a cu-nim and could have gone higher. Goldney made 65 miles to Horncastle, Riddell 58 to Sleaford, Blake 57 miles, Nixon 53, Bentson 48, and Warminger, having reached Fulbeck airfield, 48 miles, found no lift there because it had been drenched by a thunderstorm two hours earlier. Unfortunately he damaged his leading edge against a car there, so was out of the running for the final day.

By this time all competitors sacrificed their worst day's points; it was Mike Bird's worst day, with a score of 32, but his total for the other four days still kept him in the lead, though by only two points.

Leading Totals, Five Days

1.	Bird	348
2.=	Dimock	346
2.=	Morison and Hanneman	346
4.	Warminger	300
5.	Goldney and Ibberson	299
6.	Bentson	275
7.	Riddell	218
8.	Snodgrass	201
9.	Midwood and Caiger	186
10.	White and Hellewell	168
11.	Mackworth-Young	147
12.	Brown, Chubb and Corrick	138

Monday, 7th August

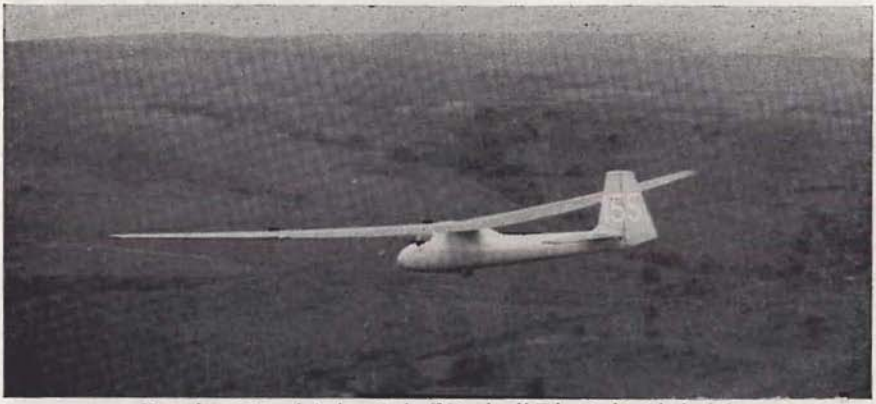
TASK: Race to Hucknall and back, 59 miles.

With light winds and good thermals, 13 pilots completed the course, plus one who overshot Camphill by 40 miles on the return journey and landed at Keighley, getting full distance marks (40 pts.).

Humphry Dimock and Mike Fairman tied for winning place with 1 hr. 55 mins. at 30.3 m.p.h.; Peter Hanneman averaged 29.5 m.p.h., Chuck Bentson 28.5 m.p.h. Over Hucknall, Hanneman found a cloud waiting for him, climbed in it to 7,200 ft. a.s.l., and glided all the way back in 25 minutes at 65 knots airspeed. Mike Bird got stuck at Bakewell, came back for another start, was delayed on the return by high cirro-stratus coming over, and made his final glide from 4,000 ft. at Matlock; but his total time was 2 hrs. 30 mins., so he came 5th in the race and lost his overall lead. He was followed, in order of points, by Snodgrass, Riddell, Ibberson and Blake (equal), Glennie, Caiger and Mackworth-Young.

But Mick Kaye, flying his Eagle *hors concours*, beat everyone else by flying the course in 1 hr. 45 mins.

At the closing ceremony Humphry Dimock was awarded the Peak Trophy, and



Humphry Dimock is bungied off Bradwell Edge in his Skylark 3F.

we heard that his Skylark IIIF, with which he had won it, had been sold to Peter Mackenzie (i/c winches at the competition); Dimock is now waiting for a Skylark IV. The trophy will be presented at the Club's Annual Dinner in December.

Aggregate distance flown at the meeting 6,194 miles; aggregate duration: 397 hours.

FINAL PLACINGS

Posn.	*Pilot(s)*	*Sailplane*	*Daily Points* 1	2	3	4	5	6	*Total Points*
1	H. R. Dimock	Skylark IIIF	73	0	73	100	100	100	446
2	S. M. Morison, P. Hanneman	Skylark IIIF	78	83	92	0	93	97	443
3	M. Bird	Skylark IIIF	81	100	84	85	32	77	427
4	C. W. Bentson	Skylark IIIF	94	0	96	41	44	93	368
5	J. M. Ibberson, P. Goldney	Skylark IIIB	76	61	95	44	67	68	367
6	A. H. Warminger	Olympia 419	100	61	11	95	44	—	300
7	J. C. Riddell	Skylark IIIF	67	0	92	0	59	72	290
8	D. C. Snodgrass	Skylark IIIF	83	0	82	3	33	74	275
9	H. U. Midwood, M. T. Caiger	Olympia II	38	0	0	63	85	64	250
10	M. C. Fairman, G. H. Nixon	Skylark III	83	0	0	0	51	100	234
11	G. W. Mackworth-Young	Eagle	30	0	100	0	17	63	210
12	K. W. Blake	Skylark IIIB	70	0	6	0	56	68	200
13	K. R. Brown, E. J. Chubb, D. W. Corrick	Skylark IIC	38	0	93	0	4	54	189
14	G. A. Glennie, D. F. Holding, D. Innes	Skylark II	95	0	6	15	0	66	182
15	J. K. White, R. Hellewell	Skylark IIB	85	0	0	0	83	8	176
16	R. C. Pick, J. C. Reussner, D. Hill	Swift	34	0	76	0	19	36	165
17	C. J. Robinson, B. Fisher	Olympia IIB	66	9	41	0	0	0	116
18	B. B. C. Watson	Sky	0	0	35	0	16	40	91
19	F. A. Rodwell, A. N. Watson, M. Wood	Swallow	5	0	72	0	0	0	77
20	J. H. Blackmore, P. E. Dale	Olympia IIB	32	0	0	0	0	16	48
21	R. D. Frodsham	Olympia IIB	0	0	0	0	27	0	27
22	E. F. Edwards, F. B. Reilly	Olympia IIB	7	0	19	0	0	0	26
23	L. Glover	Olympia II	0	0	0	0	0	0	0

A zero signifies: flew but did not score. A dash: did not fly.

AEROVOILIER AV-45

by Charles Fauvel

M. Fauvel has modified his famous Flying Wing to take an auxiliary motor, and describes the new machine as a "planeur à dispositif d'envol incorporé", which he translates as "self-launching sailplane". Below are some translated extracts from a description of the machine and M. Fauvel's latest newsletter.

THE AV-45, whose first flight took place five months in advance of expectation, has continued its test flights. The induced cooling of the cylinders proved sufficient, but the crankcase needed supplementary cooling. An adapted ventilator has given good results on the first trials.

The performances already established on the first flights have been confirmed with take-off runs of less than 100 metres on the wire-mesh runway at Cannes; it immediately climbed freely at 90 km./h. forward speed and 4 m./sec. climb shown on the variometer. With very powerful air-brakes and a tandem landing device, of similar proportions to the classic tricycle undercarriage, landings are extremely easy and short, and the double mechanical brake of the main wheel is very effective.

The AV-45 can maintain its flight path at only 2,000 r.p.m. in spite of the mediocre efficiency of the airscrew. One can fly at 100 km/h. or climb at 0.5 m/sec. at 80 km/h. The original airscrew came from a Benson Gyropter, but meanwhile a wooden airscrew designed by Delemontez is being compared with it. With the provisional wooden airscrew stopped, minimum sink shown on the variometer is less than 0.9 m/sec.

An automatically feathering airscrew is being developed, and, with this feathered, the rate of sink should be 0.85 m/sec. at 75 k.p.h. (2 ft. 9½ in. at 47 m.p.h.), and its best

AV-45 flying over the coast under power. Below, Cannes aerodrome; in the distance, Pointe de la Croisette and the Iles de Lérins.

AV-45 gliding over the Esterel.

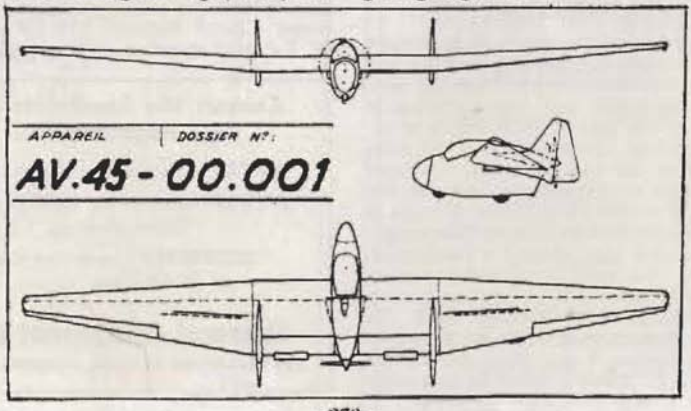
gliding angle 1 in 26 at 85 k.p.h. (53 m.p.h.). The airbrakes are of Schempp-Hirth perforated type and are slightly more effective than those of the AV-22 which give 25 m/sec. descent at 155 k.p.h. (82 ft/sec. at 96 m.p.h.).

The aspect ratio is 11.6. Dimensions and weights are:—

Span	13.68 m.	44 ft. 10½ in.
Length	3.49 m.	11 ft. 5½ in.
Height	1.88 m.	5 ft. 11 in.
Surface	16.10 sq. m.	173.3 sq. ft.
Empty weight	219 kg.	483 lb.
All-up weight	302 kg.	666 lb.
Wing loading	18.7 kg/m²	3.83 lb/ft.²

The test flights were made with the small American Nelson motor as used in the Bensen gyropter; it has the merit that it actually exists. It weighs 27 kg. (60 lb.) and gives 39 h.p. at 3,900 r.p.m. It is separated from the fuselage by a fireproof layer of glass polyester. The motor can be started during flight. There are two fuel tanks, one on each side of the fuselage in the leading edge, each one with a capacity of 17½ litres (7.7 gallons altogether). The left one is normally used, usually containing a small quantity of fuel, and the right-hand one is filled for purposes such as returning from trials or for travelling from place to place.

Since the above was written, the AV-45 has been fitted with the automatically feathering airscrew and has made its first tests with this at Cannes. A climb to 600 m. (2,000 ft.) took 2 mins. 20 secs., and later the machine was soared for 48 mins. in feeble upcurrents. With the motor stopped, M. Fauvel writes, the machine attained a gliding angle of 1 in 27.



Sea Breeze Diamond

by John Williamson

It looked as if Bank Holiday Monday, 7th August, was going to be a very good day. The B.B.C. morning forecast spoke of S.W. winds and inferred good soaring conditions. Thunderstorms were likely in the north-east, where the wind would be southerly. The Upavon met. man confirmed this with a little more detail. It may be that both forecasts mentioned the depression coming in from the west and that I was guilty of hearing only what I wanted to hear. Wally Kahn later wrote that Lasham were told that the N.E. would be clamped by the afternoon, so several people tried Lasham-Long Mynd-Yarmouth without success. Lasham's forecast was dead right. I'm glad I hadn't heard it! As it was, I was towed off from Upavon at 10.03 and got away at once, with Turnhouse as goal.

For three hours things went very well. I had arrived at Sheffield, had never needed to go into cloud and was only worried by the cirrus that was clearly catching up with me from the south. I hoped the promised thunderstorms would help me keep ahead of it. Over Leeds I spotted "The Cu-Nim That Didn't Quite". A great block of hard-edged cumulus cells towering above the lesser cumulus lured me on. I tested the oxygen mask, checked the artificial horizon. The thing looked every bit as good from below. But, alas, it had died in the ten minutes it had taken to reach it. Worse, it had spread nearly five miles and squashed all the neighbouring thermals.

I emerged from the gloom at Harrogate to find the upper sky clouding over fast and much alto-stratus moving in from the west. Thermals weakened until, near Leeming, at 2.30 p.m., I was glad to use anything at all. It was hopeless. Edinburgh was 135 miles away. With the sun obscured, it seemed more sensible to land and cut my losses, but the sight of reasonable cumulus 20 miles to the east encouraged me to try a little longer. I determined at least to try for Darlington, a possible "hot spot" for thermal production. The 15 miles took an hour, scratching and fumbling, once turning back for thermals from a bonfire near Scornton. Over Darlington I saw that the surface wind was S.E. Surely it would be impossible to reach those clouds through an adverse sea breeze.

I'm not sure when the penny dropped. Perhaps it was in the zero-sink over Darlington, or maybe when I noticed the distinct edge of the smoke haze below, with plumes of smoke blowing towards it from opposite directions. The sun had gone in an hour before and all cumulus had disappeared from the landward sky. But here was a gentle sea-breeze front, plainly marked as it meandered towards the north. Occasional patches of stratus formed above it and drifted towards the coast.

I hardly dared to move in the cockpit. Turning north again, I flew with the utmost care. Occasionally the lift improved and I dared to circle. Near Durham I found proper lift which took me up at nearly 150 f.p.m. to 5,000 ft. But I shouldn't have gone into cloud. The strengthening westerly wind blew me too far from the front. I lost much of the valuable height getting back to it.

Smoke from Tyneside showed the front further inland, west of Newcastle. I couldn't see the coast any longer when the front took me over Ouston. Feeling very lonely, I saw a red and yellow T-21 far below, busy doing circuits. They were launching towards the east—they were also in the sea breeze.

I followed the front. Past the reservoirs. Over the moors. Over the Otterburn road, deserted but for a few picnickers. Then I found a good thermal; 250 f.p.m.; 6,500 ft! I started planning my final glide. I had

given up Edinburgh hours ago but still nursed my hopes of reaching Berwick and the 500 km. But between me and that goal was a great, dark hill, The Cheviot, 2,676 ft. high. My blessed smoke trail, now faint, didn't work, though. Instead, a steady downcurrent hit me and as I flew over the eastern slopes of the Fells, I did indeed look upwards at that stark hilltop.

I calculated again. To my dismay, I found that I would fall two miles short of the magic 500 km. I needed 300 ft. more! I guessed that my front may have moved west again, north of the Cheviots, so I went north-west away from the old airfield of Milfield, abandoning the straight glide, which was hopeless anyway. At about 800 ft. above the rough ground came The Thermal, the one with a Diamond in it!

The vital 300 ft. were agonising. I was tired, I was weary, but it was the greatest climb of my life. Just 300 ft.!

I gained a lot more than 300 ft., but as I went higher and higher I relaxed, excited and happily content. I would make it! Almost as a gesture, the front carried me on for 10 miles at 3,000 ft. until I was exactly over the 500-km. line. Then it went, as mysteriously as it had arrived three hours earlier. I floated slowly down to land at Ayton, my first time ever in Scotland.

Poland's National Gliding Championships

by Ann Welch

THIS year's Polish championships, held at Leszno during 4th-18th June, were the largest competitions yet in which all the competitors were flying the same type of glider. Unlike the aircraft, the pilots were varied. In addition to 40 Poles, there was one pilot each from France, Rumania, Britain, Bulgaria, Italy, Hungary, Switzerland, Yugoslavia and Austria, and two each from Russia, Czechoslovakia and East Germany, 55 in all.

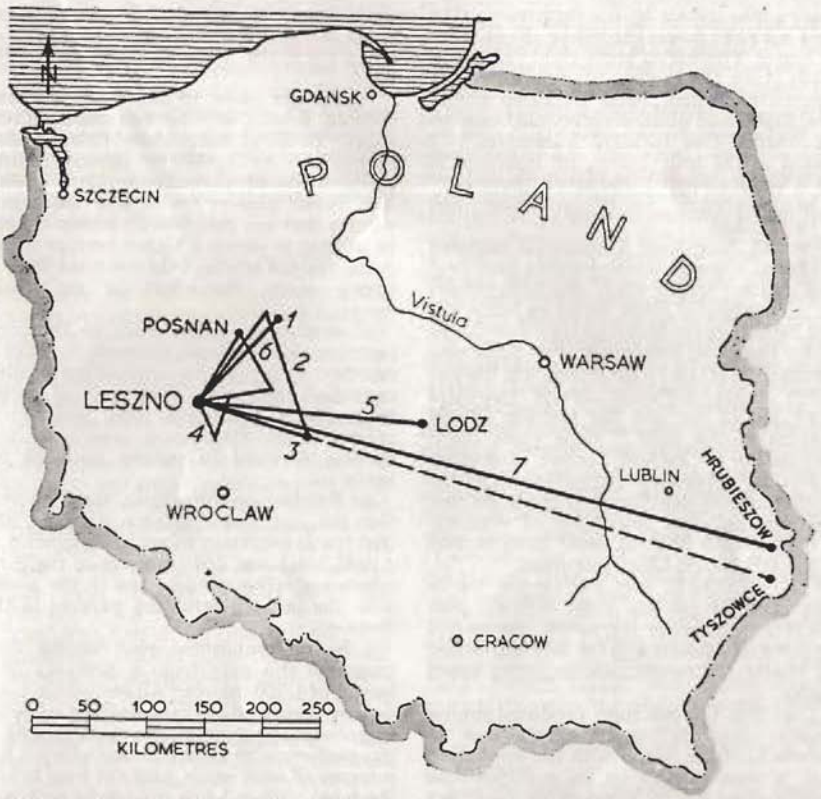
The practice days were spent in getting used to the 15-metre Mucha Standard. These were production versions of the prototype with which Adam Witek became Standard-Class Champion in the 1958 World Championships. The Mucha has been improved in various ways, and is a highly serviceable and efficient production aircraft. The foreigners who had not previously flown the aircraft soon became delighted with it, and the only complaint that came from some pilots was that, although the seat of the Mucha was standardized, their own was not. This problem was invariably remedied in the usual way—by surreptitious addition of blankets.

June 4th, the opening-ceremony day, was also a contest day; the speeches were made with commendable dispatch, and shortly afterwards the gliders were launched. Unlike the British system, in which the pilots can select their launch-time, the gliders are arranged in rows of eight (the positions being the result of a ballot) and wait there until the organization deems it time to start. The gliders are then towed up to 700 metres just as quickly as the tugs can manage it.

It is possible to get a faster launch rate than with the British system but there is the risk that, if a mistake is made in the selection of the starting time, there may be wholesale landings back on the field or good soaring weather may be wasted. There is something to be said for both systems, but theirs could be improved if the initial ballot positions were advanced each day by, say, one row of gliders, instead of having a new ballot prior to each contest day. This would obviate the risk of some pilot continually drawing a disadvantageous starting position.

The task on this first day was an out-and-return of 204 km. to the north-east, with a near-headwind of 30 km./hr. During the morning thunderstorms developed and for

In this line-up of British, Italian, Austrian, East German and Polish pilots and crews, Ann and Lorne Welch are third and fourth from the right in front. The map opposite shows routes of tasks and (broken line) Ann's 525-km. goal flight.



some time remained clear of the track, but not for long enough. Only 18 pilots, including two foreigners, got back, most of them having climbed to more than 10,000 ft. and then glided the last 30-40 miles home. Starting a little earlier would nave resulted in more pilots completing the task.

Then the retrieving started. This is done almost entirely by aero-tow, usually with Polish-built Russian Po-2 biplanes, which made a most distinctive noise reminiscent of a motor-boat plodding across a harbour. It is quite unbelievable what patches of ground (I won't say fields) their very competent pilots whisk the gliders from. The system is that the glider pilot acts as controller for the operation. He must check that his field is at least 250 metres long, with an obstruction-clear slope thereafter at the take-off end of not less than 1:30. If the field is not big enough, but there is a better one not far away, he must move the glider. This may well involve the foreigner in some complicated sign language and pidgin-anything-he-can-think-up in order to arrange for a horse to pull the glider, only to find that the farmer wishes to know the weight of the aircraft in kilograms in order to calculate the number of horses necessary! Having found himself a suitable field, the pilot places the glider crosswind in such a position that the tug shall touch down ten metres ahead of the nose (even if this means putting the glider into the next strip or across a ditch), and parallel to the wings. In due course a Po-2 waffles into the field, the glider is hooked on, and the combination clambers out and bumbles off home.

If the field is very small a shorter rope is used, down to four metres if necessary. With this sort of length, the take-off is assisted because the glider is virtually

blasted into the air by the slipstream. The Po-2 is a remarkable aeroplane. In order to fly one in Yugoslavia some eight years ago, I was given the briefest briefing ever. An expressive Serbian hand indicated climb, level flight, and glide, accompanied only by the words "One hundred kilometres." I peered at the instruments, all inscribed in the Russian alphabet, and asked "Benzine?" to be answered by "Enoff." With that I had to be satisfied.

On 5th June Josef Dankowski declared a 300-km. triangle, starting with a dead beat into a rather strong wind, and anticyclonic air. Twenty-two pilots failed to reach the first turning-point although they were in the air for three and four hours. For those who managed to get on to the second leg, life was rather easier, although nearly one-third more landed on this leg because of the lateness of the hour. Only eight pilots managed to get back to Leszno. The effect of this day's flying on the marks was to put all those pilots who failed to reach the first point beyond any possibility of winning. They included Makula, who came second in the last World Championships.

On the 300-km. day the longest leg in time, and by far the most difficult, was worth only just over 100 points, the second leg some 320 points and the last and easiest leg nearly 500 points, not including speed marks.

The third day, 6th June, produced similar weather and an out-and-return race to Ostrow (184 km. total) with the same dead beat to windward as on the previous day. Twenty-eight out of 55 pilots got back but again nearly one-third of the competitors failed to reach the turning-point in spite of flying for many hours fighting against the wind.

Again the value of marks to distance differed greatly on the two parts of the flight. To avoid this problem in the British Nationals we normally set out-and-returns *across* the wind particularly if it is strong. The Polish reason for setting them into wind is that any cloud-street formation can be utilized to obtain a higher average speed. Although this is true, I do not think that, in strong winds, the effect on the marks warrants it.

After such an active start to the competitions, it was quite pleasant to have a rest day. However, the non-soaring weather continued, and after three days of excursions, films, museums, and swimming, enjoyable as they were, everyone was looking forward to getting into the air again.

At briefing on 10th June, we were told that the task was a 100-km. triangle, and that it was necessary to get going quickly as a cold front was due to arrive in the early afternoon. The triangle was to the south, with the last leg returning parallel to the front.

I had a grandstand view of the final stages of this race from a Jaskolka at a height of 1,200 metres. All but eleven competitors streamed over the line like coloured minnows, and covered the airfield with a gay pattern as 30 gliders landed within a few minutes of each other, and not long before the front. When I saw lightning I reckoned

Pelagia Majewska, the Polish woman pilot, who has been awarded the Lilienthal Medal.

it was time for me to land as well—this was no kids' stuff growing all around. It was brakes out all the way down from 1,500 metres and, if I flew at less tnan 110 km./hr., I promptly started going up again. We just managed to pile everything into the hangar as the rain started. Marian Gorselak, who brought Poland into third place in the 1956 World Championships in France, continued to maintain top position, though pressed hard by Josef Pieczewski.

DETERIORATING WEATHER

Now came no less than four consecutive days with the weather deteriorating steadily into typical West Country rain. We felt depressed, water was lying visibly in the fields and ditches, and with the end of the competition only three days away we almost started to pack. It was therefore a pleasant surprise on the morning of 15th June to find that the dilatory front had finally started to move clear, and that sensible-looking anti-cyclones were developing over France and the Azores. The sun glimmered occasionally through the stratus, and we even felt satisfied to see that most of the available isobars were densely packed into the British Isles.

A 195-km. race downwind to Lodz was declared, not without some organizational misgivings. Normally they would not have been tempted into flying in such feeble conditions, but the Polish visitors to our championships, having concluded that "stratus flying" was a British national institution, felt encouraged to try it also.

The results were even more encouraging; 23 pilots reached the goal, but although Pieczewski made the fastest time, he was not able to dislodge Gorselak from the lead.

On 16th June a 200-km. triangle to the north-east was set, and this time there was no dead-beat leg. Gorselak, sadly, came to roost at the first turning-point, but the runner-up got back, along with 22 others, and as a result came into the lead.

I was allowed to plod along in the Jaskolka after the competitors had gone, and managed to reach the second turning-point at Posnan, getting home smartly behind a Junak tug whose pilot was quite clearly in a hurry. Fortunately the air was now calm.

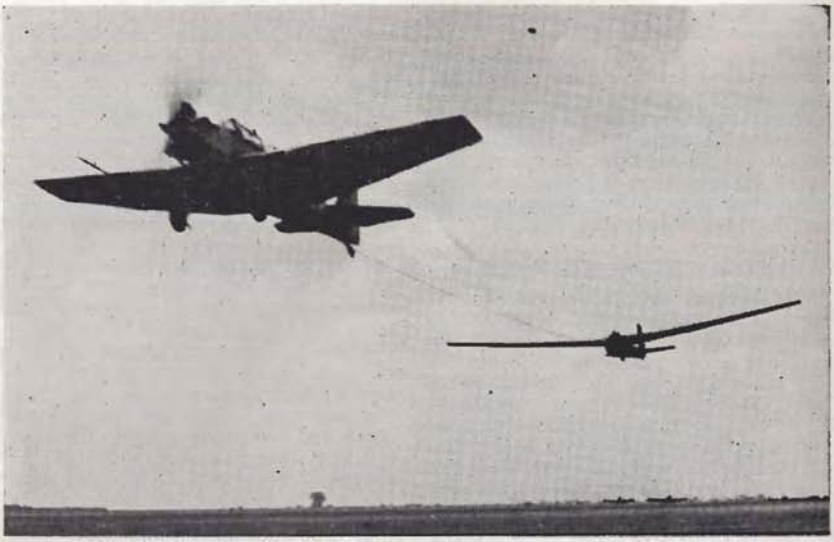
The last competition day was 17th June and the organizers were working themselves up into a frenzy of decision. For a long time now they had wanted to set either a 500-km. straight race or a 500-km. triangle. Today was their last chance, but they were not sure if the weather was good enough. The forecast was all right, but the day was late in starting. We all sat by our gliders, ready to go, and watching the cloudless sky for the first sign of cumulus. Dankowski declared Hrubieszow, 526 km. away, as goal, but said that he would change it if no clouds had appeared by eleven. At 10.50 one or two tiny wisps showed themselves and the race was on—the first 500-km. race ever to be set in gliding championships. The Muchas were off in just over 30 min., and then there was a pause while they cleared away and before I took off in the Jaskolka.

It was a courageous gesture on the part of the organizers to let me go at all, since to send 55 gliders on a 500-km. race was only the beginning. They next would have to locate and retrieve these gliders from the far end of Poland in time for next day's prize-giving—if possible. To do this gigantic job, all the adjacent aero clubs would be called in to help with drivers, trailers and tugs. The competitors had all left the site by 11.45—late for a 500-km. attempt—but I did not get clear until about 12.15, having been subjected to the most frustrating and infuriating torture at the beginning of any serious soaring flight—the attentions of a photographic aeroplane. The wretched thing buzzed round and round like a hornet, the two-rope sting in its tail flailing along too close for comfort. I lost my thermal then took twenty minutes to get going again.

The day was a triumph of faith (and I suppose not a little hope) on the part of the organization. Two pilots (one Polish, Luszpinski, and one foreign, Zejda of Czechoslovakia) reached the goal; one more, Weilgus, was only 2 km. short; and a total of 23 pilots achieved 500 km. or over. Fifty pilots, myself included, exceeded 350 km., and Lorne was only 10 km. short of the magic 500.

RETRIEVING BOTTLENECK

The retrieving was even more difficult than the organizers feared, since more gliders than expected had landed in too-small fields. There was a bottleneck in trailers, even to get the gliders to nearby collecting-point airfields for multiple-tow returns. It was late the next day before I was collected from my remote village and linked up at Lublin, but hopes of getting



A Junak tug tows off a Mucha-Standard from Leszno with a 65-ft. cable.

back to Leszno in order to catch the train to England had faded. I finally went by car with three of the 500-km. pilots on the eleven-hour trip back.

Lorne also took two days to return, but unfortunately had to continue back to England at once. I was persuaded to remain one more day, and woke up exhausted after the previous three days' perambulations, missing-out on meals and sleep, etc., to be told that the weather was excellent, and back to the Pripet Marshes I must go. In vain did I say I was too tired; I was forcibly driven into the air. Eight hours later, I was indeed back in East Poland, with a 525-km. goal in my pocket. But that is another story.

I was not able to find out much about the prizegiving except that it took place, although competitors were rather thin on the ground. Pieczewski, Popiel and Gorselak were first, second and third respectively, and the top visiting pilot was Mestan of Czechoslovakia (fourth). In spite of the poor weather during the middle part, the championships were most successful. The Polish organization of such events is among the best in the world, combining as it does sheer down-to-earth competence with courageous task-setting, and the creation of a most friendly and enjoyable atmosphere.

All the visiting pilots were involved in exchanges with Polish pilots, and, so that the Poles going to other countries could learn something about them, the exchange pairs were installed in the same huts. This also meant that the visitor to Poland had someone to help him. The language problem was not great, although most conversations were carried on in two languages. The Poles, Yugoslavs, Russians, Czechs and Bulgarians can all comprehend each other, and the second language varied between German and English, with French an occasionally useful third. One had of course to be prepared for unexpected phrases, such as "a completely unalimentated cumulus," or reference to an aeroplane as being "very good for the schleppness."

Poland is a beautiful country to fly over, in spite of the almost frightening flatness of the central plain. Navigation is easy, for their half-million air maps are good. They have one great problem in their competitions which we, thank goodness, do not have in ours, and that is the necessity to get control authority for every flight. This must make task-setting a nightmare, as often

preparations must be made the previous night before adequate weather information is available. The extent of this preparation was obvious when one found it impossible even to talk to one's friends in the organization as they were permanently on the telephone.

Some 70,000 km. were flown by the gliders on a total of seven contest days. Three-quarters of the retrieving was done by air, mainly out of fields that neither pilot had seen before. It is a tribute to the exceptionally high quality of all their pilots that, in about 170 field-towing sorties, only one aeroplane was slightly damaged. As a visitor to such events it is nice to be able to have faith in the locals, and at Leszno one felt that the standard of aircraft serviceability, operational efficiency, and flying discipline and ability was as high as one could wish for.

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India's First Diamond Distance

Safdarjung Airport, New Delhi to Aliganj Village, 325.6 miles

by Prem Saran Singh

On the 20th April a very close group of friends got me airborne at 10.56 a.m., in the Ka-7 type of glider, for an attempted cross-country flight to Fyzabad (approx. 330 miles). I immediately found myself in a decent thermal which took me up to 3,300 ft. in about 10 minutes. There was a dust haze over the city, but the area on either side was reasonably clear. I crossed my fingers, decided to risk going, and set course towards Ghaziabad. There was hardly any emotional strain involved in setting course; but a few minutes later, when I began losing height, and also discovered that the winds were towards the north and therefore cross, that the emotional strain set in. The airport was still within reach—but only for another 2-3 minutes. With an effort I made up my mind not to turn back; if necessary I would land near Ghaziabad. This decision, once made, left me no alternative but to proceed ahead —and I am glad of it!

It took me three hours to sight Kasganj. The going had been very slow and I was strongly discouraged. Delhi to Kasganj was about 110 miles. This indicated an average ground speed of about 35 m.p.h., which was far below the expected value. The reasons for this poor ground speed were understandable. Firstly, the thermals encountered were not strong enough. Only one thermal at Ghaziabad had carried me up to 5,000 ft. On the average I had been oscillating between 2,000 ft. and 4,000 ft. This kept me busy looking for thermals. Also I had to follow roads rather closely—for it takes approximately 8-9 minutes to reach the ground from 3,000 ft. if no thermal is found. The wind was most non-co-operative: instead of a tail wind, I had a gentle cross-wind pushing me up to the north. If only the winds had been as forecast (300°/20 kt.)! Dadri, a village between Ghaziabad and Sikandarabad, had been my point of lowest height (1,700 ft.). This is one village that will always scare me whenever I look at it from the air!

Another upsetting factor was the absence of water. But, being a chronic smoker, and not being permitted to smoke in the air, I had kept myself busy with some chewing gum. Near about Khurja (approx. 1 p.m.) I took a sip of water to quench my thirst. The chewing gum quietly slipped down my gullet and made its presence felt by choking the passage. I made an attempt to drown it with water: and succeeded. But in the attempt I found myself with an empty water bottle! Anyway an empty water bottle is a better alternative to a fully choked gullet! At this stage (approx. 2 p.m., position near Kasganj) all that I could look forward to was at best to reach Gurshaiganj (about 186 miles) before landing. This would at least qualify me for my Gold C Certificate.

It was round about this time that conditions began to improve. A few cumulus clouds were visible on the horizon to the east and dust devils could be seen near about Etah. I always prefer dust devils to cumulus clouds, for they are invariably associated with extremely strong thermals.

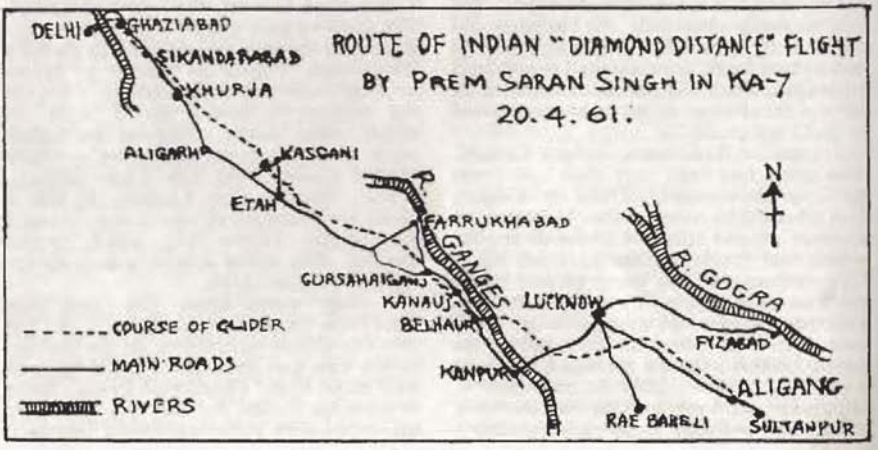
I headed for a dust devil and soon found the glider in very gusty strong lift of the order of 15 ft./sec. It was a pleasure being hit by a dust devil! This was slightly ahead of Etah and it marks the highest point of the flight—approximately 9,300 ft. Here I made up my mind to cross the Ganges at Farrukhabad. A strange, though welcome, phenomenon was the tremendous change in wind direction and strength at this height. Later estimates show that winds encountered in this area were more or less as predicted by the Met. Office (290°/20-25 kts.). This increased my ground speed to about 52 m.p.h.

Near Farrukhabad I had come down to about 4,000 ft. This necessitated a change in strategy. I decided to get back to the Kanpur road and to postpone crossing the river at some other point where my height was in excess of 7,000 ft. This was necessary because retrieving the glider from across the Ganges was likely to be a tricky proposition. Moreover, my map showed that there were no good main roads just across. Consequently I headed towards Gursahaiganj.

I was over Gursahaiganj at about 3.30 p.m. This place held a special significance to me. It was about 186 miles from Delhi. This meant that now I had already qualified for my Gold C Certificate. This gave a tremendous feeling of elation which was heightened by a strong thermal and by the wonderful sight of the Farrukhabad and Chhibarmau roads meeting sharply at Gursahaiganj. It was a tremendous scene made somewhat holy by the presence of the Ganges. The sight of Kanauj on the horizon, however, sobered me up. Kanauj is respected and dreaded by a large number of glider pilots in Delhi. Since last year six cross-country attempts have been made from Delhi with Kanpur or Lucknow as destination. Out of these six, three were forced to land near about Kanauj due to lack of thermals!

Therefore it was with a mixed feeling of awe and respect that I approached Kanauj —and got a very pleasant surprise: a thermal giving approximately 20 ft./sec. lift and carrying me right up to about 8,500 ft. It didn't look like a dust devil because there was no dust in it, though it did have the turbulence and strength usually associated with the devil! It virtually confirmed my chances of reaching Kanpur or Lucknow and also gave me plenty of height to cross the Ganges. Accordingly at about 4 p.m. I crossed the Ganges near Belhaur and set myself the task of going at least 10 miles beyond Lucknow. This would enable me to claim the National distance record held by Squadron Leader Loughran (for a Delhi-Lucknow flight made last year). Wind conditions were now generally favourable throughout and by about 4.30 p.m. I found myself crossing the Kanpur-Lucknow road a few miles north of Unao with plenty of height and with the National record more or less bagged.

I had now, at most, another hour-and-a-half or so of flying time. If I could manage another 65 miles I could qualify for the



Diamond Pin for free Distance (311 miles), an honour which no Indian had claimed so far. I had already begun to feel tired by now and had a very strong temptation to land at Rae Bareli. My grand-uncle stayed there and I could therefore be sure of at least a comfortable bed and warm food. The temptation was great—but theoretically if I pressed on I felt that with good luck I might actually manage my destination. Besides, landing at Rae Bareli would not qualify me for the desired Diamond Pin.

Better sense prevailed, and I altered my course towards the north-east to meet the Lucknow-Fyzabad Road. Conditions began to degenerate. For one thing the frequency of strong thermals began to decrease. The most important thing now was certainly height—I had to stay up at all costs. Consequently there was no point in diving the glider at high speeds. It was now best to fly it at its best glide-angle speed of 47 m.p.h. Another extremely important factor was the wind direction. It was almost at right angles to my path. I could no longer count on an effective tail wind as my ally. It soon became clear that at this rate I could only reach Fyzabad after 6.30 p.m.—and indicated thermal conditions made it virtually impossible to stay up that long.

When I hit the Lucknow-Sultanpur road I had come down to 4,000 ft. With this height I realised that if I continued on course and failed to find a thermal, then I would not even be able to reach the Lucknow-Fyzabad road. This would create a fairly impossible retrieving problem. Consequently a drastic decision was taken to give up Fyzabad and alter course to stay along the Sultanpur road. This decision was strongly influenced by another very important factor—I would get a strong tail-wind along the Sultanpur road. This meant that if I could manage just one more thermal, I should be able to qualify for the Diamond Pin with the help of the wind. And this is exactly what happened. Five minutes later I got my last thermal. This peacefully carried me up to 7,000 ft. From here began the last, long, and successful glide. It lasted for about 45 minutes.

At about 6 p.m. I was over Aliganj village with about 2,100 ft. height. There were two likely areas in which I could attempt a landing. Each consisted of a large number of small fields. The first had one fairly long and comfortable field approximately parallel to the wind direction. I immediately fell in love with it! I made a few peaceful turns over it to lose height and at about 600 ft. I established a rough sort of circuit pattern and came in at a shallow dive for my final approach to land.

When I was on my final down-wind leg the most absurd thing happened. A group of three ladies—whom I had previously noted sitting in the adjoining field to the left—got up and walked over to my field with their backs towards me. There was no possible way to attract their attention and consequently it was extremely dangerous to land. This was an emergency and it had to be treated as such. Without a second thought I pulled the glider out of the dive and immediately headed for the next batch of fields. I realised that I was not going to get a comfortable field to land in and that the chances of damaging the glider—or at least of messing up its skid—were rather high. Clearly the only alternative I had was between messing up either the glider or the group of three ladies.

The glider reached the next group of fields at an approximate height of 350 ft. I selected the longest field within range and quickly turned the glider into wind to do a real emergency heavy landing. It was a tremendous strain on the glider and I could clearly hear and feel the skid shouting that it had been murdered!

There was an unearthly pause—time seemed to have stopped. It was the uncanny calm before a storm. In a few seconds hell broke loose. The entire village began to converge on to the glider. The sun was about to set and the cross-country was over!

OCT 1961

Baling Out .

It Could Happen to You

by Derek Piggott

SUPPOSING you found yourself flying a badly damaged glider and apparently just able to keep control, would you try to get it down or jump by parachute?

When I was faced with this decision a few weeks ago at Lasham, I did not have to waste valuable seconds deciding what to do. Seconds like these might cost you your life, so it's well worth while spending a few minutes considering things now.

Obviously if the glider is uncontrollable, the sooner you leave it the better. Canopy off, release the straps, find the ripcord handle and out.

But what if you think that *perhaps* you could get it down?

Uppermost in my thoughts when my time came was the story of the Prefect pilot who, after a collision in cloud, kept control all the way down to the last few hundred feet, only to spin in and be seriously hurt.

Nobody will thank you for staying with the glider if it is reduced to scrap by the landing. Therefore, if there is any doubt about keeping control, a decision must be made while there is enough height to jump safely.

It is an embarrassment to have to ask your student to jump—but how would you feel if you were flying with an inexperienced passenger? Still more embarrassing if you happen to be using your parachute as a cushion and have not done up the harness, or if you have not explained to your passenger how to use a parachute.

My incident happened during a B.G.A. Instructors' Course at Lasham when John Allen of the Lakes Gliding Club was with me in the Bocian high-performance two-seater. We were in a shallow dive, recovering from a rather sloppy chandelle, when there was a roar as the rear canopy slid back, followed by a loud bang as it hit the tailplane. Looking back, I could see that most of the tailplane on one side was missing, leaving only the rear spar and elevator.

We were about 1,700 ft., flying steadily at about 50-55 knots and heading towards Lasham. The elevator control seemed to be jammed solid, but the ailerons were normal. The air-brake caused no change of trim, and the glider seemed to be stable.

I had all the arguments worked out, and it did not take long to make the decision. "No elevator control means no levelling out for the landing and therefore a fair risk of broken ankles in the front cockpit. If in any turn the nose drops, the glider may continue to dive, and this might happen after it is too late to jump. This is an unacceptable risk, so we must jump for it."

By this time we were almost overhead at Lasham and the centre of attention. I doubt whether any people on the ground have ever before heard a pilot give the order to get out or have seen such an escape so clearly.

The front canopy was jettisoned and, held by its retaining cable, struck me hard on the head before embedding itself in the starboard wing root. By this time I was anxious about our height and I unstrapped and leant forward to read the altimeter and also to make sure that John had found his ripcord handle. (We have at least two different types of harness with the ripcord handles in different places, and I was worried that he might not find it.) 1,200 ft. and John left without further ado.

This caused an astounding change of trim. The glider reared up steeply and I got out hurriedly. The next moment I found myself sprawled on the port wing and held there by the glider rolling rapidly to the right. I had just decided to make an effort to push myself off when the rolling stopped

and I found myself falling away freely, watching the Bocian which had settled down in a gentle inverted turn.

I pulled the ripcord and, slightly to my surprise at the time, found myself parachuting down with John a few hundred feet above and the Bocian still inverted but far enough away to forget it. Looking down, I found myself drifting slightly towards the woods, but there was no time to experiment or even to look up and see where the shroud lines were. I was rather relieved to realise that I would land in the trees, and I lifted my knees up and covered my head for the landing.

There I was, fifteen feet up and hardly scratched. I shouted to John Allen to stay where he was and not on any account to release his harness, believing that he must be in the trees near by. However, he was safely down on solid ground.

The most frightening part was getting down from the tree. This was accomplished with the help of our winch driver Toon and the club members.

Lessons learned or re-emphasised

(1) It happened to me and could happen to *you*.

(2) Don't carry a parachute; *wear* it, and make sure you and your passenger know how to use it.

(3) Think about the circumstances in which you might have to jump, and have your actions thought out beforehand.

(4) Be prepared for the glider pitching violently nose-up as you or your passenger leave.

(5) Pilots have been pursued by pieces of the glider while parachuting down. If possible, get well clear before pulling the ripcord, but do not wait too long. (A simple sum showed that another 5 seconds' delay and this article would never have been written.)

(6) Trees are usually very safe landing places—but wait for help.

(7) Canopies or fairings which come off can cause damage to the tail and this may be catastrophic at low altitude.

(8) Make up your mind quickly and *jump before it's too late*. I assure you it is a very pleasant sensation, once the decision has been made.

LASHAM GLIDING CENTRE

On 1st September, 1961, a lease was granted to the Lasham Gliding Society Ltd. After eleven very long years, we are at last firmly entrenched. We have been granted a 21-year lease with an option to renew for a further period of 21 years.

The building programme which we have planned in great detail will now be started, and in fact the cleaning down and re-cladding of our hangar at a cost of nearly £7,000 was started on 4th September. The new clubhouse which incorporates bedrooms, offices, lecture rooms, bar and catering facilities will, we hope, be started early next year.

It is our intention to provide first-class flying and social facilities not only for our own 900 members, but also for our many visitors and friends from both home and abroad who visit Lasham from time to time. Apart from events such as the National Championships, we hope to run many more Instructor and other specialised courses so that we may truly be described as "The Lasham Gliding Centre".

Our rebuilding scheme will cost a great deal of money. Our members have already given over £10,000 and we hope to collect a great deal more. A National Appeal has been launched and naturally we hope that this will produce a fairly large sum. If any of our friends would like to send a donation, any sum, however small, will be very much appreciated.

We earnestly hope that all pilots both at home and abroad will not think that we are trying to steal their thunder (other than the Cu-Nb type). We want to develop Lasham into a fine and well run and equipped Gliding Centre so that everyone can enjoy the best of gliding when they visit us for short and long periods in the future.

W.A.H.K.

Radio in the Standard Class

by Olle Berg

Since 1956, when the Standard Class was introduced as a separate class in World Gliding Championships, the discussion about radio facilities in the class has gone on. The reasons for restrictions have hitherto been many, but soon we look forward to the day when all pilots have to have a radio permanently installed in the glider if they want to fly in the airways or in the neighbourhood of airports. Hence the extra costs of a radio in the glider *especially* for championships can be ignored. The cost of the radio in the retrieving car naturally is still rather severe, and because of that I want to make a proposal for a solution of the radio question.

My proposal is:—

At the competition airfield a "radio-centre" or a "radio-tower" would be arranged. The equipment there would be, as a minimum:

(a) One complete transmitter-receiver for a common "tower-frequency". The transmitter ought to have a rather high output, more than 10 watts. The receiver ought to have high sensitivity and a noise limiter.

(b) One tape recorder for the control of all communications on the frequency during actual flight time.

(c) Two antennæ: one with a circular radiation pattern and one with a directional pattern to be aimed in the direction of the task of the day.

(d) Some form of time signal, to be recorded on the tape (b) at attenuated level.

(e) A loudspeaker system for the public.

The main principle for using radio must be true sportsmanship; the pilot has to make his own flight as long as he is airborne. This is a discrimination compared to the rules as used in the Open Class, but I think it would be of better value in selecting the best *pilot* as champion. The principle has to be announced and accepted in advance of the Championship, and it has to be repeated on every competition day before take-off,

together with a reminder that the tape recorder would be used for control purpose.

The functions of the radio centre

(a) To receive position and altitude messages from the pilots, and if possible to repeat the message as an acknowledgement, and to distribute all the communications through a loud-speaker system.

(b) To distribute all messages at once to the teams, and to assistants at a big wall-map with number pins for marking the positions of the gliders.

(c) To ensure that no communications except messages of acknowledgement occur between pilot and team.

(d) To inform airports in the district about the actual glider positions in general.

(e) To give a chance for team managers to assist in case of language difficulties.

(f) In case of emergency to take the role of air traffic controller: i.e. when many gliders are forced to land at the same time.

Rules for participants

PILOT.—Only short messages are allowed, containing information about nationality, competition number, position and altitude. If the team has a radio and is at a reasonable distance from the pilot and from the airfield, the team may give a very short acknowledgement also. No information about the weather or other airborne gliders is allowed. Instructions to the team from the pilot are not allowed so long as the glider is airborne.

TEAM.—All communication is started by the pilot; he is the only man to know if the frequency is free. No information from the team to the pilot is allowed except for very short acknowledgements after the message from the pilot to the radio centre is completed.

Comments

1.—The radio in the glider must have only the tower frequency. If the radio contains additional frequencies, these must be sealed for the competition period.

2.—If the pilot doesn't get any help from other pilots or from a ground organisation, which could be as expensive as you like, the competition gives real proof of the know-how of the pilot.

3.—Restrictions about the use of the radio after the pilot has landed must be imposed in order not to interfere with the rest of the pilots who are still airborne. The use of the radio for final location of the glider must be as short as possible.

4.—In order to increase the control potential, the competition manager could arrange to place a mobile receiver with a recorder at a strategical point, especially during triangle or out-and-return tasks.

5.—All the officials and spectators would get a more lively and exciting impression of the competition by listening to the communications and by following the positions of the pilots on the map. Some sort of café or restaurant around the big map should increase the interest yet more.

6.—The enthusiastic but rather few spectators who now attend the competitions, and hitherto have had very long and uninteresting intervals, may perhaps increase considerably, and in this way would give a better financial return for the competition.

Victoria Day Soaring Meet

by T. R. Beasley

HELD at Hawkesbury, Ontario, this contest was organised by the Montreal Soaring Council over the long Canadian week-end, 20th, 21st and 22nd May. Despite announcements in *Soaring*, and letters to many American pilots, we were disappointed to find that there were no visitors from the U.S.A. What a pity it is that U.S. and Canadian public holidays do not occur on the same week-ends!

At the first briefing it was agreed to handicap the ships, Skylark 3 being awarded no bonus, Skylark 2 and 1-23d awarded 10%, and 1-26 20% bonus.

SATURDAY, 20TH MAY.—The task for the first day was set to take advantage of the low winds, being an out-and-return race of 84 miles total to Cornwall and return. Elvie Smith of the Gatineau (Ottawa) Club was first back, and he reported seeing two gliders down. For a long while it appeared that he was going to be the only pilot to complete the task, until the other Gatineau Skylark 3 flown by Eric Wimberley was sighted and finally completed the course with exactly the same time as Elvie. A few minutes later the host club was pleased to see Ben Price finally scrape back in his Skylark 2. No other ships completed the task.

SUNDAY, 21ST MAY.—The weather was so bad that we did not even bother to phone the Met. Office. This was, perhaps, fortunate for those who stayed up too late at the excellent party organised by the Montreal Club lady members.

MONDAY, 22ND MAY.—A rather unusual forecast suggested that upper winds would be lighter than at the surface, and that conditions might again be suitable for a race. The task chosen was a 69-mile triangle: Hawkesbury, Pendleton, St. Eugene; to be flown in either direction. At first it appeared that it might not be soarable at all, until the Skylark 3s were both seen to struggle away in weak lift. Conditions did not improve sufficiently for anyone to complete the course, although several ships made two attempts. A Gatineau club member, "Shorty" Boudreault, again earned the best score by rounding one turning-point and completing 34 miles.

On a club basis the Gatineau club came out on top. It is hoped to purchase an inter-club trophy for annual competition between the two clubs.

POSTSCRIPT.—According to the well known law of cussedness the weather the following week-end was really terrific. On the Saturday several long soaring flights were made, including Silver C climbs and some good triangles. On the Sunday Gordon Hicks, in a 1-26, broke the club distance record by flying about 230 miles down the St. Lawrence, landing on the south side beyond Quebec City. This is our only possible 500-km. direction; if he had started earlier he might even have made it.

RESULTS

			Saturday, 20th May			Monday, 22nd May			
Final placing	*Pilots*	*Sailplane*	*Speed m.p.h.*	*Adjusted points*	*Daily placing*	*Distance miles*	*Adjusted points*	*Daily placing*	*Total points*
1.	E. Wimberley & O. Boudreault	Skylark 3	28.5	1,000	1=	34	1,000	1	2,000
2.	E. Smith & N. Tucker	Skylark 3	28.5	1,000	1=	19	559	3	1,559
3.	B. Price & D. Webb	Skylark 2	23.3	954	3	13	420	4	1,374
			Miles						
4.	T. Henderson & G. Hicks	1-26	0	0	6=	18	635	2	635
5.	D. Webb & R. MacKenzie	1-23d	61	490	4	3	97	6	587
6.	J. Chesborough & D. King	1-26	42	360	5	3	106	5	466
7.	K. Heindle & E. Kostolnik	1-26	0	0	6=	0	0	7	0

Camphill—Happy Memories

by Humphry Dimock

From Lieut. Cmdr. Dimock's records of his flights at the Northern Gliding Competitions we reproduce those of the last three days, in each of which he won the task, to reach top marks on the final day and become the winner of the Competitions.

As a comparative novice at gliding competitions, it is always a marvel to me that they are so well and efficiently organised, and that such a happy atmosphere prevails.

DAY 4 was a westerly wind, so I edged south all the time to avoid a short run to the coast on a Free Distance task, and to get past the Wash into East Anglia amongst my farmer friends. South of Sleaford I decided on a long glide from 6,000 ft. to a perfect cloud in an otherwise empty sky. When about a mile away, it suddenly vanished, and the air was smooth, without a bubble. There was nothing for it but to stretch my glide to the limit, and an operational aerodrome was my final choice when down to 600 ft. However, my thermistor said: "Turn right, chum, the air is warmer that way". I followed the instrument and the varios both showed slightly positive. It was a smooth thermal to 5,000 ft. in clear air—also the last thermal. I hoped to get an evening thermal from Wisbech which would have given me another 15 miles to a friend where bath and dinner would have been laid on, but no—Wisbech in the flat Fen it had to be. A factory sports ground near the centre of the town was my choice. The factory turned out to be a new school, and the resident caretaker an ex-police sergeant from my pre-war stamping grounds where I used to employ the son of his superior. We knew each other, supper was good, and "Emergency Ward 10" was his favourite T.V. programme too, so all was O.K. Up to this time I had had no real hope of winning and was surprised (and pleased) that I was the winner for the day.

The task for DAY 5 was Pilot-Selected Goal, and the met. man said if any could get away before the front they would go the furthest. Don Snodgrass went away, and the rest landed back. After lunch, I altered my goal from Aldeburgh to Boston, and set off. Instead of going S.E., the clouds took me 10 miles north of Sheffield, and in desperation I turned south and arrived over Norton sports ground (where I played rugger in my university days) at only 300 ft. This was it. I could see upturned faces everywhere as I made my final run in. At 300 ft. my thermistor said turn right, and with a guilty pupil feeling I did, and sure enough it was a thermal, slow at first, and finally galloping up to 4,000 ft.; then using clouds as stepping stones, I was never lower than this again.

Coming out of a cloud at 6,000 ft., I saw a large cloud with a cliff leaning out away from it like an overhanging mountain, and the side resembled the wool of a dirty sheep. Obviously very dense cloud pushed up by a fierce upcurrent. It was 9,500 ft. in an off-the-clock climb, and down to 8,000 ft. in an off-the-clock sink before I saw the sun again. Boston was in sight thirty miles away, but under the front which had gone by in the morning. The front was very clearly defined, stretching north and south for 100 miles each way, and no clouds in between. Memories of the violent sink deterred me from searching for lift to higher altitudes. I foresook the cloud for the goal in hand, where I arrived at 3,000 ft.

It was raining heavily at Boston, so I stood off, waiting for the front to pass on. Here it was interesting to note that the rain appeared to cause an updraught sufficient to keep me airborne at 3,000 ft. for as long as I wanted. When the rain had passed, I landed. There was an interesting meteorological phenomenon here: a line of beautiful

gliding clouds ran north and south as far as one could see parallel with the front, leaving a gap of about 30 miles of clear sky in between. If I had chosen a goal 50 miles south into Hertfordshire, I could have called on my mother!

Finally, DAY 6. Race to Nottingham and back. I forget exactly what the B.B.C. met. man said at 08.55, but it was to the effect that "for gliding pilots, little cumulus clouds would grow into large cumulus clouds with cauliflower tops; go and enjoy yourselves, it will be a day to remember." And so it was. The thermals were working under every cloud, 8-10 knots upward to 7,000 ft. I looped the starting line, turning point, and twiddlestalled the finish line instead of landing in, behaving like the happy schoolboy I felt within me. It certainly was a day to remember. This was three wins in succession, which put me at the top by only three points.

To the organisers should go all the praise possible for the happiness they created by their smiling efficiency. One memorable phrase at briefing will always cause a smile: "We shall be launching you as usual across wind—or down wind!" From my crew and myself, grateful thanks for the happy memories.

"Don't Shoot the Pianist"

by the Accidents Analysis Officer

MOST people will be able to complete the quotation; and, of course, apply it to the Corps of Faithful Gliding Instructors, who generally speaking are accustomed to people taking cracks at them; but to the Accidents Analysis Officer who is charged, sometimes rightly, but often wrongly, of saying unkind things about them, and a variety of other people as well.

Nevertheless, we are probably all on common ground in saying that when deficiencies in instruction are revealed, as is the case in most accidents, it is possible to attribute at least part of the deficiency to the fact that most Instructors have too much to do, and that in consequence the position would be improved if there were more Instructors. How many more are needed?

In his annual report, the Chairman said that the number of glider pilots flying in 1960 was 4,749; this of course excludes the Air Training Corps.

The Instructors' Panel reported a total of 108 categorised gliding Instructors, which is a proportion of less than one Instructor in every 43 pilots.

Thinking of this proportion in terms of an Instructor's duties at a normal club site on a busy day, it will be quite clear that this is a ridiculously small proportion of Instructors, and that one per 20 is probably the lowest acceptable proportion in an organisation like ours. This means that the number of new Instructors tested in 1960 was pathetically small—17 is the number quoted by the Instructors' Panel; in order to reach the minimum proportion of 1 in 20 the number of new Instructors needed would be no less than 129, even if the total number of pilots in 1961 remained the same as in 1960.

An increased number of Instructors' courses have been organised this year; but they are certainly inadequate to expand the Corps of Instructors at the rate now necessary. In fact, the accidents so far reported this year suggest that we are making no improvement, except perhaps in getting reports. A summary is included herewith.

The suggestions made by the Chairman of the Instructors' Panel (June issue) were much appreciated. One hopes for more letters like hers, although perhaps the idea of "studying the thinking of the pilot prior to accident" is one which should appeal more strongly to the Instructors themselves than to anybody else. By doing so, they will without doubt learn something to their advantage.

But more letters and ideas will always be welcome. One recollects the alleged remark of a Western newspaper editor as a fusilade of shots were fired through his window: "Print that libel again; there must be some truth in it!"

G.J.C.P.

An analysis of accidents during the first six months of 1961 is shown on the opposite page.

	Classification	*Glider*	*Pilot*	*Cost (£)*
1	UNDERSHOOT, and arrived on rough ground.	Cadet	under 5 hrs.	10
2	LANDING on sheep, on own site.	Swallow	Silver C	6
3	UNDERSHOOT, and hit cables on boundary.	Skylark 2	over 5 hrs.	25
4	LANDED on obstruction on own airfield.	Cadet	under 5 hrs.	10
5	PILOT NOT IN CHARGE, unattended glider blown over.	Olympia	—	200
6	PILOT NOT IN CHARGE, wing-tip man moved glider over canopy on ground near fuselage.	Olympia	—	5
7	TAKE-OFF, dropped wing, which hit a tyre and caused a swing.	Olympia	over 5 hrs.	30
8	LANDING, Instructor failed to take over in time to prevent heavy landing.	T-21	Instructor	5
9	CANOPY came off in the air.	Skylark 2	over 5 hrs.	50
10	UNDERSHOT and landed on rough ground.	T-21	Instructor	150
11	WEATHER: a sudden clamp on ridge, recall signal not	Prefect	28 hrs.	100
12	seen by pilots who were lost in cloud and landed all over	Prefect	30 hrs.	650
13	the place (same time and site)	Olympia	44 hrs. 350 hrs. power	25
14	WEATHER similar, but 8 days later.	Olympia	60 hrs.	400
15	LANDING: heavy landing on own airfield.	Skylark 2	over 5 hrs.	5
16	LANDING with drift on Cross-country.	Gull 3	over 5 hrs.	25
17	TAKE-OFF, released wheels too early.	Weihe	over 5 hrs.	15
18	APPROACH, low final turn, unable to recover and hit ground with wingtip.	Kite 1	over 5 hrs.	150
19	CABLE BREAK at 200-300 ft., pilot unable to cope.	Olympia	over 5 hrs.	800
20	APPROACH, undershot, stalled and lost control.	Eagle	Instructor	400
21	PILOT NOT IN CHARGE, got out of glider before ground-crew arrived and glider blew away.	Grunau Baby	over 5 hrs.	300
22	LANDING, rough ground, Cross-country.	Skylark 3	Gold C	5
23	LANDING in standing crops, Cross-country.	Skylark 3	Gold C	20
24	IN FLIGHT.	Skylark 3	Silver C	1,500
25	LANDED (lost) on obstructed runway. (First experience on new site, no familiarisation).	Olympia	over 5 hrs.	225
26	TAKE-OFF crosswind caused wing to drop, foul obstruction and swing glider.	T-21	Instructor	200
27	UNDERSHOOT into bad ground.	Cadet	over 5 hrs.	15
28	(Cancelled Number.)			
29	APPROACHED too slow, stalled.	Tutor	under 5 hrs.	80
30	TAKE-OFF winch failed, pilot unable to cope.	Olympia	over 5 hrs.	650
31	LANDED on obstruction on own airfield.	Olympia	100 hrs.	10
32	TAKE-OFF, stalled during launch.	T-31	Instructor [?]	300
33	CANOPY came off in flight.	Skylark 2	Silver C	50
34	UNDERSHOOT.	T-21	Instructor	2
35	APPROACHED too low and hit a tree during final turn in to land.	Skylark 3	100 hrs.	650
36	LANDING on bad ground having failed to get back to own airfield.	Skylark 2	?	150
37	APPROACH: stalled on approach after full circuit following winch failure.	T-21	C Cert. A.T.C. Instr. 3,000 launches and 250 hrs. C.F.I. since 1959	500
38	CANOPY came off in flight, damaging tailplane, crew bailed out.	Bocian	Instr. and Instr. u/T.	600
39	IN FLIGHT, lost control and spun in.	Condor	over 5 hrs.	500
40	LANDING: heavy landing on Cross-country.	Kite 2a	1,250 hrs.	25
41	PILOT NOT IN CHARGE: pilot and crew got out of glider which was overturned by squall.	T-21	Instructor	400
42	APPROACH, undershot into stone wall, Cross-country.	Olympia	over 5 hrs.	350
43	PILOT NOT IN CHARGE: pupil fell onto windshield.	T-21	Pilot not in charge	2
44	LANDING on rough ground, Cross-country.	Sky	Silver C	25
45	WEATHER, lightning strike.	Skylark 3	Silver C	50
46	LANDING, first solo.	Tutor	under 5 hrs.	1
47	TAKE-OFF: lost speed on launch and spun in from 200 ft., climbed too steeply.	Kite 2	over 5 hrs.	375
			Total cost	£10,026

Gliding Certificates

Diamond Numbers

The Flying Committee have decided to reorganise the register of Diamond numbers, because the original system could not expand to cope with the number of Diamonds now being achieved. The Register will be kept with the old and new numbers so that the date and identification of any flight will not be lost.

From now on the Distance Diamonds will be numbered 1/. . . and the appropriate number in chronological order. Similarly the Goal Diamonds will be 2/. . . and the Height Diamonds 3/. . .

DIAMONDS FOR GOAL FLIGHT

No.	*Name*	*Club or Society*	*Date*
2/77	D. J. Jones	Bristol Gliding Club	16.5.61
2/78	K. H. Tiede	Ghana Gliding Club	16.5.61
2/79	P. G. Burgess	Ghana Gliding Club	16.5.61
2/80	H. N. Gregg	Coventry Gliding Club	17.5.61
2/81	H. R. Browning	Imperial College Gllding Club	17.5.61
2/82	A. D. Purnell	Lasham Gliding Society	14.5.61
2/83	C. W. Bentson	London Gliding Club	16.5.61
2/84	D. D. Carrow	Lasham Gliding Society	16.5.61
2/85	A. Coulson	Newcastle Gliding Club	16.5.61
2/86	H. R. Dimock	Portsmouth Naval Gliding Club	16.5.61
2/87	A. L. L. Alexander	Cambridge University Gliding Club	17.5.61
2/88	G. F. Fisher	Bristol Gliding Club	17.5.61
2/89	D. C. Snodgrass	Surrey Gliding Club	28.5.61
2/90	I. W. Strachan	Army Gliding Club	9.6.61

GOLD C CERTIFICATE

No.	*Name*	*Club or Society*	*Completed*
79	P. G. Burgess	Ghana Gliding Club	16.5.61
80	D. J. Jones	Bristol Gliding Club	16.5.61
81	K. H. Tiede	Ghana Gliding Club	16.5.61
82	H. N. Gregg	Coventry Gliding Club	17.5.61
83	H. R. Browning	Imperial College Gliding Club	17.5.61
84	H. S. Mettam	Lasham Gliding Society	16.5.61
85	G. R. Whitfield	Cambridge University Gliding Club	17.5.61
86	J. L. Bayley	Lasham Gliding Society	16.5.61
87	D. C. Snodgrass	Surrey Gliding Club	28.5.61

SILVER C CERTIFICATES

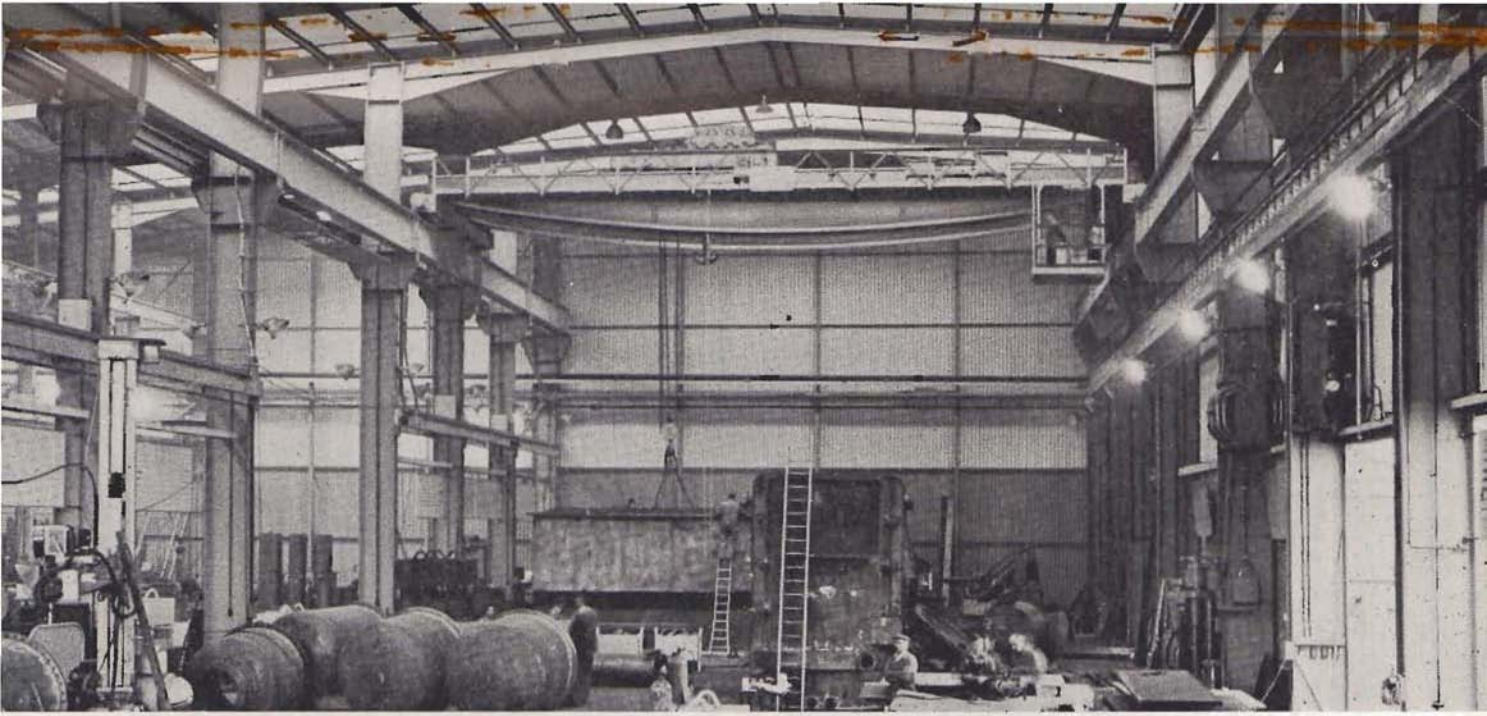
No.	*Name*	*Club, School or Association*	*Completed*
1004	H. V. Howitt	Army Gliding Club	26.5.61
1005	P. E. Bethal Fox	Cambridge University Gliding Club	16.4.61
1006	T. W. Sheppard	London Gliding Club	7.5.61
1007	A. Cunningham	Coventry Gliding Club	7.5.61
1008	D. Kenna	Suffolk R.A.F. Gliding Club	22.5.61
1009	N. A. Brett	Norfolk & Norwich Gliding Club	3.6.61
1010	D. Ratcliffe	London Gliding Club	26.5.61
1011	J. H. M. Adam	R.A.F. Germany Gliding Association	10.6.61
1012	M. W. Fitzgerald	No. 624 A.T.C. Gliding School	24.4.60
1013	C. B. Hunt	Southdown Gliding Club	27.5.61
1014	J. C. Reussner	Yorkshire Gliding Club	18.6.61
1015	D. C. Austin	East Midlands R.A.F. Gliding Club	30.5.61
1016	K. C. Perelli	Southdown Gliding Club	10.6.61
1017	K. I. Dolicher	No. 613 A.T.C. Gliding School	30.5.61
1018	G. R. Chapman	Surrey Gliding Club	25.5.61
1019	E. T. Hurley	Army Gliding Club	30.5.61

SILVER C CERTIFICATES (*continued*)

No.	*Name*	*Club, School or Association*	*Completed*
1020	C. G. Taylor	East Anglian R.A.F. Gliding Club	19.6.61
1021	A. R. Ismail	Cambridge University Gliding Club	18.5.61
1022	R. A. Neaves	B.E.A. Silver Wing Gliding Club	25.6.61
1023	A. T. Wilson	London Gliding Club	27.5.61
1024	J. L. Smoker	Oxford Gliding Club	28.5.61
1025	G. Glennie	Scottish Gliding Union	9.5.61
1026	J. M. A. Row	Cambridge University Gliding Club	14.6.61
1027	J. M. Wilson	Surrey Gliding Club	28.5.61
1028	J. Bronhead	R.A.F. Cranwell Gliding Club	18.6.61
1029	P. M. Crook	R.A.F. Cranwell Gliding Club	14.6.61
1030	R. Staines	Moonrakers R.A.F. Gliding Club	14.6.61
1031	P. Hanneman	Army Gliding Club	19.6.61
1032	S. Redman	Cambridge University Gliding Club	18.6.61
1033	R. Salisbury-Jones	Oxford Gliding Club	6.7.61
1034	E. R. Jarvie	Southdown Gliding Club	6.6.61
1035	H. F. S. Beazley	London Gliding Club	4.7.61
1036	H. H. H. Ehlers	Ghana Gliding Club	23.6.61
1037	J. J. Goddard	Lasham Gliding Society	21.6.61
1038	P. A. Crabtree	Norfolk Gliding Club	3.6.61
1039	R. Feakes	R.A.F. Cranwell Gliding Club	23.5.61

C CERTIFICATES

Name	*Gliding Club or A.T.C. School*
A. Cantlay	Aberdeen
A. MacCormick	663 G.S.
B. Dart	Suffolk
M. J. A. Mells	Army
M. J. Surrey	Andover
M. Westwood	Cambridge
F. Rowell	Northampton
F. S. Jessop	642 G. S.
E. P. Affleck	Midland
N. J. Bing	Cranwell
D. J. Baldwin	Perkins
E. C. Morrison	Wessex
K. B. Kidd	Red Dragon
K. Wilford	642 G.S.
N. Marriott	Coventry
G. J. Kinghorn	Dumfries & District
S. G. Brooker	Southdown
R. L. Harris	Midland
B. B. Gomersall	635 G.S.
F. P. Le Dul	Southdown
G. L. Caley	Perkins
J. C. Hassell	Leighton Park
H. E. A. Jeffries	Bristol
D. J. White	Midland
N. D. Secombe	613 G.S.
C. R. Simpson	Army
H. V. Jones	Moonrakers
M. S. Simpson	RAF Germany
P. W. Sardner	Surrey
J. G. Andrews	Fenland
E. R. Statham	614 G.S.
Jean K. Lawrence	Midland
G. E. Wadsworth	Midland
P. A. Waxman	RAF Germany
A. W. Barker	Surrey
A. A. Allison	East Midlands RAF
A. E. Mitchell	Cornish
D. A. Cameron	Windrushers
R. Barham	Wessex
K. N. Owen	Coventry
G. Edwards	Coventry
L. Muncaste	Doncaster & District
I. A. D. Wilson	Cambridge
P. P. Delaney	614 G.S.
J. W. Allen	Lakes
J. L. Bibb	Four Counties
F. A. Green	Surrey
H. M. T. Harden	Midlands
K. I. Dolicher	613 G.S.
P. K. Ghose	Surrey
J. Peatfield	632 G.S.
J. A. Bennett	East Anglian
R. G. D. Newill	Midland
E. P. Shephard	Midland
G. E. Dowling	Cambridge
M. D. Collins	Surrey
R. J. M. Zgorski	Polish A.F.
J. A. C. McWilliams	Cambridge
D. C. Reynolds	Wessex
L. G. Stanbridge	RAF Germany
J. E. Parsons	611 G.S.
J. S. Stainton	Surrey
I. Vestry	Midlands
T. J. Satchell	East Midlands RAF
A. R. Jury	Wessex
P. Hutchings	Bannerdown
T. C. Wagstaff	Army
Miss A. C. Cooper	Moonrakers
B. A. Davies	Derbyshire & Lancashire
B. A. Philpott	Wessex
K. A. Harrison	East Midlands RAF
R. F. Grainger	Clevelands
J. Dabill	Wessex
B. S. A. Butler	Northampton
R. J. Foster	Surrey
K. M. Plummer	Oxford
A. J. Newman	644 G.S.
B. F. Sutton	614 G.S.
J. Ward	East Midlands RAF
F. G. Hudlass	Cornish
J. Dixon	Norfolk
A. K. Pearson	644 G.S.
W. L. N. Arthur	Surrey
N. W. Fox	Derbyshire & Lancashire
H. J. Francis	Wessex
J. C. Shorter	East Midlands RAF
Miss V. Wyles	Scottish
J. Whitworth	Norfolk
J. R. Wombwell	Clevelands
E. J. Robinson	Midland
B. C. Daniels	East Anglian
D. H. Ford	Swindon
A. H. Whiffen	East Anglian
T. O. Keith	Norfolk
R. Geoffrey	633 G.S.
R. J. Shephard	E. Midlands
M. J. Smith	E. Midlands
J. M. Whiteley	E. Midlands
S. C. Sly	E. Midlands
A. MacConaill	Surrey
A. J. Spillsbury	633 G.S.
F. A. McKenna	Moonrakers
F. W. Mahtby	E. Midlands
C. S. Mingo	Imperial Coll.
P. H. P. Cass	Derbyshire & Lancashire
W. H. Bramwells	Cranwell
L. C. A. Haynes	Derbyshire & Lancashire
C. P. Joels	614 G.S.
B. Dixon	RAF Germany
Mrs. B. J. Bentson	London
P. A. Griffiths	632 G.S.
C. M. Hillyard	Cambridge
R. J. Thayer	Norfolk & Norwich
C. B. Nash	Wessex
M. J. Millican	Midland



Architect: T. M. Ashford, F.R.I.B.A., A.A. (DIPL.) Birmingham

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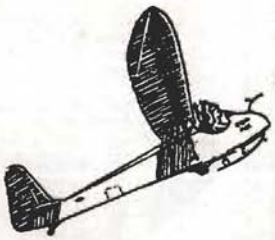


ITS - ALL - YOURS

For and About Instructors

WOMEN PILOTS

FROM out of the wreckage crawled the aviatrise, picking perspex out of her hair. Another woman pilot has done it again. Why do clubs waste their time and gliders on such accident-prone pupils who, even if they fail to break anything, probably will not be any good?

There is no doubt that the accident rate for women glider pilots is higher than it is for men. They are erratic and unreliable in their flying, and the only good thing about them is that they probably give it up fairly soon and do something useful in the club, like keeping the log.

Practically every site in the country has its quota of unsatisfactory women pilots. They may be regarded as a useful accessory, or a graceful adornment, but they are not only these. They are a monument to incompetent instruction.

Women pilots break gliders, or fail to progress, because they are taught wrongly and without understanding of the problems involved, particularly the psychological ones. In countries where these problems are understood they have Gold C's, Diamonds, do well in competition flying and record attempts. They enjoy their flying and are safe pilots. This has been achieved because their instructors realised that they should not, in general, be taught like men, but in a manner more in line with their different outlook, background and mental processes. This does not mean that they should be given preferential treatment, but that the method of instruction should be suitable.

When teaching women pilots the instructor must keep in the forefront of his mind four things:

1. They are more likely to be less confident and sure of themselves than men pupils. Centuries of seeing their menfolk rush out to battle has given them a built-in fear of calamity.

2. Their approach to learning something new, like gliding, will tend to be more emotional than intellectual.

3. They will, in general, be less able to absorb, and be more frightened of, technical explanations.

4. They often obtain a greater reassurance and feeling of confidence from the presence in the aircraft of the instructor than men, and may therefore appear, dual, to be more competent than they really are.

All this means, in practice, that their early training must be unhurried and thorough, and above all they must not be frightened by unnecessary aerobatics, or by being given stalls and spins too soon, or too suddenly. Safety procedures and actions in event of emergency must be gone into with more than usual care, so that if the pilot gets into difficulties she will have a drilled knowledge to fall back on until her own increase of flying experience is enough to take care of such things.

All this, of course, can be applied to under-confident or nervous pupils of both sexes, because when faced with an unexpected emergency a considerable proportion of their mental capacity is occupied with being scared and is not available for seeking a way out of the difficulty. It means also that as much as possible of their dual flying should be done with one able instructor, so that he can get to know the pupil well and assess her real flying skill, so that he will not get caught out by a false display of ability which might evaporate away when she is solo.

A contributory reason for accidents is that many women do not particularly want to fly, but have been persuaded into it by their husbands or friends. If the pupil

seems at all reluctant, or is making little progress, the instructor should try to discover her reasons for flying, and unless she is keen because she herself wants to do it, he should either discourage her from continuing or allow her to go on at her own speed and inclination.

THESE ACCIDENTS

THIS year looks like being the most noisily expensive we have had yet. Each week good soaring gliders are being smashed and, not infrequently, the pilots are hurt. We do not want, and certainly cannot afford, gliding to be regarded as a dangerous sport, and the increasing number of pilots with the "duelling scars" from broken canopies on their faces is no good advertisement.

Flying gliders can, and should, be a safe activity, and there is no sense in the present number of accidents; but they exist and can be reduced only if clubs are prepared to take a real look at their operations and their economics. Somehow a means must be found for running the club without having to take in every new flying member who comes along, and running incessant courses for people who may have no interest in continuing. The policy of giving too little to too many is disastrous, and many accidents are traceable to this cause. On looking into the background of several recent accidents the pattern was found to be similar.

1. The pupil had had too many instructors. This resulted in a lack of personal knowledge of the pupil and gaps in his understanding.

2. The pupil was sent solo too soon. Either the amount of flying was simply not enough or the training was inadequate.

3. Having gone solo with a sketchy background, insufficient follow-up training and supervision was given.

4. The club flying discipline was on the slack side. This was because the C.F.I. was not providing the organisation necessary to support the greatly increased flying operations of a growing club.

If we are to have a competent and safe gliding movement in which pilots can have both fun and successful flying, a great deal of thinking and action must take place

before the present bulge of under-trained pupils gets loose on solo aircraft. If this is not done, next year's accidents will be still more numerous.

This is not a thing to make rules about: each club has its own characteristics and standards and, to be fair, some of them are very high. But there is a case for putting forward some criteria to be aimed for unless there is a real reason to reduce them.

Firstly, although it is difficult to avoid frequent changes of instructor when their services are voluntary, it must be done as far as possible. As a minimum the pupil should be sent solo only by an instructor who knows him personally and has done at least 10 or 12 flights with him very recently. If possible, at least one-third of the pre-solo dual should be done by one good instructor. The need here is for understanding of the pupil's outlook and real ability, so that *sufficient emphasis can be made to overcome the weaknesses found in the pupil's flying.* The reason that too many instructors and too little personal knowledge is dangerous is that no one has any real chance to find out the pupil's weaker points and really get home the means of overcoming them.

Secondly, there have always been fashions and passions for sending pupils solo with minimum flying. Whatever the reasons, the practice is thoroughly bad. At the present time particularly, when inexperienced pilots get on to cross-country soaring comparatively soon, the need for enough flying before solo is even greater. To cope with minor emergencies, such as cable breaks, or a lack of supervision in the early solo period, *there is no substitute for time in the air.* Today's techniques demand something like five hours and 50 launches of good instruction before solo. There will, of course, always be the occasional "natural" who can do with less, and many people who will need far more. But instead of the cry, "Oh, we will get him solo quite soon," should be substituted, "Have we honestly given him a thorough enough grounding to make him a safe soaring pilot?"

Thirdly, sparing an instructor to stay on the ground to brief and supervise solo flying is always difficult, but it must be done. This work is just as valuable if done with intelligence as sitting in the other seat. It is with able tuition at this stage that good airmanship is developed.

Lastly, there is no substitute for discipline in flying training. This does not mean regimentation, but the organization and control of flying until the pilot has enough experience to ensure the safety of his glider by the discipline he has learned to impose upon himself. It is impossible in a really big club for the instructors, even the C.F.I., to know everybody, and the price of belonging to a large unit must be necessary submission to a system devised to help control the pupil and his flying. The lack of such organization is shown by the accidents happening at big clubs in spite of the advantages they have of better material facilities and equipment.

To make gliding safer, it may be necessary to charge members more to fly, and this would undoubtedly be hard on young pilots. But the price paid at present for taking in too many people for training is very expensive. It would be worth working out the real value of insurance excess and increased premiums, loss of revenue while the glider is out of use for repair, bad local advertisement when the pilots are taken to hospital, and the frustration and loss of confidence produced in the members who help pick up the pieces and then have no glider to fly.

ANN WELCH.

"Fair Stood the Wind"

by A. H Warminger

As an alternative to a run from Norfolk to the S.W., I had for several years thought of a flight on a moderate N. or N.W. wind over the Channel to France, a practical proposition for a Diamond Distance attempt. On two occasions, one in June 1957 and again in September last year, I had got to the South Coast only to find the sea breeze in full swing and accordingly an absence of cumulus stepping-stones.

On walking to work on Wednesday, 5th July, at 7.30 a.m., the weather conditions seemed to confirm the favourable T.V. weather chart of the previous evening. One would have to move fast to (a) organise things at the office for a day's truant, (b) get the retrieving side on the move, and (c) cover 18 miles to Swanton Morley and fix a tow to be airborne in time to make the 500 km. distance feasible.

In the event I took off at 11.10, releasing four miles N. of Swanton Morley over the disused airfield of Foulsham, leaving a rather bewildered Alan Jefferies and Jean Gowing "hitching up", with only passports at hand should the improbable happen. We had arranged that they should make for Dover and wait for a 'phone call at the A.A. Embarkation Office.

So much for the preliminaries. The goal nominated was Troyes airfield, south of Paris. Conditions were superlative on the route to the South Coast—⅛th cu, tops 6-7,000 ft. and the sailplane never below 3,000 ft. except when trying to cut the Thames Estuary corner a bit too fine by crossing where it was 10-12 miles wide. I experienced quite a nasty turn out in the middle with sustained high sink that I edged towards Sheppey, but eventually made Whitstable around 2,000 ft. and there contacted further lift. And so on to the air corridor-free area by Folkestone, which was reached at 14.10 hours; there I stood off-shore trying to get 5,000 ft. on the altimeter in the right position, about four miles out. The other worry, apart from the sobering episode over the Thames Estuary, was the relatively poor visibility of 7-9 miles which prevented my seeing the other side.

After the longest hour I have ever spent in a sailplane, the necessary height was eventually reached and I set off on an E. by S. heading with the "butterflies" inside having a field day! However, clouds were in evidence for half the crossing and working well, and in the remaining dead air I sighted the French coast at 15.32 hours and made landfall at 15.41 hours (4,000 ft.) between Cap Grisnez and Wissant, celebrating the occasion by singing the "Marseillaise", although a dry throat and resultant croaky voice rather cramped my style.

It was something like another 15 miles on 150° before any disturbance was felt and then shallow cu formed at the very low height of 2,500 ft. in the wooded region S.E. of Marquise. Conditions were never the same on the French side and from 16.15 to the time of landing it was mostly a scrape —three times down to 1,000 ft. and less— once getting lift off a bonfire in the field where I was about to land.

One rather disconcerting factor was the absence of suitable landing strips although flying over the large fields and flat open country; everywhere seemed under crop with no parklands, meadows or disused airfields with which we are rather well supplied in Norfolk. By 18.00 hours the

This is where No. 44 rested for the night.

bonfire had taken me to 4,000 ft. and at one stage developing heavy overcast looked as if it might be making a cu-nim, and although I had rallied myself for a final effort, I admit feeling a little relieved when it did not materialise. After seven hours in the saddle I was beginning to tire.

The map was a 1/1,000,000 American which wasn't of great help, but the Somme River with its double loop was unmistakable, and from there I edged from my S. by E. course to head for Rosières-en-Santerre, 18 miles E.S.E. of Amiens, which—because marked—suggested itself as being in use. Arriving there at 400 ft. the runways looked in a hopeless state due to bombing, neglect and cannibalisation of the concrete, so I put down on a sugar-beet strip adjacent to a runway; the time was then 7.0 p.m. and a distance of 225 statute miles as the crow flies from Foulsham.

Within minutes the whole population of the tiny village of Maricourt turned out, including the Mayor, M. Dogny; but not one could speak English, and my French is extremely limited. Obviously the thing to do was to contact the gendarmerie. Two of these gentlemen arrived after about an hour but weren't very helpful. The sergeant i/c looked at my passport, shrugged his shoulders and left it at that. My one concern was, of course, to get through to my wife in Norwich and for her to communicate with Dover A.A. This, according to the Sergeant, was impossible—the local exchange closed down at 8.0 p.m. This was confirmed by the English-speaking village Priest—"Why not try in the morning?" I had visions of Channel Alerts—it just seemed crazy, but they were quite sincere and unconcerned. However, the Mayor intervened—he would take me to the town of Rosières-en-Santerre to the Headmaster of the school there who spoke English and had taught in England. First we must tend to the "419". She was dragged across to the perimeter track and left picketed snugly in an old German anti-bomb pen with concrete walls on three sides and high trees on the other. The trees formed part of a Military Cemetery and the nearest graves were those of an R.A.F. bomber crew—somehow I sensed the Olympia was in capable company and would be taken good care of for the night.

So off to the town and to meet Monsieur Peron. Could he help? Why, of course, only the village post office-cum-'phone exchange was shut down. He would get through to Paris and the Continental Service at once. The time was then about 9.30 p.m. After delays, 'phone disconnections, inaudibility, I eventually spoke to my wife at 11.30 p.m. Poor girl, in her anxiety she had been through to the local press agency for possible information. The ends were soon tied up and by midnight I was installed in the kitchen of the town's hotel, having the first food and drink since breakfast in England.

The next morning was spent sitting on the Hotel de Ville steps, writing postcards home and looking at a sky that must have been producing a fresh crop of French Gold and Diamond legs.

At 1.30 p.m., as I sat gorging in the hotel, a familiar car drew up outside and I heard voices asking for information in Pidgin French; sticking my head out of the window I asked if I could be of help as I spoke English!

So ends my part of the story.

—300—

The Retrievers' Tale

by J. G. and A. J.

On this particular Wednesday we set out on what we felt to be rather a fool's errand. True, the sky looked good and the wind favourable, but we had heard the cry of "Wolf" before. We pressed on, however, full of faith, and clutching our passports—ever southwards.

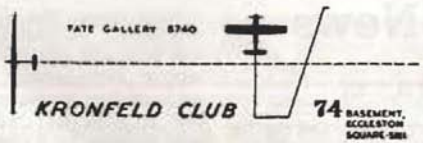
At the Tilbury-Gravesend Ferry we met our first adventure. As usual, everyone was very curious but helpful, and we were soon loaded on to the boat, where the back wheels of the trailer were only inches from the edge of the deck and far too much of the trailer itself hung in mid-air while we crossed the river! Then on we went to Dover, arriving in the early evening, still without news. Here we made the A.A. our clearing house for any telephone messages, as we realised by then that our glider had really and truly gone across that magic stretch of water.

At 11.30 p.m. or thereabouts we heard at last and were instructed to get the first ferry next morning. This meant arriving at the Quay 6.30 a.m., an hour which was quite new to me at least, as we had no bookings, papers or documents for either vehicle. Here we must wave a flag for the A.A., who were really wonderful. They soon produced all the necessary forms and documents and we waded through the lot. They even thought we had honest faces and accepted a cheque in payment of the fares, which saved the situation, as we certainly couldn't have raised enough cash and it was just a little too early for the bank. Thanks to their assistance we were able to catch the 8.15 boat and have a meal at long last.

At Calais the A.A. were helpful once again and showed us where to change enough money to buy Insurance, just to keep law-abiding. We were very soon on our way, through the hot sunshine and over the really dreadful roads. After bumping along all morning—without a break, I might add—we left the main road and wandered through a few sleepy villages, finding our pilot quite unconcernedly scoffing his lunch at Rosières-en-Santerre. After much excited exchanging of news and a glass of wine to celebrate, back to work once more. We de-rigged the glider and had many willing helpers, the only trouble being to translate the instructions quickly enough—they were so eager to get on with the job.

The return trip to Boulogne we took very carefully because of the bad roads; we were lucky to find rooms there straight away, and fell into bed exhausted after such a tiring day. The customs officials were a little suspicious at first of our extra person and glider without papers, but it was all much easier than we expected. At Dover they remembered us—indeed, how could they forget?—and although we were there for about an hour, satisfying everyone that we were not up to some new tax dodge, it was mostly paper work. Then we were on the familiar roads of home once more, driving on the left-hand side and hardly able to believe it had all happened in three days. We were incredibly happy—it was a trip to remember and boast about to other crews—we felt we deserved a medal, but you know how ungrateful these pilots are!

Declaring one Glider and one Pilot at Dover Customs shed.



PETER Scott has very kindly consented to open officially the Club's Fourth Aeronautical Painting Exhibition and Competition at 8 p.m. on Wednesday, the 15th November. There will be a press preview the same morning and the competition will be judged by two members of the Society of Aviation Artists. Full details and application forms can be obtained from Mrs. Bonham of 14 Little Brownings, London, S.E.23, telephone FORest Hill 9390, or from the Secretary at the Club. The Exhibition remains open from 7 p.m.-10 p.m. each weekday evening until the 25th.

There is still time to obtain your ticket (£2. 10s. double) for the Club's Annual Dinner and Dance, which is being held at the Eccleston Hotel on Friday, the 6th October.

The new version of the Club tie in dark navy has been selling extremely well and any members unable to get to the Club should write to the Secretary enclosing 15/- if they would like one. There are also supplies available in maroon. Both ties are now in 100% terylene.

The Club has been very pleased to welcome several overseas visitors during the past few months.

A full list of Lectures and Film Shows appears below, but it is worth making special mention of the debate, "Gliding Should be Government Subsidised", on Wednesday, 4th October at 8 p.m. The chair will be taken by David Carrow (Chairman of the Lasham Gliding Society). Derek Piggott (C.F.I. of Lasham) will propose the Motion which will be seconded by Lionel Alexander (Cambridge U.G.C.). Philip Wills will oppose and he will be seconded by Mike Riddell (London G.C.). October 11th sees the ending of the popular series of films on the history of the U.S. Air Force. On 8th November a new fortnightly series of U.S. films will begin, including the story of the Flying Fortress, the bombing of Germany in World War II, the Battle of Britain, and many other interesting titles.

H.S.S.T.

Diary of Lectures and Film Shows on Wednesdays, at 8 p.m.

Sept.	27th	History of U.S.A.F. films, "A New Air Force and The Cold War".
Oct.	4th	Debate—details above.
	11th	History of U.S.A.F., "The Air Force and the Atom Bomb".
	18th	Reserved for winner of Aerobatic contest.
	25th	The Annual General Meeting.
Nov.	1st	Auster to Assam, by Derrick Goddard.
	8th	U.S. film, fictional: "The Day North America is Attacked."
	15th	Peter Scott opening Exhibition of Aeronautical Paintings and Drawings at 8 p.m.
	22nd	Painting & Drawing Exhibition.
	29th	Around England on Inland Waterways, by Bill Gotch.

B.G.A. News

A BOOK TO GET

The B.G.A. is publishing a booklet on the formation and operation of gliding clubs. This is intended to help club officials and committeemen to understand all that is involved on the business side of running a club successfully.

Written by Godfrey Harwood, who was for several years Treasurer of the Surrey Gliding Club when it managed the Lasham Gliding Centre, this book goes thoroughly into all matters of administration and finance and will prove valuable even to clubs which are no longer embryonic. It will be available shortly.

CONTINENTAL VISITS WITH GLIDERS

UP to now there has been some doubt as to whether or not separate Carnets were necessary for car, glider and trailer when going to events in Europe. On my recent trip to Italy arrangements were concluded with the Customs Authorities as follows:—

1. CAR.—As far as cars are concerned, for some time past it has not been necessary to have a Carnet in practically all Western European countries. Cars are cleared through British Customs on a Form 29C (Sale), and this can be obtained from H.M. Stationery Office. The B.G.A. also has a small number.

2. TRAILERS.—Carnets are still necessary in practically all European countries for trailers. They are *not* necessary to our own Customs Authorities. Our Customs Authorities have now agreed to clear a trailer and the glider contained therein on a single Form 29C (Sale). This form is filled out for the trailer, and under the line "Special equipment" is included the description and B.G.A. number of the aircraft. The form can be obtained from H.M. Stationery Office or the B.G.A.

So far as Continental countries are concerned, of course, no individual official arrangements have been made. But in my own case the sailplane was successfully included on the A.A. Carnet for the trailer, which in line 22 has the heading "Appareil —Divers". This, of course, is to cover special equipment which may be carried in the trailer. Under this heading I included the type and number of my sailplane. The above arrangement made it, of course, unnecessary to have a special Carnet for the aircraft, and reduced the paper work and expense by a considerable amount.

P. A. WILLS.

Robert Perfect Trophy

THE Trophy presented by the Air League in memory of Robert Perfect was described, and preliminary conditions for its award were published, in our issue of June 1961, p. 161. The full competition rules have now been issued, and are:—

1. The award to be made annually to the Club, Service or Civilian, which is a member of the British Gliding Association, and which has, on 31st December, the greatest number of instructors holding a full, current B.G.A. Category in proportion to its Flying Membership on that date.

2. For the purposes of these counts, the figures used for Flying Membership will be those shown in the annual returns made by Clubs to the B.G.A.; and the number of

Instructors will be taken from the Register of Instructors maintained in the B.G.A. Office.

3. An Instructor can only be counted towards one Club; that Club will be the one shown on his initial grant of Category, or, on renewal, the Club shown on his application for renewal.

4. In addition to the Trophy, the Air League will award to the winning Club each year £40; to the runner-up £20; and to the third £10.

5. In the event of a tie for first place, the Trophy will be held jointly in that year by the two winning Clubs; and the total prize money for the first and second places will be halved between the two Clubs. In the event of a tie for second place, the prize money for second and third places will be divided equally between the two Clubs tying for second place.

6. A club shall not be eligible to compete for the Trophy unless it has 50 or more Flying Members shown on its return for that year to the B.G.A.

7. The contest is to be judged each year by a Committee appointed by the B.G.A. Council. This Committee shall make its recommendation to Council as early as possible after the 31st December each year; the decision of the B.G.A. Council shall be final.

The Committee appointed by the B.G.A. Council, in accordance with para. 7, is:—

CHAIRMAN—Air Cmdre. Christopher Paul (Secretary-General of the Air League).

MEMBERS—Mr. Dudley Hiscox,
Mr. Walter Kahn.

NORTHERN COMPETITIONS AT CAMPHILL

by Basil Meads

IT is eight years since the last Nationals were held at Camphill, and it was very pleasant to see some of the old faces (with new gliders!), and many new faces at these competitions. These were the first of the qualifying competitions under the new B.G.A. scheme for "seeding" entries in future Nationals, and Ann Welch and John Furlong, whom we were more than pleased to have with us throughout the meeting, were very busy hatching out a new method of assessing pilots' qualifications. I have no doubt we will be hearing more of this interesting scheme before long.

The entry was oversubscribed and was limited to 25. In the event only 23 turned up, and this number flew on each contest day, except the last when Alf Warminger was grounded by slight damage to a wing.

The weather was mixed, as various troughs and fronts caused some rapid changes, almost all of which were very accurately forecast by Peter Wickham. Peter actually rose each morning at the unearthly hour of about 5 a.m. in order to drive to Ringway Airport and get all the data at first hand. He was always back at 8.30 prompt to brief the task-setters, and thanks to the excellence of his forecasting their job was a relatively easy one.

Seven tasks were set, with two rest days due to weather, and six days proved to be contest days. There was good ridge-soaring on most days, and both competitors and helpers took advantage of this when competition launching was over. Many hours were piled up, some by pilots who had never before enjoyed this very pleasant, if somewhat old-fashioned, pastime!

All launches were by winch, except for some bungy launching on a day of strong west winds, and it is very much to the credit of the marshals and winch crews, and to the landing discipline of the pilots, that everything went very smoothly indeed. Four wires were used, and when the occasion demanded it all 23 aircraft could be launched in little over an hour. Competitors were allowed a maximum of three competition launches per day, and this is a point which may well be revised in future contests of this nature, as it turned out that more launches could easily have been given with the facilities available, and there were occasions when competitors could have usefully used them if the rules had permitted.

The Derbyshire and Lancashire Club would like to take this opportunity of thanking all the competitors, crews and visitors who came to Camphill and made the meeting a success. We hope to see you all again.

The First Man-carrying Glider

by Charles H. Gibbs-Smith

We are indebted to "Flight", in which the bulk of this article first appeared, for permission to reproduce it, and to Mr. C. H. Gibbs-Smith, the eminent aeronautical historian, for several additional paragraphs incorporating his latest researches into the history of Sir George Cayley's pioneer glider. In a biography of Cayley which we published in February, 1958, to mark the centenary of his death, it was stated that nothing was known of the appearance of his man-carrying glider. This gap in our knowledge has now been unexpectedly filled, as Mr. Gibbs-Smith relates below.

I HAVE just had a once-in-a-lifetime stroke of good fortune. By a chain of almost uncanny accidents too long to detail here, I have stumbled across a full description and drawings of the first man-carrying aeroplane of history, Sir George Cayley's full-size glider of 1853. This rare treasure trove had lain unrecognised for over a century in the issue of the *Mechanics' Magazine* dated 25th September, 1852, where an illustrated letter from Cayley appeared, dated 15th September, from Brompton (near Scarborough). This letter (of which more later) was entitled "Sir George Cayley's Governable Parachutes." But first we must go back.

Thanks to the researches of the late J. E. Hodgson, and of Captain J. Laurence Pritchard, Cayley has been accorded international recognition as the true inventor of the modern aeroplane, "le véritable inventeur de l'aéroplane" as Charles Dollfus puts it. Capt. Pritchard has also sorted out the Cayley chronology; detailed his various model gliders; has shown that a ten-year-old boy was (in Cayley's words) "floated off the ground for several yards" on two occasions in 1849 in a large "model" glider; and, finally, has established that in 1852 (or possibly 1853) Cayley—now nearing 80—built a full-size man-carrying glider and sent his unwilling coachman to fly in it. I have since been able to establish from the documents that the year was 1853 (See below).

I had my first piece of "Cayley luck" a short time back when I found a second contemporary indication of this glider in an obscure entry in a volume of the *Encyclopaedia Britannica* published in 1855. The author, not realising that fixed-wing gliding was a necessary preliminary to powered flight, wrote:—

"The flying apparatus constructed by Sir George Cayley can scarcely be considered as a successful experiment, since the wings acted rather on the principle of the parachute, merely floating the experimenter, who started from a moderate elevation, by a very gradual descent towards the earth."

There could be no better description of gliding flight, and it shows that some of Cayley's contemporaries were aware of what he was doing, although ignorant of the true significance of the events they recorded.

Although we have long known, from Cayley's notebook sketches, the configuration of some of his model gliders (especially those of 1804 and 1849), his most important machine—the documented first full-size man-carrying glider in history—remained a mystery, and hence a most tantalizing question mark for historians. It is this all-important missing link that has now come to light.

It is curious that the reason for his writing to the *Mechanics' Magazine* was a controversy about parachutes (the first live drop from the air had been in 1797) in which he said that a glider, instead of a conventional parachute, released from a balloon could not only be steered but flown to a distance "about five to six times the distance horizontally that the balloon is then above the earth." He says later that:—

". . . although the safe descent and steerage of such aerial vehicles has been abundantly proved, when properly adjusted, by their being launched from hill-tops into the valleys below, loaded up to a pound weight to the square foot of surface; yet no human lives should be put to hazard in these parachutes until a considerable series of descents have been made safely with dead weights exceeding that of the person wishing to try the experiment."

The two relevant illustrations published with Cayley's letter are reproduced here: Fig. 1 is the original crude perspective

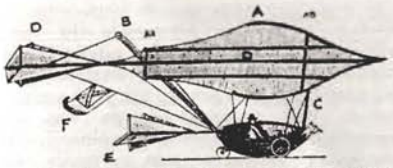


Fig. 1.—Perspective sketch of the 1852-3 glider published with Caley's letter of 15th September, 1852.

woodcut; Fig. 2 is the plan-form as given with the letter. Fig. 3 is a sketch I have made—not taking into account Fig. 4, of which more anon—to suggest a more realistic idea of the machine's appearance.

Owing to the small size of the letters on the original woodcut in Fig. 1, I have re-lettered it. The glider consisted of a kite-form wing A of 476 sq. ft. of light cloth or silk, with a main centre-section rib (to be a tapering box girder of fir) secured to the nacelle by two struts B and C and braced with wires. The nacelle is fitted with a tricycle undercarriage, the wheels being tension (cycle-type) wheels of Cayley's own invention. The wing was given a dihedral angle, on either side of the rib, of 8°, this angle being fixed by two vee-shaped spars AA and AB which in Fig. 1 are "represented as being straight, for the purpose of not confusing the perspective." This dihedral

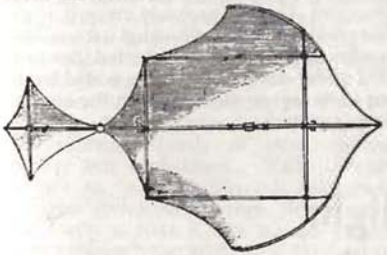


Fig. 2.—Plan view of the 1852-3 glider, also published in Cayley's letter.

says Cayley, "tends powerfully to right the parachute in all cases of accidental disturbance." The nacelle, in this somewhat crude woodcut, was a much more sophisticated affair, as we now know from examining the Cayley papers where two nacelle drawings survive: one specifically named by Cayley as that of the "boy-carrier" of 1849, and the other an improvement probably similar (if not identical) to the "coachman-carrier" of 1853.

Automatic longitudinal stability is achieved by a variable-incidence tailplane-cum-fin D which is adjusted and then fixed by means of two wires descending to the nacelle, one of which passes through an eye in the top of the extended strut B; the other (from which also hangs a flag F) runs direct to the nacelle. This tail unit "gives the most steady and secure course when slightly elevated, which also tends to secure the parachute from pitching, should it be exposed to an eddy of wind, and, together with the weight of the car, immediately restores the horizontal position." Here is automatic stability in practice nearly 20 years before Pénaud!

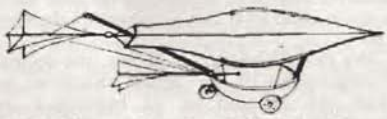


Fig. 3.—Perspective sketch, by the author of this article, based on Cayley's two drawings of the 1852-3 glider.

Control in the air, if the craft was actively piloted, was to be by the cruciform elevator-cum-rudder E, hinged to the back of the nacelle and worked by a lever; this was "sufficient to effect at will the steerage of the parachute, and to elevate or depress its course when occasion requires, or preparatory to alighting on the ground." This last is an interesting point to find considered in 1852.

The weight of the glider was about 150 lb. and "with the aeronaut, say 300 lb."; the surface, including the tailplane, was about 500 sq. ft., which gives a wing-loading of some 9.6 oz./sq. ft. "The centre of gravity

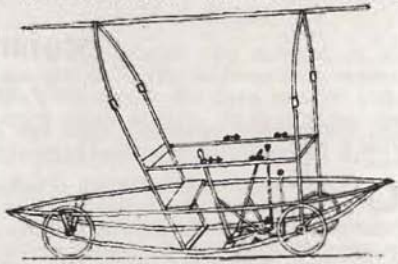


Fig. 4.—Cayley's later drawing (1853) of the nacelle of his full-size glider, published for the first time. Various control levers have been included, the functions of which are not clear today.

of the car and its load must be so much in advance of the centre of resistance of the main sail as will incline it downward in front in an angle of 5° or 6° with the horizon . . . Its angular velocity may be taken at about 30 ft. per second."

Evidence for the coachman's flight comes from three statements by the late Mrs. Thompson, Cayley's granddaughter, who witnessed the event. These statements show that in her old age Mrs. Thompson was doubtful as to whether the date was 1852 or 1853. But piecing together statements Cayley made about his work in a partly-published paper he wrote in 1852—now published in full in Capt. Pritchard's recently appeared biography of Cayley—it is quite clear that the coachman's date was 1853.

We cannot know, of course, the detailed configuration of the actual machine; but from the account of its behaviour, the description of the controls and of the general configuration—and bearing in mind that at the age of 79 Cayley would have fairly certainly finalized a vehicle about which he had done so much research—there can be little doubt that it followed the drawings he published.

A question of considerable interest is why Cayley returned to the low aspect-ratio kite form for his wing, when we know from his notes that he understood the superior lifting qualities of the high aspect-ratio wing. I think the answer is clearly that he felt he was unable to achieve strong enough spar-construction, even with bracing—a point on which he criticised Henson's design of 1843—and so fell back on the kite-form.

It does not take much knowledge of aviation history to appreciate the sheer brilliance—I repeat the word advisedly—of Cayley's design. But an extraordinary problem is set us when we ask why such an explicit and practical design was not immediately seized upon and exploited. The *Mechanics' Magazine* was certainly well known to inventors at the time, yet there is no evidence of any effort to emulate Cayley. The reason, like so many in history, is probably a complex amalgam of reasons. Perhaps the main factor in the design passing unnoticed until now was that no one in England until Wenham (about 1857-58) was really concerned with actual flying experiments; and certainly the practical problems of control, with which Cayley was also concerned, would seem almost chimerical to the earth-bound thinkers of the time. Even Wenham was more concerned with theoretical aero-dynamics than with practical flying, and the only man who would at once have appreciated Cayley's work was Le Bris in France (1856-68) who was also the one man in aviation least likely to see or hear about the *Mechanics' Magazine*, as he was working in isolation in provincial France.

Cayley was so far in advance of his generation, especially in his balanced concern with both aerodynamics and practical pilotage—characteristics which were not to be properly married until Lilienthal in 1891-96—that it is little wonder that such a sophisticated idea as this 1852 glider-design passed the world by, and was soon lost to view between the covers of dusty volumes.

Storm Flight

by Erwin Zick

This article, which incidentally sheds light on the structure of the advancing edge of a cold front, is translated and reproduced by permission from the journal "Flug Revue", of Stuttgart.

OVER the plain of the Rhine it is sultry and oppressive. No breeze brings any relief from the heat. Nevertheless training is in active progress on the Speyer airfield. Every pupil at the Speyer Airport Group's holiday camp is hoping for his four launches a day.

To the east, far across the Odenwald, can be seen a pair of magnificent cloud towers. Also to the west, over the Haardt, there appears to be something brewing. But above the airfield there lies a thin cloud layer and the pupils are able to fly their circuits with precision in the uniformly smooth air. Even weather like this is of some use to glider pilots. If only it were not so stifling! Towards evening, when everyone is thinking of packing up, the dark

cloud over the Haardt pushes slowly forward towards us. An isolated roller of cloud, lying somewhat lower, trundles transversely towards us below the turmoil. "One more quick launch, and then off for an evening's enjoyment."

THE STORM APPROACHES

I am fascinated by the cloud. This is no mere heat thunderstorm coming at us from up there; it looks more like a vigorous frontal storm. Pity it is so late in the day!

The Mü has landed.

"Now then, into the hangar with the Baby and the Greif; the storm will be upon us sooner than we thought!"

Shall I have another go with the Mü? Certainly I will.

"But not too near the cloud!"

Barograph? No time for that. Quickly slip on at least a shirt, and into the cockpit. Well strapped in, canopy closed, hook on, cable taut, a short run, and off.

Time, 18.04. Release height barely 300 m.* What's up with the variometer? Since the release it has stuck to the same reading as it showed on the winch launch. Has the instrument gone haywire, or is the upcurrent really so fantastic? Sure enough, it shoots up even higher—6, 8, 10 metres per second! The altimeter confirms its reading: 1,000 m. height after 2 minutes' flying time. What makes this rate of climb so incredible is the complete smoothness of the upcurrent; I have not yet been shaken by a single bump.

Hitherto I have been flying parallel to the roller cloud, which runs from S.E. to N.W. The whirling shreds of cloud promise nothing but turbulence. Hallo!—now it has got me; suddenly there is dead silence and the cavalcade sweeps downwards—hui!—with a roar it has turned upwards again! Steep right turn, stick forward and full steam ahead out of the witches' cauldron on a north-easterly course.

I am already over the Rhine by the time I am once more climbing smoothly. Height, 1,500 m. A glance at the airfield: the western half is completely masked by an odd-looking curtain. That must be some rain! But it was not rain, nor was it hail; the curtain was not moving from above downwards, but the reverse. My comrades said later that it consisted of nothing but stirred-up dust and dirt. Bundles of straw rolled across the airfield, the club's weighty marquee took off and flew away, and the good old Tiger Moth tore itself loose from its three pickets and turned over twice! Pity the gallant bird!

Meanwhile it has become clear to me, from up above, that a landing back at Speyer is out of the question. To charge through this front would be suicide. So I make a virtue of necessity. Pity it's so late. Now, with 2,000 m. height and at some distance from the front, I can get a panoramic view of its fantastic structure for the first time. Three hundred kilometres in the bag? But down there below it is almost dark already, particularly where the extended storm-front darkens the whole western horizon. In the midst of it there is a continual flicker of ghostly lightning flashes.

Now then, what was that? A searchlight from the American transport base at Heidelberg. Are they giving me a storm warning? Anyway it is not all that easy to get down here; I am flying with brakes out at 120 km./h., yet the Mü is still climbing. Flying time, 14 minutes up to now, and about 20 km. distance covered. No: going down no longer appeals to me—that would be a ridiculous distance flight for an evening off. Brakes in again, press on at 140 km./h. The loops of the Neckar river are behind on the left; I take up a more north-easterly course where I know the country better, as I have no map.

MAD RUSH

Funnily enough, the attitude of the machine looks like half-way to a terminal dive; the nose is 30° down and the variometer stands at zero. In spite of the mad rush, I am enjoying a cross-country flight in absolutely smooth air. The Neckar barges pursue their course quietly and comfortably in the sheltered Neckar valley. The Jagst and Kocher valleys come into view. There a Convair is also tearing along before the storm front. At full speed it hurries northwards. Will it reach the Rhein-Main airport before the storm? If not, the passengers must be prepared to have their stomachs upset.

In the neighbourhood of Heilbronn it

* Conversions (approx.):
300 m.= 1,000 ft.; 10 m./sec.= 33 ft./sec.; 1,000 m.= 3,280 ft.; 2,000 m. =6,560 ft.; 140 km./h.= 87 m.p.h.

looks somewhat more genial: perhaps a heat thunderstorm has already sucked up some of the hot air around here? The Neckar and Bottwar valleys are a welcome sight in contrast to the dark and opaque cloud wall elsewhere. Can I slip through this gap? The retrieving crew can reach me more easily in the neighbourhood of Stuttgart along the Autobahn. Tomorrow the Mü will be needed for training, for the Rhönlerche is temporarily under repair. So I go down resolutely through the cloud and out below it on a south-westerly course.—Ow! This won't do! I am back again in the Devil's kitchen; so about turn, and out again. I have no scheduled flight plan like the Convair! Once again I am in smooth lift, and regain my previous height. Below to the right, the Löwenstein mountains; to the left, the Waldenburg television mast comes in sight; ahead lies Schwabisch Hall.

Once again I am at a good distance from the front, and dive my height away. However, near the ground the cold-air wedge is still further ahead, and at 500 m. I come once again into the rotor zone of the up-glide front. Now I can no longer think in terms of Hall-Hessental Aerodrome; all I can do is to concentrate on holding an approximately correct flight attitude. The A.S.I. jumps to and fro between 0 and 140 km./h., the variometer between minus 8 and plus 10. The harness straps of the rear seat slap wildly against the cockpit roof. I keep position between two treeless plateaus to the left and right of the Ohrn valley, as it is impossible for me to guess in which direction the squalls will force me. At last, at about 100 m. above the ground, I can breathe freely again. Good old Mü! There was a time when evil tongues accused you of inadequate rigidity! No longer will my trust in you be easily shaken I still have enough height to throw a spectacular circle round the village, so as to let the villagers know that I need urgent help before the storm seizes my Mü on the ground and flings it into the wood.

FINE LANDING

After a fine landing, as smooth as the launch and, in fact, as four-fifths of the flight, I step out onto a stubble field close to the nearest houses of Buchelberg in the district of Schwabisch Hall. Flying time, 57 minutes; distance, about 90 km. (56 miles). The villagers are voluble with excitement. They believe that the storm, which shortly before had snatched their hay into the air and thrown their roof tiles all over the place, has similarly picked me up from somewhere and thrown me down again among them. There is a grain of truth in this belief.

From the retrieving crew I learn of the fate of the Tiger Moth. They tell me that the storm burst upon them so quickly that it would have been impossible for us to have brought the Mü across the airfield into the hangar. If I had not had a launch just when I did, in another 3 minutes the storm would have smashed up our Mü. It would have become another casualty of the storm, which threw the top of a church steeple into the street at Karlsruhe and overturned 53 people into Lake Constance.

Three Diamonds

PREVIOUS lists of pilots who have been awarded all three Diamonds (for 500 km. distance, 300 km. goal flight and 5,000 m. height gain) were published in the following issues:—

Feb. 1958, p. 19, Nos. 1 to 80.
Feb. 1960, p. 36, Nos. 81 to 107.
Apr. 1960, p. 105, Nos. 108 to 141 (Note: No. 140 was incorrectly given).

We give now Nos. 140 to 164, which take the list to the end of 1960. Totals for the various countries were, up till then:—Poland 56; France 53; United States 16; Germany 13; Czechoslovakia and Yugoslavia, 6 each; Gt. Britain 3; South Africa, Switzerland and Argentina, 2 each; New Zealand, Hungary, Austria, Holland and Belgium, 1 each. The Diamonds were first authorised in 1950.

No.	*Name*	*Country*
140	John D. Ryan	U.S.A.
141	G. A. J. Goodhart	Gt. Britain
142	E. A. F. Leeman	S. Africa
143	Julian Ziobro	Poland
144	Otto Quinten	Germany
145	Marcel Cartigny	Belgium
146	Tadeusz Dabek	Poland
147	Leszek Kucinski	Poland
148	Pawel Dzida	Poland
149	Philip A. Wills	Gt. Britain
150	Jean Leluc	France
151	Michel Boens	France
152	Jean Barnerias	France
153	André Binard	France

154	Bernard Pointel	France
155	Jean Menjuc	France
156	Bernard Bonlarron	France
157	Francois Henry	France
158	Zbigniew Kudzewicz	Poland
159	Lucyna Bajewska	Poland
160	Jan Gawecki	Poland
161	Bruno Falk	Germany
162	Hans Erdmann Pietsch	Germany
163	Jozef Pieczewski	Poland
164	Milan Dolinar	Yugoslavia

OBITUARY

S. SCOTT-HALL

STEWART Scott-Hall, who died in Australia at the age of 56 after a distinguished scientific career in aviation, was a founder member of the British Gliding Association, and also active in the London Gliding Club during its early days. At that time he was on the staff of the Aeroplane and Armament Experimental Establishment at Martlesham Heath, and in the course of his duties had to make an emergency parachute jump.

His gliding certificate was No. 153, and he passed his C test at Dunstable on 18th July 1931, with 11 mins. 57 secs. in a Prüfling, a secondary type glider of which he remarked once that "the only control that works is the elevator". I remember him at a German contest on the Wasserkuppe, making voluminous notes and often lying on the ground to make sketches of some interesting features of construction.

The last entry I can find in the London Club news is for 27th August 1933, when (as S. Humphries characteristically wrote): "We were frightfully pleased to see Scott-Hall's Gibraltar-like dial again, fresh from a trip in 'Shamrock'." He was, in fact, also a devotee of sailing and, incidentally, of Rachmaninov's 2nd Concerto. But his interest in gliders persisted after he stopped flying them, for he published, in conjunction with B. S. Shenstone, a notable paper in *Aircraft Engineering* for October 1935, on "Glider development in Germany since 1922".

Scott-Hall developed an interest in space flight *before* the first Sputnik went up, and I last saw him at the 1957 International Astronautical Congress in Barcelona, where he was secretly much amused at some of the people and ideas he found floating around. His last job, which he took up in 1959, was as head of the U.K. Defence Research and Supply Staff and adviser to the High Commissioner in Australia.

A. E. SLATER.

O.S.T.I.V. Papers

(Continued from August issue)

December 1960

Cijan (Yugoslavia). Outlook for Standard Class sailplanes. (Eng.)

Hall (Gt. Britain. The rise of an isolated thermal through stratified surroundings. (Eng.)

January 1961

Pflaumer (Germany). Der Eigenbau von Flug- und Bodengerät im Deutschen Aero-Club. (Ger.)

Györgyfalvy (U.S.A.). Performance analysis of the Horten IV flying wing. (Eng.)

February 1961

Järvi (Finland). A sensitive instrument for measuring the temperature gradient in convective air from a sailplane. (Eng.)

Schneider (France). Etude du comportement aréoélastique des planeurs. (Fr.)

Levine (U.S.A.). A spherical vortex model of the buoyant thermal in cumulus and dry convection. (Eng.)

March 1961

Merklein (Germany). Maschinelle Datenverarbeitung bei Flugleistungsmessungen. (Ger.)

Raspet and Györgyfalvy (U.S.A.) Boundary layer studies on the Phoenix sailplane. (Eng.)

April 1961

Bergh (Holland). Flutter in glider structures. (Eng.)

May 1961

Lounamaa (Finland). Technische Arbeit im Segelflug in Finnland. (Ger.)

Vernon (Gt. Britain). Comparison of various national airworthiness requirements for sailplanes. (Eng.)

June 1961

Morelli (Italy). Effet des hypersustentateurs au bord d'attaque et au bord de fuite sur les performances des planeurs de compétition. (Fr.)

Davey (Gt. Britain). The electric variometer. (Eng.)

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Report on Accident to Skylark 3F on 27th May 1961

At the resumed inquest on Flt./Lt. E. W. Clarke, held on 1st August, a verdict of "misadventure" was returned.

Expert evidence was given that there was no fault in the design, construction or maintenance of the aircraft. The order of break-up was as follows: the port tailplane spar failed, and the half-tailplane broke off. Due to the tail-loads being relieved the aircraft executed a bunt, causing both mainplanes to break off downwards and backwards. The failure of the tailplane spar was due to over-stressing by rolling manoeuvres outside the limits of the Certificate of Airworthiness. Eye-witnesses described seeing rolling manoeuvres, and seeing the aircraft upside down a short while before the climb and bunt which immediately preceded the break-up.

Correspondence

SUGGESTED CHANGES IN F.A.I. RULES

Dear Sir,

There are two requirements of the present F.A.I. Rules which are, in my view, palpably unfair. The first is that a glider completing a flight to a goal or round a triangle or flying out-and-return is required to land even after crossing a finishing line. This affects the possibilities of overflying a goal for some other objective such as a distance flight. If there is a starting line and a finishing line in a record flight and the crossing of both is duly observed and recorded, it seems to me that what happens before the first and after the second is no business whatever of the F.A.I's.

The second anomaly is the requirement, on a dog-leg distance flight, to declare the turning-points. For a flight to a goal which has to be declared it is obviously correct that any turning-points should also be declared, but there is no kind of distance flight round a turning-point which is not more difficult than a distance flight straight down-wind. The F.A.I. Rules were designed to be fair to everyone and certainly not to penalise pilots living in small countries surrounded by sea, for whom dog-legs were primarily introduced. To have a comparable chance of flying 500 km. in Britain as someone starting in France or Poland, a pilot *must* be allowed to use a turning-point which has not been previously declared.

I hope that our delegates to the C.V.S.M. will call attention to these two points, so that British Pilots can better hold their own with those who fly in the middle of a large land mass.

Slimbridge, Glos. PETER SCOTT.

CROWS IN THERMALS

Dear Sir,

I recently observed a flight of crows or rooks which may be of interest to SAILPLANE & GLIDING. On Sunday, 30th May, at Bedwas at 10.30 a.m., during a period of high convection which over-developed within the hour, rooks were seen to be soaring in left-hand circles starting from a hundred feet or so. As the first three or four gained height, more were seen to be joining them lower down until a column of twenty or even thirty were circling and drifting downwind to the north. The rooks never went out of sight, but although more were joining the column at low level we never saw more than thirty in the column. Where were they going? Into cloud? No. The answer lay elsewhere.

As more crows came in from the north at low level, flapping all the way, we followed

the top of the thermal fliers until we saw that at the top of the column they suddenly turned themselves into what appeared to be small black streamline blobs and dived almost vertically downward out of sight! We observed them for twenty minutes and they seemed to go up and down in a total of ten minutes. Six minutes thermalling, five *seconds* down, and about four minutes back home at flapping speed. It would be interesting to conjecture which part of the flight they most enjoyed.

During part of the display a large flight of about twenty pigeons joined them, but they flapped on and flew round the column without much success, it seemed. Three times round and off they went.

The display terminated in the obvious "difficult" conditions caused by over-development which was observed when the rooks flapped back from their T.V. dive and went upwind to their trees.

I have often seen rooks soaring with much wing-waggling over the sloping roofs of a terrace, but never up, down and back over and over again. Has any reader seen seagulls behaving similarly?

Bedwas, Mon. I. H. SHATTOCK.

NEW NAMES FOR GLIDING BADGES

Dear Sir,

I would like to suggest that the names of the premier gliding awards be changed from "Silver C Badge" and "Gold C Badge" to "Silver Star Award", etc. In these days the present labels seem somewhat of an anachronism.

R. B. FENTON.

Auckland, N.Z.

The term "Silver C" was, as far as we can discover, first used by the Editor in an article published in THE SAILPLANE & GLIDER for February, 1934, which gave a list of the first 18 holders (1 Austrian, 15 German and 2 American). It was a shortened translation of "*Segelflieger Abzeichen C mit silbermen Kranz*" (Sailflyer's C badge with silver wreath), the term used when it was first adopted in Germany in February, 1931, presumably because the new badge was based on the three white gulls of the original C badge.

The Silver C became internationally recognised at the London meeting of the ISTUS (forerunner of the OSTIV) in October, 1931; but by that time the Germans were calling it "*Leistungssegelfliegerabzeichen*" (performance sailflyer's badge). The Gold C was instituted in 1938 and the Diamonds in 1950. The unfortunate habit of other aviation journals of putting only the "C" between quotation marks results in the false impression that these badges are no more than modifications of the C badge, given for 5 minutes' soaring. So the "C" could well be omitted and the terms "Silver Badge", "Gold Badge", etc., be substituted; they are at least more colourful than the letters D, E and F as used in some other countries. An objection to the name "Star" is that none of the badges contains a star.—ED.

CLUB AND ASSOCIATION NEWS

WELL, we come to the end of another season, not a glorious one, but I think perhaps notable—more Silver C legs than ever before are reported, and there are some Golds and Diamonds, too. One interesting fact that emerges from reading through your news is the tremendous increase in closed circuit cross-country flying, triangles, out-and-returns and the like.

We are very pleased to learn that the Kent Gliding Club have at last found a home at West Malling. This is said to be only 25 miles from the centre of London on the A20, and it is also possible to go direct by train. The Club are looking forward to welcoming all their old members back.

Overseas News is short this issue. Apologies to overseas press secretaries who, through an error, did not receive a reminder from me.

The final date for copy (typed double-spaced on foolscap) and photographs to reach me at 14 Little Brownings, London, S.E.23, for inclusion in the December issue is Wednesday, 18th OCTOBER.

YVONNE BONHAM,
Club and Association News Editor.

BLACKMORE VALE

AFTER much frustration and many delays, we took delivery of our T-21 from Dunstable on 25th June, and all our members have now had a look at Henstridge from the air. Quite a number of thermal flights have been made, and we have had our first visitor, a Skylark II from Lasham.

John Fielden brought his Tutor from Dunkeswell and shewed us how to soar with a 1½ hour flight, and the following week-end we took delivery of our own Tutor which our C.F.I., John Garrood, took up for a half-hour trip.

We seem to be having our fair share of trouble, having been nearly thrown off the airfield in the early stages and then, when we felt that all was well, we were thrown out of our hangar.

Fortunately, the farmer who owns the airfield has come to our rescue again with the temporary loan of a hangar which is used by his cows. We are keeping the cows out, but cannot get rid of the aroma.

A working party of our members is going to commence converting a disused building on the airfield into a permanent hangar.

Our V8 tow car has been suffering with clutch slip, which has now been taken care of, but in the meantime we have had some very good launches using one of our members' new Automatic Jaguar.

Work is also in progress on our winch, and when this is ready we intend to make a few soaring expeditions to some very promising hill sites in the district.

Our membership is now in the 80's and we have had to draw the line here, so we are not accepting any more ab-initio flying members at the moment.

G.W.

BLACKPOOL and FYLDE

SUNDAY, the 13th of August, proved to be a lucky day for Sandra McKinnon and Arthur Atkinson, who completed their tests for the B Certificate by carrying out long-awaited right-hand circuits.

The previous week-end Mike Forshaw flew his first solo circuits in the Grunau.

Here at Blackpool Airport four circuit patterns are right-hand and four left-hand; our circuit being in the opposite direction to the power aircraft.

We are delighted with our new additional site at Samlesbury Airfield, which lies mid-way between Preston and Blackburn. We are extremely grateful to English Electric for their permission to fly from it on Sundays.

Not only have we the Airfield to ourselves —so different from hectic Squires Gate— but also it has not yet failed to provide thermals on each of the few occasions we have flown from this excellent site.

Several more first solos are expected during the next month or so and also some useful soaring at Samlesbury, which cannot fail to result in a useful bag of C's.

J.S.A.

BRISTOL

EXTREMES of weather from hot stable anti-cyclonic to screaming north-westerlies have brought varied but good soaring conditions and numerous hours and cross-country miles have been logged. During the first week of July nearly 150 hours were flown from the site in thermal, ridge and wave.

Notable flights have been a 300-km. triangle by Derek Stowe in a Skylark II, an out-and-return to Edgehill in the Prefect by John Firth to complete his Silver C, an out-and-return to Lasham by Tony Saint in the Syndicate 3F and a flight to Launceston by Tony Pentelow, also in the 3F.

On 7th August Tom Bradbury completed his Gold C with 310 km. to Wigtoft, Lincs., via Lasham, having been to 13,500 ft. a few weeks previously, both flights in a Skylark II.

Numerous solos and C's have been recorded and Silver legs have been obtained by Shaun de Salis (height and distance) and Theo Sherwen (five hours). Howard Houldey in a Skylark II just missed 300 km. in a flight to Yorkshire.

New syndicates keep bubbling up and the latest one has bought Tony Gaze's Eagle and is operating it as an advanced training

Members of the new Eagle syndicate at the Bristol Club. L. to R., K. Saunders, Pete Simons Denis Carey, John Nurse, Bob Parsons and Tony Pentelow.

and solo machine. The syndicate has a nucleus of instructors who are permanent members and the trainees can pass on their shares if they wish.

Tony Gaze has purchased the ex-Ghana Ka 6 and is rapidly getting the feel of it. He is also the proud possessor of a gleaming new Tugmaster for towing and personal transport—finding it more economical to fly to Nympsfield than to motor the 40 miles from Ross.

Winch cable is becoming a problem and it looks as if we shall have to buy new in future. A local manufacturer is producing some trial lengths of special lays for us and is prepared to produce a quantity if successful. If any other clubs are interested in participating please contact us for details.

A.L.S.

CAMBRIDGE

In spite of severe loss of flying through damage to three Club-operated aircraft, this year will be a record year for flying hours, cross-country miles and Silver C badges gained.

The most striking feature of this soaring season has been the large number of closed circuits; of the 63 cross-country flights carried out by the middle of August, 22 were triangles or out-and-return flights with an average length of 46 miles.

The fastest ride round a closed circuit was achieved by Paul Bethell-Fox who took the Skylark II round the 71-mile Slazenger Triangle in less than two hours on 1st July, and the longest circuit was Sigfrid Neumann's 128-mile triangle in the same aircraft on 30th July. Another notable effort was John Burton's flight round the Slazenger Triangle in just over three hours in the Olympia.

In June four sailplanes were taken to the Long Mynd for a fortnight's camp which saw the most concentrated burst of aviation the Club has ever produced. 286 hours were logged in 14 days and 11 pilots gained their five-hour legs. Among them was P. M. Selby, who spent most of his five hours on waves. We are very grateful to the Midland Gliding Club for the use of their splendid hill site.

Our total number of Silver C's gained this year reached 11 when five more members completed their qualifying cross-country flights: M. Thomson, R. G. James and C. Mitchell reached their declared goals, and P. M. Selby and J. Pickett-Heaps landed on aerodromes near the East Coast. David Braham achieved a solitary Gold C climb.

Dr. J. W. S. Pringle, the Club's President, has been elected to the Linacre Professorship of Zoology at—dare we mention it?—Oxford. That University now holds the record number of gliding professors—Varley, Laurie and Pringle—two-thirds from the Cambridge Club. We hope John Pringle will remain President.

Many of our instructors have in the past had kittens, but Ann Mari Neumann is the first instructor to have twins.

G.S.N.

CORNISH

We have had our share of westerlies and north-westerlies recently and these have provided some very pleasant cliff soaring. No one has yet been heard complaining of boredom with this, as quite apart from the joys of flying, the seascape and view of the coastline hold great attractions.

However, the sea breezes which keep us above the cliffs do rather put a damper on thermal activity over the aerodrome and we often see cumulus rising inland out of reach of our auto-tows. This situation makes aero-towing necessary for any serious thermal soaring and to this end the Club has purchased the Tiger from the syndicate. It has now had an extensive C. of A. overhaul and new engine fitted.

This overhaul unfortunately took some time to complete and delayed the start of the cross-country season, but C.F.I. George Collins has now started things off with two flights "up country" to Yeovilton, a 122 miles, and to Cullompton, 89 miles.

The courses have been going well with Fred Breeze's cheerful brand of instruction and George Tuson's smooth administration as Course Secretary.

The Annual General Meeting was held in July and it was revealed that the Club's financial position is sound, but that security of tenure is still under negotiation. The meeting was concluded with an interesting film show, showing a variety of aircraft and sites at home and abroad.

Statistics: 15 A's and B's, nine C's and two Silver C legs have been flown from the site since April. During April gliders were airborne for 42 minutes of each hour of operation, this on a site using runways only.

On Sunday 13th August nearly 30 hours ridge soaring were logged. We have now recovered from the excitement of receiving so

many visiting gliders during the Nationals and look forward to seeing some more—on the runways, please.

J.E.K.

COVENTRY

THE Club has just finished its annual fortnight's camp at Edgehill and although the ridge did not produce as much soaring as we would have liked, a fair amount of thermal soaring was done.

Since the last issue we have had a number of first soaring flights for C certs., the members qualifying being: Mike Coley, Trevor Brigden, Nigel Riley, Ken Davies, who is hoping that his flight will also give him his Silver height, and Peter Davis of the Swindon party who were camping with us at Edgehill.

There have been a number of Silver C legs earned—Duration by Doug Sadler (and height in the same flight on the Edgehill Ridge)—Heights, in addition to those already mentioned, by Joan Cunningham, Phill Winkley, Glyn Edwards and Reg Neap.

The cross-country flights for Silver legs have been Dereck Sadler, 37 miles in a private Olympia, Mike Aspinal, 41 miles in the same aircraft (after a few tries) and Beryl Sanders in the visiting Swindon Oly with 57 miles.

Other cross-country flights of interest made since our last bulletin were: Reg Ludgate's flights from Edgehill, in the white syndicate Olympia, to Farnborough (64 miles), Bighurst (50 miles), Tissington (70 miles) and North Luffenham (53 miles).

Chris Duthy-James took the Club Oly 52 miles to Wymeswold from Edgehill. The Club aircraft have also been on several Silver distance attempts, less fortunate than those recorded above. We also hear that the reason that we have seen so little of Doc Gregg is that he has been away making good flights at Portmoak and the Long Mynd recently.

Finally, the Club would like to record a vote of thanks to Guss Cunningham and Bill and Elsie May for their hard work put in, so often at the expense of their flying, to make our recent camp a success.

C.D.D.-J.

DONCASTER

LAST month the syndicate Tiger was to tow our Chairman in his IIIF back from a cross-country. Unfortunately it crashed on take-off and Jim Loring, who had only soloed the previous day, was killed and Frank "Curly" Haigh was badly injured. We extend our deepest sympathy to Jim's widow and family and would also wish Frank a speedy recovery.

Flying continues apace here. The doors on the hangar and the Rhonbussard has flown. Though an old and, by modern standard, quite a poor performer, the syndicate seem to get bags of fun from it. Midgley put his head through the canopy in cloud, if you can call that fun. The red plush interior excites the envy of all and Johnnie Johnson is to be congratulated on the fine re-build of the "Whitened Sepulchre".

August Bank Holiday saw everything serviceable soaring at the same time, all five, Tutor, Cadet and T-31 of the Club, and the private IIIF and Bussard.

M.C.U.

DUMFRIES and DISTRICT

OUR ground winch is now well under way and we have bought a diesel tractor which starts "on the button".

Serviceability and weather permitting, we have had some good flying and the Tutor is in demand. With regular flying our training programme will improve and the results of a lot of hard work will be seen.

G.J.K.

EAST MIDLANDS (Leicester)

THE Club celebrated its first anniversary of flying on the 16th July with the delivery of an Olympia IIB, and a birthday cake made by Mrs. Moseley—much to everyone's delight.

During the first year our T-21 completed exactly 3,000 launches; launches by other aircraft brought the total to 3,312. In this period we produced 21 "home-grown" solo pilots, the present membership of 57 flying members comprising 33 solo pilots.

Since our last report F. Maltby, D. Methven, S. Sly, M. Smith, P. Smith, I. Vesty, J. Whiteley, R. Sheppard and P. Tyers have gained their C's and L. Sutton P. Towle, P. Tyers, J. Spencer, C. Arnold and P. Reichenbach got their B certificates.

With the arrival of the Olympia IIB from Elliott's, the soaring statistics showed a big improvement. R. Sheppard and M. Smith have obtained their Silver C heights, while K. Moseley, not to be outdone, got his Silver C height in the syndicate Grunau Baby at the same time, flying to Syerston, thus inaugurating our cross-country flying.

C.R.S.

Instructor and pupil at Kent Gliding Club, ready for take-off from West Malling, use a Grundig TK-1 tape recorder for instructional purposes.

ESSEX

NORTH Weald appears to be a very good thermal area. Most of our members have sampled the delights of soaring in the T-21, whilst the Tutor has also had its share of "up", gaining C certificates for Peter Treadaway and Jack Nadler.

Despite getting our fair share of cable breaks we have averaged approximately 55 launches per day so far and hope to do better after the completion of the second drum. On Sunday 30 July we were visited by the Jaskolka flown by Mr. G. Scarborough from the London G.C.

M.G.R.

KENT

THE Club has been fortunate in obtaining permission to fly at West Malling, and the first flights for some time took place on Sunday, 16th July. We are grateful to the U.S. Navy, whose co-operation and help in allowing us to use the airfield at week-ends has made it possible for the Club to resume flying activity.

Since mid-July quite a number of soaring flights have been made. On Sunday, 30th July "Mac" MacPherson flew the Club Olympia to Herne Bay where he landed on the golf course, and on the same day Denis Crabb reached Silver C height in the syndicate Skylark.

On a week's visit to the Norfolk Gliding Club at Tibenham at the beginning of August, the Skylark syndicate enjoyed some good soaring. Denis Crabb made quite sure of his Silver C height with a climb to over 5,000 ft., and his brother Gordon did the same a day or two later. Our Secretary, Geoff Tilley, gained the first C since the move to West Malling with a flight of 20 minutes in the Prefect on 12th August.

West Malling is within easy reach of London, about 25 miles by the A.20 road, or by train direct from London, so we hope some of the old friends of the Club will find time to pay us a visit before long.

P.B.

LONDON

ALTHOUGH the advantages of out-and-return cross-countries have long been recognised, it has only been in 1961 that this satisfying and economical way of seeing the countryside has been widely used.

In July alone 10 closed circuits of over 100 km. were achieved, three others falling one thermal short. Such flights by Messrs. Jeffries, Ramsden, Fisher, Beck, Smith, Hearne, Soames and Zealley deserve fuller mention than space permits.

Longest trip, however, was Steve's 157 miles Malvern-and-return, while R. Griffiths Kidlington 100-km. merits a mention for being done in a cooking Olympia.

D. Robson ended July with O. & R. Marshalls (80 m.) and began August with Northampton-Tempsford and home (80 again) in the Weihe.

July's Silver distances were earned by A. Tarnow and R. Barrett; in early August by G. Camp and R. White.

Two-seat high-performance flying flourishes. The Ka 7 (Broad/Ramsden) made Edgehill and return (86 m.) in July and the Club Eagle has got around, notably climbing to 9,000 ft. with 16-year-old pupil "Delly" Gray-Fisk (whose 4,800 C in a Tutor some weeks ago indicates great promise). Other high points were John Cotton's 11,000 ft. and Dan Smith's 9,800 ft.

A T-21B has been added to the Club fleet while private ownership booms with the arrival of a Skylark IIIF, Eagle and Ka 6. Due sign of the times is the extension of the present trailer park to its absolute limit.

Another sign is the innovation of "Notifiable Flight Forms" on which pilots must inform the Club of C's, precious or semi-precious, record attempts and any other achievements which could now be easily overlooked amongst the ever-increasing activities of the Club.

M.B.

MIDLAND

SINCE our last contribution appeared in the June issue we have four months' news to impart.

Notable cross-country flights include Wilbur Wright reaching Stanford Hall on May 28th to set the first mark for the Pilcher Trophy at 75 miles. The pilot and his crew wish to record their appreciation of Lord Braye's hospitality. Stewart Waller, visiting the Mynd with Cambridge, flew his Swallow to Great Yarmouth.

On a very hazy day which we regarded as a circuit day a 419 appeared from Church Stretton, low enough for us to read his competition number, 86, crossed the site and was last seen thermalling over Bishop's Castle. Was this the National Champion or just a mirage?

The two new machines on the Mynd are somewhat different in character. The first is a Swallow in which our C.F.I. was aerotowed by our Tugmaster from Yorkshire and the second is an SG.38 which has been overhauled by our Ground Engineer, Teddy Proll. This "thing" is to be owned by about 30 members, surely the largest syndicate in the country.

Several days in June and July produced good wave conditions with the 8th July giving Bruce Bowdler 13,500 ft. a.s.l. from an aero-tow to 9,500 ft. a.s.l., and from earthbound launching equipment Stephen Wills reached 9,200 ft. a.s.l. and most of the fleet was above 6,500 ft. a.s.l. An unusually high proportion of westerly winds has resulted in a distinct improvement in aircraft utilisation as compared with last year.

That celebrated bachelor, Ric Prestwich, fell to the "enemy" during June. We take this opportunity of offering Ric and his wife our very best wishes for the future.

Visitors to the Mynd may be interested to know that the long-awaited cattle-grid has appeared at the foot of the Burway and should be treated with care, especially when towing a trailer.

K.R.M.

NEWCASTLE (Carlton)

WE recently celebrated the end of the first year at our new Carlton site by putting in 30 hours local soaring in one day with five aircraft.

The past year has been one of steady progress. Our access road has been widened at one or two bottlenecks, although at the time of writing, "Caution—Temporary Surface" is the order of the day; it should soon take the heavy traffic which our future plans will entail.

The really important work, however, has been going into runway improvement. We now have two long runways almost at right-angles, between them giving launches of at least 1,000 ft. in almost any wind conditions. Both have yet to be further lengthened and other runs are being prepared. The often-neglected provision of adequate space for landing handling and parking aircraft without interfering with launching is almost complete at each end of runways.

Although long runways enable us to carry out training flying and give decent circuits in any wind direction, Carlton is, of course, a soaring site. A lot of exploring has still to be done on the various neighbouring slopes, but we already have a well-worn beat of 10 miles in the best wind, which is due north. Five-hour aspirants please note! Waves have been soared several times, and thermals abound. It is quite obvious that the very long heather and bracken on the flanks of the hill is encouraged by the strong lift which the plants experience.

Without question, the most notable flight recently has been Bob Fleuret's five hours.

Our diesel tractor now wears a very non-Ferguson shade of yellow, which has effectively stopped its little trick of looking like part of the runway. This vehicle has clearly proved the superiority of diesel over everything else, if only for ease of starting in winter and all our long-term plans are in this direction.

Our new Chairman and Secretary, Ian Paul and Dick Stoddart respectively, are now well established. Between them they manage to keep us all more or less on the rails and moving in the same direction. No mean feat in a gliding club!

We have been delighted to see a number of visitors from other clubs recently and we hope for many more. Everyone is welcome, with or without aircraft.

A.J.D.

NORFOLK (Tibenham)

At the well-attended A.G.M. held on Saturday, the 29th July 1961, Dr. R. Tringham kindly continued to serve as Chairman. J. Wilkins as Secretary, R. J. Mitchel as Treasurer, and also our C.F.I., P. A. Crabtree.

We are very pleased to say that our C.F.I. was presented with our "Chairman's" Cup for the longest distance from the Club site. One of our most industrious members, Joe Podolski, presented the Club with another Cup which the members at the A.G.M. agreed would be awarded to the best height of the year. Who won it?—J. Podolski.

J. Podolski also achieved another success with a gain of height of nearly 8,000 ft. and was in the air for over five hours. Dr. Tringham, on the same day, also recorded a duration of over five hours.

Messrs. B. Redfern, J. Lawton, J. Whitworth, M. Watson and Truman Keith have all achieved their Silver C heights. Messrs. J. Cobbold, Dr. Bruce, K. Cattermole and R. Dixon have recently gone solo and converted to the Tutor.

Our members were very pleased to see the members of the Kent Gliding Club at Tibenham during the August holidays and to know that they achieved some good thermals with their Skylark II.

We are also glad to have been hosts to the Southern Gliding Glub who have had an Olympia stationed with us over the past few months.

Congratulations to John and Sheila Wilkins on the arrival of a baby daughter.

K.C.

NORTHAMPTON

Without a doubt this year should see a record number of hours for each aircraft. During early June, G. Grant, S. Norsted and Bill Petch, with the Club's Swallow, were guests of the Greenaways at Edgehill.

On 18th June, Bill Petch gained Silver C height and distance from Podington and then completed the award within four days with a five-and-a-half hours flight from Edgehill to Tollesbury, Essex.

On August Monday, Stan Norsted in the Skylark II flew from Podington to Walpole St. Andrews, Norfolk, in five and a quarter hours, reaching 7,000 ft. in cu-nim, so completing his Silver C.

John Baker gained Silver C height and distance from a sixty miles flight from Podington to Rivenhall, Essex. Wally Mason also gained his height from local soaring. Congratulations to all on their perseverance. Likewise to Neville Kay and D. Dunmore for reaching solo status.

At the same time we must not forget to record our appreciation of C.F.I. K. R. Pearson, who has sacrificed a lot of good flying time in order to carry out the ten years check on our Tutor.

D.W.W.

OXFORD

Whilst it seems that we have done more flying than ever this year, the weather and a damaged Olympia have, in fact, produced a deficit of some 500 launches and 90 hours against last year.

Nevertheless, we have had some excellent days and our previous "best" had been surpassed by six hours with 42 hrs. 42 mins. by seven aircraft winch-launched on 30th July.

In its role of Task/Group Aircraft, No. 63 has helped to produce a crop of Silver legs and 120 has frequently been flown to its 90-minute local limit on successive flights.

The Olympia 170 syndicate on a hunt for silver amongst the iron ore of Edge Hill gained five legs with 35 hours flying in four days, one of which produced Silver Duration in the morning and Silver Distance in the afternoon. Donald Lowe completed all three legs in two successive days and Raymond Salisbury-Jones had his 2nd and 3rd in the bag before the end of the week.

At Weston-on-the-Green, Barry Baker came up with five hrs. 28 mins. on his second attempt in the Gull II, and on the same day Derek Barrett came down after seven o'clock with five hrs. 1 min. from a sky which had just shed Ann Burns onto Kidlington.

Doug Evans has gained Silver Duration and Dave Roberts, having twice been up to 6,000 ft., came down with a barograph which did not tick and went up again to gain our 10th Silver leg of the year.

Cross-country flying has been less successful, Joe Wren, Ian Pratt and Stan Southam all coming to roost quite near home. A 300-km. triangle attempt by John Matheson and Chris Hurst was abandoned after the Skylark IIIB and the Skylark II had toiled in company upwind to Greenham Common. Both decided it was not "on" and flew back home again after four hours.

The Olympia, back from Elliott's looking very fit and well, has been doing its best to compensate for the eight weeks "penguinism" which its indisposition had enforced on its pilots. Of a number of noteworthy flights, Peter Pratelli's 93 minutes on one of his first flights in this aircraft is the best recorded.

L.A.S.

SURREY

THE first phase of the Club's new status as a Soaring Club seems to have produced satisfactory results and we feel we have reason to be pleased with this year's combined efforts of Private Owner Members and Club Members flying Club machines.

Ann Welch did a splendid 500-km. Diamond goal flight in Poland during the Nationals. Don Snodgrass completed his Gold C with a Goal Diamond. Alan Purnell has Gold Distance and Goal Diamond and Mike Gee has Gold Height, over 16,000 ft. achieved in a violent electric storm. He reports that he knew not whence the lightning came, but he remembers distinctly where it went.

On the same day, 15th July, Hugh Hilditch got a Height Diamond in a remarkable climb to 24,000 ft. in three cu-nims, after which he emerged into clear air at 22,000 ft. and photographed a large lump of France. Gerry Burgess has acquired a Goal Diamond.

Don Green, Ron Walker, John New, John Wilson, Geoffrey Chapman, Ferelyth Wills and Denis Wilks have completed Silver C. Pat Garnett has done the distance and Ray Duckett and R. Hollow the duration.

The Club awards for first Silver C legs this year go to G. Chapman for distance, Ray Duckett for duration and P. Wigley for height. Other heights have been done but are not yet in focus, and as for C's . . . !

In the National Championships we won four trophies out of the eight available and a special prize for the best Club entry. Even our balloons did well. One of the hundreds sold to raise funds during the Championships fetched up in Italy, and seven others at least went Continental!

The next phase involves revised training methods, both for ab-initio members in the School and for solo pilots, and we hope we shall keep up the work next season.

S.V.S.

SWANSEA

ALTHOUGH no report from us has appeared in SAILPLANE AND GLIDING since December 1960, we have been flying regularly at week-ends and also on Wednesday evenings during the summer. It is felt, however, that now we have an ever-growing number of solo pilots, the absence of thermals due to the sea breezes will make the inevitable "circuits and bumps" an inadequate attraction and restrict the development of the Club. Fairwood Aerodrome is also becoming an increasingly busy civil airport.

Bearing this in mind, we have postponed plans to enlarge our fleet and all efforts are being channelled into work necessary for expeditions to the mountains north of the town in search of a suitable ridge.

We now have a Tutor and T-21B, the T-31 having been sold to the South Wales Gliding Club in June and we have acquired a Kite I which is complete, but has been unintentionally reduced to kit form at some time or other.

In July we held a two-day "Introduction to Gliding" course for 20, organised in conjunction with the Central Council for Physical Recreation. Although the weather failed to co-operate fully, it was a most enjoyable week-end and each course member had a reasonable number of launches between extremely heavy showers.

D.B.W.

SWINDON

THE Club Open Day was held on Sunday, 28th May. Fine weather brought hundreds of spectators out to see Swindon's Dairy Queen open the proceedings in the T-31 piloted by Club Chairman, L. R. Colquhoun.

The programme continued with delay jumps by members of the Swindon Parachute Club.

Test Pilot D. Morgan brought back memories with a scintillating display in a Spitfire followed by Wing Cmdr. G. Lowdell (plus bowler and umbrella) demonstrating how not to fly a Biplane!

C.F.I. George Turner performed Olympia type aerobatics and the day finished with a "city gent" on yellow cycle being bombed with flour bags from a Tiger flown by Secretary Beryl Sanders and J. Gosling. Much flour of an unknown brand was used with very little effect!

Since that date, S. Colborne, B. Hazell, M. Parkins and J. Swallow have made first solos. C's have been obtained by Club Chairman, L. Colquhoun, P. Davies, D. Ford and D. Woodwards.

The do-it-yourself trailer was completed (enough) to take the Oly to Edgehill where we were extremely grateful to share camp with the Coventry Club.

M.B.H.

SOUTH WALES

A RIDGE wind has rarely been with us recently but thermals have continued to show the potential of the site. Since 25th June, Ivor Shattock and Alan Newton have made 27 flights of over 10 minutes and six over 20 minutes in the T-31.

However, we were able to rig on Wednesday evening, 26th July, for a south-westerly. Two flights totalled 60 minutes. The first reached 2,500 ft. when the pupil became frozen and this necessitated an early descent while still in lift of three ft. per second.

D.E.F.

WEST WALES

FLYING is progressing well and more members are going solo almost every week-end. The Swallow is being flown to capacity.

We have welcomed several members of other clubs who have been on holiday in the area and still have hopes of acting as hosts to any cross-country flyers who may land at our site which, incidentally, is just under 300 km. from Lasham.

A.S.

YORKSHIRE (Sutton Bank)

THE past three months at Sutton Bank have given us some excellent thermals and an unexpected amount of west wind. Alan Parker has joined the ranks of solo pilots.

Harold Salisbury has clearly begun to enjoy the Skylark IIIF so much that he completed his five hours' duration from the bank. His flight was mostly in wave in the vicinity of Sutton. At the beginning of July, H. Salisbury and Jock White took the IIIF up to Crosby-on-Eden to see what was good in Cumberland. Unfortunately the weather was not good, but Jock White managed to get up to 10,500 ft. in a cu and fly back to Sutton.

Our courses have been running throughout the summer and we were pleased to welcome Mr. Ken Revis to one of them. He enjoys a most active life, though blind, and we were able to give him the opportunity to enjoy soaring.

J.C.R.

SERVICE NEWS

ARMY (Lasham)

SINCE the last issue, undoubtedly the most remarkable performance has been put up by Jack Ramsden. He came down to stay at Lasham determined to complete his Gold C. On 19th, 20th and 21st June he flew 540 miles in three flights without achieving it.

A week later he was successful with a flight of 189 miles in a dog leg to Horsham St. Faith. Since he joined the Club last year he has got his Silver C, Gold C and two Diamonds. All his flights in June were done in the Club Skylark III.

Also on 19th June Peter Ibberson did his Gold C distance leg in our Skylark II. Ian Strachan and David Hooper both completed their Gold C's, the former by flying to Horsham St. Faith on 6th June, the latter by doing a 300-km. triangle on 6th July.

The next bout of long flights came from our members flying in the Northern Gliding Contest at Camphill. On one day Peter Goldney, Stuart Morrison and Bill Mackworth-Young all exceeded the Gold C distance.

Peter Goldney may have done his height as well in his flight; this depends on the calibration of the barograph. Stuart Morrison completed his Gold C and one Diamond. Bill Mackworth-Young was flying his Eagle with a second pilot.

In three months our Army Club aircraft stationed at Lasham have flown about 7,500 miles across country. Over 20 pilots have contributed to this total.

There has been a less rosy side to the picture in so far as we have had two nasty accidents. Our Olympia II was landed in a hedge at the end of June and is effectively a total loss. A misjudged field landing on a windy day in August damaged the Skylark

Varied types in the hangar used jointley by the R.A.F. Gliding Centre Gütersloh, and the local German Club.

II enough to keep it out of service for over a month.

The loss of the Olympia, which was bought only 18 months earlier to replace a Skylark II that was written off after spinning in, may well result in a change in our equipment policy.

N.E.M.O.

BANNERDOWN (Colerne)

JUNE and July produced 767 launches and 85¼ hours and the last three week-ends proved reasonably soarable.

Early June saw the departure of founder member Plt. Off. John Prince. He was posted to Ballykelly and writes to say his new club, the Red Hand, has not yet flown although formed in 1958.

During the period A and B certificates were gained by R. V. Taylor, J. Taylor and our youngest member, M. Yates. C's were flown by Kathy Fielding, R. Perrin, B. Collins, J. Taylor and N. Stephenson, while John Prince said an appropriate farewell on his last day by soaring the Oly and Sedbergh to respectable heights before conducting the T-31 to 4,400 ft. in the course of an hour's flight.

On Saturday, 22nd July, we welcomed with great pleasure the one and only "John Willie"—Sgt. J. S. Williamson, National Gliding Champion—who came to categorise Alan Yates. We are glad to have Alan's membership and experience—he flew his first solo in 1938. Since then he has logged over 300 hours, flown many aircraft types, taken part in championships, and contributed to national as well as international gliding affairs.

CLEVELANDS (Leeming)

AN indoor "Barbecue" was held in the Clubhouse to wind up the August Bank Holiday week-end and we were delighted to welcome our new Chairman and his wife, Group Capt. and Mrs. James. Despite the dampness outside, everyone was soon "thermalling" merrily!

The Skylark IIIF and Olympia IIB are fully equipped with radio and oxygen and good use was made of the IIIF recently when Peter Goldney achieved Gold height, distance and Diamond goal.

R. McLuckie has completed his Silver C with five hours on the ridge at Sutton Bank, flying the Yorkshire Gliding Club's Swallow. George Appleyard just missed Silver distance with a creditable flight to Sherburn-in-Elmet in marginal soaring conditions.

John Wombwell landed the Grunau

recently at Kirbymoorside—a cricket field served a useful purpose. Apparently during the course of the de-rig the bowlers' concentration suffered somewhat and a polite message from the Umpire was conveyed to our pilot!

R.F.P.

CRANWELL (R.A.F. College)

THE fine weather has resulted in a record total of hours, and two more pilots have gained Silver C's. Both were completed by five-hour flights in the same week. Cross-country flying has been restricted by lack of transport and has been generally limited to Silver C legs.

All the aircraft have now completed minor servicing in preparation for the summer camp, which will be over by the time this appears. It will be held this year at R.A.F. Andover, with at least six aircraft between the 25 officers and cadets attending.

After the camp a small party will take the Olympia to France until the beginning of the winter term.

D.V.Z.

HOME COUNTIES (Hornchurch)

WE are able to report great improvements to the ground equipment. The Club room is completed in a pastel decor. Friday nights are devoted to the C.F.I.'s lectures and to odd jobs about the hangar. This activity has resulted in the serviceability of our second winch, the re-painting of all ground equipment and the acquisition and preparation of a Signals caravan.

Bob Bowring has built a simple "slip-on type" visor which has proved very successful for instrument flying instruction, although it is not quite one hundred per cent proof against cheating in ropey turns.

Apart from amazing ourselves with an average on one cable of nine launches an hour on a day in July, we record the following achievements. Our first lady to fly the Olympia, Joan Simpson, gained Silver height and then nearly got a thermic five hours.

Sam Churchman also got his height. Graham Martin went to Hawkinge for his distance. Jeanmonod got his C duration and "Wiggy" Esser made up for lost time and got his A, B and C in quick succession.

G.H.M.

MOONRAKERS (Upavon)

SIX members have recently soloed and the same number have obtained C certificates. The most outstanding one is Chris Morris who flew a good C less than four weeks after his first instructional flight.

Moving on up the soaring ladder, Pete Purdie and Tony Morris have qualified for Silver C heights, Phil Goodwin for height and duration and Dick Stratton, Roger Staines and Dennis Stubbings have now completed the lot.

On to Gold now and to report that "Jock" Reilly and "Taff" Thomas both achieved the required climb. Unfortunately "Taff" is still hunting out large Cu as the barograph failed to trace the vital part of the climb. Gold distance now and a Diamond (I hope) with a flight to Great Yarmouth via Edgehill for Eric Reeves on the 30th July.

"Taff" Thomas and Jim McPherson did the fine retrieve which arrived back at 06.10 hours, just in time to change for work. Thanks at this stage to "Wilbur" Wright, his wife and all concerned for the hospitality received at Yarmouth Airport.

Now to our "JOHN" and his achievements. First, his attempt on the out-and-return record to somewhere in Wales (can't remember the name) on the 22nd July. Unfortunately the weather beyond the Mynd was hopeless, so John did a quick 180 and made it back to Upavon for tea—a round trip of 200 miles.

His crowning achievement was the August Monday flight from base to a field seven miles N.W. of Berwick-on-Tweed, duration 8.20. The news arrived at Upavon in the evening and maps were joined together on the airfield to check the distance—the result was 315 miles and great rejoicing.

Hearty congratulations on what we hope is the first set of diamonds to be completed in Britain, also credit to Boel and Jim McPherson for the retrieve.

WESSEX (Andover)

LOCAL soaring has been plentiful this last couple of months. Wing Cmdr. Smedley, A. Jury, B. Philpott and Mr. Southon obtained their C certificates; also Messrs. Docherty, Gover and Hall achieved A and B certificates.

In June, A. Arnold landed at West Horsley for his Silver C distance and Flt./Lt. Farrop achieved his Height and Distance landing at Tangmere. Also Mr.

Delaney did his Silver C height gain.

On August Bank Holiday J. Delafield and R. Padgham declared Leconfield for their Diamond goal. John was successful but hard luck for Roy who landed only 15 miles short.

In July we held a Summer Camp at Nympsfield for a fortnight. We arrived with a fleet of four gliders plus trailers, trucks and one winch. The weather was very good to us and everyone had some soaring.

We achieved four five-hour duration tests—Jean Letch, D. Pearl, N. Smith and R. Jones; a well-earned effort by Ralph who, with helmet and padding, flew in the T-31 on the North Ridge. D. Banting had an attempt at Diamond goal but landed at Lindholme, a distance of 138 miles.

On arriving back at Andover, N. Smith did his Silver C distance to Kidlington, thereby completing his Silver C—the last two legs being done within three days of one another.

J.L.

WINDRUSHERS (Bicester)

SINCE last appearing in the Club News the Windrushers have enjoyed a very successful spell. Five members have completed their Silver Badge: Ron Newall, Harry Greig, Dave Parry (all committee members), "Doc" Saundby and A./A. Stangroom, the last four achieving their duration leg in local thermals, no mean feat in the Bicester area.

During June and July Club aircraft have flown a total of 1,100 cross-country miles, notable flights being made by Brian Carroll (130 miles), Ron Newall (120 miles) and Alan Loveland (104 miles).

Recent A and B certificates have been gained by Dick Barton, Dave Davies, Paul Heavens, Paul Brisbois (U.S.A.F.) and our new Chairman, Sqn. Ldr. Garretts. C certificate flights have been made by Dick Barton, Dave Davies, R. Simpson, Brian Normington and Tommy Tomlin.

We put on record an unusual coincidence: two weeks after Dave Parry achieved his Silver distance with a flight of 53 miles to Bishop's Stortford, "Flash" Mackenzie did a repeat performance in the same Olympia, unwittingly landing in the same field; he had great difficulty convincing the locals he wasn't the same pilot.

Recently we have, unfortunately, had to say farewell to two valuable committee members, our Chairman, Wing Cmdr. Mann and Flt./Lt. Duggie Cameron, our Treasurer; each were presented with a suitably inscribed tankard in appreciation of services rendered. Harry Greig has stepped from the Secretary's shoes into the Treasurer's, Dave Parry now fills the former.

OVERSEAS NEWS

AUSTRALIA

THE Victorian Motorless Flight Group has now taken delivery of our new "long wing" Kookaburra. This is the Series 2 version which has a fibreglass cockpit lining and D.F.S. airbrakes.

The new glider was quickly put into service as a replacement for the T-31, which has now chalked up no less than 10,000 flights. The ten-thousandth flight took

John Potts from England instructs Peter Jones from Scotland in the Kookaburra.
(Photo: Department of Immigration)

place with due ceremony before television and press cameras. The front seat being occupied by H. G. Richardson, one of the pioneers of gliding in Australia, and in the back seat was Bob Frecheville, our Club President, and one-time member of the Derby and Lancs.

With the sale of the T-31 our Club fleet will be reduced to three gliders, the two "Kookaburra" two-seaters and the "Nymph", all of roughly "Olympia" performance. The next step will be to replace the solo machine with a more modern type.

It may be, with less machines, some people will miss out on a good soaring day but we think that this will even out in the long run with better utilisation of the gliders on not so good days. We also hope that it will take less time to advance a pupil to Silver C level as they will be used to high-performance gliders from the first circuits.

WORLD GLIDING

ALTHOUGH the Fédération Internationale Aéronautique asks for gliding statistics from all the World's Aero Clubs, they take a long time to get published. Those for 1958, from which *Aviasport* publishes extracts for some leading countries, may nevertheless be of interest. The following table gives flying hours for each country in order of magnitude; also the number of gliders with, in the last column, placings for this item. Below it is a table of hours flown per glider. There is no information from Russia.

		Hours	*Gliders*	
1.	Germany	96,043	1,923	1
2.	France	72,122	1,095	2
3.	Poland	41,000	675	3
4.	Gt. Britain	21,536	252	7
5.	U.S.A.	18,590	532	4
6.	Hungary	18,392	413	5
7.	Yugoslavia	12,535	304	6
8.	Switzerland	12,217	197	9
9.	Holland	9,421	98	13
10.	Sweden	8,110	232	8
11.	Italy	7,772	69	16
12.	India	5,980	48	20
13.	Austria	4,616	119	12
14.	Finland	3,657	86	14
15.	N. Africa	3,199	32	22
16.	Belgium	3,150	40	21
17.	Denmark	1,867	68	17
18.	Spain	1,596	164	11
19.	Norway	1,500	48	19
20.	Japan	1,300	170	10
21.	Bulgaria	800	32	23
22.	Turkey	425	80	15
23.	N. Korea	357	62	18
24.	Greece	212	11	24
25.	Israel	200	8	25
26.	Luxembourg	29	1	26

Hours per Glider

1.	India	123	14. Austria	39
2.	Italy	121	15. Sweden	35
3.	N. Africa	100	16. U.S.A.	35
4.	Holland	96	17. Norway	31
5.	Gt. Britain	85	18. Luxembourg	29
6.	Belgium	79	19. Denmark	27½
7.	France	66	20. Bulgaria	25
8.	Switzerland	62	21. Israel	25
9.	Poland	60½	22. Greece	19
10.	Germany	50	23. Spain	9¾
11.	Hungary	44½	24. Japan	7½
12.	Finland	42½	25. N. Korea	6
13.	Yugoslavia	41	26. Turkey	5½

TOBACCO AT ITS BEST