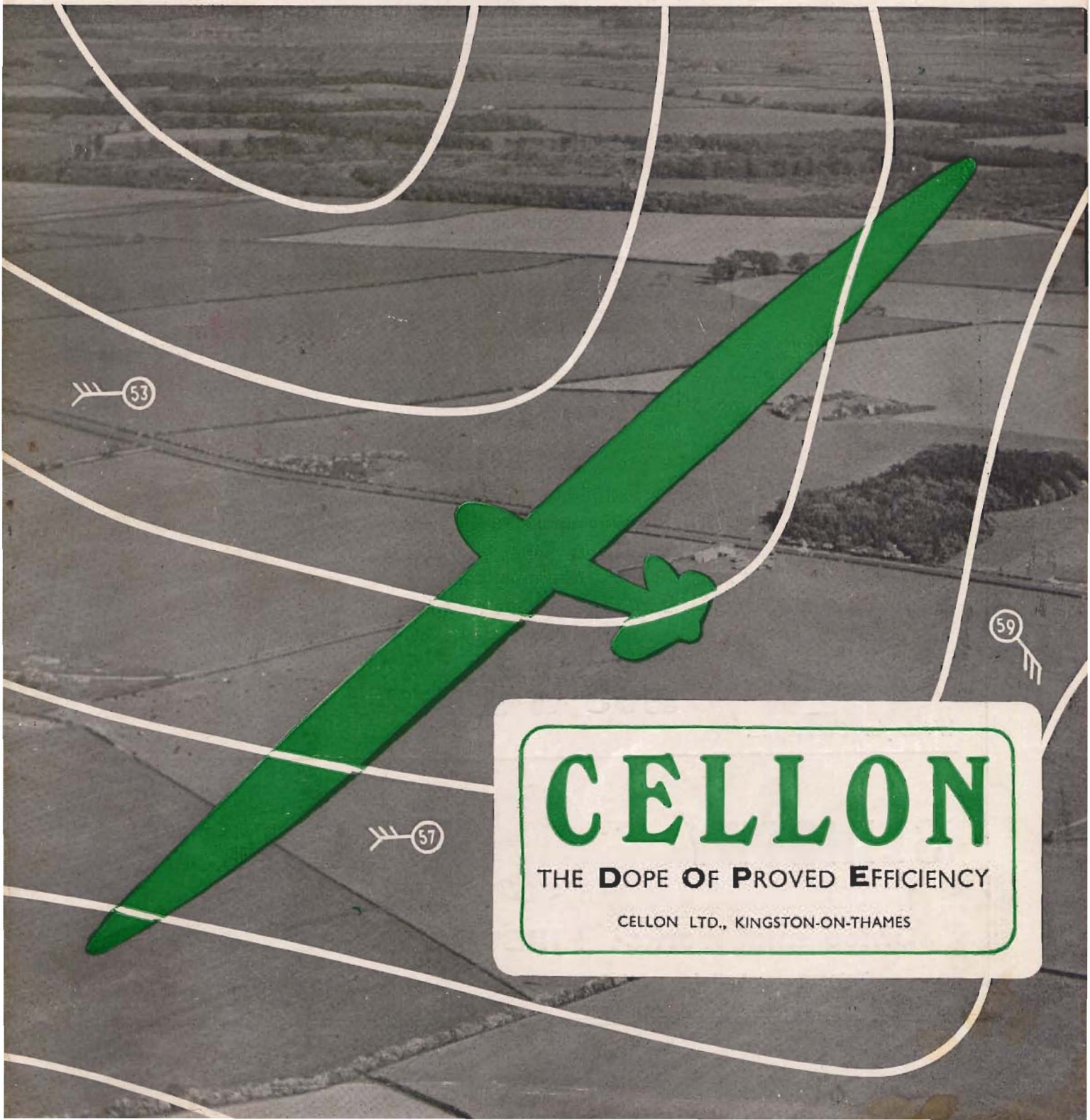
SAILPLANE AND GLIDER

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Official Organ of the British Gliding Association

EDITED BY ALAN E. SLATER



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International Records

LAST May, when we published a full list of international and British gliding records, they were of four kinds: (*a*) distance, (*b*) out-and-return, (*c*) duration, and (*d*) height. A fifth has now been officially recognised and came into force on April 1st, 1939: (*e*) distance to a declared destination—or, in common parlance, goal flight. These are the rules, which apply to both categories, I. (single-seaters) and II. (multi-seaters):—

"When attempting a record for 'distance to a declared destination,' the landing point must be declared by the competitor to the control official before the start. The landing point should preferably be an aerodrome or a recognised gliding ground. If the landing point is not an officially recognised aerodrome, the competitor should take steps to ensure that a control official be on the spot in order to check the landing, which must be made within a circle of a thousand metres radius the centre of which is the pre-declared point."

Since the last list was published, we have received particulars of the following further records:—

OFFICIAL RECORDS

Category II—Multi-seaters

GOAL FLIGHT (Germany)

Otto Bräutigam, pilot, and Hannes Meyer, passenger, in KRANICH, from Grossrukerswale to Vienna (Aspern) on April 21st, 1939 ... ... 363.798 kms. (226 miles)

GOAL FLIGHT (U.S.S.R.)

I. Kartachev, pilot, and A. Gorokhova, passenger, in STAKHANOVETZ, from Moscow to Gorki on July 1st, 1939 ... ... 395.730 kms. (246 miles)

RECORDS AWAITING HOMOLOGATION

Category I—Single Seaters

DISTANCE IN A STRAIGHT LINE (U.S.S.R.)

Woman pilot Klepikova in ROTFRONT 7 on July 6th ... ... 750 kms. (466 miles)

DISTANCE, RETURNING TO POINT OF DEPARTURE (U.S.S.R.)

Pilot Kimelman in ROTFRONT 7 on July 23rd ... ... 300 kms. (186 miles)

GOAL FLIGHTS (U.S.S.R.)

(1) Pilot Satzov, in ROTFRONT 7, Moscow—Tambov on June 30th ... ... 410 kms. (255 miles)

(2) Pilot Satzov, in ROTFRONT 7, on July 31st ... ... 600 kms. (373 miles)

Category II—Multi-seaters

DISTANCE, RETURNING TO POINT OF DEPARTURE (U.S.S.R.)

Pilot Kartachev, passenger Chechoulkine, in STAKHANOVETZ, on July 23rd ... ... 300 kms. (186 miles)

FEMININE RECORDS AWAITING HOMOLOGATION

Category I—Single Seaters

DISTANCE IN A STRAIGHT LINE (U.S.S.R.)

Pilot Klepikova, in ROTFRONT 7, on July 6th ... ... 750 kms. (466 miles)

GOAL FLIGHT (U.S.S.R.)

Pilot Zelenkova, in ROTFRONT 7, Moscow—Riazan, on July 6th ... ... 195 kms. (121 miles)

HEIGHT (U.S.S.R.)

Pilot Zelenkova, in ROTFRONT 7, on July 10th ... ... 2,080 metres (6,820 feet)

Category II—Multi-seaters

DISTANCE IN A STRAIGHT LINE (U.S.S.R.)

Pilot Velikosseltzeva, passenger Gorokhova, in STAKHANOVETZ, on July 23rd ... ... 200 kms. (124 miles)

GOAL FLIGHT (U.S.S.R.)

Pilot Velikosseltzeva and passenger Zaviolova, in STAKHANOVETZ, on July 31st ... ... 223 kms. (139 miles)

HEIGHT (U.S.S.R.)

Pilot Velikosseltzeva and passenger Vazhalova, in STAKHANOVETZ, on July 10th ... ... 1,600 metres (5,250 feet)

WEATHER REPORTS FROM MOSCOW

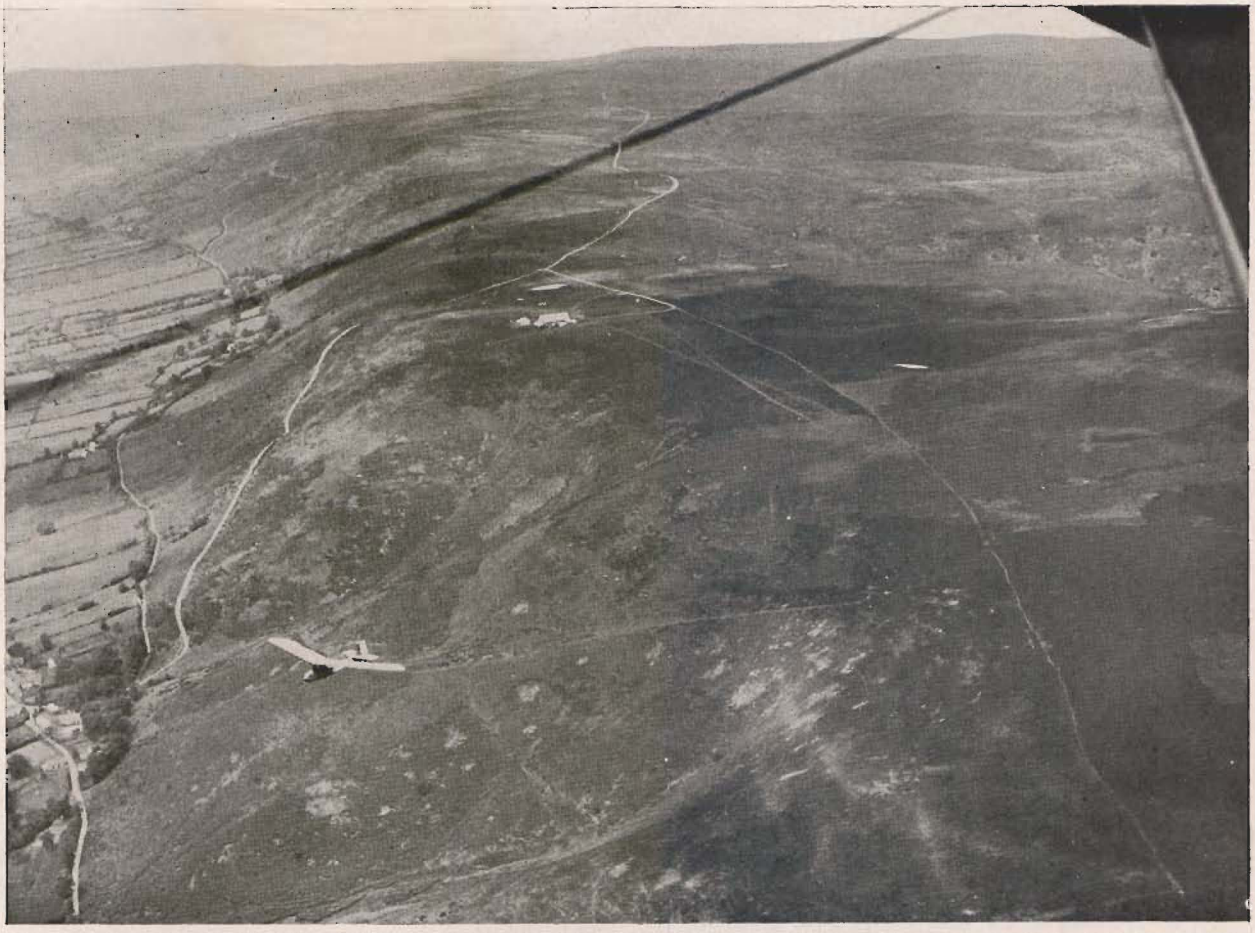
(Reproduced from the Air Ministry's Daily Weather Reports, International Section)

	June 30th	July 1st	July 6th	July 10th	July 23rd	July 31st
Morning (7 h. local time)						
Wind direction	W.	—	—	—	N.W.	—
Wind speed (m.p.h.) ...	1—3	—	—	—	1—3	—
Temperature (Fahr.) ...	59°	—	—	—	64°	—
Low cloud, height (ft.) ...	—	—	—	—	—	—
Low cloud, type	—	—	—	—	—	—
Low cloud, amount (tenths)	0	—	—	—	0	—
Total cloud amount (tenths)	1	—	—	—	2—3	—
Evening (18 h. local time)						
Wind direction	W.N.W.	N.N.W.	N.W.	S.W.	S.W.	W.S.W.
Wind speed (m.p.h.) ...	4—7	4—7	8—12	1—3	1—3	4—7
Temperature (Fahr.) ...	68°	72°	68°	82°	75°	75°
Low cloud, height (ft.) ...	5,700	4,000	4,000	5,700	5,700	5,700
Low cloud, type	St-cu.	Cu.	Cu.	Large cu.	St-cu. from cu.	Cu.
Low cloud, amount (tenths)	7—8	1	Trace	1	2—3	1
Total cloud amount (tenths)	7—8	1	Trace	7—8	2—3	1
Maximum day temperature	72°	75°	72°	84°	79°	79°
Type of gliding records ...	Goal	Goal	Distance Goal	Height	Out & Return Distance	Goal

The French National Contests

Held at the Banne D'Ordanche in unfavourable weather from July 9th to 22nd, the French National Contests nevertheless logged some 2,290 miles of cross-country flying. The 16 entries consisted of 12 AVIA 40P's (1935), three AVIA 41P's (1932), and a RHÖNSPERBER; new designs, it is learnt, will shortly replace the AVIA 40P and 41P. July 11th alone logged a total of 650 miles of cross-country flying on seven machines. On other days three 50-mile and three 100-mile goal flights were made. Didion in his AVIA 40P made the greatest climb (5,380 ft.) and best distance (150 miles) during the Contests. No marks were awarded for duration.

Towards the end of the Contests, Thomas (AVIA 40P) was violently sucked up into a cloud, which was so turbulent that the machine broke up. "With remarkable *sang froid* he looked to see if his parachute was on and then threw himself overboard," making a perfect landing a few moments later. The retrieving crew found him in a village where he had just bought a St. Nectaire cheese as a souvenir!



This photograph, sent by Mr. C. E. Hardwick, was taken from a "Falcon III" two-seater soaring over the Midland Gliding Club's site at Long Mynd, Church Stretton. It shows the "Falcon II" soaring below, the two hangars, marquee for the August instruction camp, and, in the left bottom corner, Asterton village at the foot of the hill.

Reviews

Flying Simply Explained. By MALCOLM LOGAN. Sir Isaac Pitman & Sons, Ltd., London, 1939. Price 6d.

A little book for the would-be aeroplane pilot who knows little or nothing about how to fly, though it is not to be scorned by those already learning. Well written on up-to-date lines by one who obviously knows his job, it begins by dealing separately with the functions of the various controls, going on by lucidly explaining all manœuvres of flight in the order that the pupil would learn them from an instructor up to his first solo.

The attention paid to details and the finer points of flying that go to create a good pilot, should make it very popular amongst C.A.G.'s and Air Defence Cadets. There is a great deal of information which should also prove very helpful to *ab initio* glider pilots in the early stages.

Highly gratifying to sailfliers is the paragraph recommending gliding as providing "an excellent and cheap form of flying training," and suggesting that "in the future it is likely to play an important part in the training of all air pilots." The denial of the existence of "air pockets," as such, is quite daring, and the correct explanation of bumpiness by "temperature thermals" that may form clouds, wind blowing over cliffs and trees, and the sun beating on tarred roads, must be almost unique in a popular book of this type (even though a diagram indicates that down-currents are to be expected over factory chimneys!). But it is still too much to expect a reference to sailflying in this context.

P.G.W.W.

The Glider Pilot's Psalter. Enlarged and Revised Authorised Version. Obtainable from "The Vicar of Higher Winchum," Derbyshire and Lancashire Gliding Club, Camphill, Great Hucklow, Derbyshire. Price 1s. (post free, 1s. 1d.).

Last month an applicant who wanted to join an instruction course at the London Gliding Club wrote to ask if he should bring his evening clothes. He must have been reading the poem "Dunstable is Dunstable" in this booklet, ending:

> Good Heavens above! You'll pardon me,
> But you haven't wiped your feet!

This is one of the new additions to this famous publication, which still contains all the old favourites from 1938, such as "I'm a little Bungy Flower," "You Can't Stop Me From Gliding," "It's Rough, Mighty Rough, in the West," and many another worth quoting in full—but buy it yourself and try them over.

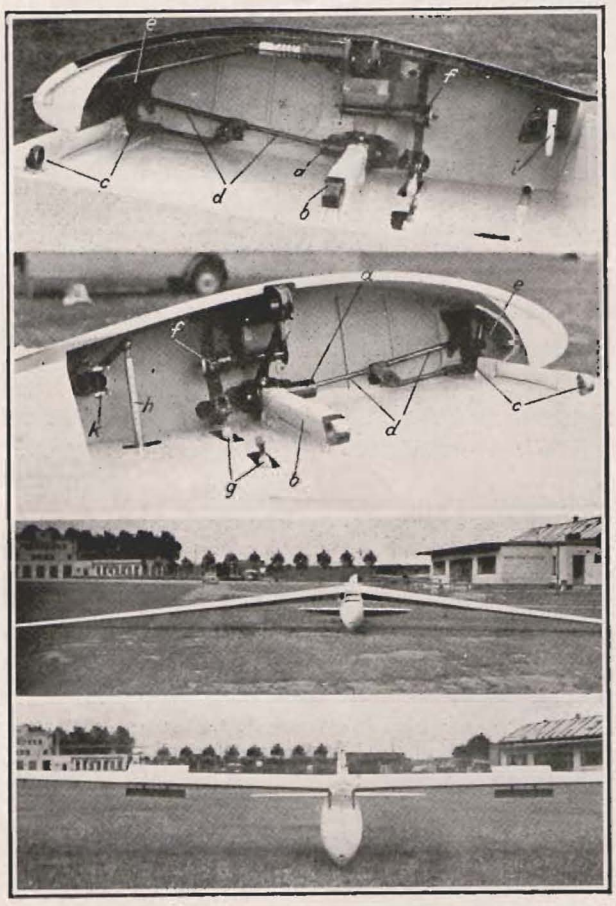
The "Weihe"

[The "Weihe" is the type flown by Erwin Kraft, who won this year's Rhön Contests in Germany. It is now in production by Flugzeugbau Schweyer, of Ludwigshafen, and the price, we hear, is R.M. 3,695.—Ed.]

THE WEIHE was developed as a cantilever high-wing sailplane with tapered wings of 18 metres span, suitable for competition flying and group activities.

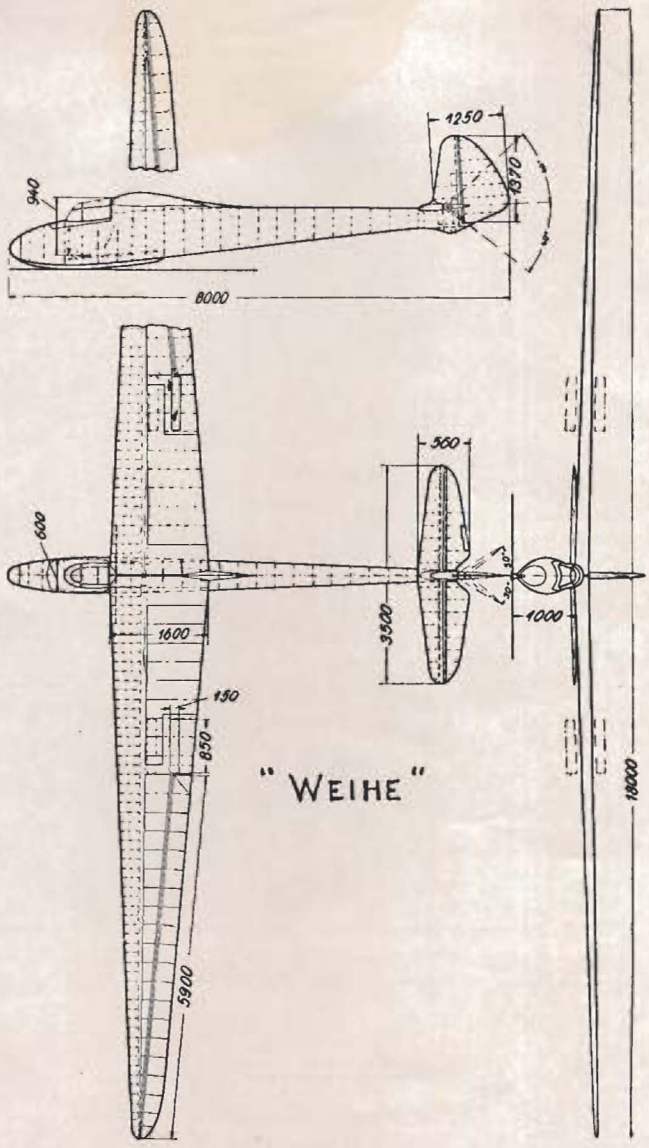
The wing is in two parts, and is of single-spar construction with torsion-resisting leading edge. The torsional stresses of the wing are transferred to the fuselage by means of a leading-edge spar, thus avoiding the heavy shoulder fitting. The bottom flanges (of the spar) are linked to the tube *b* on the fuselage by means of cylindrical bolts which are introduced through the casing *a* (see illustrations). The insertion of these bolts takes place simultaneously with the leading-edge-spar bolt *c*. Both pairs of bolts on the left and right side lie in the same axis.

During assembly of the machine, the wing can be laid on the ground and then attached to the fuselage by means of the push-rod *d* and the lever *e*. The aileron attachment levers *f* are, with the push-rods *g* and the air-brake push-rods *h*, coupled with the corresponding lever on the left side. When the wings are raised, the cross-pin *i* is forced into the levers *k* and thus links up the two torsion tubes for actuating the air brakes. The upper wing bolt is then grasped by the spindle.



Above are the various connecting devices between the wing roots of the "Weihe," explained in the text. The third photo will give great joy to those who have suffered from interminably supporting other people's wing tips during assembly. The bottom picture shows the air brakes at the ready.

[From "Flugsport," Frankfurt a.M.



[From "Flugsport," Frankfurt a.M.

By this method of attaching the wings, assembly can be carried out very quickly with little assistance.

In spite of the thin wing-section (Göttingen 549), great stiffness of the wing has been achieved (oscillations 215 per minute). The dimensions of the main spar were decided upon by considerations of stiffness, so that the rigidity of the spar is greater than specified by requirements.

For cloud flying and for landing the D.F.S. "terminal velocity" brakes are installed; these limit the maximum diving speed to 190 km. (118 miles) per hour. The sinking speed in a slip with air brakes out is 5 metres per second.

The fuselage construction is normal. The parachute box is removable to give access to the luggage space.

In the same space are the fittings for a water tank to hold 40 litres (8.8 gallons), with drain cock. The advantage of this ballast for higher speed ranges, to increase the cruising speed, is well known. In addition, the luggage space is large enough to hold three oxygen-containers for altitude flights.

The elevator and its fin are secured by a wing nut, and thereby the elvator is coupled to a trimming device actuated by the pilot.

The principal dimensions, etc., are:—

Span	18·00 m. (59 ft. 1 in.)
Length	8·00 m. (26 ft. 3 in.)
Wing area	18·20 sq. m. (196 sq. ft.)
Max. width of fuselage ...	0·60 m. (2 ft.)
Weight empty	190 kg. (418 lbs.)
Weight loaded	335 kg. (737 lbs.)
Gliding angle	1 in 22
Sinking speed	0·58 m/sec. (1·90 ft./sec)
Speed at best gliding angle ...	70 km/h. (43·5 m.p.h.)
Minimum speed	45 km/h. (28 m.p.h)
Aspect ratio	18
Wing loading	18·4 kg/sq. m. (3·76 lb./sq. ft.)

Gliding Certificates

The following gliding certificates, for which qualifying flights were made on the dates shown, were granted by the Royal Aero Club on July 31st ("C" indicates Air Defence Cadet):—

"A" Certificates

No.	*Name.*		*Club.*	*Date.*
1349	S. H. Smith		Derby and Lancs. ...	4.8.38
1350	S. F. Youles		Southdown	25.3.39
1351	L. Strauss		Norfolk and Norwich...	24.6.39
1352	W. H. Murray		Derby and Lancs. ...	25.6.39
1353	Joan H. Kitchin ...		Derby and Lancs. ...	25.6.39
1354	R. C. Heninghem ...		Standard Telephones ...	1.7.39
1355	E. G. Shrewsbury ...		Standard Telephones ...	1.7.39
1356	P. J. Nightingale	(C)	London	29.6.39
1357	J. M. Lyons ...	(C)	London	1.7.39
1358	R. G. Ive... ...	(C)	London	29.6.39
1359	R. H. Mart'n ...	(C)	London	1.7.39
1360	W. H. G. Ball ...	(C)	London	29.6.39
1361	J. F. Hawker ...	(C)	London	29.6.39
1362	S. C. Clawson ...	(C)	London	29.6.39
1363	F. R. Leadon ...	(C)	London	30.6.39
1364	L. A. Frith ...	(C)	London	29.6.39
1365	D. J. Bowman ...	(C)	London	1.7.39
1366	J. A. Wells ...	(C)	London	1.7.39
1367	R. N. Holton ...	(C)	London	29.6.39
1368	J. B. C. Howell	(C)	London	6.5.39
1369	F. C. Verity ...	(C)	Yorkshire	14.6.39
1370	D. U. Barnwell...		London	1.7.39
1371	K. B. Batchelor ...		London	9.6.39
1372	R. D. MacGilchrist ...		London	21.5.39
1373	F. C. Clarke		London	7.5.39
1374	J. J. Buckley		London	25.6.39
1375	B. R. Heerey		Derby and Lancs. ...	25.6.39
1376	D. W. Groocock	(C)	Yorkshire	14.6.39
1377	J. C. Beasley ...	(C)	Yorkshire	14.6.39
1378	L. A. S. Harris... ...		Yorkshire	14.6.39
1379	C. J. Danby		Oxford	6.3.38
1380	A. S. Boultbee		Derby and Lancs. ...	11.5.39
1381	R. F. Brigden		Southdown	16.7.39
1382	R. K. Hamblin... ...		Surrey	12.7.39
1383	A. C. Woodley		Southdown	16.7.39
1384	R. Clark...		Newcastle	16.7.39
1385	B. F. Bushby		Southdown	16.7.39
1386	P. W. Grant		Surrey	16.7.39
1387	T. Hart		Derby and Lancs. ...	25.6.39
1388	W. D. Campbell	(C)	Newcastle	8.7.39
1389	R. E. Brown ...	(C)	Newcastle	8.7.39
1390	J. Maxwell ...	(C)	Newcastle	8.7.39
1391	W. Graham ...	(C)	Newcastle	8.7.39

"B" Certificates

No.	*Name.*	*Club.*	*Date.*
1349	S. H. Smith	Derby and Lancs. ...	10.9.38
1350	S. F. Youles	Southdown	25.3.39
1351	L. Strauss	Norfolk and Norwich ...	24.6.39
1372	R. D. MacGilchrist ...	London	21.5.39
1374	J. J. Buckley	London	9.7.39
1247	E. Marianne Wakefield	London	1.7.39
1279	O. V. Ottley	London	1.7.39
1379	C. J. Danby	Oxford	30.6.38
1380	A. S. Boultbee	Derby and Lancs. ...	19.5.39
1382	R. K. Hamblin... ...	Surrey	12.7.39
1238	W. H. Wilson	Oxford	12.7.39

"C" Certificates

No.	*Name*	*Club.*	*Date.*
1349	S. H. Smith	Derby and Lancs. ...	14.5.39
1350	S. F. Youles	Southdown	25.3.39
1172	P. S. Fowler	Cambridge	9.4.39
979	R. J. Roake	London	2.7.39
1158	T. Pye	Derby and Lancs. ...	1.7.39
1342	D. F. G. Faussett ...	Midland	9.7.39
1379	C. J. Danby	Oxford	16.4.39
1382	R. K. Hamblin... ...	Surrey	15.7.39
1160	S. J. Bartlam	Midland	2.7.39
1007	H. H. Price	Oxford	9.7.39
1238	E. C. Whatmough ...	Yorkshire	23.7.39
640	A. M. Aitken	Scottish Union... ...	25.7.39

The Istus Meeting

Three nations sent teams to Poland for the meeting organised by the International Commission for the Study of Motorless Flight (Istus). The flying contests were similar to those which have been arranged for the Olympic Games in Finland next year.

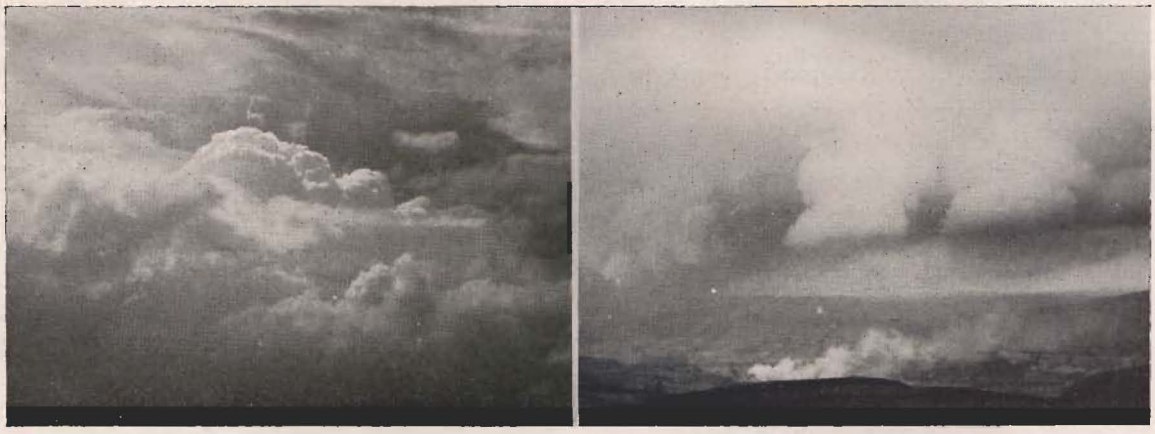
The meeting, held at Lwow, took place during good soaring weather, the pilots being very much assisted by the Army Meteorological Service, who gave unfailingly accurate forecasts. Seven machines were entered: Poland (3), Hungary (3), Yugo-Slavia (1). Lithuania—part of which became German shortly before the meeting—had withdrawn their entrants.

The first test, on May 14th, was a 60-mile goal race to Brody, but only Plenkiewicz got there, his time being 2½ hours. In the second test, also to Brody, marks were awarded for height as well. Plenkiewicz and Gora, both in P.W.S. 101's, made climbs of about 2,000 ft. and were the only finishers.

Test No. 3 was a cross-wind speed and distance contest to Lublin, some 110 miles away. Gora and Plenkiewicz both went more than 100 miles, and Szokola in his M-22, 85 miles. These flights were all the more creditable owing to a comparatively late start. At the end of the meeting a spot-landing contest was held to decide who should have one of the prizes not awarded in the second test—the average distance from the spot being 56 yards.

The results were: 1st, Plenkiewicz (Poland), 89; 2nd, Gora (Poland), 53; 3rd, Szokolya (Hungary), 28.

On the Blackpool Trail



Clouds on Friday afternoon, July 14th, at the National Contests. On the left: the approach of the storm in which R. C. G. Slazenger was carried up 7,200 feet. On the right: the cloud scene at 4.10 p.m., looking north-west from Bradwell Edge in the direction in which P. M. Watt has just gone away on the flight described on this page; showing the factory smoke which gave him a thermal and the storm clouds he tried to use.

[*Many of those at the National Contests who watched Squadron-Leader P. M. Watt launched over Bradwell Edge, drop below the hill-top, pick up height in factory smoke and finally disappear into the murk below a thunder cloud, must have wondered what befell him and his "Petrel," especially as he had the next launch after Mr. Slazenger who climbed 7,200 ft. in the storm The following account is extracted from a letter in which the pilot explains how he was able to get 25 miles and rise to a maximum of 3,000 ft. under peculiarly difficult conditions.*—ED.]

MY attempt to get to Blackpool from Camphill was so full of incident that I am not likely to forget it for some time to come.

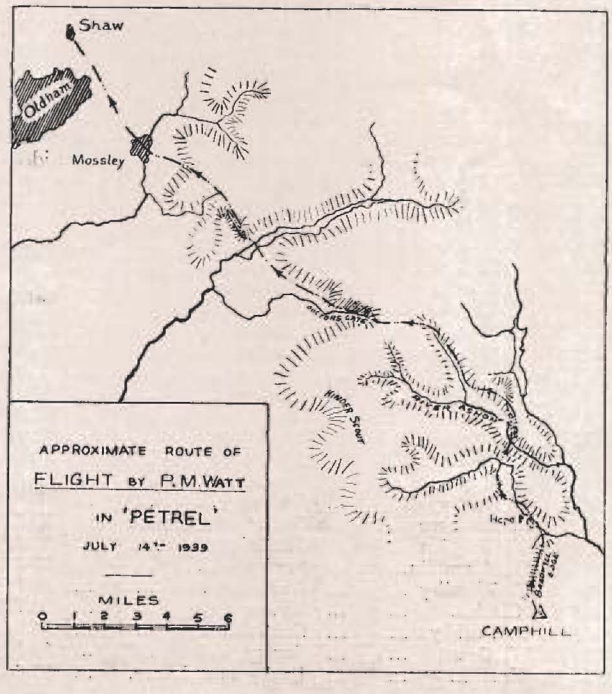
The wind direction was messing around in the afternoon, but at the time of the launch it was about S.S.W. A lot of clouds arrived, and a KITE that had just gone off was circling under the eastern half. I was not due for a launch for some time, but the other pilots stood down and I was flung to the lions. Everything was so hurried that I quite forgot to start the barograph.

The launch began at 35 m.p.h. and increased to 70 at 400 ft., so I cast off. (I think my cable was underneath the other one which was being used.) There was no lift under the KITE, so the chimney at Hope was the next goal, with a pause for height at the north end of the slope on the way. The clouds were retreating rapidly, but I had to circle because so much height had been lost getting across the valley between the two parts of the storm.

I left the smoke as soon as possible and sat over the hill to the N.W., 1,560 ft. high. Wisps of cloud were forming below the top and were going up very rapidly. The lift was local, and there were violent up- and down-currents. The PETREL got a bit out of control at one period, and took up a 60 m.p.h. left-hand turn in spite of all I could do to hold her. This placed us behind the hill where it was really rough, and I unlocked the hood. It wasn't a practical thing to do, because I was not high enough to jump, but it felt better.

After spending a little time playing around, a wave of discretion overtook me, and I retreated north over the River Ashop to a hill 1,200-1,400 ft. high. The next two hours were very peaceful. We tramped back and forth, sinking below the top twice. I could not see why we were soaring at all, because the grass hardly stirred at times. The beat was short and the areas of lift kept shifting as the wind was swinging about on entering the valley.

The centre of the next storm was some distance to the west, and it passed by without lifting me, but I



got out when another storm came along. The moors north of Kinder Scout looked forbidding, the lift was rough, local, and only temporary. At Doctor's Gate I made enough height, at the head of a small valley, to reach the hills along the north of Longdendale Reservoirs. After a beat into wind on hill lift to the south end of the reservoirs I made a dash over high ground to Mossley, where the rain came down, complete with buckets. The wind had died away and smoke haze from Manchester was rising slowly. The PETREL lost height gradually all the way to Shaw, between Oldham and Rochdale.

There was no "choice" of a field; it was the only one available by the time I started to look for one. It was quite large, but the effective size was reduced by a hill, houses and factories. The approach in heavy rain was difficult, because the front panel, when wide open, allowed the rain to beat in. I had to take a quick look, slam the panel shut, use the spoilers, then look again to see how we were placed.

The Southdowners were upon me 40 minutes after the landing, and the prompt collection did much to wipe out the memory of a peculiarly unpleasant flight.

P. M. WATT.

Riding the Wave

EVERYBODY saw the great stationary wall of cloud to the north-west throughout Monday morning and early afternoon at the National Contests. But W. E. Filmer was first to notice that its visible surface was perpetually cascading downwards. Its lift, if any, seemed quite out of reach, but Mr. Filmer became so fascinated by it that in the afternoon he set out in his VIKING to investigate.

He first took the VIKING to the north end of Bradwell Edge, and then flew out to the S.W. until he had reached a point two miles from the hill and 2,750 ft. above his start. Here he found himself in a kind of cloud valley between two sloping ridges of cloud: one was the stationary roller with its crest over Kinder Scout, and the crest of the other appeared to be over the Competition site, though this may have been an illusion, as its surface was convex and so its summit was hidden. The "floor" of the valley had somehow formed where none had been seen before from ground level.

Judging that the cloud bank over the site was an upward rebound from that over Kinder Scout, Mr. Filmer skirted its edge and found that, in the clear air outside it, the lift was just equal to his own sinking speed. But when he went inside lift increased to 3 ft. per second, and he flew along parallel to its edge, avoiding going too far in by watching how much light filtered through from the sun, which was dead ahead. Mr.



Mr. W. E. Filmer, of the Southdown Club, is here seen standing beside his "Viking," together with his "team," Mr. and Mrs. S. Cox, at the National Contests. How he used this machine for aerial surf-riding in a wave cloud is described below.

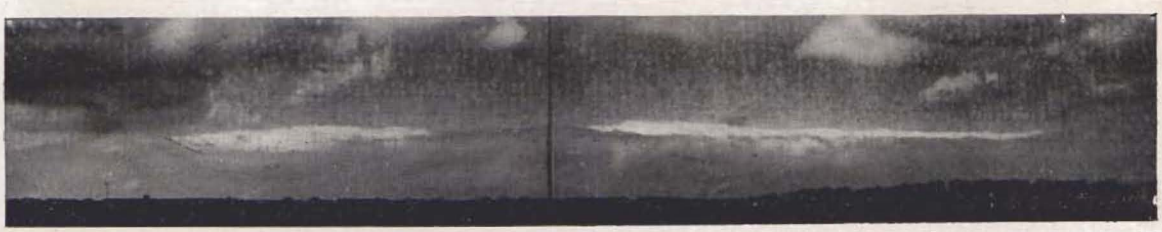
Filmer then turned round to fly northwards in the same way, but in this direction the sunlight no longer acted as a depth gauge, and the VIKING soon lost its way inside the cloud. Evidently the pilot got across into the downward side of the wave, for he emerged from its under side sinking at 5 ft. per second.

He then flew straight down-wind in the hope of reaching a third wave which could be seen some way off. The glide took him 15 miles from a height of 2,000 ft. above start, but he found no further lift and had to land.

It was a unique experience and full of interest for a pilot who knew all about the "Moazagotl" wave phenomenon in Germany.



Wave clouds at about 1.30 p.m. on Monday, July 10th. Above is the third wave of the series, looking down-wind from Bradwell Edge. Below is the first wave, apparently over Kinder Scout, 9 miles to the N.W. All but its white top is now hidden by nearer dark cloud, but its great lateral extent can be seen.



14,170 Feet in "Minimoa"

BRITISH HEIGHT RECORD FROM DUNSTABLE, JULY 1ST, 1939

By P. A. WILLS

(Reproduced by permission from "Aeronautics")



This photograph of Mr. Wills departing on his record altitude flight from Dunstable Downs on July 1st was given him by a member of the Royal Meteorological Society, whose members chose that day and place for their annual summer outing. The actual cloud which he used is seen beyond the Downs. Note the curious "feather" which projects from the top of the cloud near the left edge of the picture, and is visible also in the photos on the opposite page. The view is towards the north-east, and the cloud was over Luton.

ONE way and another I could not get to the club on July 1st until 1.30, by which time the beautiful cumulus which had been sailing over my bent head in London had given way to a rather featureless sky. So I had lunch and rigged with the aid of the Royal Meteorological Society, arrived on their annual outing, which this year had been arranged at Dunstable. Finally, it was 3.30 when I left the ground. In the meantime a front containing a number of cumulo-nimbus going to quite respectable heights had come into view from the north, moving slowly towards us, at right angles to the prevailing W.N.W. wind.

Just overhead the sky looked pretty stable, but there were obvious possibilities in the situation: keep going, keep an eye on the distant front, and take any opportunity of bridging the gap—seven miles or so—between the club site and the clouds. Right off the winch-launch I struck a thermal which took us up to 1,500 ft., and it might have been more, but I wanted to go north-east, not E.S.E. with the prevailing wind, so abandoned it and returned to the hill.

Then a local patch of stratus obscured the sun, and for twenty minutes 600 ft. above the hill was the order of the day. The returning sun struck first on the Zoo end of the slope, and flying that way thermal currents commenced again and for half-an-hour height varied between 800 and 1,500 ft. Then I saw a newly-forming cumulus drifting over Dunstable town, about half-way towards the front, which was now over the far side of Luton and developing mightily.

I abandoned the slope and flew northwards at about 1,500 ft. Over Dunstable I struck a large area of gently rising air. No amount of manœuvring could work the lift up beyond 2-3 ft. per sec., so in this gentle fashion I climbed to 3,500 ft. and then set off for the big stuff.

As the wall of cloud ahead got nearer it grew in size and blackness, and I battered through an area of down-current into a gloom enhanced by contrast with the brilliant sunshine I had left. Underneath a large and extra black patch I struck lift. At 6 to 8 ft. per sec. I circled up into the concave bell which is formed by the rapid up-current in the otherwise flat base of a cumulus.

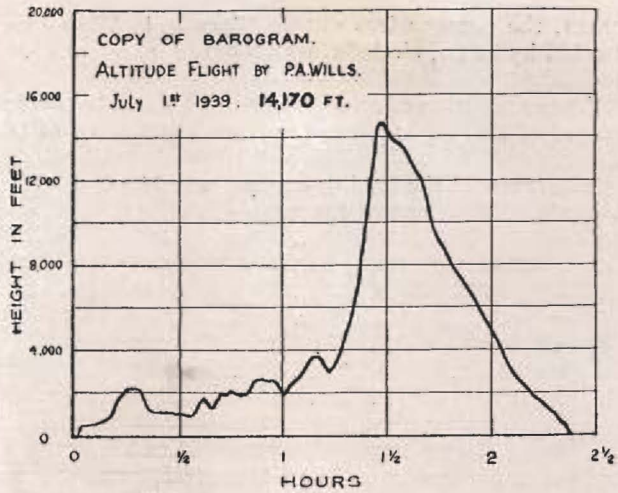
Once inside the lift increased rapidly until the rate of climb indicator jammed against the top at 20 ft. per sec. My rate of turn I kept between 2 and 3 on the Pullin electric turn-and-bank indicator, which means a circle of about 30 secs. How fast I was climbing I did not know until afterwards, when my barograph, dotting at 30 sec. intervals, shows two dots over 1,100 ft. apart—a rate of climb of 2,200 ft./min. would make even a "Hurricane" feel quite respectful.

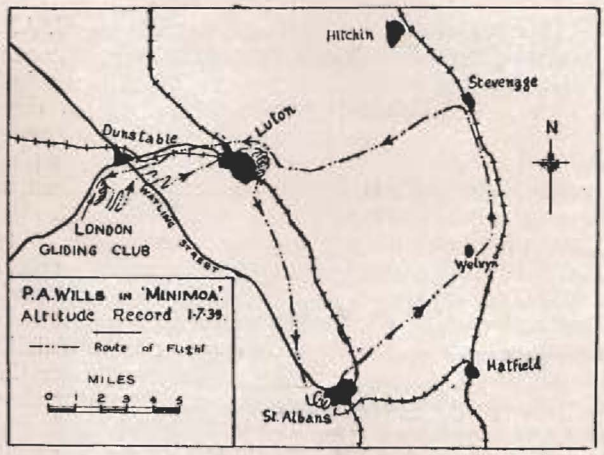
The air was in general smooth, with the taut smoothness of a stretched violin string. One expected it to break violently at any moment, and every now and again the machine would suddenly give a number of violent but small shudders. The speed would creep up from 42 to 50 m.p.h. and I would straighten up momentarily, ease off the surplus speed, and put her again into the turn.

The barograph shows that the last 10,000 ft. of climb took only 7½ minutes—it seemed more. I have a theory that the dangerous part of these big cumulus is near the top, where the rising fountain of air turns outwards and downwards like the water at the top of a fountain jet. Consequently I determined to leave immediately the turbulence noticeably increased, even if this meant throwing away the last thousand feet or so.

At length the variometer needle unstuck itself from the top and returned to a beggarly 15 ft. per sec., and suddenly the roughness of the air increased. My altimeter showed about 15,000 ft. above take-off. I straightened up and with some difficulty held her straight until the compass needle settled down at N.W.

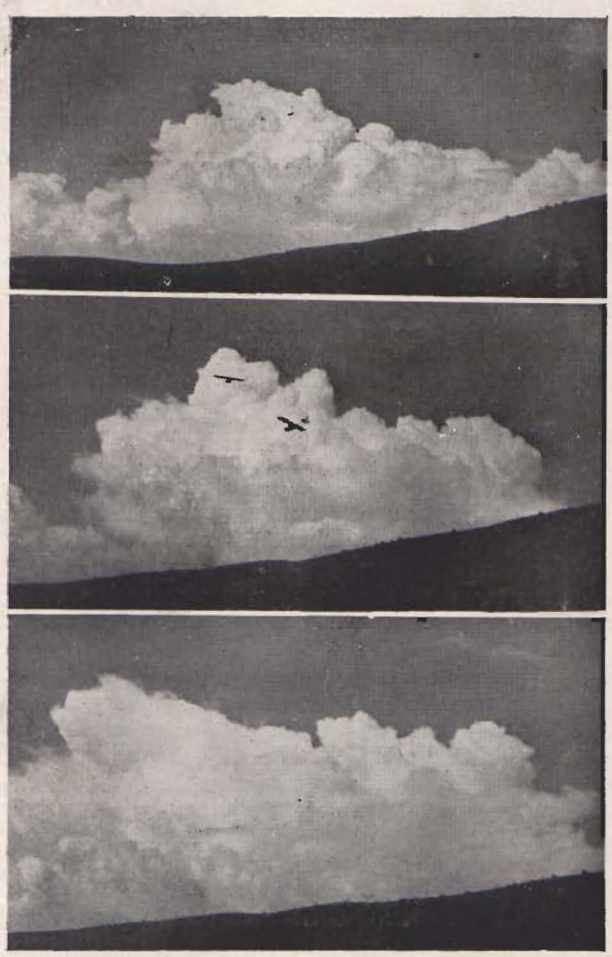
Now, before entering the cloud I had noticed that the front ran N.W.-S.E., hence the quickest way out





was N.E. or S.W. I turned on to the N.E. mark and struggled out in torrents of wild air.

The bumps ceased and a dazzling glare flooded into the cockpit. Behind billowed the mountainous cloud from which I had come, and I estimated its crest as at least 1,500 ft. above me. Right and left behind me ran further mountains in the chain created by the front, separated by deep valleys. In all other directions was a tumbled vista of cloud tops about 7,000 ft. below. Far to the north-east ahead I could see the peaks of a parallel range of cloud mountains, evidently a second front following on mine.



Three views of the cloud mass used by Mr. Wills, taken at 3.45, 3.55 and 4.3 respectively, reading from top to bottom. It is hard at first to identify any particular portion of cloud in all three pictures, but the clue is provided by the "feather," seen also in the photo on the opposite page. This shows that the whole mass was rolling over from right to left, while at the same time growing and slightly approaching. In an offshoot from this cloud further to the west, G. H. Stephenson climbed in his "Gull" to over 7,000 feet.

A broad ribbon of ice decorated the leading edge of my wings. It was about the width, and had precisely the serrated surface of one of those rubber nail brushes. It looked most un-aerodynamic. Long icicles pointing forwards decorated the pitot tubes, and all minor excrescences. If any chimney had hoved in sight I should have felt compelled to drop a stocking stuffed with my spare apple and acid drops down it.

I did not know where I was. I felt muddled and rather exhausted. If I flew west back towards where I thought Dunstable was, I should have to go through the next Everest on the line and presumably suffer further highly undesired gymnastics. I could not see the ground except when directly above a few holes in the floor, and then in the shadow of the clouds it looked just a dark blue blur. Finally I cut S.W. through the valley between my mountain and the next and flew along the wall of cloud which was then on my right. I noticed that my sinking speed at 42 m.p.h. was 4 ft. per sec. against the normal 2.4 ft. per sec.; the combination of height and ice.

At about 12,000 ft. I spotted a town below, a faint network of white lines being new concrete roads showing through the haze. I went round and round studying it and my map until a railway showed up running nearly N. At 10,000 ft. I saw the roof of the cathedral —St. Albans. Dunstable was about 16 miles to the north—right through the front. So I turned N.E. and flew along, hugging the cloud on my left. About now I began to feel a very severe pain between my eyes. It was a kind of nerve pain along the forehead, with an ache behind each eye. I rubbed my brow, took off my spectacles, shook my head, it got worse. I began to feel really worried for the first time—I had never heard of such a thing. Assuming it was due to increasing air pressure as we descended, I flattened out the glide as much as possible.

My enforced N.E. course brought me over Welwyn, then I edged north along the railway to Stevenage. We were now down to 6,000 ft., so if we were to get home it was high time we got on our course. So we

turned west and entered unwillingly into the cloud. After a few minutes a fine drizzle set in, and simultaneously MINI stalled on me—or at least the A.S.I. came back to 30 m.p.h. This was puzzling, she *felt* all right. Then the A.S.I. came back to 15—10—zero, and I spotted it—its icicle had melted and blocked the pitot. I applied myself feverishly to the artificial horizon, an instrument I had never previously honoured with much attention. But with my various aches this was too much, and I turned back east and came out of the cloud.

At 5,000 ft. it looked as if I might get west under the cloud base, so I turned again and scurried along in semi-visibility. Under the retreating front visibility was surprisingly poor, and I was relieved some time later to see Luton airport appear out of the mist about a mile to the N.W.

I reached Luton at 1,500 ft., and it seemed hopeless to try and get back to the club from there, six miles away. But then I noticed the smoke from the chimneys was blowing from the *north-east!* The front had passed over and brought a change of wind—having lifted me on high it now arranged kindly to blow me home.

I turned and followed the ridge of low hills that runs from Luton to Dunstable, and managed to reduce my rate of descent appreciably thereby. Dunstable drew nearer, passed a bare 600 ft. below, the back of the edge of our hill came nearer, it was going to be touch and go whether we cleared the power wires that run so thoughtfully along the top. The golf course went underneath, the power wires ditto. Glory be! We cleared the hill by 50 ft., circled the club house, and landed.

An examination of a second, more reliable, barograph record of this flight gives the following figures of this climb.

Time spent in the final up-current was 14 mins. Climb in each 2 mins. was as follows:—

1st 2 mins.	800	ft.
2nd ,, ...	1,100	,,
3rd ,, ...	1,200	,,
4th ,, ...	2,000	,,
5th ,, ...	2,650	,,
6th ,, ...	3,000	,,
7th ,, ...	770*	,,
	11,520	,,
Height at beginning of first minute (above point of release)	2,650	,,
	14,170	,,

(* This figure is unreliable and is almost certainly more, but the pen of the barograph left the top of the chart.)

Thus the greatest rate of ascent averaged 25 ft. per sec. for one minute. The reason this barograph record was not entirely usable for the official calibration was that the needle went off the top of the chart just before the end of the climb.

Correspondence

Indian Thermals

SIR,—I remember having read in past numbers of THE SAILPLANE various articles and letters referring to soaring conditions in India. The results of my own observations, though not very original or startling, may be of interest to your readers.

I spent the month of May this year at Murree (Punjab) convalescing from an accident. I couldn't do anything very active, so I amused myself for a considerable time each day by watching the clouds forming or the hawks trying for their "Silver C's." I made notes and took photographs.

Murree is a hill station at an altitude of 7,000 ft. The place from which I made my observations was at the top of a ridge facing approximately north-east. The slope to the valley 2,000 ft. below was very steep in parts, uneven and half covered by trees. Other spurs ran out approximately at right angles to the main ridge. My general impression was that slope-lift was strong but turbulent.

I will enumerate the main points that I noted:—

1. *Almost invariably* there was a wind blowing up the slope, either directly or at an angle. The wind-speed I estimated to be usually in the neighbourhood of 15 m.p.h. at mid-day, dropping in the evening. Sometimes it was stronger and once, just before a thunderstorm, it rose to about 40 m.p.h.

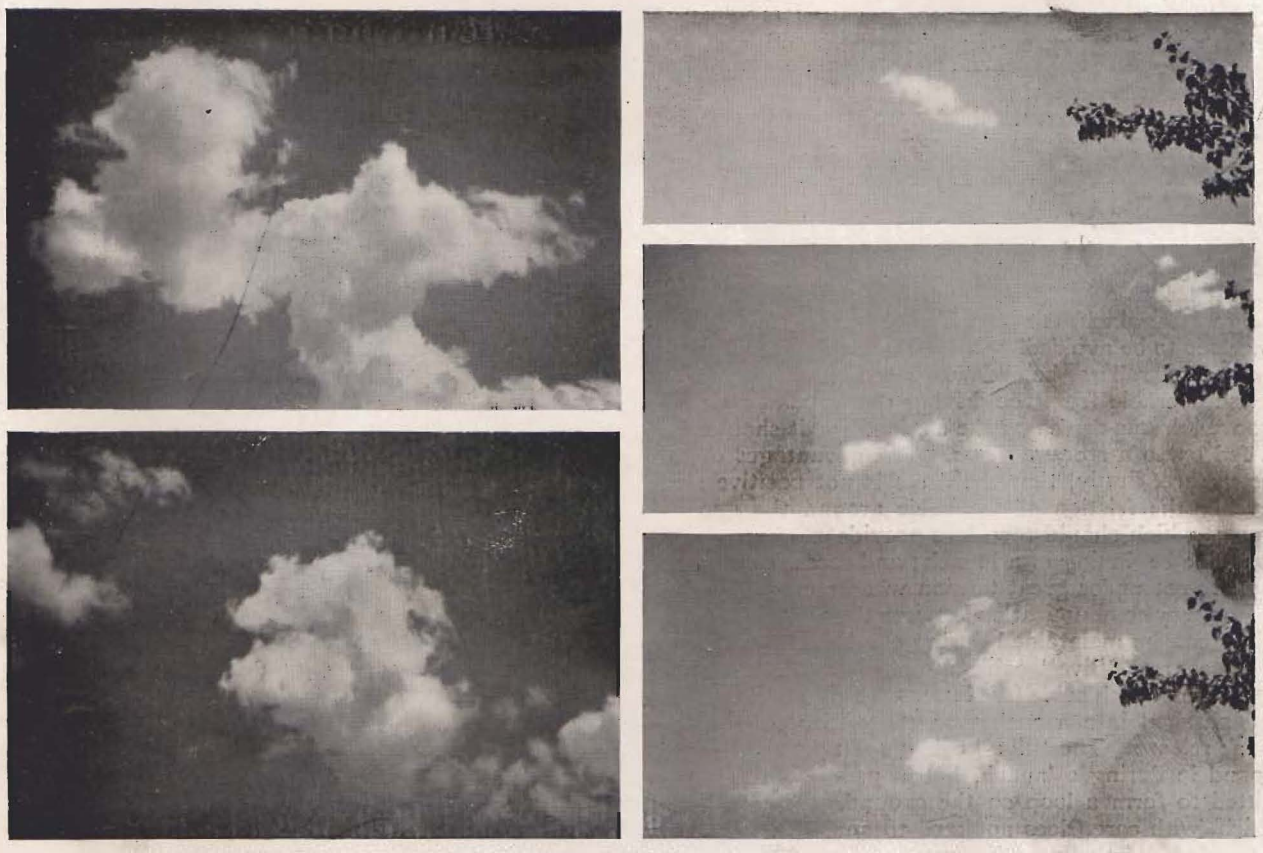
2. With the exception of a short period of thundery weather, every day was sunny. The weather was warm and humidity—again excepting the thundery period—appeared to be fairly low.

3. On the majority of days there was every indication of violent thermal activity. Cumulus cloud, fairly high up, was plentiful, and at about 10 a.m. every morning would begin to form all over the sky. I was surprised at the rapidity with which these clouds formed and dispersed. Photographs A and B show a large mass of cloud breaking up. B was taken ten minutes after A. C, D, and E show a cloud forming and were taken at five-minute intervals. On one occasion I saw a fairly well developed blob of cumulus appear in a perfectly clear patch of sky in about fifteen seconds. As a general, though by no means watertight, rule, the clouds formed mainly over the valley and dispersed, surprisingly enough, when they were blown over the ridge.

4. There were always large numbers of hawks soaring, often very high. It was not always easy to decide whether they were using slope or thermal lift, or a combination of both. Occasionally, however, a hawk could plainly be seen to "catch" a thermal and circle in it, whereupon it was usually joined by two or three other birds.

5. Between about 5 p.m. and 6 p.m. activity died down, but one evening at about 6.30 p.m. I noticed hawks soaring over the thickly wooded portions of the slope. Since the wind had dropped to 1 or 2 m.p.h. I presume that they were making use of an "evening reversal."

6. One day was particularly interesting. Storms during the night brought heavy rain in the morning, with a fairly strong north wind. About 10.30 a.m. the rain stopped, but the sky remained covered by a low uniform layer of strato-cumulus. Then clouds began



The Indian cumulus clouds referred to by Mr. Savage in his letter. A and B on the left: C, D and E on the right.

to form *below* the top of the ridge. One large patch of cumulus away to the north-west, with its top about level with the point where I was standing, gave the impression of moving towards me, but never got any nearer. I found that this was due to the cloud continually dispersing at its leeward edge and forming at the windward edge in "Moazagotl" fashion. This cloud remained for about two hours. Opposite to where I was standing there appeared to be a periodic liberation of thermals, because at regular intervals a puff of cloud would suddenly appear at about half the height of the ridge, rise, and either disperse or merge into the strato-cumulus layer above—I couldn't be sure which. By timing I found that these small clouds appeared at four to five-minute intervals. I can only assume that they formed when the rising air bubble reached a sort of secondary condensation level at about half the height of the ridge.

My general impression was that soaring conditions at Murree were hopeful and interesting. As a possible soaring site it would suffer from the disadvantage of the thin air due to its height and, more seriously, from the almost complete absence of suitable landing grounds. I expect that there are in India other sites with better facilities in this respect, where similar topographical and meteorological conditions prevail. If any readers in India know of such a place and are thinking of forming a gliding club there, I should like to get in touch with them.

Incidentally, I have met very strong thermals while flying over flat country at Risalpur, though I have not attempted to soar a heavily-laden "Wapiti" in them yet!

MICHAEL SAVAGE,

Primary Seating

SIR,

I should like to call your readers' attention to the danger which exists through the use of our present primary machines (in particular) with no provision for shock absorption between the pilot and the ground. The general idea seems to be that if a pilot makes a bad landing he should suffer for it as well as the machine. This is hardly fair to the beginners, who trust that the old hands will look after their safety, for the point overlooked is that the pilot's punishment may last him the rest of his life on account of the permanent injury he may sustain. In my own case I suffered a cracked pelvis through crashing a NACELLE, and I have heard of others who have not got off so lightly even with a milder crack-up. I now use (have to use) a three-inch thick sponge-rubber cushion when flying, and I have written to the B.G.A. suggesting that they should recommend the fitting of such a cushion to at least the primary machines. They reply that the committee "are of the opinion that general regulations on this point are not necessary." I should be glad if anyone who can do so would bring to the notice of the B.G.A. cases of injuries caused through the lack of such a cushion so that they may realise how necessary cushions are, and in the meantime I earnestly entreat clubs and instructors to give their *protégées* this necessary personal protection.

The committee of the London Club passed such a resolution at their April meeting.

WILFRED P. WAID.

BM/Waid, London, W.C.1.

On Launching Sailplanes

MR. A. YORK BRAMBLE, M.R.S.T., has written a treatise on winch launching which deals with the design of winches and methods of communication between winch driver and pilot. The following is a summary of the more important points.

Of the principal methods of launching gliders, winch launching is the most satisfactory, but in its present form it leaves a lot to be desired. In dealing with the design of a winch, the necessity of jacking up the rear wheels is to be avoided. The cable should pass through the normal rollers, behind which is mounted a cutting device operable from the driving seat, round a pair of grooved drums driven by the engine, and it should then be fed on to a storage drum. The advantages of this system are, firstly, that the drive is not positive since it is by the friction of the cable around the grooved drums, which should therefore provide a smooth take-up at the beginning of a launch; and secondly, that the cable is not under great tension when stored.

Two-way communication between the pilot and winch-driver can be maintained during the launch by the use of a separate "live" cable attached to the launching ring of the winch cable (the latter acting as earth return) and plugged into a socket on the glider close to the quick release. The "live" cable is not wound in during a launch, but is permitted to form a loop on the ground, which, with care, does not tend to get entangled. An alternative method is to use a special launching cable with an insulated wire core instead of the usual hempen one. This type of cable would be used for aero-towing where telephonic communication might be usefully employed.

The equipment for the glider need weigh no more than 2 lbs. if a lightweight headphone and microphone set is used. As a result of this method of launching the pilot is enabled to give the winch driver the signals for commencing the launch, and he can then converse during the launch, saying whether it is too fast or two slow. Also there is the considerable advantage of being able to instruct a pupil while his initial flights are taking place. In the latter case the pupil has headphones only.

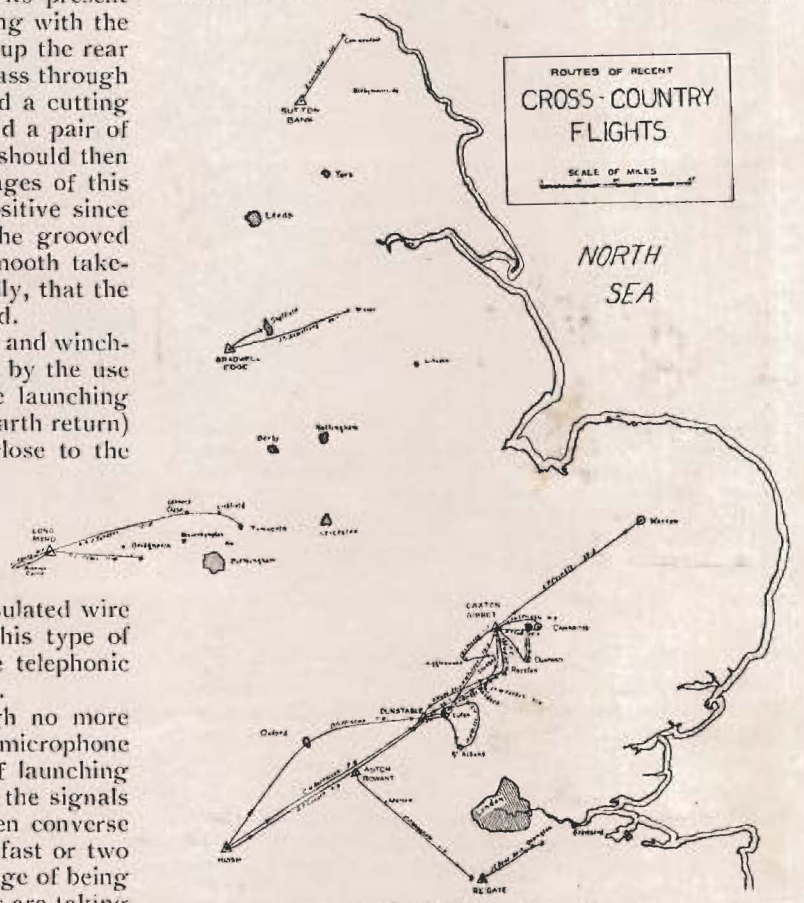
P.G.W.W.

British Gliding Association

Glider Log Books

The B.G.A. Technical Regulations require that a log book should be kept for each machine in which major repairs, overhauls, replacements, etc., are entered. The log book must be available for inspection by B.G.A. Inspectors on C. of A. renewals.

A fresh supply of log books is now available, price 2s. each.



The map above and the table below give all cross-country flights, other than those at the National Contests, reported to "The Sailplane" during the past month.

Cross-Country Flights

Date	*Starting Place*	*Pilot*	*Sailplane*	*Mode of Start*	*Landing and Mileage*	
May 19	Cambridge aerodrome	J. W. S. Pringle	KIRBY KITE...	Aero-tow	Duxford, via Caxton ...	38
June 29	Caxton Gibbet (Cambridge Club)	A. P. Pringle ...	KIRBY KITE...	Winch into thermal	Watton R.A.F.	46
,, 30	,, ,, ,, ,,	J. T. M. Parker	KIRBY KITE...	Winch into thermal	Baldock	16
July 1	Dunstable (London Club)... ...	P. A. Wills ...	MINIMOA ...	Slope lift	Dunstable, via St. Albans...	38
,, 1	Caxton Gibbet (Cambridge Club)	J. W. S. Pringle	KIRBY KITE...	Winch into thermal	Shingay, via Biggleswade...	18
,, 1	Aston Rowant (Oxford Club) ...	C. J. Wingfield	KIRBY KITE...	Slope lift	Reigate	42
,, 1	Sutton Bank (Yorkshire Club) ...	E. Lavington ...	KIRBY KITE...	Slope lift	Commondale	21
,, 23	Bradwell Edge (Derby & L. Club)	J. S. Armstrong	GRUNAU BABY	Slope lift	Misson, Notts.	32
,, 23	Dunstable (London Club)... ...	G. H. Briggs ...	KIRBY KITE...	Slope lift	Baldock	24
,, 30	,, ,, ,, ...	N. W. Lee ...	GRUNAU BABY	Slope lift	Royston	25
,, 30	Reigate (Surrey Club)	J. C. Dent ...	GULL... ...	Slope lift	Near Orpington	20
Aug. 7	Huish, Wilts.	C. H. Nicholson	RHÖNSPERBER	Slope and thermal	Dunstable (London Club) ...	65
,, 7	,, ,, ...	R. P. Cooper ...	RHÖNBUSSARD	Winch into thermal	Dunstable (London Club) ...	65
,, 7	,, ,, ...	D. G. Hiscox ...	GULL... ...	Slope and thermal	Dunstable (London Club) ...	65
,, 10	Long Mynd (Midland Club) ...	A. A. J. Sanders	KIRBY KITE...	Slope lift	Tamworth	55
,, 10	,, ,, ,, ,, ...	F. J. Davies ...	KIRBY KITE...	Slope lift	Long Mynd	22
,, 11	,, ,, ,, ,, ...	R. E. Pears ...	KIRBY KITE...	Slope lift	Beyond Bridgnorth ...	23
,, 13	Caxton Gibbet (Cambridge Club)	K. W. Turner...	GRUNAU BABY	Winch into thermal	Luton airport	26
,, 13	,, ,, ,, ,,	G. H. Briggs ...	KIRBY KITE...	Winch into thermal	Baldock	15
,, 15	,, ,, ,, ,,	R. T. Cole ...	CAMBRIDGE I	Winch into thermal	Cambridge aerodrome ...	12

News from the Clubs

London Gliding Club

Sunday, July 30th.—Good soaring in a W.S.W. wind with thermals and cloud lift. Norman Lee tried to get to Duxford in the Slingsby GRUNAU, but got sunk at Royston after going 25 miles. Lacey reached 2,000 ft. in the same thermal. Sproule was lent the RHÖNADLER and took it eight miles to Barton Aerodrome, going away from the club site at only 1,000 ft. He recovered this height several times on the way and then got to 3,000 ft., which enabled him to reach Barton at 2,000.

Sunday, August 6th.—A moderate soaring wind, suitable for "C" tests. Anne Wakefield, who for some months has been taking farewell of everyone on the eve of her departure for Canada, but couldn't bring herself to go without a "C," got it to-day and has now left us. Another pilot who tried to get his by doing very low figures-of-8 on an incredibly short beat, insisted on continuing each turn until he was facing downwind; it wasn't long before the inevitable happened and he had to be retrieved from the golf course. It is a perpetual mystery to us how vast crowds of British public, 90 per cent. of whom are known to believe that gliders have no controls, will nevertheless sit on the Downs all day and watch the machines going past within a few feet of their noses without turning a hair. Even this flight didn't rattle them.

Monday, August 7th.—Just after 4 o'clock a RHÖNSPERBER arrived out of the blue, and was found to contain Nicholson, who had flown it from Huish. At 4.15 a RHÖNBUSSARD similarly appeared and disclosed Cooper, also from Huish. They said they had left Hiscox behind somewhere on the way, and sure enough he turned up in the GULL at 4.50. A club instruction camp, which had just begun, was thus shown what lies in store for those who are good at their lessons.

Sunday, August 13th.—What had been an excellent soaring wind on Friday, with a good turn-out of club machines and private owners (Briggs and Simpson), and a barely soarable wind on Saturday, dropped to-day to nothing at all. So a party went to Caxton to try and catch thermals off the Cambridge Club's winch, with the result that two of them were able to fly part of the way back. Turner reached Luton, nearly within gliding distance of Dunstable. Briggs landed between Baldock and Royston, at precisely the same spot which he had reached from Dunstable on July 23rd.

A welcome visitor was Otto Frischknecht, from St. Gall, in Switzerland. He was a regular attendant at the club in 1932, but left England at the end of that year and has never again been seen until to-day, though he continued to contribute to THE SAILPLANE for some years. In Switzerland he has been so busy organising model aircraft groups that he has had no time to get beyond the "B" certificate, and in fact what brought him to England was his leadership of the Swiss team competing for King Peter's Cup. So gradually does the club personnel change that it is hard to believe that a visitor from seven years back should have recognised no one but the club steward (Mr. Walker), the club caterer (Mrs. Turvey), and the Editor. What has happened to the stalwarts of the early days? Will all our present 381 members likewise have grown tired of the game seven years from now?

August Camp.—This instruction camp, which lasted from the 4th to 18th, has been the most successful held by the club since the famous one of 1935. Twenty-seven people secured 18 "A," 22 "B," and 4 "C" certificates. Everyone got an "A" who hadn't got it already, including one pupil who had seemed hopeless at first and was twice threatened with stoppage of flying. All but two got "B's" who hadn't got them already. Of those who obtained "C's," one was a pupil who had attended one previous club camp (at which he got "A" and "B") and had done no other flying whatever. The only soaring weather came in the first week.

Among the campers were Dr. Jameson, from India, who had his "A" from the Channel Club; V. Sundaram, flying instructor at Bombay, who soared along the ridge in an open primary; a Wills (no relation) and a Pringle (younger brother of the famous pair). Like many who have come to us from overseas, Mr. Sundaram intends to start a gliding movement when he gets home; and as, unlike the others, he actually got his "C" here, perhaps something will come of it.

Air Defence Cadets.—We continue to train 40 of these in the last half of each month. The July contingent came from Watford, Ilford, and Woolwich. Our own "Pop" Furlong, almost unrecognisable in his uniform, officered the Woolwich lot.

Summary of Flying.

Week ending:	*Days of Flying*	*Ground-hops*	*Timed Flights*	*Flying Time hrs.*	*mins*
July 30th	4	689	87	31	1
August 6th	5	277	117	29	28
August 13th	7	616	289	28	47
August 20th	6	244	118	4	13

Totals since January 1st: 13,331 launches, 811 hrs. 51 mins. flying time.

Certificate Flights.

July 26th.—Bainton,* "A"; Mould,* "A"; Page,* "A"; Cutler,* "A"; Cook,* "A"; Feeney,* "A"; Shirley,* "A"; Sanderson,* "A"; Smith,* "A"; Miller,* "A"; Smythe,* "A."

July 30th.—Allen,* "A"; Sharp,* "A"; Beckford,* "A"; Greenwood,* "A"; Perkins,* "A"; Hill, "A."

August 6th.—Smith, "A"; Sundaram, "A"; Smythe, "B"; Baker, "B"; Miss Wakefield, "C."

August 8th.—English, "A"; Fryer, "A"; Jamesen, "B"; Barnwell, "B."

August 10th.—Walker, "C."

August 11th.—Philipson-Stow, "A"; Cronin, "A"; Sundaram, "B"; Gee, "C"; Neumark, "C"; Jameson, "C."

August 12th.—Neihorster, "A"; Pringle, "A"; Hearne, "A"; Comber, "A"; G. Troup, "A"; English, "B"; Fryer, "B"; McKelvie, "B"; MacLucas, "B."

August 13th.—C. Troup, "A"; Wilson, "A"; Wills, "A"; Pollard, "A"; Neihorster, "B."

* Air Defence Cadets.

Formation Flight from Huish.

Draycot Farm, at the foot of the Huish Downs, originally discovered by the Cambridge Club, was the rendezvous for several private owners in the first week of August. But they were so short of retrieving crews that, whenever anyone flew away, some other pilot usually had to stop flying in order to retrieve him; also one of the pilots had to do the winching, so they couldn't all go up at once. So it came about that when, on August 7th, Cooper in RHÖNBUSSARD, Nicholson in RHÖNSPERBER, and Hiscox in GULL, set off for Dunstable, two other machines were unable to follow them.

At 12.40 Cooper was launched to 400 ft. and immediately caught a thermal to 1,000 ft. There was a very light drift from S.S.W., which must have given a little slope lift, but not enough to keep up on. But he climbed in further thermal lift to 3,000 ft. and glided off north-east to Marlborough, reaching it at 1,000 ft. and climbing over it to 3,000. Then, when circling over Lambourn, 15 miles from the start, he caught sight of Nicholson doing likewise.

Nicholson, after being launched at 1.22, started to go off, but returned to the site and caught the same thermal there as Hiscox. They both set off in this, but SPERBER soon left GULL behind and caught up BUSSARD, as related, at Lambourn. Thereafter the two kept company for the rest of the journey, helping each other to look for thermals.

The Germans, by the way, initiated "chain flights" of three pilots each in their 1934 National Contests. But, from what we heard, three proved to be too large a number to go thermal-hunting together, as it was too much of a strain to be trying to avoid collision with both other machines at once. Two, however, is the ideal number, as they can go up comfortably in the same thermal by keeping on opposite sides of the circle, and in the gaps between can double the area to be explored for further lift.

Nicholson and Cooper had to do a good deal of exploring over Harwell R.A.F. Aerodrome, in the Thames Valley, and were stuck there for at least 20 minutes. Eventually they crossed the Thames at Benson and after that got very good thermals and clouds a few miles to the N.W. of the Chiltern Hills escarpment, parallel to which they flew, and were lifted

to 4,500 ft. They passed over the Oxford Club's site, apparently unseen. Nicholson, after a long glide from Princes Risborough, arrived over Ivinghoe and climbed back to cloud base—4,000 ft.—whence he was able to glide straight in to the London Club ground. He arrived at 4.5 p.m., 200 ft. up, going at 85 m.p.h.

Cooper couldn't bridge the gap in one swoop, so went to look for lift over the glasshouses at Eaton Bray, and sure enough they lifted him from 1,000 to 3,000 ft. So he arrived over the club at 2,000 ft., looped and spun, and landed at 4.15. Thermals, he said, had at times been as much as 12 ft. per sec.

Hiscox had no map, and, on seeing a large town by the Thames, took it to be Reading, till he saw its aerodrome in the wrong place and decided it was Oxford. This was confirmed when he caught sight of the Chilterns, dropped a perpendicular on to them and flew along it, and sure enough located the Oxford Gliding Club. He arrived at Dunstable at 4.50.

Straight-line distance of each flight: 65 miles. Some *Kettenflug*!

Cambridge University Gliding Club

Thermal Flights at Caxton.

The forecast for Sunday, August 13th, though ideal for holiday-makers, was poor consolation to Dunstable fans—the wind would be N.W., 0-5 m.p.h., cloud 2/10 to 6/10, with higher cloud 9/10 forming later. Telephone inquiries to Cambridge brought the disconcerting news that aero-towing at Duxford was "off" during the fitting of the new type quick-release to the Cambridge Club's "Moth." However, it was decided that four sailplanes with their owners and retrieving crews should go to Caxton Gibbet for the day, in the hope of winching into thermals.

Briggs led the way with the BLUE KITE, followed shortly by Simpson with his KITE, Greig and Stephenson with the BLUE GULL, and later by Turner, who had spent the morning fetching Deane-Drummond and their GRUNAU BABY from Oxford.

The first launches were made well before mid-day, while small cumulus formed overhead, but there were only circuits with a few delayed descents, lift being very weak and scrappy. Gradually the cumulus grew and flattened out into alto-cumulus almost covering the sky higher up; it looked as if low thermals must cease, and several pilots resorted to refreshing their jaded spirits at the local hotel.

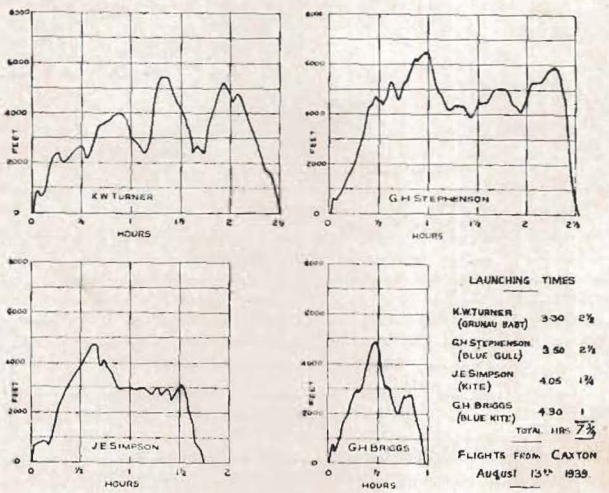
However, at 3.30 Turner, in the true tradition that the last to come shall be first to go, was observed to gain height very slowly after his 800 ft. launch. Naturally enough, this resulted in a burst of enthusiasm, and within the next hour Stephenson, Simpson, and Briggs had followed suit, though less successful attempts were made to soar in the CAMBRIDGE I by pilots who had come from Cambridge.

Turner's thermal, under a short cloud street, took him at 3 ft. per sec. to 2,400 ft., where he lost it; after gaining a little in another, he went to where he saw Stephenson circling, arriving at about the same height. Both machines circled in a dog-fight up to 4,000 ft., the GULL gradually outclimbing him. Dunstable —which, it was hoped, would be the destination of all four machines—seemed worth trying in spite of unpromising looking clouds in that direction. After twice going into cloud and climbing to 5,400 ft. over Bassingbourne, he finally landed at Luton Airport, a few miles short of his goal, knowing at least that he was not the only one who had failed to get to Dunstable, for on the way he had seen the BLUE KITE on the ground at Baldock 4,000 ft. below him.

Stephenson in the BLUE GULL soon found a large area of weak lift after his 500 ft. launch. It was very smooth to 5,000 ft., taking him up at 3-5 ft. per sec. into a cloud overhead, where there was an occasional improvement to 10 ft. per sec.; he left this cloud at 6,400 ft. as it was getting rather turbulent. Then ensued several struggles with weak thermals until he entered another cloud for a second half-hour's blind flying practice. Soon after a brief appearance out of the side of this cloud he finally gave it up to show us what a GULL can do by way of aerobatics.

Loops, spins and stall-turns we have all seen before—not infrequently on DAGLINGS—but a tail-slide (was it intentional?) and the shooting-up of a passing "Hart" are new to us at Caxton, and are the reverse of the usual procedure!

Simpson was launched below a large vague cloud, finding an area of lift so weak that it took five minutes to find its centre, and then he only averaged 1 ft. per sec. rise. The thermal again became very weak after a 40-minute climb to cloud base at 4,600 ft.



Discretion being the better part of valour, he decided not to tempt Providence by entering the cloud above in his anxiety to get to Dunstable—he remembered that the GULL was probably still in it.

To the north there were still several firm cloud bases so, giving up the idea of going to Dunstable, Simpson made for the nearest of these, which he reached at 4,000 ft., seeing the GULL flying in the opposite direction above him. At this point the barograph record shows an almost horizontal line for over a quarter of an hour; a thermal which proved to be very hard work indeed. Leaving this thermal, he went to a cloud under which Stephenson was circling. Thermals were again very weak at 6 in. per sec., and so, after sticking to one until he had got to 3,000 ft., he floated around, giving vent to his feelings by doing a couple of loops before landing back at Caxton.

Briggs was the last to get away at 4.30, catching Simpson's thermal at 400 ft. when coming in to land; it took him up to 2,800 ft., where it faded out. Later, with another 2,000 ft. to spare, he set off to Royston, but found only slowly dying thermals. However, he landed at Baldock in the same field that he had come down in on July 23rd after a flight from Dunstable.

The following conclusions can, perhaps, be drawn from the reports made by the pilots. Firstly, it must be remembered that it was a slightly hazy anticyclonic day with a fairly high cloud base—2/10 at 4,600 ft.—and 8/10 at 7,000 ft. during the period in which the flights were made, so that thermals might naturally be expected to be weak. Unfortunately there was insufficient wind to make it practicable to wait for the sunny periods just before a cloud shadow, so that it was not possible to demonstrate the efficiency of J. W. S. Pringle's theory of launching at this time: it might well have proved worth while with sufficient patience.

As it was, it seems evident that thermals at the 2,000 ft. one would obtain from on aero-tow were almost equally as strong, or rather as weak, even as low as 400 ft.; therefore the only advantage of aero-towing under such conditions would be that the pilot has longer to search for a thermal. Perhaps it would be worth while trying some form of thermal indicator close to the winch. A smoke indicator of the oil atomising type as used for aerodromes would, of course, be ideal, but a chemical smoke from the winch-car's exhaust should suffice if led clear of the winch. (One sees some winches that don't even need chemicals!)

Thermal conditions earlier in the day looked quite good, and it was thought then that if it had been possible to start at 10 a.m. it would have been an easy matter to get away from a 500-ft. launch. Rooks could be seen going round in tight circles of a size far too small for sailplanes. The white butterfly that Simpson saw at 2,700 ft. had presumably been sucked up in one of these thermals, which as usual became larger and weaker as the day progressed. It was interesting to hear that lift in cloud was invariably best on the up-wind side, and that there was very considerable turbulence near the summit of Stephenson's cloud—intensified perhaps by the sudden spreading out at the inversion level.

It might be hoped that, in the not so distant future, further development in the technique of winching into thermals will see gliding sites chosen in flat country for preference, where there are no overcrowding hill-soaring sites; winching to 1,000 ft., or more if necessary, being the only form of launch.

P.G.W.W.

Midland Gliding Club

Soaring Over the Welsh Marches.

The August camp, lasting from August 5th to 13th, has been without exception the most successful ever held on the Mynd; the results speak for themselves. Of the nine days of the camp, only two days were unsoarable and hoppery proceeded. We were in cloud for one morning; and we did not fly until 17.30 hours on the 12th because of grouse shooting.

During the remaining five whole and two half days, over 160 hours of soaring were done. Certificates gained were: 4 "A's," 2 "B's," 2 "C's"; 4 "Silver C" enduring flights, 1 "Silver C" distance, and 1 height. Sanders won his "Silver C"—congratulations!—and everyone who came without any certificates went away with at least one, if not more. All soaring pilots had their fill; Aldridge took his "C" on Tuesday and left on Sunday with 18½ *hours* soaring to his credit, including his 5 hours; Wild did 17½ hours, Sanders nearly 17 hours, Wingfield did 11½ hours in 3 days' flying; and Theo Testar's total must be astronomical. Great credit is due to his tireless instruction and two-seater "taxi-driving," and to the successful ground work of our flying G.E., Colcombe, and Mrs. Jarret.

Crashery was very small—some small holes in two-seater made by a snapping bungy; slight damage to FALCON II in a down-wind landing; the party from Derby had bad luck in damaging their KITE's fuselage and removing the skid from the GRUNAU on the last week-end.

Those visitors who had never flown at the Mynd before had a complete revelation. All their previous conceptions of hill-soaring, gained on small slopes in other parts of England, were upset, even though hill lift was not considered good by old hands; it never went much above 900 ft., even in a 25 m.p.h. wind. But thermals and cloud-lift were so abundant and large in area that even "C" certificates in the KADET were taken at heights of 1,000 to 1,500 ft. (all heights being reckoned above the launching point at 1,490 ft. above sea level and 700 ft. above the bottom).

Another peculiarity of the Mynd is that hill lift takes one right up to the influence of cloud lift, without the use of ground-originated thermals; I have often used lift under strato-cumulus (with 10/10 St.-Cu. and no clear sky) which is normally out of range except from an aero-tow. Such lift tends to be widespread but slow. On normal unstable soaring days (with 4/10 to 7/10 cumulus) circling is very often unnecessary, the areas of lift tending to be of a size proportionate to the size of the cloud causing it. Thus one merely luffs into wind on meeting cloud lift, and places oneself according to the lie of the cloud. On reaching the up-wind boundary of the lift, one turns down-wind and repeats the performance. I do not mean that circling is *verboten*; one naturally circles in patches of extra good lift, and we sometimes have small thermals here, as elsewhere; it depends on the conditions obtaining. But as an example of this, I climbed 1,500 ft. in four minutes straight off the bungy launch by this method, without circling once; the barogram looks just like an aero-tow!

Arguments that the Mynd is unsuitable for high-performance soaring are quite groundless. The amount of cloud- and thermal-soaring done here is proportionately higher than at any other club; thermals off the winch are the rule rather than the exception on suitable days (the whole moor fairly sizzles up); cloud lift is connected here on days when it is out of range of "little hill" sites due to lack of thermals low down; and once up in cloudland we can usually stay there for periods of an hour or more. This week KITES, and even TWO-SEATER, TUTOR, and FALCONS were happily flying three and four miles up-wind; Captain Davies flew 11 miles up-wind from Church Stretton to beyond Bishops Castle in a 25 m.p.h. wind. No one who wants to has yet found any difficulty in getting away from the Mynd for a cross-country.

As regards the wind-range of the hill, the lift in very light or oblique winds depends entirely on the lapse-rate. A S.W. wind with good polar air and cumulus is easily soarable, a warm-sector S.W. wind with low cloud and drizzle is not—but who wants to, anyway? The same applies to a N.N.W. wind. This week I noticed that good lift was obtained in a W.S.W. wind at surface, *backing* to 220° at 1,000 ft. We don't hill-scrape, because a bottom landing, though perfectly safe for novices, is a nuisance. The TWO-SEATER, however, recently got up again after sinking to 300 ft. below the top in a very light wind. There is no danger from "curl-over" or other menaces.

We have got an evening thermal to add to the attractions, although it has not been long discovered, it has already taken Testar to 3,000 ft. and Carl Beck to 2,900 ft. The lift appears to originate from the N. end of the Mynd, and to be very slow, but steady, and spread over a wide area; low cloud often forms in it at 2,500 ft. The Derby and Lancs. Club have pronounced it to be the genuine article.

The best flights of the camp were: Sanders' 55 mile flight to Tamworth, which was not at all a sinecure, as conditions were very difficult after the first 20 miles; R. E. Pears, 25 miles to Bridgenorth in own KITE; and Captain Davies' 11 miles up-wind in his KITE. In lighter vein, Wingfield was observed doing something very like a tail-slide in GRACIAS while looping; the subsequent five minutes were spent picking up the maps, tools, cigarettes, pipe, and heaven knows what that were scattered round the cockpit floor!

Summary of Flying.

Saturday, August 5th.—Hoppery for the half dozen *ab initios* and pre-C pilots, but no soaring.

Sunday, August 6th.—Wind west, 10-15 m.p.h.; 4/10 cumulus until 14.00 hrs., then clear sky and very hot. Hill lift to 400 ft. with narrow "clear sky" thermals up to 1,500-2,000 ft. (Testar and Sanders). Soaring by KITES, TWO-SEATER, TUTOR, and FALCONS.

Total, 14 hrs. 7 mins.

Monday, August 7th.—Hill lift again weak, only to 400 ft. Smallish thermals and cloud lift to 2,000 ft.

Total, 6 hrs. 54 mins.

Tuesday, August 8th.—Low cloud, rain and light S. wind all morning. Pears arrived with his KITE from Surrey, via Draycot. At 14.00 hrs. wind veered to W. by S., 25 m.p.h., and cloud lifted, giving a cracking afternoon. Flying by all and sundry in (very nearly) anything with wings on. Hill lift to 800-1,000 ft., many thermals and frequent large areas of cloud lift, with greatest heights at cloud base, 2,500 ft. Aldridge (late Cambridge Club) took his "C" in a KADET with 2 hrs. 18 mins., reaching about 1,500 ft.—beat that if you can! Pears did 5 hours in his KITE, Wingfield in GRACIAS completed 100 hours' soaring with four consecutive loops. Machines stayed away from the hill for long periods up-wind.

A light evening thermal started at 19.30 hrs. till dark. Testar and Wingfield got to 1,100 ft. in a light W.S.W. wind; at 1,000 ft., 220°, 20 m.p.h., very little low cloud. Steady lift at 6 in. per sec. was found over the north end. Flying due up-wind, Wingfield found the lift constant as far as Wentnor, where it dropped to zero, falling to 1 ft. per sec. sink by the main road 2½ miles up-wind.

Total, 33 hrs. 37 mins.

Wednesday, August 9th.—S. wind, low cloud, rain. Occlusion passed about 18.00 hrs. Hoppery: Williamson got his "A" and "B" in KADET.

Thursday, August 10th.—Wind W.S.W., 25-20 m.p.h. Cumulus nimbus becoming 5/10 cumulus. Anothing cracking day. Sanders flew 55 miles to Tamworth. Williamson took his "C"; Aldridge missed his 5 hrs. by only 11 mins. when let down in a lull. Wingfield climbed 1,500 ft. in 4 mins. straight off a bungy launch. Captain Frank Davies took local honours in his KITE; he climbed to 4,000 ft. just behind Church Stretton, and then cloud-hopped 11 miles upwind to beyond Bishops Castle (taking about 50 mins. to get there) without circling, but flying straight from cloud to cloud between 2,000 and 3,000 ft. The rest of us were all up-wind on cloud lift (Wingfield for 1 hr. 40 mins.), TWO-SEATER, FALCONS and all.

Total, 38 hrs. 37 mins.

Friday, August 11th.—Wind W.S.W., 20 m.p.h., similar to Thursday. Machines all out of the hangar by 5.30 a.m. hoping for a crop of "5 hourses," but wind very light until 9.30. Tovey and Wild did 5 hours each in FALCON 1, Aldridge 5 hours in TUTOR. Thermal and cloud flying by everyone—2,500 ft. by Sanders, and 3,000 ft. by Wingfield. With four KITES all flying here this week, the rivalry has been considerable. Between 16.00 and 17.30 hrs. Wingfield was in and around the clouds, and found lift and lack of it in very unexpected places. The clouds were small, 1,000 ft. high and not very dense; lift inside was very slight, but between clouds or round their edges sometimes 5-10 ft. per sec. He once circled half in and half out of one about 300 ft. above its base. There was no difficulty in hopping up-wind from one to the next, though some would not oblige at all, and good lift was found in some of the clear patches. An approaching layer of alto-stratus cut everything off in the end.

A good evening thermal was used between 19.30 and 21.00 hrs. Surface wind dropped, but 270°, 30 m.p.h. at 1,500 ft. Testar and Sanders found steady lift at 2 ft. per sec. at the N. end, extending out to Wentnor. No associated low cloud. Meanwhile Holt in TUTOR went to the bottom, due to lack of wind at the surface!

Total, 43 hrs. 26 mins. R. E. Pears went approximately 25 miles to Quatt (5 miles S.E. of Bridgnorth) in his own KITE.

Saturday, August 12th.—Major Clark was grouse shooting (an excellent covey got up within 150 yards of the hangar!), so flying was suspended until 17.30 hrs. Even so, 17½ hrs. were done. A large and welcome party from the Derby and Lancs. Club arrived with a KITE and GRUNAU. Wind was lightish, but everything soared except the KADET. Sanders got 1,500 ft., and Wild sat on top of everything in TUTOR for 45 mins. at 900 ft.

Total, 17 hrs. 29mins.

Sunday, August 13th.—Wind calm; anticyclonic weather; very hot and unstable. Almost everyone found thermal lift; Parker in the Derby and Lancs. GRUNAU, Tovey in the club KITE—his very first flight in it!—Amy Johnson, Gerry Edwards, and Sanders all went to cloud base at heights of 3,000-3,500 ft. and stayed there for varying periods. Sanders went to 4,300 ft. inside cloud, determined to polish off his "Silver C" with the height test. He had a job to get down through the 20 ft. per sec. thermals rising off the moor.

When the thermals stopped, hoppery continued, and Mrs. Aldridge got her "A" and "B," and Dennet and Smart got "A's."

Here endeth the lesson. And since there is a new hangar and bunk-house (for ladies *and* male "glolder-drivers") *and* mid-week launching facilities all through September, we very much hope that some "Golden C's" will be won by visitors this month—don't forget the "Moazagotl" effect discovered in *September*, 1937! You can also fly over 190 miles to East Anglia and over 200 miles to Kent—so what about it, GULLS, SPERBERS, BUSSARDS, and VIKINGS?

GRACIAS.

Long Mynd to Tamworth.

55 Miles, August 10th, 1939.

At 3.25 p.m., the high stratus having cleared away, I set off across country, circling up to 2,600 ft. in thermal lift from Asterton Village below the hangar. Owing to my own ineptitude and impatience I lost the lift over the Ape Dale some eight miles back and sank in a delayed descent towards the Severn Valley.

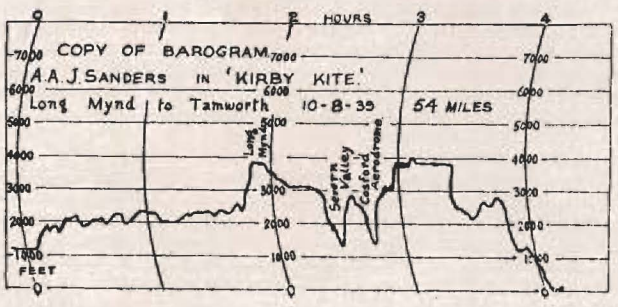
In hill-soaring at the Mynd thermals are deflected by the rising air so that their track is at about 50° to the vertical; over the open country their gradient of rise was about 1 in 6 or 7, and until I appreciated this I failed to contact the thermals where expected. The countryside, which is intensely variegated in Shropshire, should have given a great deal of thermal lift, for woods and lakes are mingled with small villages and cornfields. Eventually I flew down-wind over two cornfields where, in the river valley, a wind-shadow thermal was to be expected, contacted the lift at 20 ft. per sec. when at 150 ft. on the clock, and rose at first at an average of 10 ft. per sec. to 1,600 ft.

I then wandered out of the lift, failed again to make contact, and flew towards Gosford R.A.F. Aerodrome, intending to land. In the lee of the aerodrome houses and barracks I found lift at 20 ft. per sec. and rose almost to cloud base north of Wolverhampton, where my height was 2,800 ft. As Captain Davies at the Mynd reached 4,000 ft. below cloud, the base must have fallen 1,000 ft. in 30 miles—approximately one hour later.

Indefinite thermal lift, about 6 inches up and down, enabled me to maintain height at about 2,600 ft. for some time, in circling flight over Cannock Chase. Unfortunately this was insufficient to bridge the gap to the true Black Country around "Brum," where deep cumulus was piling up in a convection storm. I flew down-wind in strong downdraught to Lichfield, where somewhat scattered thermal lift carried me up to 1,600 ft.

I was feeling rather tired by now, having been in the air for about four hours, and I failed to use the lift efficiently. I flew cross-wind to Tamworth, thinking it lay down-wind, and found intermingled lift and downdraught to leeward. Actually I had lost my bearings and so was not truly down-wind from Tamworth, but rather south of the correct position. Eventually I glided on down-wind over factories, mine-tips and villages, but in the wrong position to contact thermals, and finally landed the KITE in a field sloping steeply the right way, beside a road at Bramcote, 55 miles from the Mynd, at 6.5 p.m.

A. A. J. SANDERS.



Three days later, on Sunday, August 13th, I took the KITE to 4,300 ft. inside cumulus, following a winch launch in conditions of flat calm. Subsequently flying over the Mynd at about 1,000 ft., I was amazed by the volume and quality of the lift; the green ball was up 95 per cent. of the time, usually between 5 and 20 ft. per sec., and only by keeping the speed at 55 m.p.h. was descent to warmer regions possible. In this day the Asterton thermal rose almost continually with velocity up to 20 ft. per sec. and half-a-dozen or more pilots followed it up to cloud base at 3,600 ft.

A.A.J.S.

A Club at Cranwell

The Flight Cadets at Cranwell, some of whom have already attended courses at the Midland Gliding Club, were so stimulated by the landing of D. F. Greig in the BLUE GULL during the National Contests, and the subsequent sight of a MINIMOA passing overhead, that they have decided to form a gliding club.

Oxford University and City Gliding Club

During the past month most of the club energy has been concentrated on the Air Cadet camps and the weather has continued to be pretty foul until the last week. During the last nine days of July M. R. Gilford and McCowart qualified for "A," and A. L. C. Chalk and Brian Bell (both power pilots, the latter in the R.A.F.) gained "B's." Deane-Drummond (from Bristol), D. F. Greig, G. H. Stephenson, and Philip Wills, and a few others have been soaring in the week-ends, but no one has got off across country. Studham, a pilot from New Zealand, who is spending six months over here, has joined the club.

The Baron de Vos arrived one day in a "Drone" which he rashly left parked in the field, where it was severely chewed by the horses. One club machine has suffered mishap in the hands of a member who stalled on a winch launch, over corrected, and landed on a fence, missing the railway by inches and damaging a wing.

The great event of the month was witnessed by a few early arrivals one morning; they saw our large hangar gliding in a stately fashion across the field, and it is reported that they all hurriedly signed the pledge. Our vice-chairman had been unobtrusively doing some ingenious work with jacks the day before and he towed the edifice bodily from its site beside the main road to a more convenient corner on the opposite side of the field.

Air Defence Cadets.—The second Air Cadet camp has just ended and the third batch of cadets, from Maidstone and Paddington, arrived with two officers on the evening of August 15th and began their training the next day. The results of the first two camps are interesting.

	Camp I	Camp II
No. of flying days	14	12
Total starts	626	579
Average starts per day	45	48
Qualified for "A"	6	9
Average starts needed for "A" ...	37	32

During the twelve flying days of the second camp the total number of starts on one very wet day was only 7; the greatest number on any day during this camp was 77. The record number of 100 starts was made on July 27th, during the first camp, and the average number per day during the second week of this camp was 65.

At the rate of progress made by those who did reach the "A" stage during the first camp an average of 57 starts per day throughout the fortnight would have to be maintained to enable all the cadets to qualify for "A," and this number should be easy to achieve in fine weather. But actually a good many more starts would probably be needed unless the trainees were selected with more regard to their suitability, for some were very slow to learn. We learn that some were chosen by ballot and some on the results of an exam.

In the second camp a new policy was adopted of giving the apter pupils more starts, so that if and when suitable weather turned up some could take the opportunity to make qualifying flights for "A"; those who succeeded were then relegated to

ground work, to give others a chance of more flights. Penn, the first of these cadets to qualify for "A," did so on his twenty-third flight; the slowest cadet to qualify took 42 starts to do so.

The second batch of cadets came from Banbury and Salisbury squadrons, the latter being public school boys, who made more rapid progress than the others and gained 8 of the 9 "A.'s" Certificate-gainers in the first camp were Flying-Officer Powell, Sergeant Rose, and Cadets Butler, Henderson, Jackson, and Tomsett. In the second camp they were Cadets Carter, Cuthbert, Farris, Gulliver, Hodson, Nolan, Penn, Thorn, and Williams. Flight-Lieutenant Ackers, from the first camp, stayed to help with the organisation of the second course and then qualified for his "A." Cadets Penn and Williams are staying to give help during the third camp. Penn is learning to drive the winch and both are very helpful to our ground engineer. The first camp also produced a useful engineering assistant, Cadet Clarke, and Sergeant Moore was very efficient in the second camp, which had no other officers.

During the first camp one machine had a spar cracked in a bad landing and another was badly smashed, not during gliding, but because an amateur retriever backed a car into it and crushed a wing against a fence. The second camp produced only very slight damage to the wing of one machine which ran into a hedge after landing. This small amount of crashery has been a pleasant surprise to us (touching wood). The retrieving cars, however, seem to be feeling the strain and one of them abruptly shed its roof during a journey, but this may only have been because it was feeling the heat. Two new ones have been enlisted. Our ground engineer reports that we have a permanent memento of the cadets in the shape of a patch on one machine which is made of the tail of a cadet's shirt, and we hear of another shirt seeing active field service as a flag.

A painful incident was the court-martial held on one cadet for swearing at a retrieving car; the victim testified that the shock to its feelings caused aching gears and trembling plugs. The prisoner was found guilty, sentenced to be detained during His Majesty's pleasure, and ultimately (since His Majesty's pleasure did not become known) deported

Derbyshire and Lancashire Gliding Club

July.—This month opened with hopes of an improvement in the quantity and quality of soaring winds, in view of the National Competitions commencing on July 8th. These hopes were justified, inasmuch as for eight days there was always some wind blowing up the slopes of the Camphill site, sufficient to keep machines in the air, and although cross-country conditions were never really good, to make use of the opportunities presented, and to convert them into the results achieved, did show an all-round advance in technique.

The whole-hearted appreciation of the club's efforts by our visitors more than compensated for the hard work put in by the ground staff.

One of the things that stands out in one's mind on looking back was the sight of the Bristol Club's G.B. going up in an incredible attitude on a winch launch, and finally releasing at no less than 1,600 ft. It will be long remembered by those who witnessed it.

Saturday, July 1st.—Wind W.N.W., 20 m.p.h. An excellent afternoon's soaring by the whole club fleet with strong thermals sufficiently rough to make flying really interesting, and even alarming at times. MINIMOA returned to be flown by Philip Brown and G. O. Smith. Pye made a stout effort at his "C," and completed it in seven minutes. Lowson, paying us one of his frequent visits, flew the G.B., and finding a thermal which promised to be good made off across country, but had not gone very far when he was let down, and landed on the Baslow-Chesterfield road, seven miles away.

Sunday, July 23rd.—Wind W., 20 m.p.h. A promising day, with the low hill mist clearing away quite early, and cumulus forming by 8.30 a.m. By mid-day the clouds became really active and those in the air began to enjoy themselves, frequently circling up to good heights. Terence Horsley spent the week-end with us, and we presume that he enjoyed himself, as he viewed Derbyshire once more from great heights.

Early in the afternoon J. S. Armstrong in his G.B., and Duncan Swale in FALCON I, found a useful cloud, and worked their way well up towards cloud base. Swale decided on discretion and came back, but Armstrong continued, and some hour and a half later landed at Misson in Notts., 34 miles away, his first "Silver C" leg completed. Godfrey Slater in a loaned KITE almost disappeared from view down-wind at over 3,000 ft., but having amused himself for half an hour returned his steed to its rightful owner, who forthwith went out to emulate Slater's tactics, but only met with partial success. At 4 p.m. Booth, not to be outdone by his stable companion, Armstrong, disappeared down-wind in the club G.B., but lost his thermal, failed to find another, and landed at Ringinglow, eight miles away.

During August the club is closed until the 26th.

Tailpiece.—Scene: Lady passenger strapped in two-seater, ready for flight. Kaye standing by waiting for winch cable, having just taken over from Burnett. Elderly mother of passenger rushes up and announces in subdued tones:

"My dear, I've made enquiries about the pilot, and I hear he's a man called Kaye, married, with one child, and quite respectable. You'll be quite safe, darling!"

Summary of Flying, July 1st to 26th.—Winch launches, 184. Flying time, 66 hrs. 19 mins.

Southdown Gliding Club

Monday, August 7th.—Several passengers were taken up in the TWO-SEATER. During one of these flights the machine took five minutes to descend from the winch launch to 400 ft. At the time the wind was blowing up the valley from the S.W. and a very black storm was approaching from the opposite direction, causing a slight decrease in temperature on the ground.

Sunday, August 13th.—Winching the TWO-SEATER and KIRBY KITE up to 800 ft. The KITE caught a slight thermal and maintained a steady height for 15 minutes.

Saturday, August 19th.—Hill-soaring from the east slope beside the hangar.

Sunday, August 20th—Wind N.N.E., 15 m.p.h., cloudless. Hill-scraping along the north site. There was a model aeroplane competition on our east slope throughout the day and it was a treat to show them how gliders should really fly. People still seem to think that the pilot of a glider has no control of same.

Tailpiece.—During a discussion on meteorology as applied to gliding, one member, butting in, asked if it was possible to circle in a lapse rate.

Air Defence Cadets.

July 28th.—Squadrons from Worthing and Latymer School arrived during the afternoon, and were soon receiving ground instruction and wing-balancing. This went on till dark. Throughout the fortnight training was greatly handicapped by the weather and could only be carried out in short spells.

During the second week they were divided into groups of four and by the end of the camp six cadets got their "A's" and four others the half wings. Bounsall got his "B" from winch launches during his first week, and later had two bungy launches in the two-seater solo. He is one of three Worthing cadets who had lent a hand every week-end for the last six months and had been allowed to join the club at special rates. He got his "A" on July 23rd. Probably he is the first cadet to get his double wings.

The only damage during the first fortnight was three broken landing wires and one split spar.

The second camp started on August 13th and consisted of squadrons from Eastbourne and Dartford. All cadets had flights in the two-seater from winch launches with an instructor in the back, and most had dual instruction from bungy launches.

Certificates during the past month: "A": Bounsall,* Sibley, Flint,* Swales,* Jacobson,* Leggett,* Rough,* Hayes.*

"B": Brigden, Bounsall,* Billeness, Woodley, Bushby, Sibley, Parker.

* Air Defence Cadets.

A Club for Plymouth

A meeting to promote the formation of a Plymouth Gliding Club was held at the Farley Hotel on August 3rd. It was stated that the club had been offered a site free of cost at Wembury by Mr. R. A. Stansell. On the site there was "a flat of about 800 yards, but it was narrow in one direction. Gliding would be possible with a W. or S.W. wind, but not with an E. or S.E. wind. If, later, they could secure use of an adjoining field, launches would be possible in any wind."

Mr. W. Ollish was appointed secretary and Mr. P. Griffin treasurer. For instructors there are two members who have taken a gliding course, and a member at the R.N.E. College who has "even more experience in gliding."

A general meeting is to be held on August 31st.

South African Gliding Association

No. 10 of *Gliding*, the quarterly journal of the Association, is mainly confined to reports of activities of the associated clubs. The following are extracts:—

That successful clubs exist in comparatively small centres, indicates that lack of population is not responsible. All evidence points to the fact that any shortcomings are due to internal difficulties between groups of the members, or still caused by unsatisfactory instruction, or lack of suitable sites.

When South African clubs first came into existence very little was known of mechanical launching, and as there was, furthermore, an almost complete lack of instructors, hand catapult launching was advocated by the association.

Since then much has been learnt of both car towing and winch launching. These methods make the choice of a suitable site far easier as it is practicable to launch from the vicinity of either the top or bottom of the ridge, and, what is more important, to land again at the starting point, and thus save endless time in retrieving of machines.

The 1939 Annual Rally.—This event will be the fourth of the series, and will include the third National Competitions. Both Quaggapoort and Port Elizabeth have been suggested as possible sites for the event, and should the former again be chosen the period would probably be from October 1st to 22nd.

Border Gliding Club.—The East London and Kingwilliamstown Clubs have amalgamated to form this club, which operates by car towing from flat ground near Kingwilliamstown. A hangar houses both club machines, a GRUNAU 9 and a KIRBY KADET, fully rigged.

Cape Gliding Club.—During 1938 activities have continued from the Koeburg site. Flying equipment consists of a FALCON III two-seater which has been found to be rather too large to operate from the club's confined site, a KIRBY KADET, NACELLED DAGLING, and a GRUNAU 9. In the first three months of 1939 four "C's" were gained.

Defence Gliding Club.—The club commenced flying activities in February, 1938, with a WOLF, GRUNAU 9, PRIMARY, and KIRBY KITE. Two further primaries, a KIRBY KADET and TUTOR wings have since been added. A large hangar has been erected at Quaggapoort where a haulage winch, with telephonic communication to the valley, has been installed, and a club house is nearing completion. The present membership is 152, including one "Silver C." Among the "C" certificate holders are three Air Apprentices with no previous experience of flying. (The club is run by members of the South African Air Force.)

Durban Gliding Club.—Attempts are being made to obtain the use of a ridge at Isipingo, about 15 miles from Durban. It will be necessary to do quite a lot of clearing to this site, but this should be well worth while as it is possible to soar there in practically all wind directions. The club possesses one GRUNAU 9 Primary and is constructing a ZÖGLING. A group of three members have ordered an American BABY ALBATROSS. A hangar for three machines, and a launching winch, are ready for the new site.

Bloemfontein Gliding Club.—Gliding activities commenced with the arrival of a GRUNAU 9 Primary in April, 1938. Later in the year the use of a soaring site was obtained at Wesselkop, six miles from Bloemfontein, where a hangar has been erected, a road cleared up the side of the ridge and runways made below for auto-towing. A GRUNAU BABY IIA arrived from Germany during September, but has only been used for demonstration purposes up to the present. A NACELLED DAGLING has been ordered and a launching winch is under construction.

Port Elizabeth Aero Club.—Early in the year the club acquired a launching winch, the first to be used in South Africa. This has made possible the use of a soaring site opposite Redhouse, about six miles away. A hangar housing four machines fully rigged has been erected there. Although the ridge is only 300 ft. high, flights of up to 1,500 ft. have been made on hill lift alone, and thermal flights up to 3,700 ft. Soaring time for the year was 20 hours. A KIRBY KADET has been built from parts supplied by the manufacturers.

Rand Gliding Club.—Flying took place at Quaggapoort during almost every week-end throughout 1938. Winch launching has added considerably to the flying hours, and flights from "thermals off the winch" are now common on days when ridge-soaring is not possible. Machines are now housed in a large hangar belonging to the Defence Gliding Club. They are: two GRUNAU 9's, one KIRBY KADET with spare fuselage, and two GRUNAU BABIES. Total flying time for 1938, excluding groundhops, was 168 hours 54 minutes. There were 1,724 launches. Certificates gained during the year were: 10 "A," 3 "B," 10 "C," 3 "Silver C."

Umtali Gliding Club.—Activities are confined to the local aerodrome, where a hangar for four machines, fully rigged, has been erected. The club possesses one Slingsby PRIMARY, one KIRBY KADET with spare TUTOR wings, and one KIRBY KITE with single landing wheel. Purchase of the last two items was made possible by a grant of £280 from the Southern Rhodesian Government and a donation of £125 from the State Lotteries Trust.

Other Clubs.—The Transvaal Pioneer Club, it is understood, are doing good work. A club has recently been formed at Salisbury in Southern Rhodesia; it has a PRIMARY. M'Beya in Tanganyika territory, where a club was first formed some three years ago, is again on the active list, and is reported to be flying.

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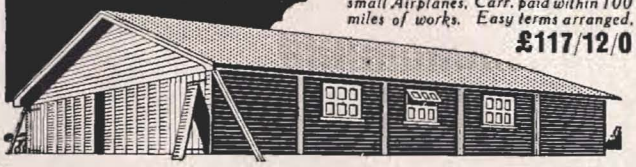
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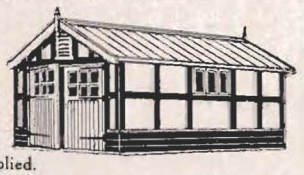
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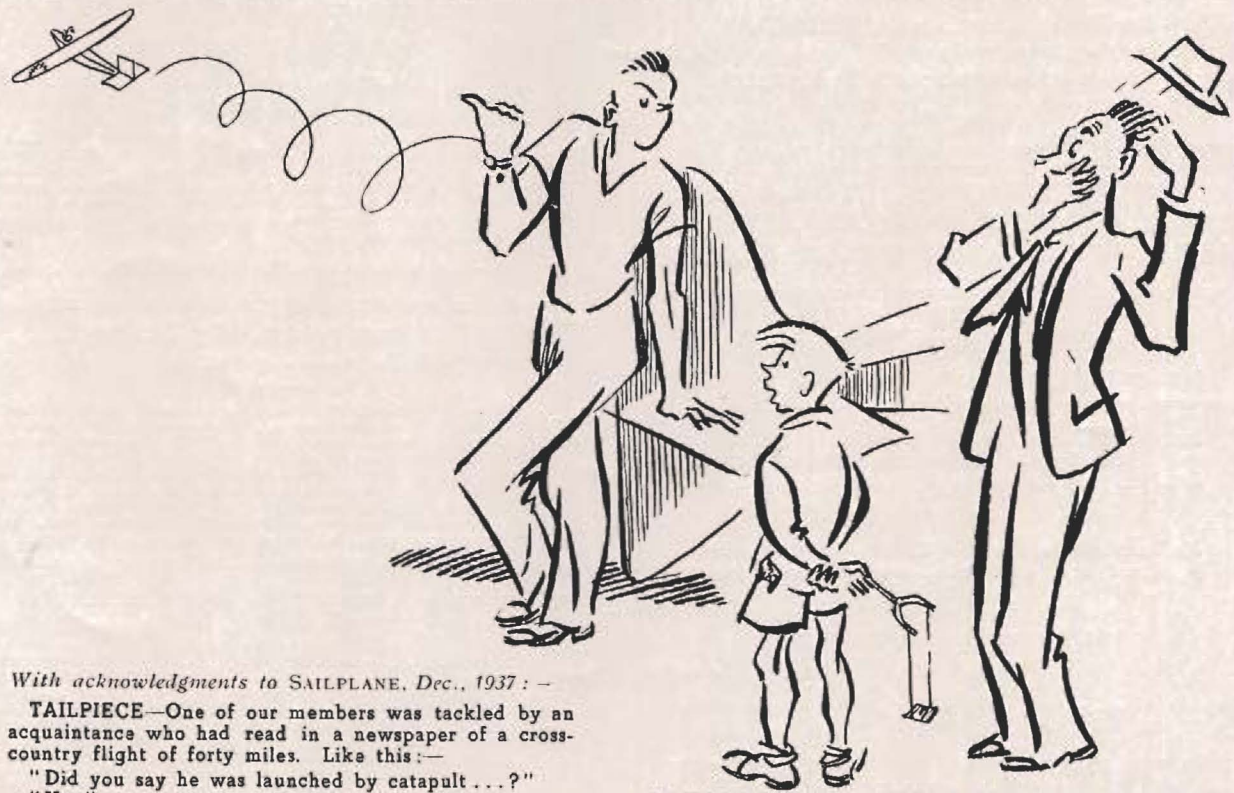
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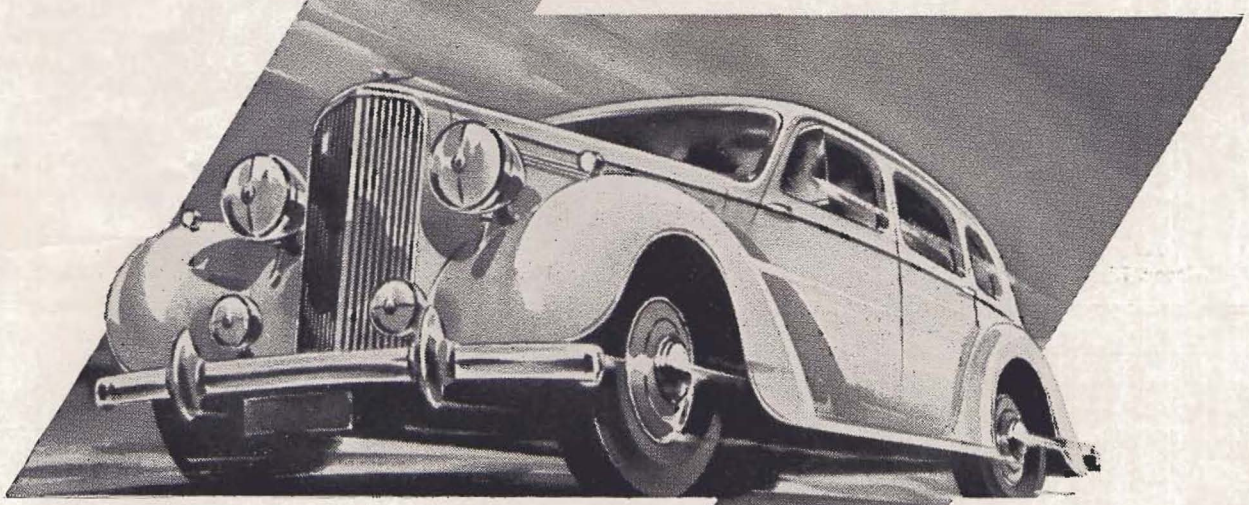
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