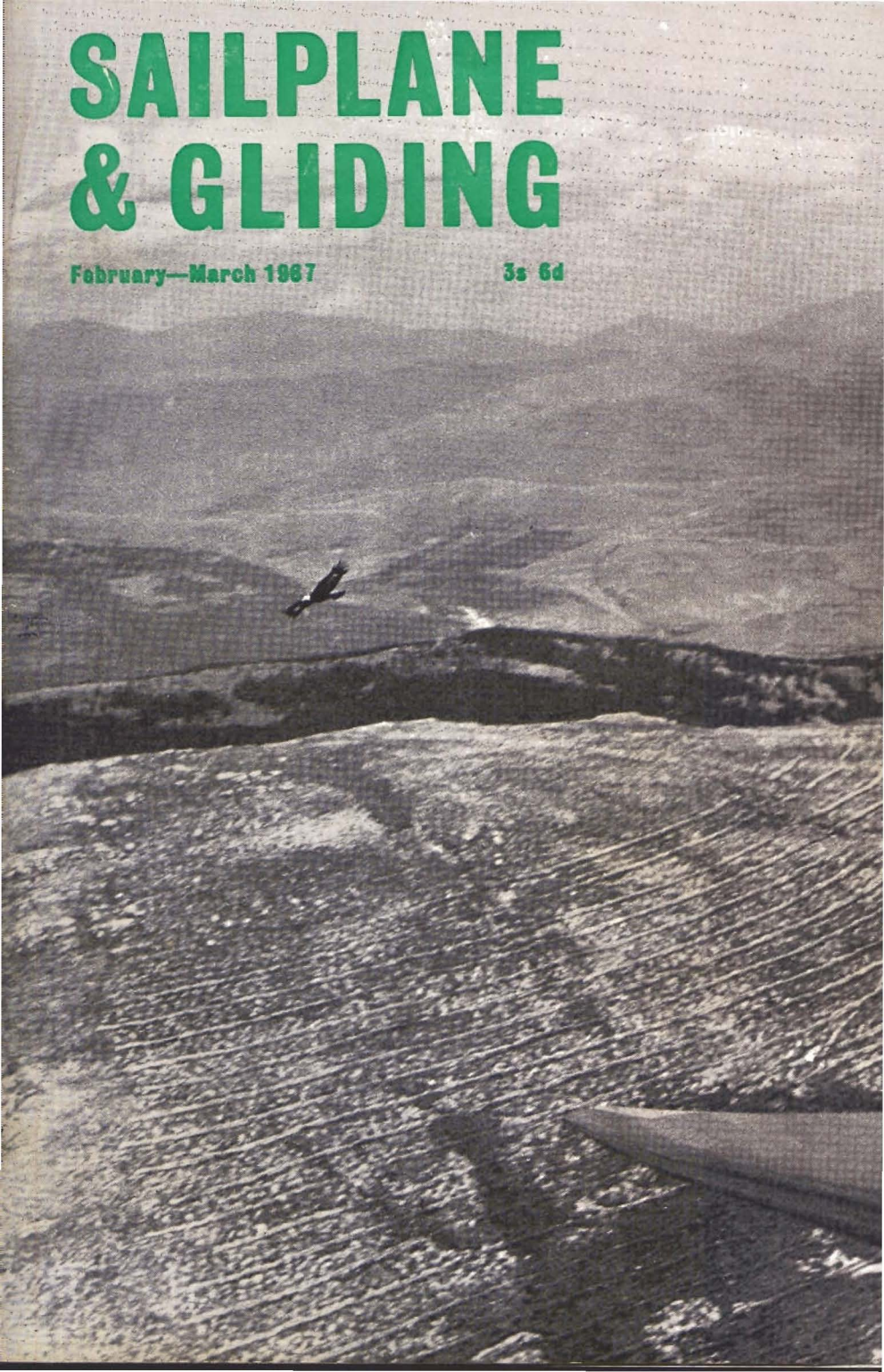
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Cover photograph: An Eagle over Mt. Terminillo photographed by Philip Wills during a Free Distance flight at the 1966 Italian Nationals.

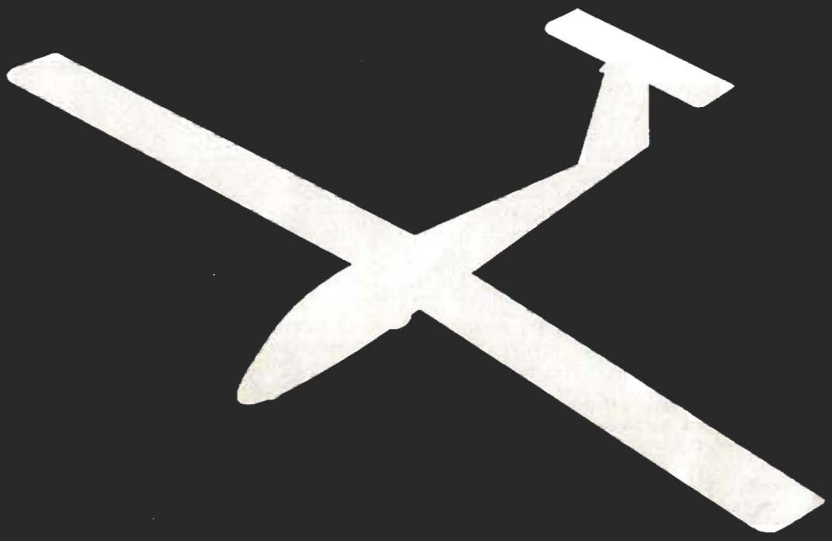
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WRITE FOR DETAILS

AIRFLOW OVER RIDGES

By BRUCE B. BISHOP

WHEN an airstream meets an obstruction to the flow, then it obviously has either to flow round it, over it, or both. In the case of an isolated hill, then a large proportion of the flow is displaced in a horizontal plane, with only a small amount flowing over the hill, this being especially so if there is a marked temperature inversion above the hill. If, however, the ridge is constituted by a ridge of considerable length, then the larger part of the flow will be forced to rise over the ridge, thus creating an area of lift on the windward face of the ridge.

The steepness of the ridge is an important factor; this, together with the wind speed and stability, will govern the strength of the lift. If the slopes are too gentle, then the lift will be weak even with strong winds, but if the slope is too steep, then although the lift is stronger the flow becomes increasingly turbulent. It is, of course, impossible to lay down any hard and fast rules as to the best angle for the slope of the ridge, but in general any slope of between about 30 and 60 degrees should generate lift suitable for comfortable soaring, although the lift from steeper slopes is usable provided that the turbulence factor is taken into account, especially when operating from a hill-top site.

Meteorological Factors

STABLE AIRSTREAM

The ideal conditions for smooth hill lift occur when there is a layer of neutral stability over the first few thousand feet of the atmosphere.

Assuming, of course, that a decent ridge is available, then the wind probably becomes the most important single factor in the generation of the hill lift. The wind should be blowing as near as possible at right angles to the ridge,





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through a layer to at least twice the height of the ridge. The more the wind deviates from this angle then the weaker and more broken the lift becomes. The wind speed, together with the slope of the ridge, will mainly determine the vertical speeds in the lift system, winds between about 15 and 20 knots being probably about the optimum value for turbulence-free lift, giving usable lift to about three times the height of the ridge above the upwind valley. With stronger winds the lift becomes increasingly turbulent, whilst the height to which it extends is not appreciably increased.

ing to a further increase in the turbulence if there are ridges upwind of the one being soared.

With a low layer of neutral stability capped by a sharp inversion, and moderate winds, the lift may extend to several thousand feet above the summit of the ridge. This will not occur over isolated hills, the effect of the inversion being merely to force the flow around the sides of the hill. With these conditions over a ridge the lift will often tend to be less turbulent than normal, which leads to the thought that the lift may be aided or amplified by waves generated by other

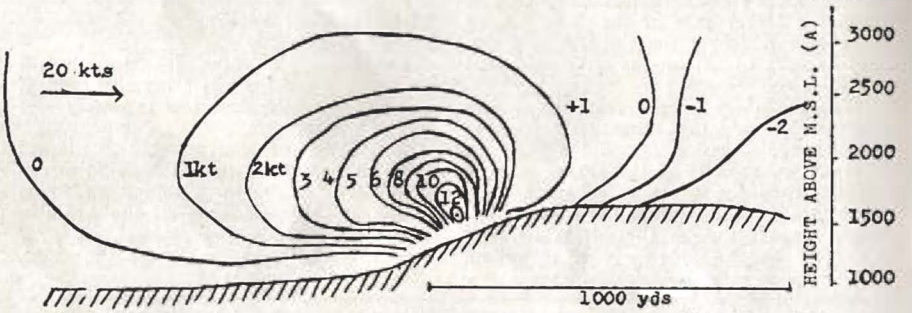


Fig. 1.—Typical pattern of lift distribution over Long Mynd in W. wind.

With a wind of less than 20 knots, the flow takes the form of laminar streaming (Fig. 2), the pattern of lift being something like that shown in Fig. 1, although with steeper slopes there may be standing eddies formed on the lee slope, this being of no consequence whilst soaring, but it may well constitute a hazard whilst approaching to land at hill-top sites. With speeds of over 20 knots the eddies will tend to form on both slopes, and break away from the lee slope and drift downwind, this lead-

ridges upwind, and extending above the normal hill lift. It is with this sort of stability pattern that the hill lift is sometimes affected by the downcurrents of the wave system, cancelling out the hill lift and occasionally resulting in expensive landings in the bottom.

Unstable Airstream

With an unstable airstream flowing across a ridge, especially a sun-facing ridge, the effect of the uplift will be to trigger off convection cells in the air-



Fig. 2.—Laminar flow, wind less than 20 knots.

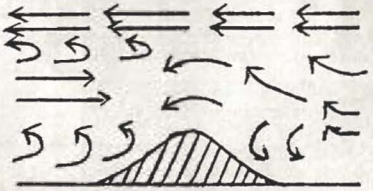


Fig. 3.—Turbulent flow, wind greater than 20 knots.

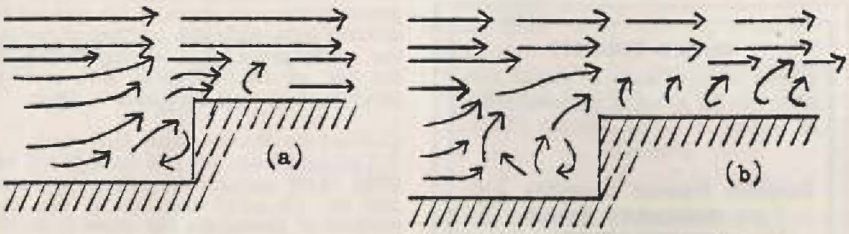


Fig. 4.—Flow over an escarpment (a) Wind less than 20 knots (b) Wind greater than 20 knots.

stream. Depending upon the vertical temperature and wind structures, these convection cells may, in ideal conditions, form a line of lift along the ridge, the top of which would extend to the limit of convection. The lift in these conditions is more turbulent than that found in stable airstreams, and more nearly like that found in thermal soaring. The vertical currents formed in this way will tend to break away from the hill slope and drift downwind, and so can be used as an aid to contacting further thermals downwind of the ridge.

THERMALS FORMED OVER HILLS IN NON HILL-SOARING CONDITIONS

Thermals may form over hill slopes, especially those on the lee side (wind shadow), or on sun-facing slopes. In Fig.

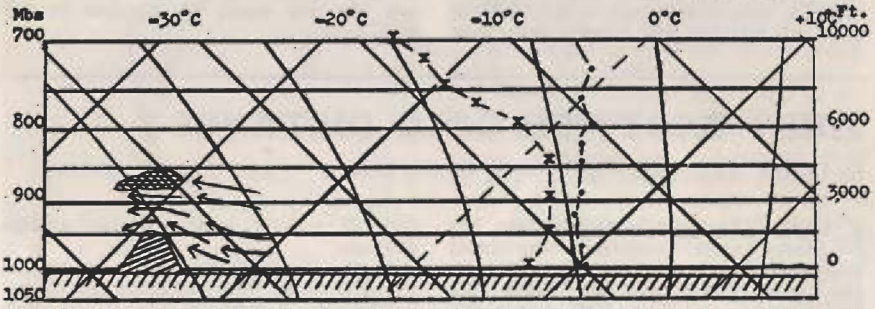


Fig. 5.—Typical ascent through a laminar streaming layer (plotted on tephigram), showing streaming pattern (on same height scale but linear horizontal scale).

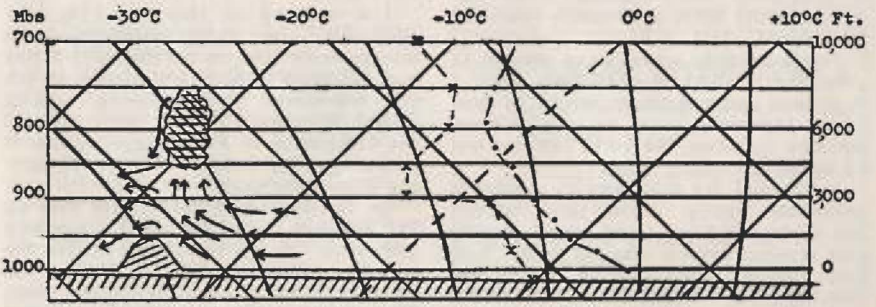


Fig. 6.—Typical ascent through an unstable airstream flowing over a hill.

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6 the cloud is formed with a surface temperature of 15°C, but half way up the slope convection could take place with a temperature of only 12°C. Thus, over a sun-facing slope, especially during the morning when convection is just starting, the temperature required for thermals to form is often reached before the valleys and lower land are warmed enough to trigger off any lift.

These effects may occur on isolated hills, as well as on ridges; these are generally the only types of lift created by isolated hills, although on rare occasions the convergence of a strong airflow to the lee of the hill may give rise to patches of at least zero sink at times.

CONTACTING WAVES FROM HILL LIFT

The conditions suitable for hill lift are often those suitable for waves to form, and the oft-asked question is the best method of contacting the wave from the lift on the hill. In the stable airstream, the hill and wave lift may merge, in which case a straight climb in hill lift may be sufficient to contact the wave. In an unstable airstream, then, if there are waves above, the cumulus will be at their largest under the rising part, and under the crest of the wave system; so a climb in the largest Cu in the area, as high as possible, and then a flight out of cloud, into wind, i.e., into the rising air in the wave system, may bring results. The safest and surest method is still, however, to find a kind tug pilot to give you a tow into the wave; it's cheaper in the long run!

FIRST SCOTTISH GOLD DISTANCE

By DEREK MARPOLE—C.F.I. Fulmar Gliding Club

GOLD C Distance from Milltown has never been considered the most practical of cross-country tasks due to our geographical position. With the Moray Firth to the north, constantly harassing us with its sea breeze, the Grampian Highlands to the south, and a prevailing south-westerly wind, our cross-country flying is generally restricted to the east.

North-westerly waves have seemed to offer the ultimate in conditions, since a high-level out-and-return would be possible. However, since we are without aerotow facilities, the wave remains out of reach.

In thermal, the task presents numerous problems. Firstly, unless large detours are made, any route taken would necessitate crossing several areas of rather high and extremely inhospitable mountains. Secondly, the 28% rule as applied to triangles makes turning-point location difficult without adding to the overall distance.

Lastly, the wind must be from west of north to delay the inevitable sea breeze infiltration. Experience has shown that any easterly influence can prevent convection from forming over the coast altogether.

The weekend of 16th and 17th July produced the right conditions so unexpectedly that on the Saturday I was just not there in time, and arrived to see the sea-breeze front moving rapidly inland. However, a check with Met. at the completion of flying suggested that it was still on for Sunday, the chart remaining almost the same.

On Sunday I was ready, and with an "If I'm not home by six I'll see you tomorrow" to my wife, I set off for the airfield. A further check with Met. on arrival confirmed that conditions were likely to be better, but as the wind had



strengthened slightly to 10-12 knots from the north, there was no time to waste before the arrival of the sea breeze.

By 10.15 I was ready to go, and with Ouston (Newcastle) declared as my goal, was auto-launched at 10.20 to 1,100 ft. with the sea breeze just beginning to clear the airfield. Once clear of the launch, I turned south, contacted weak lift, and from 900 ft. I climbed only slowly to cloudbase, a mere 1,800 ft. The next forty miles were far from pleasant. Lift was weak and scrappy, and on one occasion appeared to die altogether over a large area ahead, leaving me above a rather inhospitable valley; but for some inexplicable reason the weather improved behind me, and by backtracking about five miles I was able to find better lift. Eventually conditions ahead improved, and as I reached Aboyne I contacted my first strong thermal of 6 knots, which lifted me out of the valley to cloudbase at 5,000 ft.

Over the radio I learned that my crew were likely to be delayed considerably before setting out, but as I could hear Arbroath and Portmoak on the air, I was not too concerned, as I would use them as staging points.

Making contact with Arbroath, I learned that Gordon Glennie was airborne in his new Dart 17R, and a quick word with Gordon confirmed that conditions ahead were really "cracking". This I proved two thermals later when I contacted 8 knots which took me to 7,000 ft. just inside cloud, allowing me to glide easily over the 3,000-ft. mountains south of Glen Esk. The going became progressively easier and I flew uneventfully from the Mountains to the Firth of Forth in a 5-7,000-ft. height band.

I had now covered half the journey in three hours, and still not realising that 500 kms. was very definitely "on", continued to "bumble" on at a ground speed of only 50 kms/hr; I was sticking to the rule "get high and stay high". However, my complacency was to end abruptly when, coming out of cloud at 6,000 ft. two miles out over the Firth, I realised that any attempt to cross the water via the North Berwick coast was definitely unwise. The northerly wind had swept convection inland well beyond safe gliding range, leaving no alternative but to make the long detour round Edin-

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burgh. My troubles were still not over, as the cloud to the west had merged, cutting off convection, and confirmed by the two pilots struggling to get away from Portmoak.

Turning towards Kirkaldy I sank to 3,000 ft. over the town before contacting lift again, and was surprised to find 4 knots under a very discouraging layer of cloud. My policy of staying high was now showing dividends, and I managed to scrape around Edinburgh Control Zone in several widely spaced thermals.

Now round Edinburgh, I set my sights on the Moorfoot Hills, and once clear of controlled airspace managed to climb back to cloudbase at 6,000 ft., and reached the Hills with little difficulty. However, from this position I could see that the east coast had suffered considerably from the effect of the sea breeze, and with regret I decided that Ouston was not "on". Towards the south-west convection was decidedly better, and the Solway Firth saved the day. Turning back under the Scottish T.C.A., I was thankful for the remarkably high cloudbase which enabled me to remain in V.M.C. in a 3-5,000-ft. height band.

With a final word to Arbroath on failing batteries, I reached Briggar at 4,000 ft. Just ahead lay the Louther Hills, presenting a craggy barrier to the Annan Dale, but luck was again on my side and I crossed this range at an almost constant 4,000 ft., flying straight and level through large areas of weak lift under merging cloud. Reaching Moffat, the convection ahead looked better and the next thermal produced 4 knots plus.

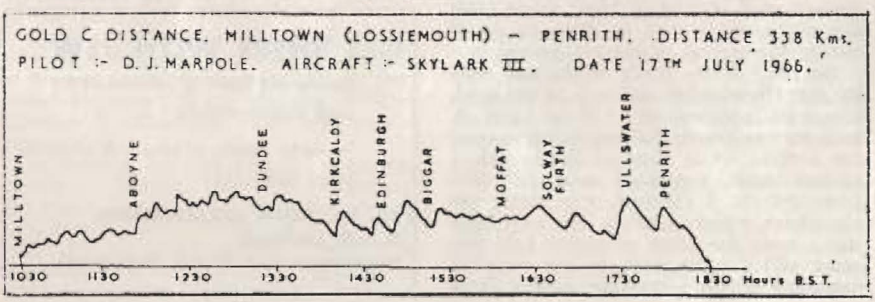
The transmit side of my radio was now failing fast, and from 5,000 ft. could not raise Portmoak. However, I suddenly heard my crew calling up Arbroath and I learned that they were nearing Dundee.

I arrived at the Solway Firth at 16.30 and, unbeknown to me at the time, had crossed the 300-km. line, my map only being marked for the east coast route. Clear again of controlled airspace, I climbed back to cloudbase over Kirkbride airfield and a little later had a bird's-eye view of an enormous T.V. aerial whilst climbing to 6,000 ft. in a 6-knot thermal to the west of Carlisle. I now felt confident that the line had been crossed, but as cloudbase was lifting slightly and thermals were still strong, I pressed on towards distant Ulswater. It then dawned on me that the 500-km. line was not so very far away; conditions were still magnificent as I arrived over the northernmost tip of Ulswater at 7,000 ft., having climbed at an average of 6 knots. However, the realisation was too late, as I had been in the cockpit now for seven-and-a-half hours and, being rather tall, I was feeling extremely uncomfortable at the point of contact with the seat cushion.

Deciding that Penrith was as good a place as any to land, I circled the town, selected a field, and landed beside the A6, where I was almost immediately surrounded by the majority of the spectators of a cricket match I had disturbed further down the road.

My crew, who had been waiting at Portmoak, eventually arrived at eleven o'clock, and after a long night on the road we reached Milltown at ten o'clock next morning.

In conclusion, I can only say that it was the finest 500-kms. day I shall ever have the pleasure to miss, notwithstanding the pleasure of having completed Scotland's first Gold Distance.



SOARING SAGA

By CORUNUS

THIS is the tale of George Wellington Moring, who thought he'd take lessons in Gliding and Soaring.

George Wellington was quite a likeable chap, he worked hard on the Stock Exchange, there was quite happy; careering around with the Bulls and the Bears, cheering hoarsely as they pulled out each other's hairs.

At nights he went scooting
back home to East Tooting,

his fond parents said *he* would ne'er go galooting.

At week-ends young Moring, in plus-fours, as often as not would repair to a quiet game of golf. From what I have said can be quickly agreed that young George was a Briton of True Bulldog Breed.

There can hardly be need
to repeat in this screed

that young George was a Briton of True Bulldog Breed.

One morning he sat in the eight-forty-three and he opened his paper and happened to see a page by an enthusiastic reporter, how every man—what is more, every man's daughter (especially girls)—was now taking to Gliding, a marvellous pastime, akin to air sliding. The writer impressed it was really quite simple; you went to the top of a hill (just a pimple), you seated yourself in a beauteous machine and just sailed to the foot like a king (or a queen).



At night he went scooting
Back home to East Tooting.

At this picture the bosom of Wellington swelled, his prudence he stifled, his conscience he felled. He resolved with a countenance rigid and stern that he too would a gliding club enter, to learn

the how and the why
of learning to fly

without any engine high up in the sky. Yes, by Jiminy, why shouldn't *he* have a try?

When young George to his parents imparted his scheme they were shocked by their dear son's impractical dream; until Pa said: "My dear, it's perhaps not a fluke that George rivals his namesake, old Wellington (Duke)

in courage and daring
not too much beware-ing—

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perhaps in our strictures we'd better be sparing."

So the very next week-end saw Wellington hie to where heroes at Dunstable darken the sky. This spectacle rushed to George Wellington's head; he joined on the spot and dashed out, seeing red. Ignoring a number of primitive craft looking something like gate-posts designed by the daft, he ran to the hill like a hero indeed and started to climb it at maximum speed.

About half-way up he was passed, coming down, by a beauteous maiden with hair all wind-blown, who went whistling by on a primary DAGLING with fear in her face and controls wildly waggling.

Arrived at the top he found numbers of men, Press reporters, inditing with fast-flying pen, how Miss Blank had just flown with quite masterly skill, in one piece from the top to the foot of the hill.

How this beauteous dame
had once more put to shame
all mere men, and her sex once more covered with fame.

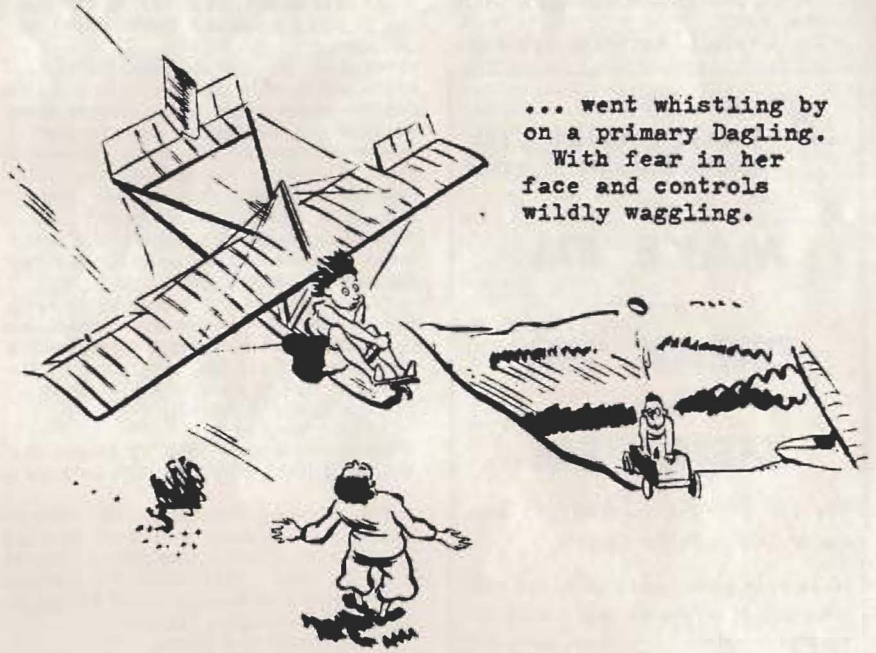
Young George was o'erwhelmed with a fierce indignation; his forehead was dewed with a slight perspiration. "If none of *you* chaps will go risking your necks, *I'll* show 'em which is the superior sex,"
he valiantly cried,
Just then he espied
a graceful machine to the ground firmly tied.

The owner I fear to the Club Bar had hied.

So into the cockpit young Wellington got; the instructor approached with his face slightly mottled with fear from the flight of Miss Blank he had seen. "Have you got permission to fly this machine?"

Our hero, rememb'ring he'd just paid his sub, and was really a member of Dunstable Club, nodded twice, gave a look with resolve fairly laden, and said: "Kindly launch me towards yonder maiden."

The poor mutt was thinking
'twas easy as winking;
the newspapers said so, so *he* wasn't shrinking. (Let us pray for the owner, enjoying his drinking.)



Some husky young men then appeared on the scene; hung a rope on the nose of the gleaming machine; the instructor cried "Walk," and then "Run" and "Let go!"; George was up in the air with the world down below.



As George settled down to enjoy his first flight, the machine gave a lurch, which gave him his first fright. He grabbed at the first thing that came to his hand; 'twas the joystick—he thought most conveniently planned for the pilot to hang on, to hold himself steady.

The consequence found him entirely unready.

As he tugged, in a flash the hillside disappeared; so he pushed, and the wing with a whistle upreared.

Down below someone cheered,
It was wild, it was weird;

the instructor next morning had grown a white beard. The result was far worse than poor Wellington feared. For the sky swung beneath and the earth swayed above, as he pushed and he pulled tried a tug then a shove. With a howl and a whistle, a swoop and a flash, George returned to the earth with a heart-rendering crash.

As George tottered forth from the heap which had been but a few seconds back a slim, bird-like machine, the Captain of Flying dashed up, his face torn with mingled emotions—fear, relief, hate and scorn.

"What the purple blue blazes, the asterisked Hell, did you think you were doing, you knock-kneed gazelle? Did you mean to be clever, you product of sin? Or are you a loony escaped from the bin?

It's clear you've not mastered
The art, for you've plastered

this wretched machine o'er the ground you fat idiot. Come, come, this won't do now, you've wrecked this poor GRUNAU. With soaring, young Moring, you're finally through now."

Poor George in his plight could reply not a word; in silence he vanished, his bright dream interred of great newspaper headlines proclaiming a Moring as Conquering Hero of Gliding and Soaring.

No never, no never, would headlines aflare announce that a Moring was King of the Air.

* * *

This tale has a moral; it's really quite plain. But, in case you don't spot it, poor mutt, I'll explain.

YOUNG MORING GOT INTO THIS TERRIBLE MESS BY BELIEVING TOO MUCH IN THE POPULAR PRESS.

For information:—Corunus was the pen name of Philip Wills.

Reprinted from The Sailplane and Glider — April 1936.

B.G.A. NEWS

Annual General Meeting

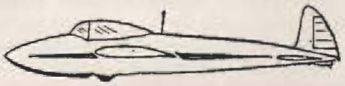
The venue for the British Gliding Association's Annual General Meeting will be the Queen's Hotel, Cheltenham, Glos., on 11th March.

The cost for this will be between 5 gns. and £7-17-6 for one or two nights. Booking forms and further details will be circulated shortly.

Withdrawal from a "Rated" Competition

Competition pilots who have to withdraw from any rated competition (e.g. due to business commitments, lack of crew, illness or damaged glider) should let the organizers of the contest and the B.G.A. Flying Committee know the reason for withdrawal as soon as possible. Pilots will not be credited with a dash (Did not fly) for rating purposes unless the Flying Committee is satisfied with the reason for withdrawal. If pilots are

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aware, before a competition starts, that they will have to miss one or more days, it is in their own interest to send a note to the B.G.A. explaining the reason for their withdrawal in time for a decision to be given in advance of the contest.

If the B.G.A. is *not* satisfied with the reason, the pilot scores a zero for the days in question and those scores are taken into account for rating purposes.

1967 Regional Championships

The B.G.A. Flying Committee has confirmed that the following Regional Championships will qualify for Rating purposes in 1967:—

Organising Club	*Contest Dates*
Midland*	June 3 - 11
Bristol	„ 17 - 25
Derby & Lancs.	July 1 - 9
Coventry	„ 15 - 23
Lasham Gliding Society	„ 22 - 30
London	Aug. 5 - 13
Airways (Wycombe)	„ 19 - 28

*Olympia 460-series Championships

These are the *only* civilian-organised Regionals that will count for rating purposes.

Pilots wishing to enter any of these contests should write direct to the Competitions Secretary at the Club concerned. (For more details see December, 1966, issue, page 461.)

THREE SEA BREEZE FRONTS

By JOHN SIMPSON

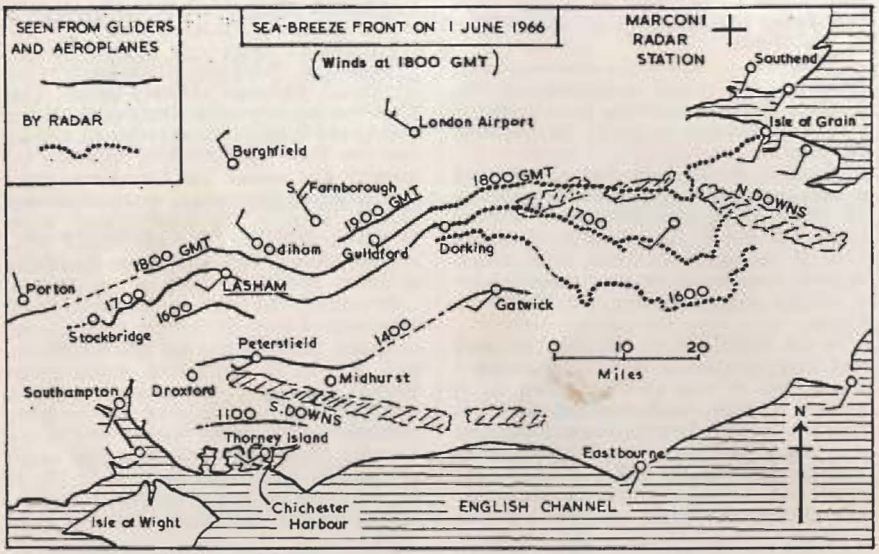
THE first two weeks of June were voted the Weeks of the Year Most Likely to Succeed (in the production of sea-breeze fronts), and glider pilots had been asked to keep a special look-out for sea-breeze effects. Henry White was in residence at Lasham with his ultra-light Fournier RF-3 Avion Planeur, prepared to make observations throughout the day, Marconi's had agreed to watch us by radar from Chelmsford, and arrangements had been made for assistance from Thorney Island Met.

Strange to say, the start of June 1966 brought some good gliding weather, and sea breezes blew on the South Coast. The movement of an anticyclone south-eastward across England into France caused the sea-breeze front to develop very differently between Lasham and the South Coast on the first three days of the month.

Wednesday, 1st June.—This was a sunny day with small cumulus and a light W.N.W. wind. The sea breeze was first observed by Les Cheeseman sailing in Chichester Harbour at 09.45 hrs. (I shall give all times in G.M.T.). Shortly afterwards a wind shift was recorded at Thorney Island.

By 11.00 hrs. Henry White in the RF-3 could detect a faint haze boundary and weak lift roughly half-way between the coast and the South Downs. Next time he had a look, at 13.00 hrs., the edge was still not sharply defined, but he came across some swifts, and measured 2 knots lift at 1,500 feet. By 13.30 there was a wide weak lift of 2 to 3 knots and a faint haze line right along the Downs from Droxford to Midhurst.

When Marconi's had a look on radar at 16.30 hrs. a clear line could be seen on the screen, and when the front was investigated by air a distinct boundary was found between the land and sea air, near Bourdon Camp. On the sea side of the front there was a narrow band of turbulence, and then sink beyond that;



two swifts were seen. About this time a despairing radio message was received from a glider pilot: "I am in sink and lost in thick haze!" He was told by Lasham Base to fly north to get out of it.

Twenty minutes later the front was one mile south of Lasham. Most of the haze appeared to be below 2,500 feet, and the leading edge was now very sharp and distinct; there were some bends in the line, and further west it curved more towards the south.

At 17.17 the haze covered the airfield and the sun was by now partly obscured by high cloud. Thermals were now over, and several pilots were soaring as if in hill-lift, finding up to 3 knots lift in an area ½ a mile wide, above the slope of the haze (see Hugh Hilditch's photograph). The front had two tongues stretching forward, with slightly steeper "bowls" in between.

As it was late by the time the front reached Lasham, most pilots who were still flying did not venture any great distance away from the field, but M. C. Wooldridge in a Skylark 4, who had released over Lasham ten minutes before the arrival of the front, attempted a Silver C cross-country to the west. He succeeded in soaring 20 miles, but found large horseshoe-shaped bends spaced about five miles apart. Eventually he lost track of the front near Stockbridge and had to land.

Further west, the sea breeze reached Exeter Airport between 12.00 and 13.00 hrs. The Dorset Club at Tarrant Rushton had a minor sea-breeze effect in the morning, but they could still soar in the district most of the day. At 16.00 hrs. there was a steady enough S.W. wind to justify changing the runway in use, and for 1½ hours after that a line of steady lift was found about two miles to the north of the field. At Yeovil, the wind remained N.W., but increased in strength.

In the other direction, Derek Piggott and Keith Chard flew along the front (with the aid of power, in the Condor) past Guildford and Dorking. Here they met numbers of swifts soaring and made some estimates of the angle of the "nose" and depth of the haze. From their measurements and from those of J. Mackenzie in SHK, and "Buzz" Wilson in a T-49 we can build up the picture of a slope almost vertical for the first 500 feet, then curving over until it approached a steady level of 2,500 feet about 4 miles back. This gives an average gradient of 1 in 6, but for the first 1,000

feet it was more like 1 in 3. The slope was flatter at the "tongues" and steeper in the "bowls".

A further section to the east was being followed by radar, extending to the Thames Estuary, showing an interesting kink near the gap in the N. Downs near Maidstone.

North of the Thames, the radar showed a sea-breeze front stretching another 30 miles along the Essex and Suffolk coast, but not so far inland as the other line. It seems likely from Met. Office records that the front also extended for a similar distance along the Yorkshire Coast.

In the early part of the day the front had been advancing steadily at about 3 knots, but it was slowing down as it passed Lasham and reached a limit roughly through Basingstoke and Odiham —it just made Farnborough! As the anti-cyclone moved, the general wind was increasing from a northerly direction, and during the night the sea air was swept back again southwards, apparently still in a sharp frontal form.

Thursday, 2nd June.—This north wind continued, although not very strong. This direction has proved unfavourable in the past to sea-breeze fronts reaching Lasham, but the front did make a half-hearted attempt and passed Les Cheeseman (still in Chichester Harbour!) at 13.45, within half an hour of the time forecast early in the morning by Thorney Island Met. Henry White in RF-3 could detect nothing at about 14.00 hrs. south of the Downs.

Eventually the front moved about 15-20 miles inland most of the way from Exeter to Spurn Head. It did not reach Lasham, and in fact the opposing north winds seemed strongest in central southern England. The radar showed a front lying parallel to the coast almost stationary between 15.00 and 16.00 hrs., just south of Gatwick (it arrived there at 16.10). It curved along the line of the North Downs, getting nearer the coast, and was only



Haze, marking sea-breeze front near Lasham, looking west. Photo by Hugh Hilditch.

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about 5 miles inland at Dover and Sandwich.

Friday, 3rd June.—The surface wind had gone round to W.S.W., but was still less than 10 knots, and it looked like being another fine day. The sea breeze was already blowing by the time Les Cheeseman set sail in Chichester Harbour, and Thorney Island reported its onset at 08.15 hrs.

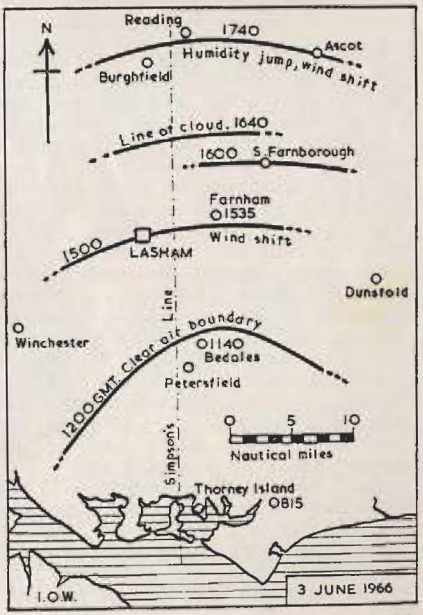
Derek Piggott made two flights in the RF-3. He found no curtain-clouds or double cloud-base, but at 12.00 hrs. all cumulus ended in a line near the Downs, so there was a clear sky to the south (see map No. 2). Winds further south were S.W. 5-10 knots. There was a gentle rise in dewpoint at Petersfield but no sharp front—confirming that the clear air represented an area of "sea air" moving in from the coast. On his second flight the sea air had reached as far as Liss, and he did some local soaring with the prop stopped.

At Lasham, no clear line was reported, but my "wind machine" recorded a shift to S.W. at 15.00 hrs. By 16.00 the wind at Lasham was S.S.W., 10 knots, and Ann Welch reported sea breeze at Farnham at 15.35 hrs.

About this time I was on my way (on the surface) from Reading, where the sky had been clear of cloud since mid-day. About six miles north of Odiham I met a scattered line of cumulus at 16.40 hrs.; there were some lumps with slightly lower bases and also higher tops. As I motored under this line my passengers were able to measure a change in relative humidity from 33% to 47%. At Reading there was quite a sharp humidity jump recorded at 17.40, with a change from a light wind varying between W. and S. to a steady, stronger S.S.W. A similar effect was recorded at Ascot at about the same time.

Swifts in the Sea-breeze.—Glider pilots should have much in common with these birds, who spend nearly all their waking hours flying, and feeding on the wing. (They are thought, incidentally, to mate in the air!)

Swifts are certainly hard to see, but in some conditions they may be the best available markers of the lift. If nothing else, it gives a boost to morale when



trying to soar in weak sea-breeze lift to find that the swifts agree on the same best spot.

Groups of swifts soaring in lift, chasing their airborne insect food, have been established as the cause of some radar "angels" (unidentified radar echoes). Some people think the sea-breeze radar echoes are more likely caused by the sharp humidity gradients, and yet others have suggested that insects may be the cause. As well as watching swifts, perhaps next season we may be able to do some insect-collecting in lift with nets. My attempts so far with sticky patches on various leading edges have not been especially popular or successful.

Acknowledgements

I should like to thank the Royal Meteorological Society, the Meteorological Office and the Marconi Company for their encouragement and help, and also the observers from Bedales at Petersfield and on the Downs. Especial thanks are due not only to Henry White and Derek Piggott, but also to the many other glider pilots who have made observations and passed them on to me.

Conclusions

On 1st June, with a light offshore wind, the sea-breeze front moved steadily inland at about 3 knots and just reached Lasham. On 2nd June the offshore wind was more northerly and slightly stronger, and the front did not reach Lasham. On 3rd June, the surface wind had a slight component from the sea; a cumulus-free zone moved inland, accelerating with increasing frontal effects, and penetrated 40 miles inland. The fronts on the 1st and 2nd were followed for several hours by radar.

STAY THERE, FAYENCE—I am coming back

By RHODA PARTRIDGE

"YOU can't!" they said. "Go to Fayence alone? Without your own glider? Without even a car? You must be crazy. Haven't you heard? Listen—their gliders are falling to bits. They don't even D.I. them. When it comes to a C. of A. they just run a hand over the wings. They tow behind a huge Storch on a ten-foot rope. The tug pilots are all cowboys. They do their first steep turn at 50 feet. They wag their wings and then dive with never a backward glance. They tow you through rotor and as long as you don't overtake the tug they don't care what happens to you. And the French hate the English. Joan of Arc and de Gaulle and perfidious Albion. Anyhow, they won't accept you without a Silver C. Yes, I know, but you landed short, didn't you? So you haven't got it. So you can't go."

But I thought I'd write anyhow. I had three clear weeks for the first time ever, and October is a bit late for England. I got a letter back saying that they would be delighted to see me, and would I fill in the form and send £8 (120 frs.) subscription (it lasts a year), and bring a medical certificate and an insurance policy and my C Certificate!

I flew out to Nice, was in Fayence an hour later (that was luck: you would probably have to get there by bus), and the next morning saw me unpacking the hangar in a state of bewildered delight. Sun, twelve impeccable gliders, a scent of pines and herbs and fruit in the air. The tug warming up. Monsieur Gendron, the C.F.I., gave my logbook a cursory glance and me an alarming, weighing-up look, and I decided, regretfully, that I wouldn't be able to put anything across that one. He kept me in the Bijave (tandem two-seater) for two days and I wasn't sorry. There is a lot to learn about the place because there is absolutely nowhere to land out. He taught me the names of the mountains and their break-off heights and where it was safe to be in what winds. The last flight we had together, he said I was to forget he was there. We had an hour and a quarter and I knew when I was properly centred

because he sang. "Right," he said afterwards, "I'll give you the instruction book on the site and you can study it tonight. If you know it tomorrow, you can take the Ka-8."

And so it started. Twenty hours of the most beautiful, thrilling, alarming, funny, rewarding flying I've ever had. I flew six different types while I was there, ending up, like a cat with cream, in a Super Javelot. I fell flat for that glider. It gives you a tremendous feeling of power and strength, is absolutely silent (until you open the brakes, when it comes down like a stone, screaming like a banshee), and has an excellent trim by your left hand. The one I was flying was new, and I liked that too.

What about the French loathing the English? Well, maybe they do in theory (in the bar I did occasionally have to apologise for burning Joan of Arc), but in practice, provided you shake hands, they're absolutely charming. This handshake thing takes some getting used to. You shake hands all round when you go in to breakfast. Everyone who arrives to fly shakes hands with everyone who's there already. It's all dreadfully un-British, but if you don't do it, not only are you behaving like a cold, toffee-nosed Britisher but you're also behaving like a surly Frenchman and all their kindness and helpfulness just dries up. I think that if you don't speak French you should go out in a group. My French is fast and fluent enough to exchange wisecracks, but I make the occasional ghastly mistake which has them falling about.

What didn't I like about the place? Well, I found the towing a bit alarming, but I've always been a nit about towing. I'm not nuts about squat loos. I hated the way the airfield closes down on Tuesdays, and I didn't much like club members having priority on Sundays. I did manage to get a flight each Sunday, but it needed a good deal of guile and nagging, and I missed lunch.

And what did I like specially? The people and the beauty of the place and the food and the people and the sun and the Super Javelot and the people and the fumble-free flying, and the wine; and the way, if you got over 4,000 feet, a lovely range of snow-capped peaks appeared behind bald old Maley Martie mountains (and the people) and twirling lazily round the church spire of Fayence in no sink, a wing pointing down at clustered, red, pantile roofs and little narrow streets and still 1,000 feet above the airfield. Oh yes! and my bill. It wasn't as much as I expected. My full board for three weeks came to £21. My flying (about 20 hours in 23 launches, all by aerotow and mostly to 3,000 ft.), £60. My fare out by Caravelle £38, and £10 for drinks and cigarettes: £129 total. You try three weeks in the South of France, travelling independent, and see what it costs you!

Is it worth taking your own glider? Well, Fred and John and Philip from Lasham arrived while I was there. They had a nightmare Channel crossing and an exhausting journey down, and they arrived at Fayence at 10 o'clock one morning just as we had finished washing the fleet, which stood sparkling in its red and white livery. I had a glider to myself. They were three to their Ka-6. But they only had one check flight each. Monsieur Gendron said "if they break their Ka-6 it would be very sad, but if they break one of my gliders it would be serious." Anyhow, I found my two-seater time very valuable.

What's the best time to go there? Not from mid-June to mid-September. They are bursting at the seams, and it's too hot anyhow. From December to February the place is taken over by wave-hungry Germans. The weather in October was like the sort of English summer one dreams of. They say it's wonderful from March to June.

Can one do it on the £50 travel allowance? I don't know, but I'm certainly going to try. After all, the worst that can happen is that I go broke and have to be repatriated by the British Consul, and that would make a story too.



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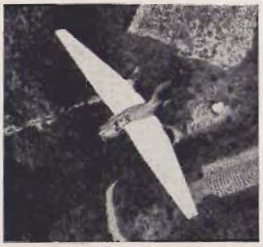
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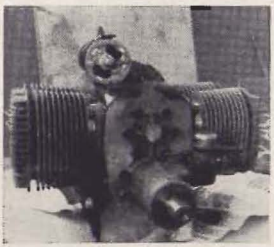
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RESISTANCE WELDING SOLID WIRE

By K. NURCOMBE (Coventry Gliding Club)

SINCE piano-wire costs only about one-tenth the price of stranded cable, it has obvious economic advantages. Unfortunately, it also has operational disadvantages that often lead to its being discarded in favour of the more easily handled stranded cable. To anyone who has struggled with large coils of "knitting" at the winch, while tempers rise at the launch point, these handling difficulties need no description. Piano-wire was used at Coventry for about 12 months before a return to stranded cable was decided upon, since fumbles were losing more revenue than the cable cost. However, the thought of paying £85 for one length of cable really hurt, and a small group of solid-wire diehards set about eliminating, as far as possible, these inherent disadvantages.

Piano-wire behaves very well until it is broken, when it has to be joined by a knot of some form. This knot, nine times out of ten, is the cause, either directly or indirectly, of subsequent breaks and snarl-ups. Since the knot is bulky, it has a strong tendency to get trapped on the drum and snag the outgoing wire during retrieving. This is apart from the weakening of the wire owing to the horrible bending and torsional strains introduced in the forming of the knot. It was suggested that these problems could be minimised or even eliminated by welding the wire instead of knotting it. Although, at first glance, this method appears impracticable for field use, an extremely practicable, almost automatic, technique has been developed at Husbands Bosworth. The idea was a direct application of an industrial electrical resistance welding unit suitably built to operate from D.C. accumulators carried in the winch. The unit can be easily assembled with some simple tools and a small amount of metal-working knowledge. At this point, perhaps, a description of the technique would not be out of place.

When an electric current is passed through a resistor (in this case the piano wire), the latter gets hot. As its temperature increases, so does its resistance, which, in turn, causes it to get hotter still, perhaps up to white heat—hence the electric light. If enough power is applied, the resistor can be made to melt. An excellent resistance is formed by touching together two broken ends of a length of piano-wire and passing a heavy current across the break. The metal close to the join melts, and by forging together the two lengths of wire the weld can be consolidated, leaving only a small collar of "flash" to show its position. This weld will almost certainly be brittle, and it may be necessary to anneal it by reheating it for a short time, using the same equipment.

To be of use on the flying field, the unit must be reasonably foolproof, self-contained and reliable. However, the most important factor remains the strength of the weld and the consistency with which it can be reproduced. It was to determine whether or not these basic requirements could be met that preliminary tests were started.

The wire that we use at Husbands Bosworth is 11SWG 70/80 ton cold-drawn plain-carbon steel obtained from British Ropes Ltd. Initial welds were done on a commercial bandsaw welding unit operating on 250 V A.C. mains (transformed to 1.5 V 6K.V.A. instantaneous max.) and then tensile tested on a Hounsfield Tensometer.

Annealing was carried out under various conditions and was found to be not critical if the weld was maintained at a dull red heat (700-800°C) for about five seconds. Subsequent experience has shown that the judgment necessary to carry out this treatment can be obtained by even the most non-technically minded person with very little practice. The results of the tensile tests can be seen in Fig. 1, with standard wire and a reef knot for comparison. It can be seen that a strength factor of between 70% and 80% can be obtained consistently, leaving an adequate safety margin over a 1,000-pound weak link. Although the weakest welds obtained are no stronger than a reef knot, the risk of failure is reduced

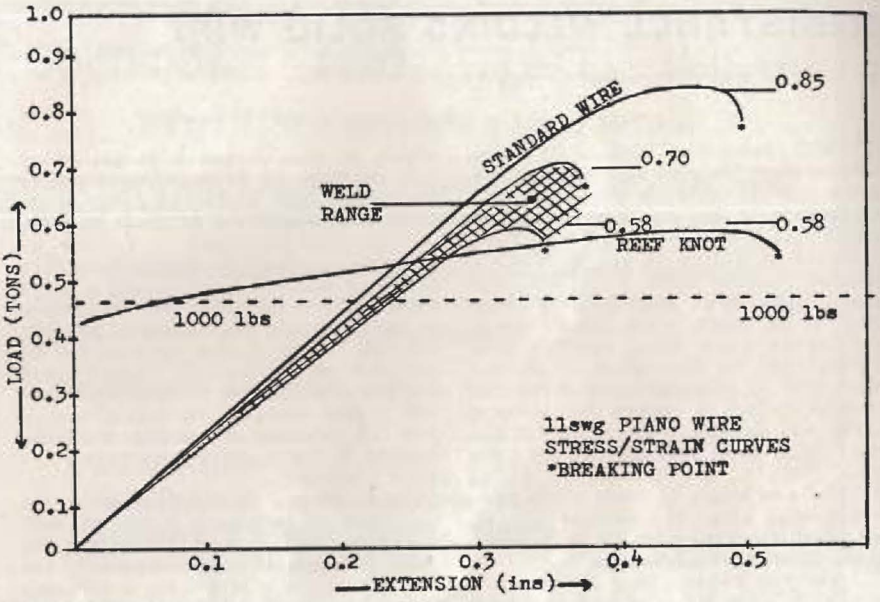


Fig. 1.

since the stresses induced in the knot by the launch are, of course, absent. The strength of the annealed weld is determined by the ultimate strength of the annealed wire, and, in fact, the region a small distance either side of the weld is the weakest part. However, there is evidence to suggest that the annealed zones are subject to work hardening by repeatedly passing over, in tension, the cable pay-on gear. It is very likely therefore that the strength of the weld increases with use, although quantitative measurements have been inconclusive. The bend-strength of the welded joint is considerably lower than that of the standard wire, but this has proved to be no disadvantage. It is possible to bend welded length of wire through a sharp angle of 180°-270° before fracture, and indeed, if the standard cable was subjected to this treatment before use, it would almost certainly fail during the following launch.

Although plenty of design information was available for welders operating on transformed mains supply, no references to low voltage D.C. operation could be found. Consequently, a small test apparatus was constructed for use with a heavy-duty vehicle accumulator. Experiment showed that, for welding, 12 volts were ideal, 6 volts being more satisfactory for annealing (allowing the temperature of the wire to be more easily controlled).

A large number of welds were done by this unit, and all of them showed up satisfactorily on test. Several short lengths of wire were joined together, using this unit, and then connected to the stranded cable then in use. It withstood over 50 launches before being removed by someone unaware of the experiment, but it was felt that the results were sufficiently encouraging to go ahead and build a welder on to the diesel bus winch. This unit was operated from the twin 6 volt heavy-duty accumulators that the bus normally carries. Meanwhile, various modifications were in hand to prepare the winch for use with piano-wire, and as soon as the change-over was made the welding unit was brought into service. It was very gratifying to find that it came up to expectations with the minimum of

teething troubles. Bolt-cutters were found to leave an unsatisfactory surface for welding, and it was necessary to fit a small guillotine to ensure square, flat ends on the cut wire. However, the design was not as practical as it might have been, since it was built for experimental use, and a Mk. II unit has been constructed. The design of this unit is shown in Fig. 3.

The electrodes are made from cold-rolled brass plate and must be left slightly springy in order to clamp the wire in position. This means that hard soldering or brazing must not be done anywhere near the business ends. One of the electrodes is made movable to enable the weld to be forged. Switching of the heavy current is taken care of by a 12 volt car-starter solenoid switch while a similar one serves for the annealing, which must be done manually. Two micro-switches in parallel with the electrodes operate the solenoid and thus the welding cycle is made semi-automatic. The operation of the unit is as follows (with reference to Fig. 3):

Depressing the lever (A) exerts a force on the moving electrode (B), pivoted at (C), tending to close the electrode gap. Movement of (B) is prevented by the touching faces of the two lengths of wire clamped tightly in the electrode jaws. When the lever (A) reaches the bottom of its travel (maximum load applied to the weld faces) it operates micro-switch (D) throwing the solenoid (E). A heavy current passes across the wire in the electrodes and melts it in the proximity of the cut faces. When the wire melts, the moving electrode closes with the fixed one and forges the weld, thus expelling surface oxidation into the "flash", or waste metal. As (B) begins to move, it operates the micro-switch (F) and switches off the current. The lever (A) is held depressed for a fraction of a second while the weld solidifies, and then it can be released. The wire is then unclamped from the jaws, allowing (B) to return to its initial position, and is reclamped in the wide, annealing zone of the electrodes. Solenoid (G) is operated manually, keeping the weld at a dull red colour for about five seconds. The wire is removed from the jaws and is ready

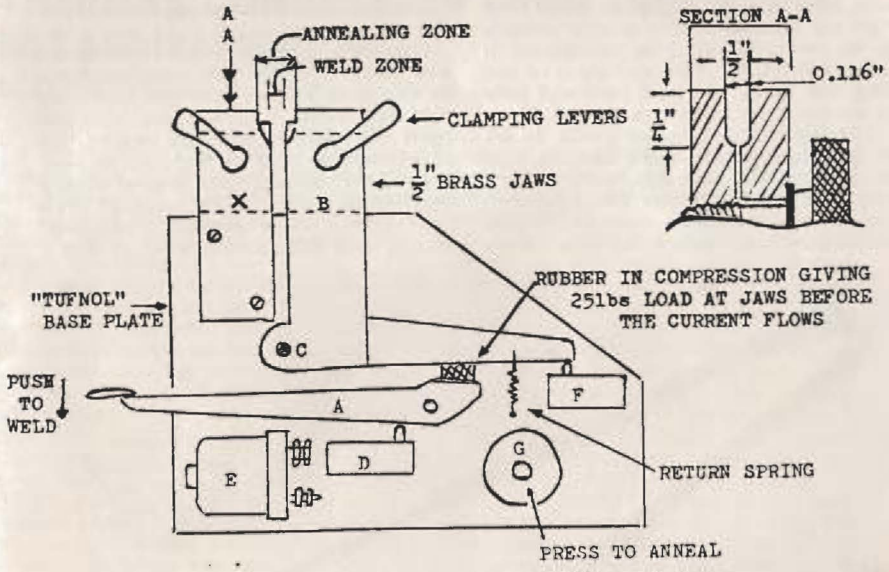
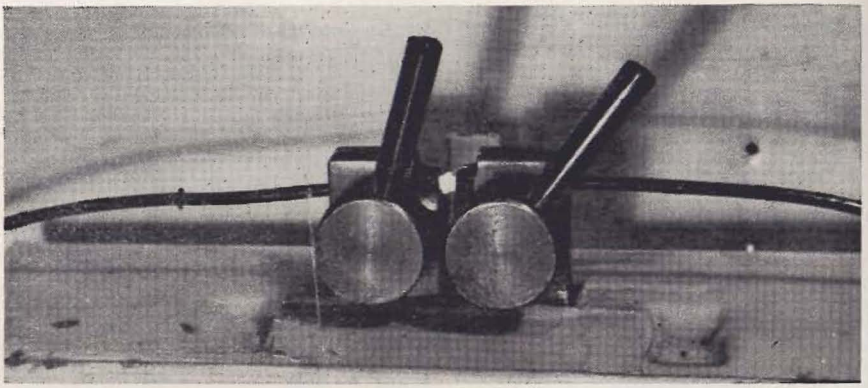


Fig. 3.



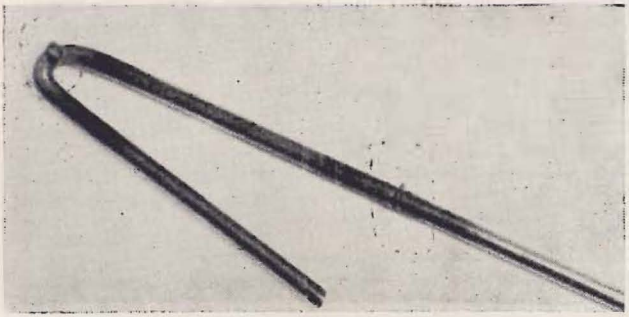
The welding machine.

for use. The unit is now set for the next weld.

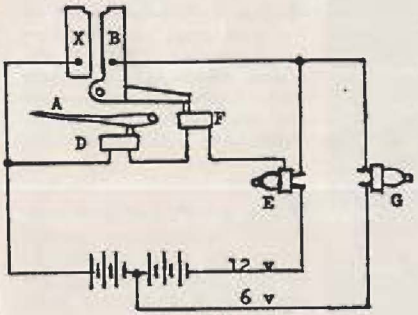
The optimum movement of electrode (B) is about $\frac{3}{32}$ in., initial gap being $\frac{7}{32}$ in. Adjustment of this gap is simply provided for by means of two eccentric cams made from bolts. Width of the annealing gap is not critical, $\frac{1}{2}$ in. being adequate. Micro-switch (F) should be adjusted to cut out the solenoid *immediately* electrode (B) begins to move, but must cut back in when the latter returns to its rest position. This adjustment is rather critical, for if the current is on too long, too much wire will melt and may be splashed out when it is forged.

The high-current circuit needs to be 30 amp (continuous) cable since it may be carrying over 50 amps, while 10-amp wire will cope with the micro-switches and solenoid circuit. As many as 20 rapid welds have been done without detriment to either the circuit wiring or accumulator, although the former tends to get rather warm when subject to such severe treatment. The original test accumulator performed over 100 welds without recharging, and no drop in performance was noticed at the end of the test period. However, there is no denying that the accumulator leads a hard life when treated so, and it is certain that a NIFE accumulator would be more suitable for this purpose.

Originally, it was intended to throw the wire away after 200-300 launches, since by this time it must have well and truly paid for itself. It now seems that the cable life might be extended beyond that at first thought possible, and also we have been able to salvage short lengths of wire that would normally be scrapped. Not only have we eliminated "snagging" breaks, and fatigue and wear of knots,



Two typical welds showing neatness and "bendability".



Circuit diagram.

but also repair time is reduced by this apparatus, since it is possible to perform very rapid repairs with a little practice. The cost of batteries, if life proves to be shortened appreciably, is easily offset by the saving in cable cost, leaving an increased profit margin on winch launches. Even more important, fumbles can be brought down to the level of those with stranded cable—very low.

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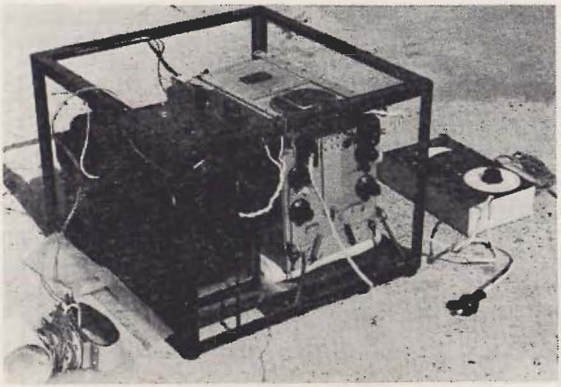
THERMAL CONVECTION FROM INDUSTRIAL ESTABLISHMENTS

By ALFRED HELBIG, Geophysical Institute, Leipzig

IN the course of preparing a Diploma thesis (Ref. 1) the author investigated the distribution of vertical velocities in the air above the Böhlen factory complex near Leipzig in various weather conditions and seasons.

Thermal convection depends in general upon the aerological structure and the strength of the heat source. This heat source can be due to irradiation of the earth's surface, but additional ones are possible, such as volcanoes, forest fires and burning oil on the one hand, and industrial activities such as works employing heat energy, briquette factories and foundries on the other hand. Above such factories one encounters vertical speeds considerably higher than in the surrounding environment. Even below a complete low cloud cover one can find thermals there. As these thermals are formed above industrial establishments whose outflowing gases give additional warmth to the air, they have received from sailplane pilots the name "industrial thermals" (*Industriethermik*).

In the investigations the vertical motion was determined by fine temperature measurements. A platinum sensor with a Wheatstone bridge circuit serves for measurement and recording. The bridge is only temporarily adjusted to a point on the measurement range. The flow across the bridge in the absence of adjustment represents a measurement of the change in resistance at that point due to the temperature, and is registered by an optical Askania tracer. Hereby the exact determination of the temperature difference between rising air and the environment is important. In addition the air temperature is measured with a semi-conductor thermometer (Fig. 1). The whole set-up is installed in a powered



◀ *Fig. 1.—Overall view of the measuring and registering apparatus. Left, the Pt-sensor; centre, the container with switch, accumulator and registering apparatus; right the semi-conductor thermometer.*

▼ *Fig. 2.—Pt and semi-conductor temperature sensor below the wing of the L-60. On front strut, the Pt-sensor with protective ring; on back strut, the semi-conductor sensor.*

aeroplane of L-60 Brigadyr type. The two temperature sensors hang below the wing (Fig. 2).

The measurement of the upcurrent region, which possesses a higher temperature than the environment, is carried out by horizontal probing flights between 300 m. and cloudbase at height intervals of 100 metres. An industrial thermal in calm air takes the form of a pillar, so that the probing flights can be comparatively easily positioned in the correct orientation, as a rule from windward to leeward.

From two sets of probing flights in July and September, 1965, the following values were obtained: Maximum temperature difference =2.9 deg., and cross-section of the region with positive temperature deviation 200-300 m. The temperature records during the flight on 22.7.65 are shown in Fig. 3. One can observe at all levels the temperature changes during the flights through the smoke column. The maximum rate of ascent was calculated, according to a formula of Yates (Ref. 2), as 7.3 m/sec. from the temperature difference and the diameter of the rising smoke column. Owing to influence of an anticyclone and very low wind speed, the industrial thermal in maritime polar air was very

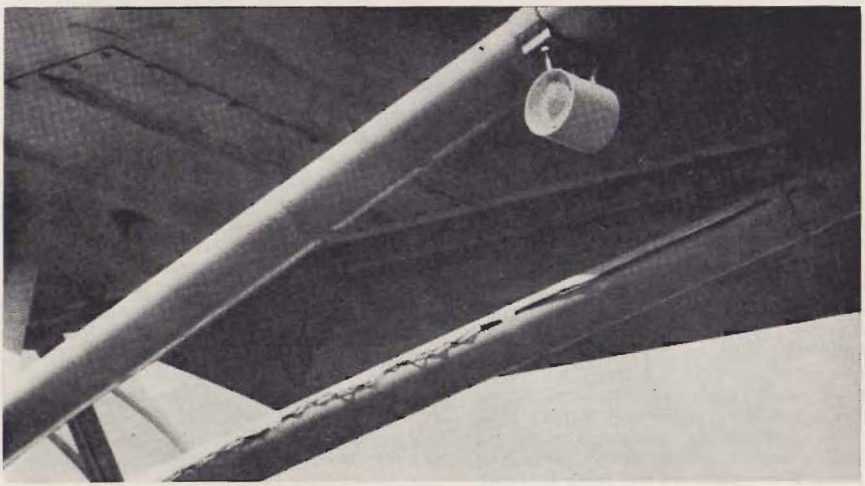
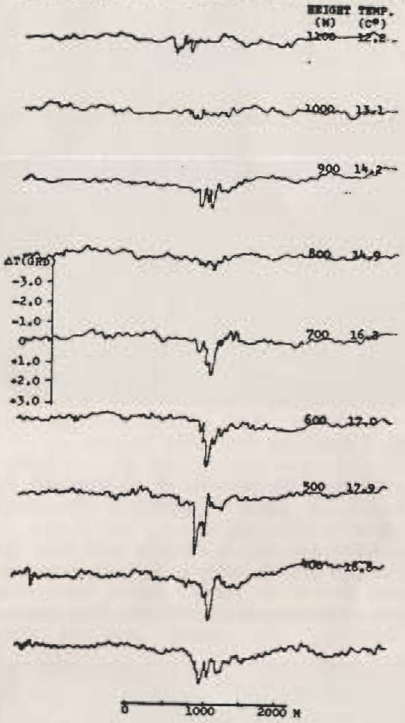


Fig. 3.—Flight No. 1 over Böhlen on 22.7.65, from 15.51-16.17 M.E.Z. Direction of flight, W.S.W.-E.N.E. (Data omitted from last tracing are: 300 m., 19.7 deg. C.)



well defined. Even from far off one could see above Böhlen a vertical, bright brown smoke column with a shallow cumulus. An inversion at 1,300 m. prevented further development of convection clouds.

The temperature differences with natural thermals lie between 0.1 and 0.3 deg. according to data from various authors. Similar differences were found on the recording apparatus during a flight from Böhlen to Leipzig/Mockau.

For further investigation there are available photographs of the smoke columns over Böhlen, accounts of soaring flights and barograms. For each group of observations there are also available the synoptic situation, vertical temperature gradients reported from aerological ascents at Lindenberg and Dresden, and wind velocity at the nearest met. station at Mockau. The behaviour of the smoke columns can be divided into three groups according to their appearance and their usefulness for soaring flights. These three groups are definitely related to the vertical temperature gradient and wind velocity (Fig. 4).

A good picture of industrial thermals in a very weak wind is shown in Fig. 5 (vertical smoke columns). Upon the arrival of a high-pressure region, a vigorous cumulus cloud has developed over

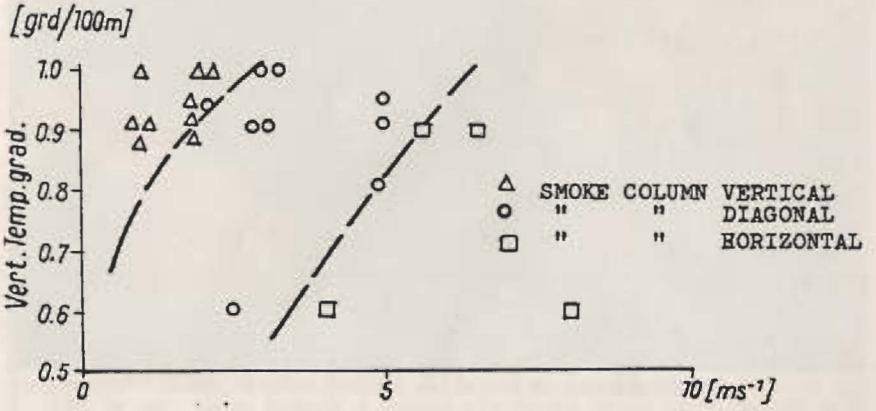


Fig. 4

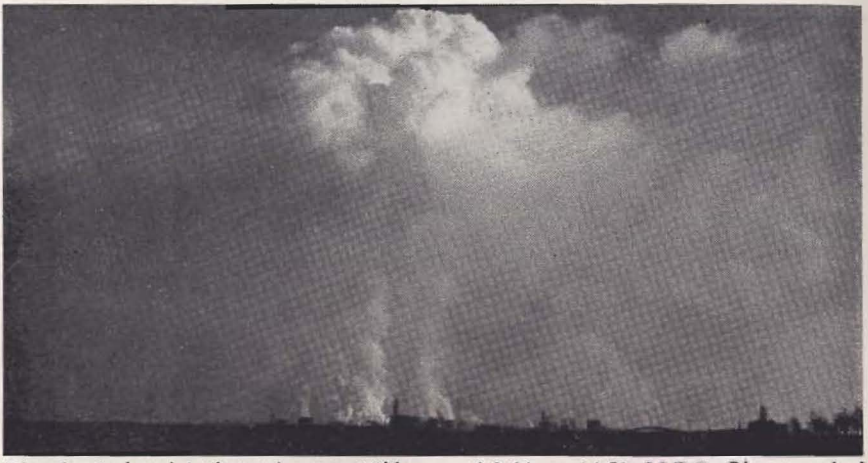


Fig. 5.—Industrial thermal over Böhlen on 2.3.66 at 14.50 M.E.Z. Photographed from 3 km. west of the factory. Cloudbase 900-1,000 m.

Böhlen in an unstable air mass. The cloud development due to natural convection is, however, only weak because of the low intensity of incoming radiation. With a higher wind velocity the developing cumuli are quickly driven away and a cloud street is produced. Fig. 6 (smoke columns horizontal) shows an example of this. The weather is determined by polar air from Greenland; the wind velocity is 6-7 m/sec.

Summarizing, it can be said that the vertical speeds with low wind velocities and neutral to weakly stable lapse rates are always greater than in the natural thermals. The upper limit of wind



Fig. 6.—Cloud development over Böhlen on 26.12.65 at 14.40 M.E.Z. Photographed from 10 km. to the north. The Böhlen factory is situated at the extreme right of the picture.

velocity for the development of a vertical closed upcurrent region above the factory is around 2 m/sec. With high wind velocities there is stronger mixing; the upcurrent region is torn apart into periodically released thermal bubbles, which however are still utilizable for soaring. Only in calm weather and with a neutral lapse rate do the industrial thermals reach a greater height than the natural thermals. Surface inversions are broken through, inversions at greater heights can also be penetrated, but owing to wind shear at the inversion levels no continuous vertical upcurrent field is built up. In the industrial thermal over Böhlen a maximum climb velocity of 10 m./s. was measured with a sailplane. The maximum height of 4,050 m. was reached in it on 2nd July, 1963, in VFR conditions with the sailplane Libelle. This was a Gold C flight.

In conclusion, an estimate of the heat gained by the atmosphere over Böhlen will be given. The three principal heat sources in the Böhlen factory area are the power house with a performance of 250 MW, the briquette factory, and the central gasworks chimney. The power house gases have a mean temperature of 200° C. In all, these three heat sources give out about 3.3×10^6 kcal/min. to the atmosphere. If one takes the total heat of the power house alone on its area, one obtains the value 6.3 cal/cm² min. For the whole factory area the value is around 1.3 cal/cm² min. Therewith a comparison with natural conditions is possible. The heat flow of the industrial thermals is 10 times as great as the heat flow of natural thermals.

Industrial thermals are thus stronger than natural thermals owing to the constancy of the heat sources. Nevertheless the aerological conditions exercise a strong influence on their behaviour.

* * *

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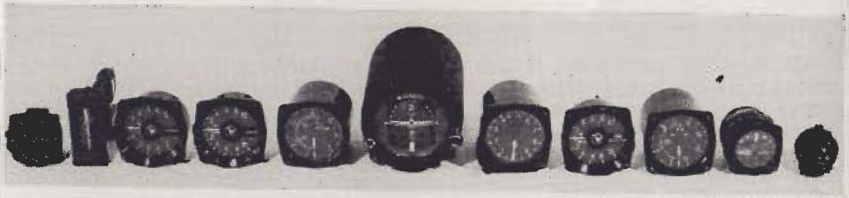
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IT AIN'T ALL GLIDING— but "Thistle" do!

"Pray tell me, gentle aviatrix,
What drives you to the sky?
Why must you scorn the arms of man
To fly and fly and fly?

"For I have viewed you from afar,
All this and many a day,
But when I try to chat you up
You rise and fly away.

"Then I too don my wings and go
Into the Boundless Air;
I soar o'er hills and under clouds
Until I find you there.

"You rush towards me, wings outstretched,
To hold you soon, I pray,
But dammit! *Bishop's on your right
And I must turn away!

"O Damsel of the sky above,
You never heed my words.
Affection I must seek elsewhere,
You're strictly for the birds!"

"Mac"

RESPONSE

"Now hold your breath, my little lad,
You're victim of your youth.
Imagination plays you tricks,
It's time you learned the truth.

"Why should *I* bow down low to man
While skies wait up above?
My feelings I'll keep to myself
For gliding's *my* true love.

"Up in the bright and timeless sky
Life's passions fade from sight;
One's troubles vanish from the mind
Through peaceful, silent flight.

"The towering cu. attracts me to
A world that few have seen.
It lifts me up to dizzy heights
Where I *alone* am Queen.

"So go your way and seek elsewhere
A mate amongst the crowds.
My feet may seem to touch the ground
But my heart is in the clouds!"

"Mag"

* Scotland, not Nevada.

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THE KRONFELD CLUB

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ON the 1st January we welcomed to the Club the members of the Tiger Club at Redhill who are to use the Club as their permanent London home. Other organisations with aviation connections who use the club regularly for meetings etc., include the Aviation Society of London; Aviation Forum; Cisavia; Popular Flying Association; British Balloon Club; The Girls Venture Corps; The Island Cruising Club; The Civil Service Sailing Association and occasionally the British Women Pilots Association and the 99's, and two other new Group members, the John Lewis Partnership Flying and Gliding Club and the Sandhurst Cadets Flying Club.

Group membership is open to any organisation at £16 16s. 0d. a year and allows 10 meetings in the Lecture room. Single bookings to non-members are £3 3s. 0d.

On Monday, 16th January, the Annual Series of Instructional Lectures commenced with a talk by the Hon. James Beering on Air Touring. This year the subjects are designed to be of particular interest to power pilots although at the end of the course there will be a Met. Lecture and one entitled "An introduction to gliding and soaring". Full details and Registration forms may be had from the club (or phone Mrs. Bonham, FORest Hill 9390).

Y. C. B.

Lectures on Mondays at 8 p.m.

Jan.	30.	Aerobatics, by A. Haig-Thomas of the 1966 British Aerobatic Team including new Ford colour aerobatic film made at Redhill.
Feb.	6.	"The Finer Points of Flying", by Derek Piggott ex-C.F.S. A-1 Instructor.
Feb.	20.	Air Racing.
Feb.	27.	The Business Use of Aircraft.
Mar.	6.	Light Aircraft Maintenance.
Mar.	20.	Meteorology.
Apr.	3.	An Introduction to Gliding and Soaring.

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

Jan.	25.	Learning to fly in South Africa, by Rosamund Hervey.
Feb.	1.	The Marx Bros. epic "Love Happy".
Feb.	8.	Readers and Writers, by Mike Bird.
Feb.	15.	Airships, by Fl.Lt. Vale, R.A.F.R. (Rtd.)
Feb.	22.	Art and Elephants, by David Shepherd.
Mar.	1.	Film "Home of your Own" starring Bernard Cribbins, Peter Butterworth.
Mar.	8.	Talk with slides by Lorne and Ann Welch.
Mar.	15.	Role of the Air League, by Sir Archibald Hope, Bt., O.B.E., D.F.C.
Mar.	22.	Aviation and Parliament. The Rt. Hon. Robert Carr, M.P., Robert Howarth, M.P., and Eric Lubbock, M.P., Kenneth Owen (Chairman).
Mar.	29.	Film "A Space Hobby".

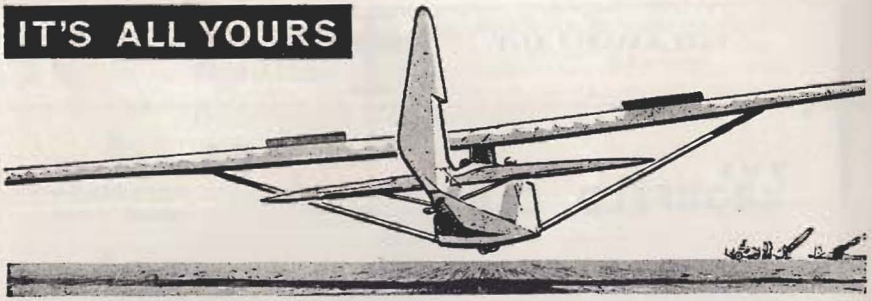
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IT'S ALL YOURS



C.F.I. Conference, 26th-27th Nov., 1966

FIVE days of instructor flying on the Capstan, Eagle, Schweizer 2-22 and the Avion Planeur RF-3, followed by talks on powered trainers by Derek Piggott and the Kittiwake tug by Roy Procter, heralded in the 1966 Conference at Lasham.

The programme provided a series of formal lectures of about an hour's duration each, plus some special subject short talks. The main subjects were:

(1) The 1966 Accident Survey by Paul Minton, which is reported later.

(2) Instrument flying training, taken on at short notice by John Williamson, who concentrated on the teaching techniques necessary to get the pilot safe and competent to deal with normal clouds in a short time.

(3) Glider airworthiness and limitations, by Frank Irving, who illustrated his talk using drawings on transparent film with a 3M's overhead projector. The advantages of this equipment are that superimposition of diagrams is possible and the projection is visible in daylight.



Vic Carr on aerotowing.

(4) All-through aerotow training. Vic Carr showed that all-aerotow training could produce a pilot with wider experience and skill for a given amount of flying in comparison with winch training. Fewer trainee pilots gave up through frustration, which introduced a new problem in providing for the increased number of soaring pilots in the club.

(5) Elementary training. Ann Welch and John Everitt. Points made were that there is no substitute for care and thoroughness in the pupil's early lessons. He should not be taught new exercises, or given added responsibility, until he properly understood the previous step.

In addition to the main lectures, Wally Kahn talked about outside factors which affect gliding, particularly the need for good working communication with local and regional sports control bodies, and outside authorities, so that clubs would have friends to help overcome their problems.

Nick Goodhart outlined proposed further airspace legislation which would severely limit cross-country gliding, although no reasonable case could be made for it on traffic safety grounds.

On the Saturday night Paul Minton introduced a programme of films kindly loaned by the General Aviation Safety Committee. They were produced by U.S.A.F. and A.O.P.A., and connected closely with what became the theme of the Conference—effective communication as an essential ingredient of train-

ing. The film on spatial disorientation linked with John Willy's lecture.

Wally Kahn presented the Wills Scholarships to the largest-ever number of new instructors who had successfully completed instructor training courses during the year. The four years' work by the National Coach, subsidised by the Department of Education and Science, with the Capstan, which W. D. & H. O. Wills presented to the B.G.A., have achieved a steady flow of instructors into clubs and at last broken the acute shortage which existed. Plans for next year's Coach and Capstan operations, which will include a new range of courses, are now being worked out.

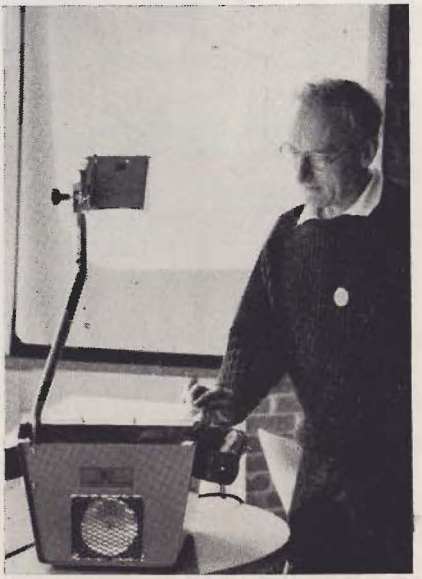
The Conference, which also included a simple method of making instruction slides by Tony Knight, reports on Instructor Panel Meetings, and the Coach's 1966 survey, which are dealt with later, was attended by 98 instructors from over 40 clubs. We hope they found it useful.

Programmed Learning and Ground Instruction

The problem of obtaining effective communication between instructor and pupil is highlighted by lack of opportunity for other than in-flight instruction; instructors often have insufficient time between pupils for briefing and de-briefing, formal lectures do not always reach the people for whom they are intended, and classroom facilities are almost non-existent. Pupils have, therefore, to learn a great deal of background knowledge on their own, with the expected result that sometimes they do not, and continue to fly with serious gaps in their understanding.

With gliding becoming increasingly complex, different methods of putting over training information to small groups of pupils, or to individuals, should be investigated. It is stressed that no book or theoretical knowledge can replace in-flight instruction. It should be used to help the instructor to concentrate on the really important things and use his time as fully and effectively as possible.

There are various aspects of programmed learning which are worth investigating, and which are not so expensive or complicated as big teaching machines. One way is to use short and cheap "self-teaching" booklets, in which



Frank Irving working the overhead projector.

the information is laid out in very small steps, with each page containing an information statement and a question on it. The pupil has to respond correctly to the question before going on to the next step. Exercises such as cable breaks, where procedural knowledge is required as well as in-flight experience, are suitable for this treatment.

Another method is the short self-contained course, as introduced by A.O.P.A., covering a particular aspect or stage of training. The course programme and information takes the form of paired notes—one for the instructor covering in detail the points he should teach, and one for the pupil covering the work he will do. Both sides can study their schedules in advance and both know exactly what they are trying to achieve from the course. Effort can be closely concentrated on the particular subject, with the chance of achieving proper understanding and skill in a short time.

As with self-teaching, self-contained courses are best used to cover a *particular* aspect of training. Neither should be



Recipients of the W.D. and H.O. Wills scholarships. On far right: Ann Welch, Wally Kahn (behind), John Everitt. (Photographs by Sally Thompson.)

used to try to do the instructor's job of teaching flying in general, although the principles behind programmed learning are worthy of study by any instructor.

A sample self-contained course—One-Day Introductory Courses for Non-Pilots—was distributed at the Conference, and will be in the next issue of INSTRUCTOR. This is intended to give informative and practical introduction in gliding to, for example, groups from schools or factories.

The next self-contained course will be designed to cope with the conversion of suitable private pilot licence holders into competent tug pilots. The training schedule will provide for some 4 hours' in-flight instruction, in both the tug and the glider, and 4 hours' ground study, in a period equal to one week-end.

Instructors' Panel Report

Arising from the meeting on 19th November, the Instructor Category system is to be reviewed. It is felt that the present single category, with the higher grade endorsement for C.F.I.'s, is insufficient to cope with the present wide range of instructor experience. Some form of limited category for instructors looking after small or new clubs, who have not yet attained the full category rating (they would all be called ratings), should be introduced to ensure that some formal training had in every case been carried out before starting to instruct.

A sub-committee of the Panel was formed, consisting of John Williamson and Vic Carr, with John Everitt as Chairman, to study the matter, so that any changes recommended might be introduced by 1st January, 1968.

It would also consider the introduction of a retest and medical for instructors who had held a category for 10 or more years, and in conjunction with the B.G.A. Flying Committee look at medical standards generally.

ANN WELCH.

* * *

CAN WE IMPROVE FLIGHT SAFETY?

IT is fairly obvious when dealing with accidents either individually or collectively that there is rarely any single cause—rather that there are a series of minor deviations from good practice which add up to a situation where an accident is likely, or even inevitable. Hence it is worth considering how to prevent this build-up of events by foresight, training and experience, i.e. those qualities which are the particular responsibility of instructors. It is pertinent to consider this problem under four headings:—

(1) Creating a low-risk environment.
(2) Education to see the risks that remain.
(3) Training to realise the correct action to counteract the risk.
(4) Practice to make it possible to take the correct action to remove the risk.

(1) A LOW-RISK ENVIRONMENT. This to a large extent already exists for any club operating within the B.G.A. as, for example, the airworthiness requirements as laid down reduce the risk of accident due to a deficiency of a glider to an acceptably small level.

The problem is a very real one for the new club which has to make far-reaching decisions even before it starts operating, particularly regarding the choice of a site. Even with an established club the gradual increase in scale of operations could produce unsafe conditions due to lack of thought and direction. For example, when aerotowing is introduced it is vital to ensure that tug and winch cables do not become interwoven. As time goes on, even well-tried methods must be kept under review, as there have been sundry incidents with such prosaic items as exist at the glider end of winch cables ending up with launches on the bungey hook, cables jammed round the skid, and parachutes over tailplanes after a cable break.

(2) SEEING THE RISK. The major educational problem in training a pilot is to ensure that he is aware of the risks that exist, particularly those whose demonstration would not give the two-seater or its occupants a reasonable chance of survival. The most important case is, of course, flying too slowly near the ground and the attendant chance of loss of control due to a stall or spin. No doubt every pilot has been warned to avoid this pitfall, but, judging by the continuing number of accidents of this type, very few pilots realise how much greater is the risk when the pilot is distracted by a difficult final turn, a poorly judged circuit, an inadequate field to land in, etc. Even the experienced pilot can be discomfited by forgetting that such phenomena as cable breaks are not less dangerous because they become less frequent with modern equipment.

(3) REALISING THE CORRECT ACTION. Under this heading really lies the training for good airmanship. The educated pilot must see the risk and then be able to propose a satisfactory course of action to reduce this risk to an acceptable level. For example, the local soaring pilot faces the risk that he may be unable to return to his base. He makes this risk acceptable by always aiming to reach home with sufficient height to complete a proper circuit of the landing area. The more experienced cross-country pilot faces a problem with regard to landing in a field; the risks are obvious; the correct action is similarly to start to pick a field with sufficient height to make a good choice and then to have enough height to make a good circuit.

(4) PERFORMING THE ACTION. While it is true that safety is largely a state of mind, the final process in avoiding risks must of necessity be a physical one and this can only be made effective by practice. The pilot who spins in on his final turn usually does so because he is turning tightly in order to line up for a safe approach and is physically unable to per-

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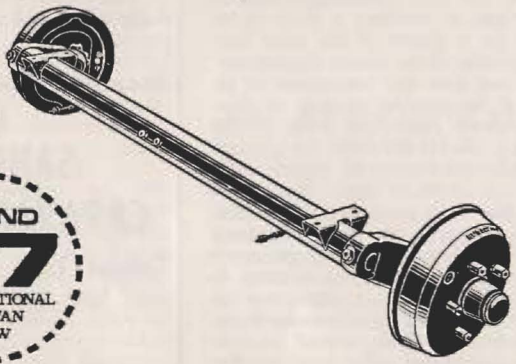
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form an accurate turn at a reasonable speed under these circumstances. The inexperienced pilot dealing with circuits from poor launching and cable breaks is often left in a similar plight.

Conclusions

As instructors we are completely responsible for safety under the four headings above, and it is up to us to ensure:—

(1) that all our operations are to such a standard and so organised that there are the minimum of "built-in" risks;
(2) that those risks that cannot be eliminated are made plain to all pilots at every stage of their career;
(3) that pilots are trained to produce the correct solution to a problem set them by such risks;
(4) that pilots have sufficient physical skill to be able to translate their solution to the problem into action.

PAUL MINTON

* * *

EXTRACTS FROM TALK BY NATIONAL COACH

DURING the various items which were discussed, it was pointed out that C.F.I.'s could help to improve the elementary training standards by making sure that their instructors are reminded of some of the general principles of instructing. They should be made familiar with the practical aspects of all the basic exercises, with the objects of them, their relationship to one another, and be aware of the problems from the pupil's point of view. Appreciation of these points should enable one to give convincing demonstrations in conjunction with the right sort of patter. A great deal of harm is done by poor patter and there are many examples of this in practice. Although a standard patter is far from desirable, it is better in the early stages of an instructor's career to use a standard patter, rather than say the wrong sort of thing.

Only if this step in the instructing sequence is carried out properly can the instructor have some basis for the next stage which is, of course, to enable the pupil to practise and to correct his faults. The best results can be achieved, not by giving the pupil a long list of things that the glider has done wrong, but by thinking of the problem in a logical way, beginning with "what has gone wrong and why"?

When instructing is approached along these lines, one feels that many of our more gleaming errors can be eliminated —the instructor who never lets go of the stick, the one who expects too much of his pupil and takes over too late, etc.

On the more specific problems such as approach speeds, use of brakes, etc., it is advisable to use a reasoned system of instruction; it is quite wrong to use out-of-date, misleading dogma, which is really a substitute for proper instruction and can do positive harm.

HUNGRY RETRIEVERS' GUIDE

IT is intended to produce a small booklet (possibly for inclusion in the 1968 B.G.A. diary) listing good places at which gliding people can sustain themselves after long and arduous retrieves. To obtain the wide geographical coverage necessary to be beneficial to all, we would like to ask anyone who can recommend an eating place to send details to the address below.

It is hoped that by collating a "good food guide", glider pilots and their crews can expect a welcome and their "unusual" behaviour accommodated satisfactorily. If possible we would prefer to stick to main retrieve routes, though a recommended "stop" not too far from the beaten track would readily be included.

Please include the following in your recommendation(s):—

(a) Name: Address: Telephone No. (including rough details—map ref. etc.)
(b) Type of establishment (hotel, pub, transport café etc.)—licensed or not.
(c) Approximate prices—cheap, moderate, expensive.
(d) Opening and closing time.
(e) Trailer parking facilities.
(f) Any other remarks; e.g. recommended dishes, service, other available facilities.

Please send all information as soon as possible to: Miss Jane Warter, 10 Berkeley Place, London, S.W.19.

FLYING TALK

By ROGER BARRETT, Chairman, B.G.A. Flying Committee

Contest Organization weekend, 25th-26th February, at Dunstable

AS an experiment the B.G.A. is holding a seminar on Contest Organisation at the London Gliding Club on the 25th-26th February.

Amongst the topics which will be covered are: Task-setting and Met. forecasting, changes in the B.G.A. General Regulations and Scoring Rules which come into force in 1967 (including photographic evidence), the new Rating Scheme, Ladder Contests and the future structure of contest flying (Class competitions, etc.). Nationals Officials and members of the B.G.A. Flying Committee will take part.

The object of the weekend is to provide an opportunity for everyone concerned (now or in the near future) with organising competitions to discuss techniques, problems and future possibilities. It is hoped that the interchange of ideas will prove helpful, both to the Flying Committee and to Club officials. All task-setters, stewards and officials who are involved in the 1967 Regionals will be particularly welcome.

It is planned to have the discussion on the future structure of competitions during the evening of Saturday, 25th February. Any competition pilots who are interested in this subject are welcome to come along to this meeting.

Anyone who would like to attend the whole of the seminar should write, as soon as possible, to the Secretary, B.G.A. for further details.

PHOTOGRAPHIC EVIDENCE

By GEORGE BURTON, Member, B.G.A. Flying Committee

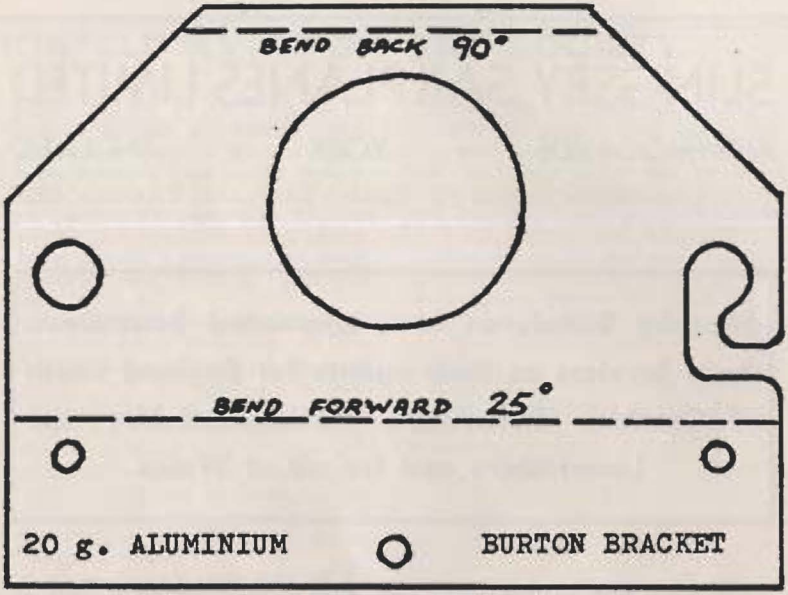
THIS year will probably see photographic evidence used for rounding turning-points for the first time in British Competitions. In the rules only one type of camera will be permitted — the Kodak "Instamatic" 25. This has been chosen for a number of reasons, and besides standardisation and cheapness the camera itself has the merit of being almost foolproof in operation. From the evidence we have, failures only seem to occur when the keen photographer-pilot uses his favourite (and complicated) expensive equipment!

The "Instamatic" is based on a system introduced three years ago by Kodak of cartridge loading. The film does not have to be threaded but is merely dropped into the camera as a factory-loaded cartridge. The frame positions on the film are pre-determined. Both double-exposure and double wind-on are prevented; a small lever, detecting slots in the film, stops the wind-on at the correct point. Wind-on is by knob, but this is not a disadvantage since thumb pressure is sufficient to turn it and only a quarter-turn is needed. The format is 28 mm. square, and the lens focal length is 43 mm. This results in a field of view of 34° horizontally and vertically: this is equal to most 35-mm. cameras in the horizontal plane and is considerably better in the vertical plane, which, as far as we are concerned, is the most important.

The film to be used is Verichrome Pan. It is supplied in easy-load cartridges each giving 12 shots. It has an extremely wide latitude of exposure, and for most turning-point shots the aperture setting should be on "Bright".

There are two methods of use which are recommended for turning point photography, and one that is not.

The method favoured by the Swiss is to strap the camera to the palm of the hand, hold the hand out of the clear-vision panel with the camera pointing vertically downwards, and fly straight and level over the turning-point. The button can be operated with the thumb.



The photograph is taken when the wing-tips come level with two points on the ground which the pilot has already established are just beyond the turning point.

The method I favour is to fix the camera to the glider by means of a simple metal bracket (as illustrated). The camera is upside down and looks downwards through the canopy at an angle of about 30°. This makes it easy both to wind-on and to press the button. If you cut your flight path to the absolute minimum and vertically over the turning-point, then any angle-of-bank between 43° and 77° will include the turning-point; however, if one overflies the turning-point by about 400 yards, which is more usual, then the required angles-of-bank are the more moderate values of between 23° and 57°. With practice it is easy to take two pictures in three seconds, so that it is not necessary to make a 360° turn in order to get two shots. For competitions it is recommended that a bracket is fitted to both sides of the cockpit.

The method definitely not recommended is for the pilot to peer through the viewfinder. The sideslips and phugoids resulting are a collision hazard to the other pilots taking part. With this cautionary note — good shooting!

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KRONFELD AVIATION ART SOCIETY

ALMOST all the 54 members of the Society, formed in March, 1966, exhibited at the Society's first Exhibition held in the Kronfeld Club during November, 1966.

The exhibition was opened by Graham Hill, ex-World Champion racing driver, who, being himself a pilot and art lover, gave a most amusing speech and presented the prizes.

The prize winners were announced in the December issue, page 480; to this should have been added that Kenneth McDonough and Margaret Kahn were the Overall-Winners in the professional and non-professional classes respectively.

Of the 102 exhibits hung 25 were sold and commissions taken for another 4.

We were privileged to have on the panel of judges this year the doyen of all aviation artists—Frank Wootton, whose report we print below.

Sixty of the exhibits were selected for the Travelling Exhibition which will be available for airshows etc. during 1967. It starts off with a four-month tour of Scotland, and is being opened at the City Art Gallery, Dundee on the 27th January by the C.O. of R.A.F. Leuchars, and from there goes on to Art Galleries at Perth, Forfar and Kirkaldy.

This will be the first time aviation art has been seen over the border, so we hope those gliding people living up there will go and see it and tell their friends about it. The collection includes 12 gliding paintings.

Enquiries for the Travelling Exhibition should be addressed to the Hon. Sec., Mrs. Yvonne Bonham, 14 Little Brownings, London, S.E.23.

Y. C. B.



Graham Hill (Photo John Blake)

* * *

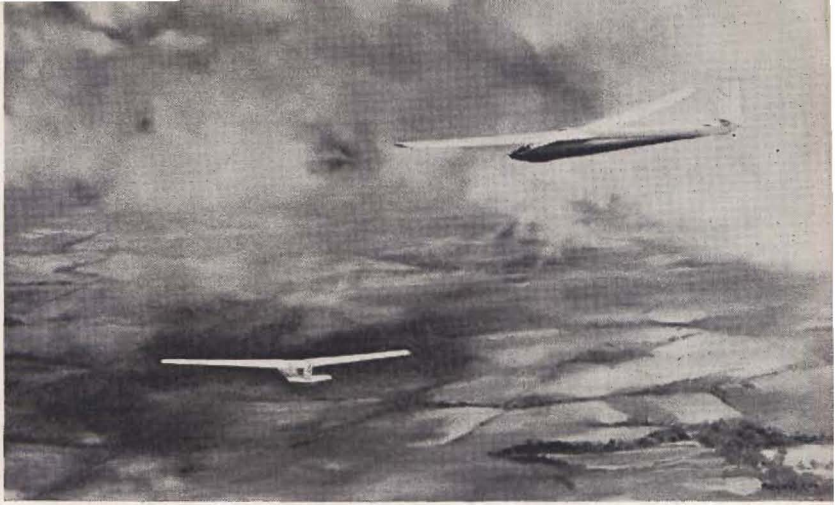
THE EXHIBITION

IN the first place I should like to congratulate all the exhibitors and the organisers on a very commendable show, a high standard of work, well displayed and so efficiently prepared.

Having been asked to assist in adjudicating the exhibits I feel I should mention that before any other considerations I looked for works of art. In other words a work that would win acceptance in any other exhibition of art as against one confined to Aviation Art. A work of such quality that it could be appreciated by people who are not necessarily enthusiastic about aviation or flying; I would also add that such a work need not show any great technical knowledge, or even technical competence, for that which falls into the category of competent illustration is not necessarily a work of art but more often than not merely a skilful piece of work, no more, no less.

The gulf between these is a difficult one to surmount and is not readily understood by the layman who doesn't so much know what he likes as likes what he knows. As a subject the technical considerations of Aviation impose severe restrictions on an artist; however I think







A SELECTION FROM KRONFELD ART EXHIBITION

Left Row

MONTREAL TOWER	*Brian Williams*
THE JUDGES, L. to R., F. WOOTTON, W. GUNSTON, J. BLAKE.	
HUNTER ATTACK NEAR CHANGI	*D. Hammond*
DART	*F. N. Slingsby*

Right Row

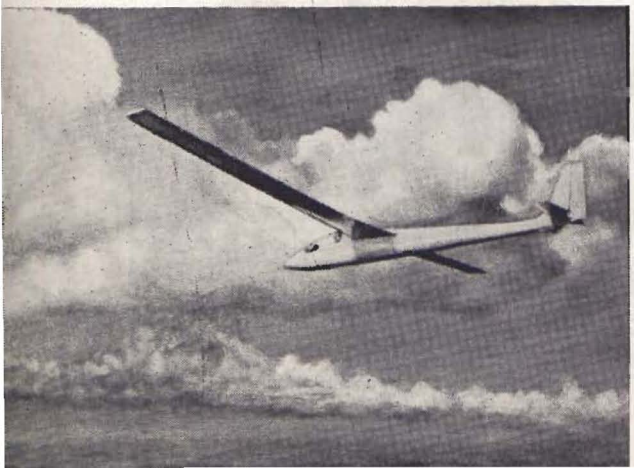
PAIR FLYING	*Margaret Kahn*
NIGHT VIRGINIA	*F. Munger*
LOUIS BLERIOT	*Kenneth McDonough*

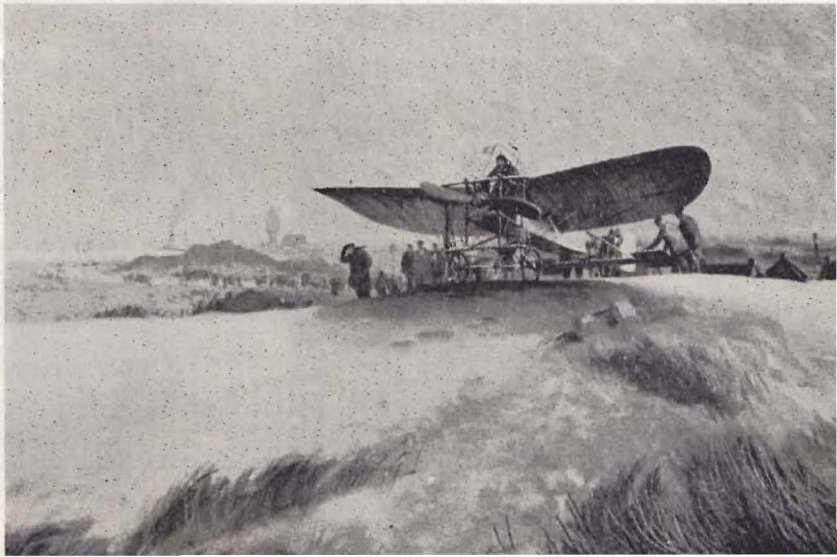






Photographs courtesy "Flight"





you would agree that, given two works, one a work of art capable of communicating beauty and human emotion that could reach and move most men yet containing technical inaccuracies, and another work so technically correct but lacking the aesthetic communication of the work of art, it would be a simple matter to advise the artist responsible for the work of art and for him to adjust it if neccessary, while it would be impossible to transform the technical drawing into a work of art.

This of course is merely my own opinion and reasoning while at the same time there were two other judges looking no doubt for other qualities, nevertheless I think we were all three surprised to find that our lists of awards compiled separately and individually tallied remarkably well.

The painting of "Louis Bleriot" by Kenneth McDonnough: The composition of this picture is unconventional and satisfying to a high degree; the position and scale of the aircraft at the top of a sloping dune gives it a great sense of importance and portent so well exemplified, leaving no doubt whatever that this is the start of a significant flight. Having stimulated the imagination so well, the mere suggestion of a crowd and the people making their way across the dunes at that early hour in July fifty-seven years ago at Barraques was all that was needed to complete the artist's interpretation of the subject so obviously inspired by enthusiasm, affection and a high degree of sensitivity.

"Bristol Bulldog" by Gerald Coulson is a very fine study, extremely competent with a sensitive understanding of texture and light on metal and painted surfaces.



Margaret Kahn has a touch of magic in her brush and the ability to paint a sky that is not merely a backdrop. "Pair Flying" has atmospheric light and shade, depth, movement and change with a fine regard for the subject matter. Beginners should note the proportion of background to aircraft; this gives scale and a great feeling of space. The conception of one who flies and has a feeling for the elements as opposed to the editorial conception of a photographer's art with copy space and material considerations in mind, trims a print for publishing barely clearing the extremities of the aircraft—something so unfortunately and so often followed by amateurs.

Norman Hoad has produced a most refreshing and successful painting with "Finger Two". He has achieved with understanding and feeling that intensity of light so often experienced when flying above the clouds. Refreshing because the artist has sought to escape the more obvious recourse to the conventional blue sky on which there is all too often a widespread reliance in an exhibition of this kind.

His colour scheme and control of tonal values reveal a capacity for a unity of lighting, the light striking the upper surfaces of the wings of the Hurricanes still retaining form and colour but at the same time modifying the opposing effect of a straight winged aircraft to the feeling of forward movement given by the fuselage. The feeling of movement gains great support from the pace of his brushwork.

"Night Virginia" has a romantic appeal which induces a subjective response from the onlooker. A difficult subject extremely well handled in a difficult medium. I should have liked the artist to have made his figures more mobile; for this is something within his grasp whereas the photographer is handicapped in a night scene of this period.

One other mention is for Miller's "Hart Formation": this has a unique sense of colour and pattern which I feel is not accidental but something inherent. I can only hope to see more like this, perhaps bolder and larger, so reminiscent of the work of L. S. Lowry, A.R.A.

FRANK WOOTTON.



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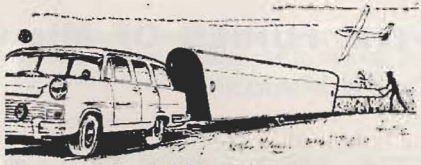
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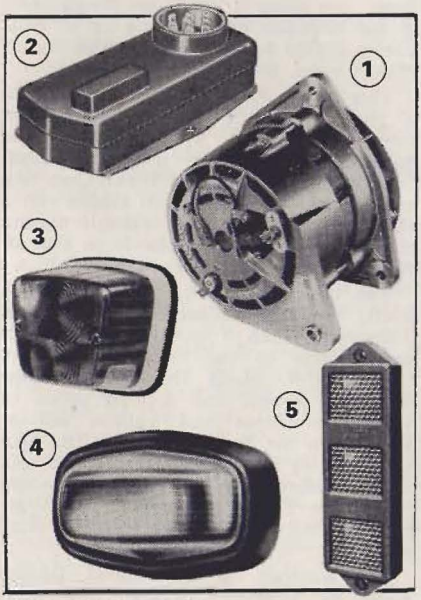


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THE FURIES OF Mte CORNO

By PHILIP WILLS

THE third task set at the Italian Nationals, on 4th August, was a 201-km. triangle, Rieti—Funivia (Ski-lift) Gran Sasso—Foligno airfield—Rieti.

The first leg of this course runs east from Rieti into the most dramatic region of the Apennines—the Gran Sasso d'Italia is the highest range of the system, forming the backbone of Italy, and the first turning-point was at the southern end of the foot of perhaps the most impressive soaring slope in the world—a straight line of steep mountains running perhaps 20 miles across the prevailing wind, averaging 4,000 ft. in height, and at the northern end peaking up to Mte. Corvo (9,000 ft.) and behind that again, Mte. Corno, nearly 10,000 ft.

This range forms the eastern wall of a wide central valley, containing the town of l'Aquila. It also forms the natural barrier between the Mediterranean and Adriatic Sea breezes, so that very often over its eastern slopes run a chain of cumulus and cumulo-nimbus clouds which can be seen from the air 50 miles away or more.

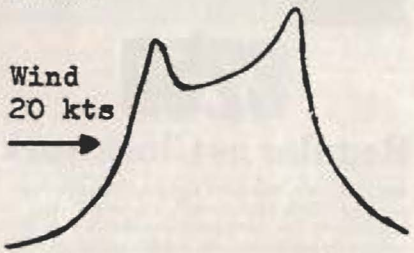
The course therefore runs east from Rieti, over the adjacent 7,000-ft. Mte. Terminillo, then a series of mountains and valleys to the first turning-point, thence N.W. along the soaring slope described above, and a long series of lakes, mountains and valleys out to Foligno in the Perugian valley; the final southern leg being along the eastern side of the valley, over the southern mountains, over Terni in its valley, the mountains behind it, and back into the Rieti plain.

The weather on 4th August, though good by British standards, was only mediocre by Rieti ones, so the task gave competitors a lot of problems, and only seven finished it; I came in first in 3 hrs. 38 mins., a minute faster than Giorgio Orsi in his SHK.

The first leg did not give much trouble. Slope-soaring on Mte. Terminillo to 7,500 ft. gave enough height to cross via Antrodocco, over which on the Free Distance day a little later I met the most friendly eagle of my acquaintance to date, to the northern end of the enormous slope of the Gran Sasso, and a southerly rush along this, holding the nose down to avoid gaining too much height, took me round the turning-point at the bottom of the ski-lift at its southern end. Then north again along the slope, climbing all the way at 5 knots, to the towering bulk of Mte. Corvo.

I took this to the top—slope-soaring up to 9,000 ft—and then had to decide whether to set out on track from there, or to fly back east over a shallow rocky saddle to the still higher peak of Mte. Corno.

I was with Vergani in his Dart at the time, and he took the first decision. It proved the wrong one, as he came to earth about 15 miles further north. I, on the other hand, allowed my greed for more height to win the day, and turned down-wind for Mte. Corno, less than a kilometre away. The profile of the two mountains was as follows:



I had not flown 100 yards before I wished I hadn't: the air wasn't there. Instead, the saddle was filled with wild invisible devils, cavorting around, to and fro and up and down, as if they had gone mad at the invasion of their privacy. It was a vortex of the most vicious kind, unmarked by any cloud system, which might otherwise have made me wary. It was the wildest air I have ever met, even including the rotor cloud in the lee of Mt. Cook in New Zealand, which, being in the lee of a



. . . The most friendly eagle.

14,000-ft. mountain, has far more excuse for its unkindness.

Before I knew where I was, I had both hands on the stick of the Dart, and was fighting to lift first one wing, then the other, as each in turn dropped precipitately into the invisible holes in the air. I dared not let my speed drop below 60 knots, because it was fluctuating wildly by as much as 20 knots, so, of course, the accelerations of the aircraft were all the more violent, and I should estimate varied between +4G and −3G. There was not much margin for manoeuvre or error, since the walls of the two mountains were a few hundred yards ahead and astern, and the shale basin of rock between them was a few hundred feet below. No grass, nothing green, no kindness anywhere.

The sun above poured out of the blue sky on to what might have been a small area on the moon—perhaps that was why I was perspiring rather freely.

Thanks to the light and quick ailerons of the Dart, I fought her round, across the wind, so I was drifted sideways towards the slope of Mte. Corno; then the inevitable upward sweep of the tortured air took hold and I was shot aloft, above the peak, into the blessed calm above. I took a couple of tacks to 11,000 ft., a long breath, and started to sort out the acid-drops and general clutter which had shot out of their pockets all over the cockpit.

Good for the Dart.

After this, the rest of the second leg was complicated, but relatively uneventful. It consisted of innumerable calculations of the effect on the wind of each mountain and valley ahead, so that course could be set for the most likely spot for the next upcurrent. The scenery below was of unsurpassed beauty: mountains, lakes, rivers, valleys, little villages, often clustered on hills under the shadow of a pinnacled castle or church. Then, out over the eastern mountain wall of the Perugian valley, over the turning-point on Foligno airfield—and, at 4,000 ft., into the unmistakable creamy calm and gentle lift of a wave.

I turned south and whispered for home at 40 knots. For 20 miles I flew, gaining height at half a knot, to 5,000 ft. over Spoleto, everything so quiet that it was not the Dart which was moving, it was the dreamy earth below which was being drawn silently backwards. I was not on the same planet as that which contained the fighting furies of Monte Corno.

So I landed at Rieti in a soothing frame of mind. Not so the next pilot of a M-100, who scrambled out of his cockpit, knelt down, and touched the ground three times with his hands before his team arrived to tow his aircraft in. I don't think any of the other pilots on that day took on my particular Gnomes of Corno, but they found plenty of other troubles of their own. But the hero—or heroine—of the day, to my mind, was Adele Orsi, a small and slight lady with the heart of a lioness. She got her Skylark 4 round the course, in 4 hrs. 38 mins. The "four" is perhaps the safest and steadiest sailplane in the world, but her very stability means hard work on the controls. Adele came in so exhausted she could hardly stand—but she came in.

To round off the day, we were all eating in the garden of the local hostellina when, in the pitch dark, at 20.45 hrs., a whistle overhead announced the arrival of the final finisher. He had arrived after the turning-point and landing observers had closed down. But he also had arrived.

STRUCTURE OF FUTURE BRITISH COMPETITIONS

By JOHN DELAFIELD AND IAN STRACHAN

(An abbreviated version of a paper addressed to the B.G.A. Flying Committee.)

THE problem is one of the increase in cost and complexity of the future generation of Open Class gliders, tending to put such machines out of the reach of the bulk of our present competition pilots. The 1966 West German Nationals illustrate a trend that will soon be seen in this country. This contest was in fact divided into Open and Standard Classes, and the really significant fact is that only 15 gliders flew in the Open Class, against a full complement in the Standard Class. After all, in this country Skylark or even Dart owners would hardly like to pit their machines against D-36's (as seen at South Cerney), AS-12's (production version of D-36), or the new BS-1. Another highly significant fact is that, had the two classes been marked together, pilots of the standing of Huth would have only been about tenth in combined placing. In previous years, before the advent of these new Open Class gliders, Huth had won both classes outright. The trend can already be seen in Britain with the SHK, and will become more pronounced when gliders like those already mentioned, plus the HP-14 and possibly the Sigma, arrive on the scene. Unfortunately, the bulk of British pilots will not be able to afford these new machines (the AS-12 is quoted at about £3,000), and they will have problems in syndicating such gliders due to the difficulty of finding other pilots of suitable ability and experience to share them.

The Aim of British Gliding Contests. We all enter contests to enjoy ourselves, and do this by extracting the maximum from the available weather on each contest day. We also wish to compare our performance with that of other pilots, and this implies that contests should be organised in such a way that all entrants have a relatively equal chance of winning, or at least of scoring high enough to advance up the Rating List. Surely, then, the basic aim of any contest (except, perhaps, W.G.C.—Open Class) is to produce a champion who is genuinely the best *pilot* of the meeting. Our scoring system goes to great lengths to do just this, and our rating system is also geared to the individual. Obviously we need to eliminate the glider's influence from the results as far as we can, so that the results reflect the *pilot's* performances.

Solution One—Handicapping. The most obvious solution to the problem is a handicapping system. Indeed the 1967 B.G.A. proposals include a "5% jump" system of handicapping for all contests except Nationals—League 1. The exclusion of League 1 is an anomaly and produces unfairness in lowering the rating points of pilots who happen to fly lower performance gliders. Handicapping should be universally applied or not at all. However, the big drawback to handicapping is that it will still not give a fair result if gliders of widely differing performance are flying in the same contest —but it should also be noted that the result will be a fairer reflection of pilot skill than if no handicapping were employed. For instance, an Olympia flying against a Dart would stand no chance of winning, even with a better pilot in the Olympia, handicapping or no; but the handicapped result would certainly come the closest to comparing the pilots' skills.

One argument that is always used against handicapping is that it is difficult to give a fair handicap figure, and that there will be endless bickering over such figures. Certainly we agree that we must not degenerate into a sort of gliding equivalent of the King's Cup Air Race, but we also firmly believe that any honestly thought out handicapping system is better than none at all, otherwise the pilots of the better gliders will always win. The advantage is always with the higher performance machines anyway, for reasons we specify later. Despite this, it obviously must be ensured that lower

performance machines do not win solely because of inflated handicap bonuses. With these thoughts in mind, we believe that a good system *can* be devised, for universal application in all our contests. 5% jumps, however, are too coarse, for we all know that a 419 is better than a Skylark 3, and that a Ka-6E is better than a Ka-6CR, but on the 1967 B.G.A. system it just doesn't show. We have therefore devised our own "2%" system which appears with this article. It is based on our own estimates combined with the Deane-Drummond and B.G.A. figures, combined with the principles stated earlier in this paragraph. It still does not entirely solve the problem of the future—how can we cater for the 463, Skylark, Ka-6 and Dart owners who will see themselves outclassed by the more fortunate (and not necessarily more skilful) owners of AS-12s and other more advanced types? This leads us to our next proposal.

Solution Two—Class Contests. In the 1967 Nationals we are going to list the Open and Standard Class results separately. This, although a step in the right direction, is no long-term answer because there is no mechanism for ensuring equal numbers of gliders in each class, and also because of the well-known anomaly that the Skylarks and other gliders are of Standard Class *performance* although not eligible to fly in that class. We have, in this country, missed the boat on Standard Class through not encouraging it enough.

"One-Design" contests have been proposed by some, but we believe that, whereas they may be the system for ten or twenty years from now, they are no good at the present moment because, basically, there just are not enough gliders of the same type to run such events. Also the thought of everyone being *compelled* to enter a particular Regional instead of one of their choice is distasteful, the application of the idea to Nationals is doubtful, and one influence would be to remove some incentive to improve British gliders.

To our mind, the answer is to go for class contests for gliders which are all within a certain performance bracket. For instance, flying Skylarks and Ka-6s together would produce a contest whose results reflected *pilot* skill. To extend the range of types, handicapping within the class should be used. We could now, with handicapping, fly SHK's with Darts, and even Skylarks; and in another competition the Skylark/Ka-6 group could be extended downwards to include 463s and other types. This proposal has the merit of being a system which would carry forward into the future as far as we can see it—unlike some systems based on span, cheapness or other considerations (e.g. the present Standard Class or similar ideas. See S. & G.—Dec. 1966, page 469). We believe that our system would work right now with the minimum of fuss.

Proposal. From 1968 onwards all British contests will be based on class flying, the classes to be of gliders of roughly the same performance. Within each class, a handicapping system would operate, using percentage intervals as fine as can be fairly determined (i.e. 2% jumps to start with).

The composition of each class would be determined by a B.G.A. official handi-

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cap list, which would be amended annually by the Flying Committee. The suggested basis for such a list is the present (5%) one, combined with a mathematical system similar to Tony Deane-Drummond's, together with sensible estimates from experienced competition pilots. A ballot could be held after each Nationals to see if pilots thought that any figures were in need of revision. The Flying Committee would obviously see to it that no wildly advantageous bonuses were given to the lower performance machines.

We envisage that the 1968 and subsequent Nationals would consist of about 40 gliders in an "Open" class, and 40 gliders in a "Restricted", "Sport" or "Club" class. The present Leagues would disappear but the new system would fit in easily with the Rating system for selecting pilots. Meanwhile the Regionals would cater for difficult class groups; for instance, the London Regionals one year might be "Open" class, whereas the "Northerns" would be restricted to gliders of handicap %, say 96% or more (i.e. "Sport" class, or 419/Ka6E and worse), and the Western Regionals to gliders of handicap 100% or more (i.e. "Club" class or Skylark 3 and worse). The proportion of classes in Regionals would depend on demand. There would thus be some restriction in most contests on the best glider that could be accepted, but we would not envisage any restriction on the lowest performance that would be acceptable except that exercised by the organising club committee.

A Skylark or even a 463 could fly in our hypothetical London (Open Class) Regional, but an AS-12 or SHK could not affect everyone's scores in either the Northerns or the Western Regionals. Organising clubs would volunteer to the B.G.A. in the previous year with their preference of class for their intended contest and the Flying Committee would ensure that a fair spread of classes was in fact achieved.

We propose that handicapping should apply throughout, even in the "Open" class. Some eyebrows may be raised at this, but remember that our aim is to let the best *pilot* win, and not just the best *glider*. Dart owners remember that the SHK is with us already, and there will soon be AS-12s and better types to compete with shortly. In any case handicapping should apply throughout in order to ensure that rating points are consistent between classes, and also to produce a standard system for all British contests.

Possible objections. It may be said that by restricting the range of gliders in a contest, the incentive to buy and build better machines will be lost, and that pilots will stick to obsolete machines when it is the good of the movement that new and better types are flown in this country. However, our intention is to keep such restriction down to an absolute minimum, and certainly not to anything like the extent of the advocates of "one-design" contests. Pilots will *always* want to own better machines, and our intention is that when the movement has progressed into a better performance bracket, more contests should be run to cater for that bracket. But we must never allow those with good fortune on their side to win all our contests, simply because they can fly the latest machines—they must be really made to *fight hard* to win!

The incentive to buy better machines still exists because:

(a) Pilots want to get the best out of the sport, and in order to complete Gold C's, Diamonds and to break Records.

(b) Even with handicapping, the higher performance gliders still have an advantage because:

(i) On days where thermals are far apart, the better gliders can sometimes just reach them, but the others don't.

(ii) The "speed squared" rule in contest scoring gives the faster gliders more points than they lose, because of any handicap. (The handicap is linear, the speed marks a squared factor.)

(iii) On some days the fast ships may *just* get home, but the others may have to land out and so lose their speed marks.

(iv) On marginal days, "X" is so much easier to reach with a glider with a superior glide ratio.

(v) The theoretical cross-country speed of these new gliders may well be pessimistic. This is because they can utilise the technique of spending very little time in circling flight, utilising most lift by just flying through it with wings level.

Conclusions. A basic re-organisation of British competition gliding is required if top level contests are to continue to grow, and if the Rating List and Regional Contests are to produce fair results. There will be an increasing need to cater for those pilots who are not able to fly gliders of the top performance at the particular time. The aim of any contest is to produce a champion who is the best *pilot*, not necessarily the pilot who happens to be flying the best *glider*.

The introduction of a form of class contests together with handicapping within each class will fulfil these requirements. There should be a limit in each contest on the best glider that may fly.

We firmly believe that failure to change the structure of our contests in 1968 will lead to a contraction of top-level competition gliding in this country, because those who cannot obtain the very best machines will tend to drop out. Let us all be warned and do something on the suggested lines now—before it is too late.

References: All from SAILPLANE & GLIDING.
The German Nationals—Last paragraph and results, Oct, 1966., page 350.
Glider Handicapping—Aug., 1966, page 260.
Report on the AS-12—June, 1966, page 179.
Technical Impressiveness—Oct., 1965, page 387.
The Diamant—Oct., 1965, page 400, and Dec., 1966, page 446.
The BS-1—Dec., 1966, page 452.
Championships and Handicapping—Dec., 1966, page 498.

The Chairman of the B.G.A. Flying Committee writes: As Messrs. Delafield and Strachan will be aware, the Flying Committee has for some months now been spending a considerable amount of time studying various possibilities for a new competition structure in 1968. Although their contribution to the discussion is welcomed it does not, of course, touch on a number of other quite fundamental related problems which have to be solved. We hope to be able to make some recommendations to Council on the subject within the next month or two.

Suggested Handicap for British Conditions

J.D./ I.W.S. H'cap %	D-Drummond Mathematical H'cap %	Sailplane	1967 B.G.A. H'cap %
?	?	Sigma	?
82	?	BS-1	
84	69	AS-12	?
86	75	D-36	
?	?	HP-14	
90	85	SHK, Diamant, Phoebus	
92	87	Dart 17	95
94	—	—	
96	92	K-6E, Oly 419, Foka	
98	97	Skl.4, Dart 15 (New) Osprey, Oly 403, 465	100
100	100	Skl.3, K-6CR, Std. Austria	
102	101	Dart 15 (old), Blanik (solo)	105
104	102	Oly 463, Blanik (2-up)	
106	?	Mucha, Jaskolka	
108	?	Eagle (solo)	
110	109	Skl.2, Eagle (2-up), Oly 401, Bocian (solo)	110
112	114	Weihe, Sky, Bocian (2-up)	115
114	?	K-7 (solo)	
116	?	K-7 (2-up), Capstan	
118	?	SF-26, K-8	
120	119	Oly 2, Meise	120
122	?	Gull 4, Swallow	
124	—	—	
126	?	Kite 2, Gull 3	125

NOTES:

The Deane-Drummond handicap quoted only applies to some of the gliders where there are several on one line.

The figures at the high-performance end are pure guesses as these gliders have not yet flown in this country, although all that would be necessary would be a few comparative glides with known types to give a more accurate figure.

Note that in the high-performance bracket we have followed the principle of not handicapping the new machines out of existence. Our figures penalise them less than do the D-D percentages which are derived mathematically. This principle is important if we are to encourage people to fly new machines, and yet at the same time give *some* help to those pilots less fortunate.

Comfort

(very important)



Pilot's comfort is very important when you buy a new glider. Make sure there is lots of shoulder width and space for tall pilots (think of the resale value). Buy yourself a DIAMANT and feel at ease in the semi-reclined position. You have an adjustable neck-and-head support (very important), adjustable pedals, adjustable ventilation, space for more instruments than usual and an excellent view. **New** for 1967: even more elbow room — more comfort.

15 meter	**New: 16.5 meter**	**New: 18 meter**
L/D 39, min.sink 2.0 ft/sec., delivery spring 1967	L/D 42, min.sink 1.8 ft/sec., delivery middle 1967	L/D 45, min.sink 1.7 ft/sec., delivery end of 1967

DIAMANT

Flug- und Fahrzeugwerke AG
9422 Altenrhein Switzerland

BOOK REVIEW

The Eye of the Wind: an Autobiography, by PETER SCOTT. Revised edition (Paperback), published 1966 by Hodder and Stoughton, London. Price in U.K. 6s., Australia 90c., New Zealand 7s. 6d., South Africa 70c.

THE first (hardback) edition of this book, published in 1961, was reviewed by Philip Wills in SAILPLANE & GLIDING for April, 1961. It had four more impressions up to 1963, and now this lower-priced version has five additional chapters. They include his recent trip to Antarctica, and flights to the South Pole, where he found the pressure altitude was nearly 2,000 ft. higher than the actual 9,180 ft. a.s.l., "because of the centrifugal effect of the earth's rotation on the atmosphere", so that sleep was difficult. Added to the gliding chapters is a short account of how he became National Gliding Champion; this is followed by one describing how, instead of staying in England to defend this title, he tried to win the America Cup. Each chapter is headed by a line drawing.

Needless to say, the book is very good value—especially at the lower price.

Jane's All the World's Aircraft, 1966-67. Edited and compiled by J. W. R. TAYLOR. Published by Sampson Low, Marston & Co., Great Missenden, Bucks. Price £8 8s.

IN its 57th year of issue this famous book includes a 28-page section on Sailplanes, brought up to date to 1st September, 1966. Sailplanes from 23 countries are included, starting with Argentina, where a research sailplane with an experimental wing, the DINFIA 54, has been built, and ending with the Yugoslavian Delfin. The French and German sections are particularly long and include one or two motorized sailplanes, but the Avion Planeur is properly treated as an aeroplane. The U.K. section includes the Osprey, Swallow, Capstan, Eon 460 series, the Darts and the new metal two-seater.

Meteorology for Glider Pilots, by C. E. WALLINGTON. Second Edition, published by John Murray, London. Price 35s. net.

THIS indispensable book first appeared in 1961 and was reviewed in SAILPLANE & GLIDING for August, 1961 by Derek Piggott. The main additional feature of this new edition is an extra chapter on how to construct Your Own Weather Map. This is done best by taking down the B.B.C. Shipping Bulletin on 1,500 metres, using an ingenious system of shorthand devised by "Wally"; from this one can construct a passable weather chart for a large area round the British Isles, complete with isobars and fronts. With practice, he says, "an early morning map can be completed in about ten to fifteen minutes—ready for use as the key to assessing gliding prospects for the day."

Incidentally, a series of these maps could be used for tracing any particular mass of air back to its origin in an attempt to assess its soarability.

As to the rest of the book, some minor details of met. routine have been brought up to date, but the main body of scientific information has needed no change. It still maintains its lead over its not very numerous rivals in other countries.

By the way, "Wally" has now been awarded the L. G. Groves Memorial Prize by the Air Ministry, in addition to the OSTIV Plaque which he received in 1965 "for outstanding scientific work".

A. E. S.

CORRESPONDENCE

NATIONAL LADDER

Sir,

So we are to have a National Ladder at last! Just when I thought the National Rating System was running out of ways and means to complicate the ways of deciding who wins a competition! Now we have a new system based on two systems operated by Bristol and Cambridge.

I'm sure they must have been devised by mathematics-loving gentlemen who compute each and every flight with log tables and slide rules. In short, do we *have* to have all these complications?

We are running our own Ladder in the club on a much smaller basis and very, very simple to compute. Two other points before I nip out and buy a computer:— (1) As there is no prize worth cheating for (and we are all honest in the gliding world), can't we take the word of the pilot with the Official Observer's signature to back him up? Ladder claims only, of course. (2) Do we *have* to have speed points? The championships are for that. A Tutor pilot would soon come to earth if he tried to fly faster than the Club Skylark, but he would probably fly a long way taking his time. Lastly, four flights are not enough; make it six.

If you want details of our motive and points system used in our Club, I'll gladly supply them and save hours and hours of calculating.

South Wales Gliding Club, 250 City Road, Cardiff. I. SHATTOCK, C.F.I.

The Flying Committee knows well enough it is worth striving for simplicity! However, you can go so far in that direction that you defeat your objective. If a "National Ladder" competition does not include speed tasks it will not be of interest to many "Club Skylark" pilots and the whole host of private owners. However, there is still plenty of scope for Tutor pilots. They *can* count their downwind distance flights (ignoring speed) and they can measure themselves against others who do the same.

At the time of writing, we know of six Clubs that will be running Ladder contests in 1967. Will any others who intend to, but have not yet advised the B.G.A., please do so as soon as possible? At the end of the season we shall welcome ideas, to improve the Ladder rules for 1968.

ROGER BARRETT, *Chairman, Flying Committee*

A CLUB FOR IMPROVING COMPETITIONS

Dear Sir,

After reading SAILPLANE & GLIDING for August/September, 1966, and particularly the article (with picture) on page 265, I felt you'd be interested in a rather unique club we have formed in Southern California and some of the accomplishments of the group.

The club I am referring to is the Southern California Competition Club, Inc. (popularly called S3C). It was formed a year ago as a result of years of talking about improving contests, contestants, and contest equipment. Paul Bikle was one of the prime pushers for action and nudged me into contacting interested people in So. Calif. The purpose of the club is fourfold: (1) to investigate the area of bettering ground support equipment for soaring contests (starting gates, turnpoint identification, etc.); (2) to increase the proficiency of pilots interested in competition; (3) to train personnel in the organisation and operation of soaring contests; and (4) to develop new organisational techniques for soaring contests. The group's operations are called "Workshops", with the number of such events determined yearly by the membership at the beginning of each year. The Workshop is conducted like a contest, using the U.S. Nationals Rules, but competition is limited to task-flying. There are no winners nor awards. Paperwork is kept at a minimum. A critique of the day's flying is held on Saturdays of the Workshop and it is used to iron out problems encountered in

the day's task as to operations and/or flying. The Contest Director for each Workshop is selected by the President from the membership, and each competing pilot is required by the By-Laws to serve in ground capacities at least once (two days or one weekend) during each Workshop year. The club is self-supporting—members pay nominal dues to learn and work.

During this first year of operation, the club has held four Workshops and its members have conducted the S.S.A. Region 12 contest (one method of selecting contestants for Nationals). One of the outstanding accomplishments is the development of an optical sighting device with such accuracy that an instant reading by the start and finish gate operator allows an immediate signal of "go" or "no go" to the pilot who has just crossed the gate. The device was first introduced in a Workshop, refined for the next Workshop, and since its refinement has been used successfully (and with many compliments) in the So. Calif. Regional, the Marfa, Texas, Regional, and the U.S. Nationals at Reno. The device could also be used for turnpoint identification if rules called for an altitude limitation around the turnpoint.

We are now working on ideas for positive identification at turnpoints, and experimentation will be made on a number of suggested devices or ideas to eliminate inequities now possible in the panel system.

In addition, the S3C has acquired equipment for contest operations, such as tow ropes, bulletin and briefing boards, take-off selection boards, etc., which are kept in a small trailer for convenience of transporting the items to different sites. These items were loaned to various contest groups last year, including the U.S. Nationals.

I believe our group will develop other items of benefit to soaring nationwide, in addition to increasing proficiency of pilots in competition and having knowledgeable ground handling personnel for contests. The interest in this organisation has been keen and we have over 60 members.

Lancaster, California.

JOHN W. WILLIAMS,
President, S3C.

IN DEFENCE OF PRIVATE OWNERS

Sir,

Whilst sympathetic towards Mr. Carey, whose letter you published in the October, 1966 issue, for his stand for a better deal for the solo pilot, we cannot allow his attitude towards private owners to pass without reply.

In the first place, whilst some private owners may be "obviously rich", there are others who are not. The scramble for club aircraft is such that anyone who finds it difficult to get to his club every day of every weekend at crack of dawn is at a serious disadvantage. In these circumstances, for many people, private ownership is the only sensible policy. Before dismissing the cost of private ownership as prohibitive for the ordinary person, compare, say, the cost of smoking 20 cigarettes a day (5s. per day, £90 approx. per year), saved over three years, with the cost of, say, a quarter share in an Oly (roughly £250 including trailer, parachute, etc.). Diamonds have been won with lesser machines. There are a fair number of machines of this sort of performance, which are privately owned, as well as the Darts and SHKs, etc., and we believe that a policy of "deliberately soaking" private owners could drive as many people out of gliding as those who are "obviously rich".

It is true that private owners often depend on other members to crew for them, but we have seen private owners helping club pilots, and, looking round our club, we can think of a fair number of private owners who do such things as voluntary instructing, trailer work for club aircraft, and many other contributions to the club as a whole. Oh, and on one or two occasions this year, we have had to put away club aircraft because there were not enough club pilots still on the site to do the job. Members of the gliding movement—whether private owners or not—must help each other if we are to keep going. Until someone invents a glider which rigs itself and tows itself out, we will always need a crew of three or four people per glider. Unless clubs employ paid crew (at enormous cost), we will always have to spend a lot of

non-flying time on the site. In this connection such devices as tail trolleys (which in a light wind mean that two people can tow out with a car instead of three) should cut down frustration time. In general, at our club, it seems to be the private owners who have taken the trouble to make them.

Private owners should not be deliberately soaked. They should pay the cost of keeping their aircraft on the site plus a reasonable margin for site improvement and no more.

C. M. ELSDEN AND PARTNERS
Basingstoke, Hants. Owners, Skylark 2 No. 229.

SOME COMMENTS

Dear Sir,

May I make a few comments about what appeared and what did not appear in your last issue of SAILPLANE AND GLIDING?

Firstly, Mr. Nicholas Goodhart's article on Gliding and Controlled Airspace. This suffers from a fault that I usually commit when writing a violently felt protest: it brings up points which are not strictly true or relevant, and thereby the reader who is opposed to the opinions being expressed gives all his attention to these points rather than to the really important and wholly revelant facts. For example:

1. Mr. Goodhart considers the case of the effect of controlled airspace on B-B collisions, but this will be of no concern to the officials who lay down the rules about controlled airspace; they are only concerned with A-B and A-A collisions, and who can blame them?

2. Mr. Goodhart states: "gliding . . . generates tenacity, determination, initiative, airmindedness" (I only wish it would do the first three for me) "and it is all spiced with a trace of danger. Do we want this for our young people? If we do, then it is essential that it is not controlled to the point where it ceases to provide the challenge which is so glaringly missing in much that is offered to young people today." This conjures up the picture of sixteen-year-olds in high-performance gliders weaving in between jets landing at London Airport and losing all interest in gliding if they are not allowed to get this spice of danger. Mr. Goodhart's opponents could say that more restrictions will generate more determination.

3. Is it wise to finish an article which is meant to persuade someone to your way of thinking by calling them a bureaucrat?

Is not statistical evidence based on a possibly hypothetical population the means by which Mr. Goodhart can back his points of view?

Secondly, all this business of handicapping and rating which seems to occupy a large amount of space in every issue of S. & G. Quoting from your last issue, you have 6,000 readers and there are 300 pilots struggling for a place in one National Championship. This seems to me to imply that only 5% of your readers are directly interested in the subject of handicapping. Have you considered that a fair proportion of the remaining 95% have still a long way to go before they have to bother with this subject?

As an alternative, I would like to suggest articles on the simpler aspects of gliding such as:

"How I decide which is the best place to go for lift and how I know where to find ridge lift", by P. A. Wills.

"How I know where I am when going on a cross-country", by Ann Welch.

And a reprint of: "The Elements of Gliding Flight", by E. G. Hart from The Gliding Book.

"What are the essential things to know and learn when starting gliding", by John Everitt.

I can see snags to the above titles, the first two being possibly trade secrets and the fourth being similar to one in S. & G. Feb.-March, 1966, but the third would be useful re-reading, even for the pundits.

Thirdly, Mr. Warren's sorrowful plea for more professionalism. He seems to regard it as an imposition that he has to do a whole day's work on the airfield just

to get one three-minute flight. Obviously he has not learnt one of the basic rules of gliding, that one takes anything one gets with gratitude and one cannot expect or demand a fixed return for one's efforts; this is self-evidently true in the air, and as it seems to apply on the ground, the acceptance of the latter produces the right frame of mind for the former.

I hope you will not regard this letter as critical of S. & G. because I do not feel that way about it — I am usually awake at 1 a.m. the morning after it arrives, still devouring its contents.

Stafford R. B. LARKINSON

CAPTAIN GOODHART writes: "The trouble is that although I am working on a highly technical problem, I also have my heart in it, and cannot always avoid showing it. But I do not let this affect the facts I am dealing with, and I certainly cannot accept the argument that officials should wash their hands of the B-B collision problem. A's must have their priority but, after all, B's are people too."

ROGER BARRETT WRITES: "I am sure Mr. Larkinson is right when he guesses that a minority of readers are directly interested in handicapping, class competitions and rating schemes. The number must surely be more than 5% however — what about all those crews for a start? And had Mr. Larkinson forgotten that handicapping applies in the Ladder Competitions which are open to any pilot who has permission to fly cross-country, i.e. pre-Silver C's?

"Whatever the figure may be, the Flying Committee knows only too well the *intensity* of interest these readers seem to have in anything that affects competitive flying. Hence the occasional column in the "Official Organ of the B.G.A." to explain just what one part of the Association does. We will try to keep it short!"

EDITORIAL COMMENT: The information asked for by Mr. Larkinson can all be found in books on sale by the B.G.A.—ED.

FOR FUN OR NOT FOR FUN

Dear Sir,

As a newcomer to gliding and a Swallow pilot I offer my script in support of the themes of Messrs. Fairman and Warren in your issue December-January, 1966/67. In the short while I have been gliding I have met not a few who agree with me and action begins with publicly expressed opinions.

But no criticism is implied against those who work most admirably to sustain gliding as it is now; they do so under difficult circumstances which must surely resolve themselves into a system enabling those who wish to glide to pay and do so with certainty.

Some fear change because it may mean an increase in fees, but what is the value of cheap fees penalized by many hours of wasted time and transport?

It seems that a professionally run organisation must be the answer that the goods may be delivered on demand; not a practicality with an amateur arrangement.

It is said that to succeed in business you must have know-how, and are assured supply of both raw materials and markets. In this case the two last are the same thing and require assessment, the foremost must exist.

Having said this much, one may ask: what are you going to do about it? And the fact is not much, as along with a lot of others I am not in a position to. But in writing this letter I hope to throw light on a potential that may be developed by the right persons or person, should they discover further and adequate support.

Gliding for fun. Doing anything for fun. There are two psychological groups, one needing a competitive spur for enjoyment, the other and more mature, able to enjoy itself free of self-imposed shackles. I belong with Mr. Fairman to the second group. I find that competition beyond the pint level spoils things. There is no doubt about the existence of the first group as witness the mass of relevant matter in S. & G., and you can't deny these persons their sub-hobby; they will do it, you can't get away from it. Just take no notice.

JOHN JEFFERSON (Non-Pundit)

HANDICAP V. CLASSES

Dear Sir,

I have followed the discussion about classes versus handicaps and feel I would like to add my four penn'orth. Ours is not the first sport which has been technically based and perhaps there is something to be learned from the way other sports deal with the problem of pilot merit versus superior equipment. In yachting the dinghy men have completely disintegrated into rival one-make clubs so that it is practically impossible to choose a national champion without regard to the boat he sails. However, there are probably as many contestants in any one class as we have in the whole of the gliding movement, so that individuals in the class (say) rally can compete amongst themselves with satisfaction — contrast this with, say, a Ka-6 class; although this is one of the commonest variety of sailplane, the individual would not be able to compete with above 30 or 40 others of the breed on a regular basis. This position is more nearly matched in motor racing, whereby individual manufacturers agree to produce cars to a different fashion (they call it formula) every five years or so. If this were agreed in gliding, there would be a cyclical stimulation to change the breed even if it did not actually improve it. The difficulties are that the late formula cars are as dead as the dodo; the technical advances within the formula necessitate a steadily higher purchase price so that eventually only the very rich or the works-sponsored drivers get a ride in the formula I car. (But isn't that exactly what is happening in gliding today?) Here I am not concerned with club racing (Junior League); here there is handicapping according to driver status *and* vehicle type within a class structure based on engine size. The snag is that if one car obviously has all the advantage, that class soon becomes exclusively occupied by owner-drivers of that marque — the boredom of an all-mini event has to be seen to be believed.

Competitive pedal cycling is classless and stereotyped and handicaps are the rule in all but national and international events. Horse racing is the prime example historically speaking of classes (by age) and handicapping of an individual horse and its rider (by weight). The computation of a race handicap with horses of different ages and jockeys of different abilities is pretty fearsome, but the results are rarely a foregone conclusion and even ARKLE can be beaten.

While not suggesting any final answer to our own problem, all I would like to do is to point out that in every sport in which man-machine combinations compete this dilemma is posed. Many sports are older than ours and many have solved their problem, and before we become committed to any one solution, I would like to see a committee study the methods of all these sports from fly-fishing to competitive kite-flying, to see clearly the pros and cons *in action* and not just in fantasy. There is still time.

London MICHAEL J. CONWAY

AWARDS

THE Air League has awarded its Founders' Medal for 1966 to Anne Burns for her achievement in becoming British National Champion and her consistent performance in the International gliding world.

A Tissandier Diploma of the Fédération Aéronautique Internationale has been awarded to Alan E. Slater, editor of this magazine and its predecessors, on the nomination of the B.G.A. who "feel that the international prestige of British gliding today is due in large measure to your enterprise and devotion to the sport, which is now more than 30 years old".

NEW RECORDS:—Mrs. Anne Burns, flying a Schweizer 2-32 at Colorado Springs, U.S.A., on 5th January, with Janie Oesch as passenger, reached an absolute altitude of 9,632 metres (31,600 ft.). This is a world feminine record, and a British National record, both overall and (for the first time) feminine, for absolute altitude in two-seaters.

On 1st January, likewise at Colorado Springs, Anne Burns bettered her British National feminine record for absolute altitude with 36,000 ft. in a 1-23.

In South Africa on 29th December last, Pat Beatty set up a world single-seater record for speed round a 300-km. triangle, 126 km./h., presumably in the BJ-3.

All the above records are subject to homologation by the F.A.I.

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DEMONSTRATOR Blanik, new in June, 1966, fully equipped with instruments. £1,850 duty paid. Peter Clifford Aviation Ltd., Oxford Airport, Kidlington, Kidlington 4262.

SKYLARK 3G, complete with everything from trailer, oxygen, horizon and two radios, to parachute, barograph and pencil holder. Owners regretfully becoming domesticated. C. of A. to end 1967. £1,600 the lot. Apply Southdown Aero Services, Lasham. Tel. Herriard 359.

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STANDARD AUSTRIA SH-1 (1964), with retractable gear, C. of A., in excellent condition, no instruments, with covered trailer (steel tube construction). £1,600 ex-works. Schempp-Hirth K.G., 7312 Kirchheim-Teck, W. Germany.

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OLYMPIA 463, March 1965. First class condition. C. of A. December 1967 with full instrument panel, including trailer and spare wheel. Approx. 100 hours. £1,550. A. Linee, The Willows, Annings Lane, Burton-Bradstock, Dorset.

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SKYLARK 3 complete with full panel, parachute, barograph, radio, "F" type canopy and Slingsby Trailer, all in excellent condition. Box No. S.G. 257.

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MIDLAND GLIDING CLUB requires instructor for full-time instructing to assist the resident instructor for the 1967 Course Season. Apply K. R. Mansell, 1 Westbourne Avenue, Birmingham 34.

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WANTED.—Back number Summer 1952 of "Gliding". Roger Meulemans, 36 Allées de Provence, Bruxelles 14, Belgium.

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OLYMPIA 2B or Ka-6 wanted (with or without trailer) for Cotswold Gliding Club. Excellent condition with '67 C. of A. imperative. Full details and price to R. S. A. Bunker, 6 Notgrove Close, Tuffley, Glos. Phone Glos. 29266.

Cash waiting for Dart, Skylark 2 or 3, or similar performance sailplane. Contact Thorpe Aviation Ltd., 177 Lincoln Road, Peterborough. Tel. Peterborough 68818.

WANTED. — Good 15-metre sailplane, Ka-6CR or similar. Details to Box No. S.G. 255.

THIRD MEMBER wanted; join syndicate owning superb Olympia 463, based Rearsby, Leics. Contact Price, Rolleston Drive, Arnold. Nottingham 264784.

FIFTEEN-METRE high performance sailplane required by Bath Gliding Club. Details to D. Barker, 39 Lucklands Road, Bath. Tel. 63524.

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PUBLICATIONS

"AUSTRALIAN Gliding" — monthly journal of the Gliding Federation of Australia. Editor Peter Killmier. Subscription $3.60 Australian, 30 shillings Sterling or 4.25 dollars U.S. and Canada. Write for free sample copy, "Australian Gliding", Box 1650M, G.P.O., Adelaide.

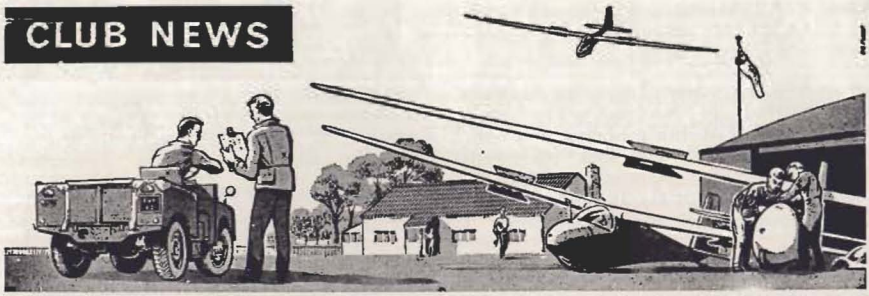
NEW ZEALAND "Gliding Kiwi". Official Gliding Magazine of the N.Z. Gliding Association. Printed October and alternate months. Write N.Z. Gliding Kiwi, P.O. Box 487, Tauranga, New Zealand. £1.0.0 Sterling for year's subscription (inclusive of postage).

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CLUB NEWS



WITH most clubs concentrating on the social side, and preparations for the coming soaring season at this time of the year, news is rather sparse, except from those lucky enough to have the occasional wave.

Contributions for the April-May issue should reach me by the 8th February. Owing to the Nationals, the June-July issue will be published early and copy should reach me by the 29th March at 14 Little Brownings, London, S.E.23.

12th December, 1966

YVONNE BONHAM (MRS.)
Club News Editor

BATH AND WILTS

RECENT flying activity with club aircraft has been confined to two-seater work with our newer members and the mainly one-a-week launch to keep their hand in for the solo pilots.

Some of the syndicate aircraft have ventured farther afield to indulge in a spot of ridge soaring. Gordon Mealing made an experimental dash to the shallow ridge above Erlestoke and found that it was working reasonably well in a north-easter. This means that we now have three ridges, two within the reach from a normal launch, which we can make use of when the wind favours any one of them.

For the first time we held a firework party on November 5th for the children of club members. I don't really know who enjoyed it the most, the youngsters or the adults, but I do know that quite a few of our lady members were lucky to escape without nerves completely shattered. The evening was rounded off with a party in the clubhouse for the "adult children".

Our first social occasion of the winter, which has become traditional, was the usual "Bring and View Evening", when members bring along their colour transparencies and 8mm. movies of the past season. As in the past, it was not the excellence of the photography which made the evening, but the unscripted, often ribald commentary, which accompanied the pictures.

We were privileged during our second social occasion to hear a talk by Peter Higgins, who went as a medical officer with the recent Sandhurst expedition to Ethiopia, and who flies with us whenever his duties permit. His colour transparencies of the expedition were greatly appreciated, but he steadfastly refused to recount *all* of his adventures.

Next season will see at least two more aircraft in the air over Keevil.

Eric Hales, who recently left the R.A.F. and joined us, has acquired Peter Scott's 419. He has spent a lot of time worshipping and polishing and praying for next season.

The Ralph Jones, John Thorne, Trevor Greenwood syndicate are off shortly to collect their new SHK from West Germany. We eagerly await its arrival and hope to see Ralph flying it in next year's Nationals.

K. N. S.

BRISTOL

AS the end of the season squelches to a close, we take little comfort in looking back. We did encounter some

wave over the river in early December, but 5,000 feet was the best height attained.

Colin Pennycuick is atop the Club Ladder and there seems considerable enthusiasm for the National Ladder Competition. We've enough high-performance machinery around us now to form our own Darts League, so we can expect the mileage to be well up next year.

There are some posters around the Clubs announcing the Western Regionals from June 17th-25th, but what they don't say is that these Competitions are once again at Nympsfield—we promise to be more efficient on the day.

To those flying-in we must warn that the North track on our field has been filled in, as it had become a foot deep in places, so please don't land on the new sown grass. Other site improvements are apparent and thanks are especially due to Bentley McCleod's fencing and trenching efforts.

The most apparent change on our site should materialise this year in the form of the new hangar which, though still on the drawing board, is now a viable proposition. Designed on an ingenious system known for short as "back to back and tip over apex", the reader is left to his imagination as to how it works. Nevertheless, we can tell you that it will hold 13 fully rigged gliders, any of which can be moved without disturbing the others.

Finally, to the Card Rating system. We've started this now since it's becoming impossible for instructors to know every pilot on the site, particularly as there are so many syndicates. Each pilot must carry his card, which is of differing colour according to his experience. We are not the first club to do this, but clearly it is worth while in the interests of safety.

R. G.

COVENTRY

HAVING reported in our last Newsletter that Shelley Curtis had joined us from the Mynd and become Assistant C.F.I., we now put on record, with pleasure, his promotion to C.F.I. of the Club, since Alwyn Findon, our past C.F.I., has reluctantly had to terminate his duties, due to intense pressure of running his own business. Alwyn has done a grand job for the Club during his year of office, and we are all sorry to see him vacate a post which we know places great burdens upon one's private and business life.

The busiest people in the Club at the moment seem to be the Social Committee, with the Christmas Dinner and Dance, Raffle and Children's Party, all having caught up with each other in quick succession. All were outstandingly successful, and thanks must go to everybody on the Social side who has helped with these events, and also to the kitchen helpers.

F. W. F.

DEVON AND SOMERSET

THE A.G.M. of the Club was held in the Church Hall, Hemyock on Saturday, 10th December. Some sixty members attended and were welcomed by the President who then presented the trophy for the best flying progress during the year to Ted Hayter. One honorary Life Member was elected unanimously for his valuable services to the Club. Various

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officers and members (not forgetting the ladies) were thanked for their hard work during the period of transition from Dunkeswell Airfield to the new site at North Hill, about which the members were later given financial details.

The Club endorsed the action taken by the Management Committee relating to the move and will now face the task of building a hangar, clubhouse and approach road. Flying from North Hill commenced about a month ago and the site offers exciting prospects for both ridge and thermal soaring, not to mention magnificent views from a place acknowledged to be a natural beauty spot.

Our new Chairman for this venture will be Francis Bustard and C. F. I. Owen Corsbie. Fred Breeze remains at Dunkeswell and is starting a training concern there of his own in which we wish him good luck. Courses will be held at North Hill this summer and applications should be addressed to the Course Secretary as advertised in SAILPLANE & GLIDING. Visitors will be very welcome.

A. E. R. H.

GRAUNCHESTER AND DISTRICT

YOUR scribe takes up his pen with pride to report steady progress. Here in the hut at Grauncheste, we feel that the time has come at last to let the rest of the fraternity know what we have been doing during the soaring season.

Alf Turnbuckle, who only lacks one leg of his bronze C, has now passed his air-law paper and thus has been unanimously elected C.F.I.

Hearty congratulations on gaining their "wings" are due to the following first soloites:— Harold (shortie) Longbottom, Gertie (anything you can do, I can do better) Longbottom, and (Wincher) Jim Cablethwaite. As to the latter, there were some doubts expressed about the normality of the landing, but at an extraordinary general meeting called to extricate the Cadet from the tree, a motion that the damage was superficial was carried with acclaim. The above three pundits are now undergoing a "crash" instructor's course prior to the long-awaited visit from the B.G.A. coach. By the time this missive is read; John Everitt will know just what stuff the lads and lasses of the Grauncheste and District Gliding Club and Sailplane Society are made of.

Our site is not without its problems. Situated as we are in the pulsing heart of industrial Britain, (another hub, you might say) finding a home was not without its difficulties. But thanks to the benevolence of our President, the redoubtable Major Todworthy of Todworthy Bros.—Gent's outfitters Grauncheste, Tel. Grauncheste 270, we have now come to rest on the side of what has been described as a refuse heap commanding a view over the picturesque Grauncheste Valley Water Co. emergency static reservoir (of which more later).

Our winch fleet, not being as powerful as it might, necessitates launching downhill. Up until this season, we have been landing in the same direction as take-off. It has been noticeable however, that on any but the most windy days, the gliding angle of our T-31 tends to be less than the slope of the hill. Unfortunately, the above-mentioned static reservoir is situated at the foot of the hill. We will leave our readers to draw their own conclusions, but suffice it to say that on the last occasion of a mishap to the Cadet (apart from the tree) the local boffin was heard to say "the reason why the Cadet is such a good glider is that it has a small wetted area." As might be imagined, the members of the Grounching Angling Society who cast their bread upon the waters which constitute our overshoot, were not entirely satisfied by the situation as it existed at that time. After a full and frank exchange of views, the Angling Society's Chairman, was taken for a spin by the redoubtable Alf. Unfortunately, it was a calm evening. As a result, the Angling Society have grasped our problems and have placed their punt "Ark Royal" at our service as a permanent rescue launch.

This year, we have taken to landing uphill. Unfortunately, the slope being what it is, an intrepid groundhandling team must be at constant readiness to prevent a recurrence of the aftermath of our first uphill landing attempt which resulted in yet another launching of the good ship "Ark Royal"—Alf at the helm.

Talking of Alf, his marriage to our very own Ethel of tea and wads fame has

been blessed with issue. "A split-pin of the old castellated nut" says Alf. All the members would like to take this opportunity of wishing Alf and Ethel many more hours dual (haha).

A special event occurred the other week when Wally Kahn of Lasham fame quite literally dropped in after the centre-section fairing of his Dart came adrift in flight. "Could have happened to anyone" quipped Wally. While waiting for his crew, we inveigled Wally into giving an *ad hoc* talk on "Getting the best out of your Cadet". During the animated discussion which followed, we took advantage of the opportunity of expressing our own theories based on our unique experiences. Seriously, though, Wally, we enjoyed the chance of crossing swords with you.

Only two items of interest remain. Exciting plans are under way to bring a tug to our site every second Saturday during the season as soon as the arrester hook problem has been mastered.

Not unconnected with this venture is our scheme to support the B.G.A. in their search for new sites for Regional Competitions.

Why don't you come and match your skill at the King of Sports next August? Look out Lasham, we may make you a turning point.

W. A. R. N.

KENT

CONDITIONS recently have been somewhat cold, wet and distinctly muddy, and we have accordingly been pleased to make good use of the ridge in south-westerly wind conditions and, as always, when cloud base has permitted, aerotows have been popular.

Another syndicate with a Ka-6 has been formed, bringing our total of privately owned machines to eight; the Swallow syndicate has just purchased a 463 in replacement for their machine recently sold to the Club.

Our Annual Dinner was a crowded success. During the evening the following were presented with cups for their achievements: Dave Brown, longest cross-country; Mike Honey, longest first cross-country; Glyn Richards, winner of the Club's triangle race; Roy Hubble, Instructor's Cup; Robb Judd, ab-initio.

The "SHK" sailplane, which has been in series production since 1965, has quickly become recognised as a top class, high performance sailplane. After being placed third in the World Gliding Championships at South Cerney in 1965, it has followed up by gaining second place in the 1966 German National Competition and took first place in the 1966 National Competitions of the U.K., Switzerland and Italy. The successful pilots in these competitions have all agreed that they have been greatly assisted, not only by the excellent performance of the "SHK", but also by its good flying characteristics, its manoeuvrability and comfort.

The 1967 model of the "SHK" has several further improvements. It has a larger cockpit with a new adjustable backrest which will accommodate any kind of parachute. The seat and floor are formed by a moulded fibreglass shell which affords more comfort and protection. The ventilation has been improved and is easily adjustable. A braking parachute in the tail cone is included as a standard equipment, and this, in addition to the Schempp-Hirth type metal airbrakes, gives additional safety for landings in difficult terrain and for cloud flying.

Gliding Clubs are realising that the "SHK" is an ideal cross country sailplane for their less experienced pilots. To be able to stay up, even in weak thermal conditions, means a maximum of annual flying hours.

Today the "SHK" is an advanced and well-proved sailplane and can be offered at a fair price due to large series production. A well known service is guarantee by experienced engineering and skilled labour at this company.

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During the summer months Glyn has been in great demand to give aerobatic displays at local fetes.

So many fireworks were available for Guy Fawkes' Night that the festivities spread over two evenings. Finally, on the social side, we are pleased to congratulate Mike Wilson and Ann Buxton on their recent engagement.

After a successful year, we now look forward to 1967 and we are already receiving bookings for our courses.

R. W.

LAKES

THE year-end sees a change of executive which we feel should be reported in these columns.

Jill Gillett has undertaken to relieve Rosalie Allen of much of the secretarial work and becomes the Club's Assistant Secretary. Elma Hoole has handed over the duties of Treasurer to Brenda Warburton, and Peggy Huck, who resigned as Social Secretary, has been succeeded by Thelma Carr. Rosalie, Elma and Peggy will be well known to our friends, for they have filled their appointments with distinction for a number of years. We are grateful to Rosalie for continuing as Secretary for a little longer and acknowledge the sterling work which these three have undertaken for so long.

Our flying has been curtailed by the Walney monsoon and there is little activity to report, but the time has been put to good use in the hangar. Plans are in hand to encourage a more competitive spirit in the Club and we look forward to a summer worthy of the name.

F. G. R.

LONDON

1966 has been a record year in our operations. At the end of November launches had exceeded 19,000, and hours about 4,500. Both these figures were well in excess of any previous years. Cross-country flying was not outstanding, however, good days being few and far between.

There have been some solid achievements on the ground as well, one of which is our garage. After many years of willing and unwilling slave labour, it is now complete. Rome wasn't built in a day, and the Parthenon took ten years. So did our garage! A monument to perseverance! Our Transport Committee, headed by John Argent, are now happy constructing a third super winch, assisted by an impressive array of equipment. One of these items is a fiendish machine slung from the beams which looks like a jet engine, and provides heat for frozen bodies!

The Club fleet underwent a major reduction in number of types by 1965, now consisting of Prefects, Olympias, a Skylark 3, T-21's and a Capstan. We now visualise an even greater reduction to two-seaters only, and one particular glider which fits the requirement of training to advanced flying is the Ka-13. We have one on order, and we may eventually have nothing else.

We have other plans under way aimed at increasing our flying, one of which is to increase our airfield size even more. Six winch lines is our next target, as well as four tug aircraft. It'll most likely take two or three years to reach this stage.

In contrast with the expansion programme, there are ominous rumblings and black clouds on the horizon. The authorities who see fit to swallow up more and more air space are now threatening the whole gliding movement in its activities, and unless common sense and reason prevail we shall find ourselves far worse off as compared with our Continental colleagues. This Club will be 100 per cent. behind the British Gliding Association in its struggle for reasonable freedom of the air.

M. P. G.

NEWCASTLE AND TEESSIDE

SINCE the last club notes were written, the weather has been singularly unkind to us at Carlton. It seems that week-end after week-end has been unflyable for one reason or another, whilst soaring winds and waves have been observed frequently during the intervening week-days! We have also had more than our fair share of rain and wind. The site has become very sticky in places, and moving the 'bus winch about is a somewhat hazardous business. A recent force 10 gale threatened to blow the very grass out of the ground, but settled for demolishing a good part of

our new workshop, partly demolishing the old tin hut, and provoking a fight between the Dart and Skylark trailers —it looks as though we are destined never to get that workshop into commission.

On one occasion, however, the weather man got his days mixed up, and provided us with a soaring wind at the week-end! This cheered us up appreciably and the air was quickly filled with gliders of assorted types. It was also the signal for our youngest flying member, Ray Beezer, to solo. In fact he was so taken with the idea that he completed qualifying flights for his A, B and C certificates on successive launches, thus setting a record for the Club which may be equalled but which cannot be beaten.

On the social side, the customary events of the long winter evenings are proceeding as usual. The customary round of C's of A are in hand and private owners are already laying their plans for the next soaring season. Roll on the thermals!

B. W. B.

R.P.E. (WESTCOTT)

INSPIRED by the formation of CISAVIA back in 1964, a group of enthusiasts at the Rocket Propulsion Establishment at Westcott decided to investigate the chances of starting a gliding club.

We were fortunate in that, although much of the Westcott airfield has been built on since its operational days, there are still several usable grass areas and two quite respectable runways. Could we use them? The answer, in due course, was "Yes".

CISAVIA were very helpful with information and advice and, when the time came, the loan of their Kranich on contract hire. It was aero-towed in on 23rd October and has flown every week-end since.

Launching is by F.100 tow car and heights of 1,350 feet have been achieved. Exploratory flights over the low hills near the airfield have contacted weak lift in light northerly winds and 8-minute circuits are quite common.

Shortage of instructors restricts our activities to 2 or 3 hours on Saturday afternoons and 5 or 6 hours on Sundays, in spite of which 150 launches have been achieved and one pupil has gone solo (he already had a C but had not flown for 10 years).

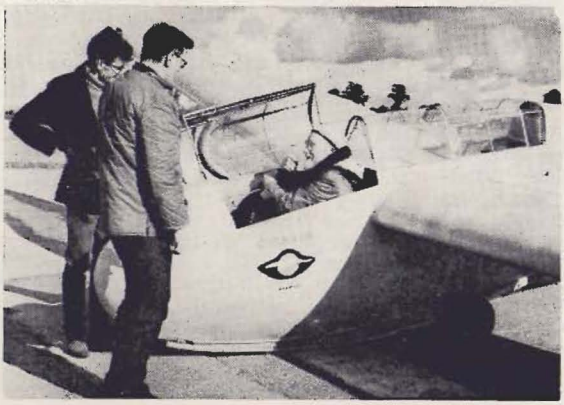
Needless to say, C.F.I. Derek Godfrey has to work very hard, and it is not unknown for the retrieving party to include his wife, Jean, carrying a bowl of hot soup for him to eat while the next pupil is being bundled into the front seat.

With an eye on future needs, we have been rebuilding a Grunau Baby 3, but are held up until we can locate a supply of Polish Pine.

Our membership (restricted, unfortunately) has passed 40 and is still growing.

To those members of other clubs and organisations who have helped us to get off the ground we tender our sincere thanks.

R. E.



Godfrey Harwood in the Kranich just delivered to Westcott. Standing by: Malcolm Paul, Chairman (left) and Roy Exell, Hon. Sec.

SCOTTISH

THE wave continues to operate from time to time—mostly mid-week—but in spite of this several flights of above 9,000 feet have been logged. And on a recent week-end, while a gaggle of five gliders were wave soaring over Loch Leven at 15,000 feet, a south-bound airliner—a Viscount—passed below them, about 200 feet nearer Mother Earth. We are sure that, somewhere around, there is an airline skipper who has been called a liar in his bar parlour.

In contrast, the hot air which has been bandied about concerning the expansion of the airfield through the purchase of adjoining farm land has reached white heat, and a decision should be arrived at soon.

This depends upon the ability of certain members to pick the pockets of certain public funds. Many gliding groups in Central Scotland now operating from time to time at Portmoak are sniffing around in the hope that this can become a centre in a miniature form of "the Hub".

Some aerotowing with an ultra-short tow rope has been seen—the advocates are now trying to think of a safe method of hitching the nose of the glider straight on to the tail skid of the Tiger. "PORTMOAK BASE" is now on the air—and the searchers for wave can often be helped by radio means to track down the most desirable areas of lift.

The club members who believe that gliding is worth working for are hard at it on several projects. The standby petrol winch is being remodelled to be "cable laying" like our diesel one. The latter has now been fitted with a cartridge operated guillotine. Trailer building and repairing has its addicts. The Tiger hangar—resplendent with its new sliding doors—gapes into the west wind—ready at any moment to prove the fact that, on the lift here, one can soar on a corrugated iron roof.

The surfeit of two-seaters at Portmoak has made it necessary to increase the number of P.1's in such craft, and there are many competent members now enjoying this responsibility.

We hope that Roger Neave's Diamond gain of height with us, 19,500 feet, will take the De Havilland Trophy for 1966—making a hat trick for Portmoak. Two Diamonds for home grown pilots have also been added to the list.

On the social side, the haggis bashers still cavort on Saturday evenings to entertainments involving a variety of novelties—from Scottish Country Dance to Pyjama Parties.

M. B. R.

WYCOMBE GLIDING CENTRE

OPERATIONS are in full winter swing. But despite the rain, the mud, the fog, the frozen hands and feet, flying continues.

Now we are getting ready to face next season's challenge from what we hope is a position of strength. Our new Super Cub is in the air towing with an efficiency and reliability hitherto undreamed of. This has given us the opportunity of experiments for a short period with a system of all aerotow training. Using three Ka-7 gliders for both basic and advanced training, we have kept the winches and the T-21's firmly off the field. How this will have turned out by the end of December is anybody's guess. Certainly the problems and situations that have already come up have been enough to keep conversation in the bar at a highly animated level. A great deal of give and take is going, with perhaps a shade more take and a fraction less give than had been anticipated. However, while some talk, others do fly, and perhaps that is the best way of keeping everybody happy.

The number of gliders waiting for the soaring season has now reached a very healthy total. Quite apart from the training centre—three Ka-7s, two T-21s, two Swallows—the Airways Flying Club have their Ka-6 and the Olympia 2B, and the Thames Valley have a Skylark 3 and another Olympia 2B. The Post Office Olympia 2B is back in the air and, if some of the plans that various members are making come to fruition, then our fleet of private syndicate aircraft should be quite impressive by the beginning of the season.

In the meantime we may get frozen, frustrated and fed up, but none of us is likely to get bored before the season starts.

R. W.

SERVICE NEWS

BANNERDOWN

AS we said last year, we are at this time always torn between waiting for the G.S.A. statistics and publishing in time to send good wishes. However, the S. & G. deadline must be met, so our annual review will be confined to the comment that generally the year has not been as sparkling as we could have wished, but this has been the experience everywhere. Nevertheless, we had one important highlight—Bannerdown's first ever British National and U.K. speed record achieved by the Willson-Daniels Blanik back in May, when they all rushed round a 300-Km triangle at 55.5 Km/h. The other day we saw the certificate, a most elegant scroll with typography and script letter of olde-worlde form, but beautiful for all that.

The new G.S.A. year has for us started reasonably well with 374 launches for 35 hours in the October period. Sometimes it is the fashion to record that thermals ceased on such and such a day but, since hope springs eternal, we will not do this, and in any case we are delighted to record that for the first time since the club formed we seem to have established a reasonably productive ridge and a workable system. So much so that Bruce Coutts and Bob McGinn both sat out five hours a week or two ago, thus advancing their Silver legs and giving us an excellent start in the 66/67 league table. These achievements have set the lads by the ears and week-end sorties are being planned in odd corners of the clubhouse, which is a good thing, because we all lack ridge practice. In the meantime ab-initio and advanced "cards" have been established in the bus and instruction proceeds normally—witness an entry in a certain lady member's log book (which recently fell into our hands), "four loops in succession with 'X'—FAB!"

Recently we had the great pleasure to welcome our one and only John W., who left Locking in bright sunshine ready to conduct a cat. test, only to finish the last road mile or two to Colerne on instruments to find almost automatic landing conditions on top. P. H.

CHILTERNS

STATISTICS will show (we think) that the soaring year 1966 has been a poor one.

The following club trophies have been presented:— Flight of the Year Trophy: to Doug Bridson, C.F.I., for his spectacular Battle of Britain aerobatic display in a Slingsby Dart. Novice Trophy: to Alan McClune for the best all-round progress during the year. Member of the Year Trophy: to deputy C.F.I. Barry Nowell for the second year running, for his dedication in both instructional and technical fields. Clanger of the Year Trophy: to Cliff Brookfield, for his Silver distance attempt. Distance 0.5 km.!

With his promotion to Squadron Leader, Doug Bridson has moved on to new pastures. We wish him every success in his new appointment at R.A.F. Thorney Island. Bill Maltby has also left us and is now C.F.I. of the Aden Services Gliding Club. New faces on the instructing staff are Con Greaves, the incoming C.F.I. and Andy Price, a recent arrival from R.A.F. Germany.

Our fleet is in fine fettle for the magnificent soaring season that 1967 promises to be! The SF-26 has been replaced by a Bocian which has been well utilised during the winter as an advanced trainer.

A. C. P.

FENLAND

APPROXIMATELY 40 members attended the A.G.M. held on the 28th October, and heard the C.F.I. report that the club had passed last year's total for hours and launches and nearly doubled our cross-country mileage.

The following committee were re-elected: Secretary, "Mac" McMillan; Assistant Secretary, C. Flogdell; Treasurer, G. Barrell; A/C Member, D. Keech; M.T. Member, T. Weldon.

The Fenland Cup for the longest cross-country flight was awarded to Hank Hancox for his Diamond Goal flight to Uppottery, and the Member's Trophy for the member making the most progress during the year went to M. Wilton-Jones.

After some months of uncertainty the club has moved to R.A.F., Marham, Norfolk. We all look back with regret at leaving Feltwell after two fine seasons there. However, we are now established

at Marham after a grand aero-tow "fly-in", and it is business as usual again.

The full address is Fenland Gliding Club, R.A.F., Marham, King's Lynn, Norfolk, and the Secretary, Fg. Off. McMillan, can be contacted Monday to Friday on NARBOROUGH 261, extension 361.

R. G. J.

R.A.F.G.S.A. (BICESTER)

ALTHOUGH the number of flying days in 1966 was down on the previous year, launches came to well over 19,000, cross-country mileage was nearly doubled and flying hours totalled over 4,000. It was not such a notable year for individual achievements, but two are worthy of mention. Under difficult conditions Ron Powell did a Gold C out-and-return to Yeovilton, and Con Greaves made sure of his place in the 1967 Nationals by winning the August competition. Lou Costello received the annual award for the outstanding novice, and Dick Dawnay again took the Cup for his continuing good work on the ground.

The programme this year includes an expedition to Nympsfield in April, and task weeks in June-July are an innovation. The range of gliders available at the Centre in 1967 is most impressive and will adequately cater for pundits and beginners. Given the weather, this could be our record year.

A. E. B.

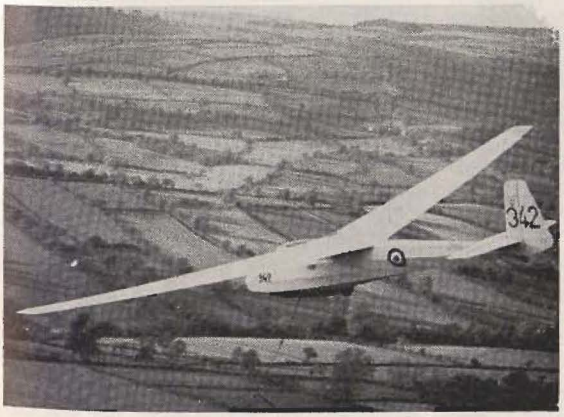
WREKIN

AS with most clubs, our tempo is slowing a little towards winter, but we haven't completely stagnated. John Williamson arranged an expedition (labelled "Mynd Madness") from the Mendips and Moonrakers to the Long Mynd, by courtesy of the Midland Gliding Club. He very kindly offered to have a few of our members along, so our SF. went up to brave the rain. We were fortunate one day, when Harry Oxer got his 5 hours, and Malcolm Allison his Bronze duration from a bungee. After this, Pete Purdy took the SF. to Portmoak in search of wave—unsuccessfully—though he did get 9 hrs. soaring in 7 launches, on the ridge.

At the A.G.M. we found we'd achieved 5,478 launches and 485.52 hrs. since we started operating at the end of February, until the end of November—of this we are quite proud! Hamish Brown got the ab-initio prize, and Tim Gormley the award for the best apprentice performance.

Our site-mates, No. 633 Squadron A.T.C., with whom we have close and friendly relations, tell us they have comfortably reached their target for the year —our congratulations to them.

Recently the club took another step up the performance ladder, aircraft-wise, with the arrival of a Skylark 3F. So we all have something to aim at now, and are hogging the hours to get enough to



The Wrekin K-7 bungied from the Long Mynd.

be considered for a conversion to join the select few!

The future—we have a Christmas Expedition arranged for a dozen members to Leeming, in hopeful search for the Pennine waves, or some ridge soaring for more duration "legs". May they, and all our gliding friends, have a happy New Year, with bigger and better thermals!

H. F. O.



We would be pleased to receive news for this section from every country in the world where soaring is done.—A. E. SLATER, *Overseas News Editor.*

ARGENTINA

AN experimental laminar-flow wing has been fitted to a Conder 4 two-seater fuselage and the resulting machine is known as the DINFIA 1A 54 aerodynamic research sailplane. The wing has a thickness/chord ratio of 18%, and the pressure gradient should allow laminar flow over 50% chord on the upper surface and 80% of the lower surface. The aspect ratio is high at 17.55, with a span of 62 ft. 4 in. (19 m.). The outer halves of each wing have a dihedral angle of 3° except at the tips, which are turned downward. The chord in the inner half of each wing is constant at 3 ft. 11¼ in. (1.2 m.), and 2 ft. 7½ in. at the tip. The wing is single-span, all-wood, covered with plywood, except for metal air-brakes on the trailing edge. Empty weight 750 lb.; max. flying weight 1,190 lb.; max. wing loading 5.39 lb./sq. ft. (26.3 kg./sq. m.).

The design of the machine was started in August, 1963, and construction of the prototype began in October the same year. DINFIA stands for Direccion Nacional de Fabricaciones e Investigaciones Aeronauticas.

NATIONAL CHAMPIONSHIPS.—These will be held from 29th January to 12th February at Pehuajo, 300-km. west of Merlo.

AUSTRALIA

STATISTICS of Australian gliders as at mid-1966 have been issued by the Gliding Federation of Australia. There are 179 on the register, made up of: single-seaters, high performance 46, low performance 61; two-seaters, high performance 24, low performance 48. Clubs own 123 and private individuals or groups 56. The Schneider firm has provided 82, and 43 were imported and 54 home-built.

Gliding certificates for the year ending 31st March, 1966, showed a large increase over previous record years (given here in brackets):— A, B and C together, 171 (123 in 1962); Silver C, 58 (51 in 1964); Gold C, 30 (16 in 1964). Yet the total number of members of clubs applying for subsidy was the same as in the previous year — 1,572.

QUEENSLAND WAVE.—Little wave soaring is done in Australia, according to Ian Aspland, who contacted a wave set up in Queensland by the Bunya Range last July in a Mucha. He climbed at 1 m./s. from 6,000 to 9,000 ft. in what was apparently the second wave, but was un-

able to reach the first wave, which was marked by a lenticular, through the intervening sink. He asks if this is the first wave flight in Queensland.

Malcolm Jinks writes that wave clouds at 20,000 ft. or higher are to be seen over the Flinders Ranges in the north of South Australia, and he has heard of a glider flight to 14,000 ft. there which was broken off only for lack of oxygen.

PERMANENT COMPETITION NUMBERS are now being allotted after an A.G.M. decision, and 47 Australian gliders have them so far. No. 1 goes to Marjorie Pegler's K-6. Nobody wants No. 13.

Australian Gliding

AUSTRIA

HEIGHT DIAMONDS "fell like ripe plums" at Innsbruck on Sunday, 16th October, 1966. In the early morning 40 sailplanes were already waiting to start, 30 of them having come from Germany; the Hamburgers had made the longest trek. Lift extended from the Dachstein to the Glungezer. By the evening 18 pilots had their Height Diamonds (5,000 m.) and several their Gold C height (3,000 m.). The greatest height registered was 8,700 m. (28,543 ft.), and a woman pilot from Stuttgart, Brigitte Keller, made 5,700 m. (18,701 ft.). Innsbruck will be closed for "Foehn flights" until 15th March, 1967, or until the airfield is free of complete snow cover.

Fritz Raderer, of Saltzburg, is the 17th, and Dr. Alf Schubert the 18th, Austrian pilot to complete all three Diamonds.

Austroflug

BELGIUM

THREE Days of Gossoncourt was the name of the last competition of the 1966 season, organized jointly by the Milan and Diest Aero Clubs and the Air Force. Twice round the course Gossoncourt-Temploux and return (144 km.) was the task on Friday, 9th September. In anticyclonic weather no one climbed above 650 m. (2,150 ft.); 5 of the 8 starters reached Temploux (30 km.) and one, M. Bluekens in a Ka-8B, got 8 km. of the way back.

By Saturday all 13 entrants had turned up for a 78-km. out-and-return Bierset. With a cloudbase at 500 m. above ground, three got away, of whom M. van Assche in a Ka-6CR reached Bierset at 1,000 m. and got 15 km. of the way back.

On the Sunday, all but two got away on an out-and-return Temploux with lift extending to only 600 m. Henri Stouffs in a Ka-6CR was the only one to reach the turning-point. Van Assche won the competition with 942 points and H. Drory, with a Zugvogel, was second with 707.

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CANADA

IT is time to look back on the activities of the past year, to see what lessons can be learned from its experiences.

In Canada, 1966 has undoubtedly been a year of growth—as, in fact, is any year. It has not always been painless growth, though, as in the case of the Southern Ontario Soaring Association, who operate near Toronto and who have built an entire base of operations during the year—hacking a runway out of land hardly suitable for farming, building a hangar and building a clubhouse. This follows the club's move from its former base at Brantford, Ont., late last year.

Another painful expense has been borne by the Montreal Soaring Council, who operate from Hawkesbury, in the extreme eastern tip of Ontario. Their clubhouse was consumed by fire last December (1965), and has now been replaced with what must surely rate as one of the finest soaring club headquarters in the country, if not the best.

The year has seen some four names added to the list of clubs in the country, and although membership numbers are not yet available, it is probable that the

total increase would be of the order of 8 to 10%.

The sailplane fleet now numbers some 170, and ranges from the wartime TG-2 and 3 (The Bomber) to the SHK, with the more sophisticated types such as AS-12 being on order for several pilots. The question is whether the last-named will be eligible for type certifying, with indications at the present that it will not. Home construction is quite widespread, and the most popular design is the HP-11, a Dick Schreder design. Its popularity is due to it being practically the only design suitable for home construction in metal, with an acceptable performance level. There is no doubt that metal is the desirable material.

On the flying side, the good warm season we have enjoyed this year, extended by a spectacular Indian summer, has given most clubs a useful increase in numbers of flights—some clubs were still flying early in December!

ONTAERO

CZECHOSLOVAKIA

NINTH SLOVENE CHAMPIONSHIPS. — These were held at Nitra, 42 miles E. of Bratislava, in July, with 32 sailplanes competing. Tasks were: 129 km. triangle (winner, Wala at 62.42 km/h.); 103 km. triangle (Koprna, 63.4 km/h.); 100 km. out-and-return (Dobrovic, 40.25 km/h.); 103 km. triangle (Dobrovic, 45.61 km/h.); same task (Wala, 43.52 km/h.); 200 km. out-and-return, not completed (Holly, 183 km.); 300 km. triangle, not completed (Lajda, 275 km.); 103 km. triangle (Kerepski, 56.69 km/h.). Leading totals: Ing. T. Wala, 5,870 pts., K. Kerepski, 5,797, Ing. J. Saban, 4,437.

Letectvi

JOHN HULME
Swaffham Road,
Bottisham, Cambs.
Phone: 323
for
REPAIRS, C of A's, OVERHAULS, and T.21b. HIRE

DENMARK

DANISH records of 7,100 m. height gain and 9,195 m. (30,166 ft.) absolute altitude, set up by Klaus Wiese Nielsen flying a Schweizer 2-32 in the United States on 29th June last, have been recognized.

Flyv

EAST GERMANY

SIX pilots went to Jelenia Gora in Poland (formerly Grunau) for a course in wave-soaring: Fredy Voss, from Leipzig, Manfred Iltsche and Irmgard Morgner, from Dresden, Günter Schütze, from Gera, Rudiger Karisch, from Schwerin, and Klaus Körner, from Frankfurt/Oder.

Aerosport

FRANCE

SILVER AND GOLD.—From 1st January to 15th October 101 Silver C certificates were issued, of which 31 holders were under 21 years old. Gold C's issued were 29; no holders were under 21.

INTERNATIONAL MOUNTAIN SOARING COMPETITION.—This event, which was held for the first time last June (see S. & G. Oct.-Nov., p. 416), turned out to be *"la plus belle manifestation vélivole française pour* 1966". Because of the encouraging results, and at the request of the participants, the organisers have decided to renew this event in 1967. It will take place at the aerodrome of Vinon-Verdon from 17th to 25th June. As an innovation, it will be open to two-seater sailplanes as well as single-seaters.

It will be open to pilots with the equivalent of the Brevet de Pilote de Planeur, who have had competition experience and have a good knowledge of mountain soaring. The entry fee is 250 F. (about £18). The number of competitors is limited to 30. The tasks, which will be for speed, will be set in the framework of the Southern Alps.

To facilitate the tasks of the organizers, interested pilots are invited to write in the first place to the Siege Social of the Association Aeronautique Verdon-Alpilles, 19, Route Nationale de Saint-Antoine, Marceille (15e), France. All

additional information on this meeting will be given them as soon as possible.

M. MARCY, President.

BEZIERS.—At this centre four Diamond altitudes have been flown in the past two years. Absolute altitudes reached were 10,700 m. (4,104 ft.) by Auban in Breguet 901s, 10,400 m., 7,200 m. and 7,000 m., all in Breguets.

COW COEFFICIENT. — Discussing the marking system which gives a pilot just short of the goal 0.7 of the marks he would get for landing there, Roger Klein calls this figure "Coefficient 'Vache'" ("Aux Vaches" is the French term for a field landing.) Klein argues for raising the Coefficient Vache to 0.9.

Aviasport

HOLLAND

A general briefing on wave-flying was held at Terlet at the beginning of the winter season and a short time later a group of about eight set course for Innsbruck. They arrived just after a strong Föhn period and only two booked results. Rijk Bruinissen gained a Diamond, and Ernst Sanders, after about 30 years of attempts during which he once lost a Grunau-Baby together with the barograph record while inside a cunimb somewhere over Africa, climbed high enough to complete his Gold C.

The Dutch Aero Club has purchased two Ka-6E's for the training of top pilots and to enter them in international contests. Delivery is expected in March and it is probable that Ed van Bree will fly one of them in the next Nationals.

With the new workshop at Terlet nearing completion the accommodation problem for gliders will, to a large extent, be eliminated. Aerotows will also be available on a much larger scale than hitherto.

The *Instructor's Handbook*, published early in 1966, was discussed at the Instructors' Conference held on the 20th November, 1966. The conference was attended by over 70 instructors from all over the country. Proposals for changes in the glider-pilot-licence requirements were given to the Civil Aeronautical Service.

A Gliding Art Exhibition will be held from the 4th to 18th March at the Royal Academy of Art in the Hague.

J. Th. v. ECK

HUNGARY

A Polish Wilga-3 tug has been presented to the Hungarian Aero Club and has been giving demonstrations of aero-towing, of both single-seater and two-seater sailplanes, at Budapest/Ferihegy and Budapest/Bucaörs airports and Györ and Farkasasz gliding airfields.

B.I.L.L.

NEW ZEALAND

NATIONAL CHAMPIONSHIPS.—These will be held from 8th to 18th February at Waharoa aerodrome and preceded by four practice days.

Auckland Provincial Championships

Held at Waharoa, this was a four-day contest including Labour Weekend, with 17 entries, mostly local but including 3 from Wellington.

FRIDAY, 21ST OCTOBER: anticyclonic with only weak thermals. Task: 90-mile triangle via Tirohia and Arapuni power station. John Roake, task-setting for the

CROSSWORD SOLUTION

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first time, was delighted when 11 finished the course. Ross Reid was first round and made the fastest speed, 34.5 m.p.h., well ahead of the next four: B. Kosoof, 30.4; T. Fowke, 30; G. Hookings, 29.75; P. Heginbotham, 29.28 m.p.h.

SATURDAY, 22ND OCTOBER: weak thermals for 1 or 2 hours, then frontal upper cloud increased. But the first leg of the course, a 42-mile triangle via Te Aroha Racecourse and Motumaoho Dairy Factory, corresponded to the line of the Kaimai mountains, 7 miles to the east, and eventually most of the competitors were soaring on the ridge in a strong westerly wind. B. Kosoof managed 24.6 miles, R. Carmichael 24.3 and R. Reid and F. Gatland 23.6. Ross Reid led overall.

SUNDAY, 23RD OCTOBER: strong southwesterlies cut down thermal strength, then cirro-stratas came over. Task, originally, Okoroire Springs plus distance along a line to Ardmore; but airway restrictions caused it to be altered to a return trip down the line. Ridge lift was used as before. Nearly everyone was caught by the cirro-stratus, but Tony Fowke surprised everyone by returning at 6.5 p.m., only to find he had omitted to take a starting photo. So F. Gatland won the day officially with 74.6 miles; weak wave had taken him to 7,000 ft. Kosoof led overall.

MONDAY, 24TH OCTOBER: an intense anticyclone over the central Tasman Sea; small cumulus and strong thermals till 3 p.m. An 84-mile triangle via Awamuto and Te Aroha (West) was won by Tony Fowke, who was a determined man after the previous day's disappointment. He made 42.9 m.p.h., Hookings 34.2, Kosoof 31.4 and Heginbotham 30.7. Brian Kosoof won overall, but Fowke received the Ardmore Trophy for the best performance. Final leading results:

B. Kosoof	K-6	3192
G. Hookings	Skl. 4	3093
R. Reid	K-6PE	2990
R. Carmichael	K-6	2875
D. Wright	Oly 463	2727
P. Heginbotham	K-6	2717
T. Fowke	K-6E	2671
F. Gatland	K-6	2666

Condensed from account by ROSS MACINTYRE

South Island Championships

By scoring 3,699 points out of a possible 3,940, David Roxburgh of the Marlborough Gliding Club succeeded Dick Georgeson as the South Island Champion. The contest was held at Omaka airfield, Blenheim, over 4 days including Labour Weekend. Although the weather was not fully co-operative, the nature of the terrain is such that it was possible to set tasks on each day of which only one was scored below 1,000 points.

The site at Omaka is 6 miles from the coast and a mile from hills which rise to 5,000 ft. on the southern side of the Wairau River valley.

OCTOBER 22ND.—A new task—a race to the Wye River bridge and return was set at noon. The technique to get away necessitated using your launch height of 2,000 ft. and with your back to the field make a very positive drive into the mountainous terrain where the thermals could develop outside the influence of the valley air. Four pilots scored this day with a fifth qualifying. Westenra and Roxburgh scored 1,000 each this day with a landing just around the turning-point covering 52 km. Both reported strong headwinds developing and heavy sink areas which just couldn't be licked.

OCTOBER 23RD.—The cold front passed through in the early morning and should have produced a cracking thermal day, but the associated trough lurked around, and instead of Cu as forecast, a stratus layer developed at 4-5,000 ft. which thickened and later produced rain. The weather office remained hopeful throughout the morning, so a triangle was set at 10 a.m. At 12.30 the clamp broke a little and Club C.F.I. Peter Nelson and task-setter Rex Handley took a circuit in the Cherokee (powered type) to assess conditions. At almost a gallop Rex left the aircraft with a new idea forming in his box, and at 13.00 a new task was set involving a tow to 3,000 ft., 8 miles short of the start point at Rarangi, the task from there being distance along a line which paralleled the ranges. Almost the moment the first aircraft launched at 14.10, the wind began to drop. This could prevent the pilots from moving off Rarangi, but as it transpired there

was just enough ridge lift for them to work, and from peak to peak at cloud base about 3,000 ft. they slowly worked towards the west.

Roxburgh gained 1,000 points with a 37-km. flight, the last few kms. coming from a weak thermal. In the event all pilots scored this day and none were penalised for being off track.

OCTOBER 24TH.—Patience and tenacity were shining through with the pilots and for the organizers it seemed as if we could at last really show off our local weather. In the past the local club have had a few exploratory flights up the Wairau to perhaps Hillersden. In Nelson, pilots have flown both ways along a line to the south-west and have traversed the line from Nelson to Omaka. The third day's task embodied all these legs into one ambitious 224-km. triangle race with the first turn at Lake Rotoiti and the second at Nelson aerodrome. Thermals did not develop until 12.00. Westenra showed much patience in working the same thermal source about five times before development really set in. Then almost within minutes G. W., D. R. and I. E. all set off with approx. 6,000 ft. in hand and gradually for the first 20 miles and then with increasing speed took themselves in a loose bunch around the first turning point and on to a landing in the vicinity of Nelson. Evans and Westenra both rounded the point and Roxburgh was short by about 8 km. The Cummins Lynn combination also did well this day, covering over 100 km. The two Darts did not score this day and this kept a boomer day with 6-8 knot thermals and bases at 8,000 ft. near the lake, down to a 940 points maximum. Here again as on each day of the contest, two pilots share equal marks. Westenra now reduces Roxburgh's lead but Evans has pushed hard and has narrowed the gap between his 3rd position and 2nd

OCTOBER 25TH.—The final day was a real scratcher with the anticyclone coming rapidly across the country with all its descending warm air and two whopping inversions which, 200 miles away at Christchurch, were measured at 3,000 and 8,000 ft. A quick trip in the Piper where a temp. drop of 3½° in 3,000 ft. agreed that thermals would be scarce, but gave hope since an amount of turbulence was felt deep into the hills. This was the only hope, so higher tows to 2,500 ft. were allowed at a position closer to the hills and the task was a race to the Waihopai Power Station, thence to Frank Orchard's farm strip at Seddon, a distance of 75 km.

The four who scored had all had two attempts and most improved their points at the second go. Landings were from the turn to 13 km. along the second leg. Evans and Georgeson took the 1,000 points.

Final results:

D. Roxburgh	K-6	3699
I. Evans	Rhönadler	2995
D. F. Westenra	Skylark 4	2969
S. H. Georgeson	Dart 17R	1850
Cummins and Lynn	Skylark 4	1004
P. O'Hagan	Olympia 463	111
Trotter and Hazlett	Dart 17	7

REX HANDLEY

Retrieve by Helicopter

When Ian Millward took off at 3.40 p.m. on 2nd July in G.B.V. Upper Valley's T-45 Swallow other machines were staying up over the hill between Whiteman's Valley and Upper Hutt. However, some turbulence was also present, and occasional extensive areas of down were being encountered. After some 20 minutes, someone remarked that the Swallow was no longer to be seen, and some discussion followed on retrieving.

The Tiger was sent off with an observer on a search flight, returning some 10 minutes later to report the Swallow down in densely wooded hill country, about a mile west of the strip. Rescue HQ was quickly set up at the clubhouse and an advance party with medical kit left post-haste for the scene of the accident. This advance party met Ian making his way out towards the main road, and he had come through the ordeal without as much as a scratch.

It was decided to leave the machine where it was for the night, as the weather was calm and the forecast good. Plans were made to meet the following morning at 7 a.m. and salvage the glider. It was a two-hour solid slog through heavy bush to reach the scene, and it was immediately obvious that getting the machine out presented some mammoth problems. The glider was sit-

ting some 30 ft. up a tall beech tree and would require to be lowered to the ground by gantry even before the herculean task of getting it out of the dense bush-clad hill could be considered. By now it was obvious to the retrieve party that a lift out by helicopter was going to be the easiest, if not the only way of getting the Swallow back to the strip.

By Monday lunch-time the big retrieve was under way, the ground party was once more in the bush securing lifting tackle to the glider ready for the helicopter which was due at the strip at 2 p.m. Just after the arrival of the helicopter from Wanganui, a call came through that a chain saw would be needed to cut away some heavy branches which would prevent the glider from coming out cleanly. A chain saw, borrowed from a local farmer, was flown in by the helicopter at the end of a 100-ft. rope; the pilot then returned to prepare for the actual retrieve.

Trailing a 200-ft. rope which was weighted by an old discarded tractor starter motor to stabilize it, the helicopter slowly descended over the stricken glider. After securing the rope to the glider and clearing the area directly under the tree, the O.K. was signalled to the pilot, who then lifted the glider clear of the trees. At a very cautious 4 m.p.h. the helicopter and its precious load slowly made its way to the gliding site and carefully lowered a sorry-looking Swallow to the ground.

So ended what has probably been the most expensive glider retrieve in New Zealand — £150 for one mile.

Gliding Kiwi

POLAND

WORLD TWO-SEATER RECORD.—After 14 years the world gain-of-height record for two-seaters, set up by L. E. Edgar and H. E. Klieforth in the United States with a height gain of 34,426 ft. (10,493 m.), has been beaten by Stanislas Josefczak of Poland, with a passenger, in the Tatra Mountains. Their height gain was 41,174 ft. (12,550 m.), and, like the American record, was done in a wave. It awaits homologation.

Air et Cosmos

SOUTH AFRICA

FIVE Transvaal gliding clubs are investigating a plan which could end their growing problems — shortage of hangar space at active airfields, growing activity at club aerodromes, and airways crowded with traffic. The five clubs — the Johannesburg Soaring Centre, Transvaal Gliding Club, German South Africa Gliding Club, Pretoria Soaring Club and Defence Gliding Club — have formed a committee to look into the possibilities of forming a gliding centre at a site near enough to Johannesburg and Pretoria to make it attractive to members and newcomers.

In a memorandum circulated to these clubs, it is pointed out that the combined total active membership is about 150 pilots, with seven two-seater training aircraft, three tugs (excluding Defence Tigers), while two clubs operate winch launches. The relatively large number of non-owner active members indicates that these aircraft are being poorly and inefficiently utilized when viewed from a common point of view. Each of these clubs has some problem — uncertainty of tenure, little or no hangar space, temporary fields or the restriction of flying due to near-by control zones.

The memorandum suggests a central gliding site as a possible solution to some of these problems — and that such a centre would offer facilities which would otherwise never be available to members of smaller clubs. It also suggests that pooling of facilities would only be proposed where it would be to the mutual advantage of clubs concerned.

Wings Over Africa

BJ-3 COMPARISON TRIALS.—Recently Boet Dommisse in the BJ-2 and Pat Beatty in the BJ-3 flew in company. Boet reported: "We were together in the same upcurrent; at first the rate of climb was 2,000 ft./min., then the lift fell off. Then, while Pat had trouble in holding the height gained, I had no difficulty in outclimbing him and gaining some 2,500 ft. more. Then, after radio contact, we decided to fly towards a fixed point at speed for best gliding angle. Pat made 120 knots while I kept to 80 knots. Not only did I arrive later, but at a much lower altitude!"

Pat calculated from this that he could perform a more or less equilateral triangle of 300 km. without using any lift on the last leg. At the beginning of October, in the period before summer thunderstorms cover the Transvaal, Pat decided to try for the 300-km. Triangle World Record. Unfortunately a depression over the Cape dissipated the clouds at about 3 p.m., leaving Pat *"le bec dans l'eau"* between the first and second turning-points. But if all goes well, one expects him to get his record before the end of summer. (See page 56.)

H. VAN GEMERT in *Aviasport*

SPAIN

TWENTY Swallows have been ordered from Slingsby Sailplanes by the Real Aero Club de España. Slingsby's Agents first reported interest in a suitable intermediate glider in October, 1965, when an order was placed for two Swallows. Subject to these proving satisfactory to the Spanish requirement, a further order for 20 was anticipated and subsequently awarded.

The first two gliders were packed in a road trailer and taken from Kirbymoorside to Newhaven, cross-Channel steamer to Dieppe, from there across France to the Spanish Border at Irun, and finally the sailplanes were delivered to the Real Aero Club de España at Madrid. The 20 Swallows now under contract are being delivered in batches of three via Trans-Continental Rail from Malton Station via Hendaye and Irun to Madrid Station.

These 20 Swallows incorporate the improved canopy, i.e. Dart Perspex Canopy. The improvement to the appearance of the aircraft is most marked and there is a corresponding reduction in drag. All-round visibility and cockpit space are both increased.

W.N.S.

UNITED STATES

ONE-DESIGN CHAMPIONSHIPS.—The Second Annual 1-26 Championships, with 18 entries, all of this Schweizer type, were held at Guthrie in central Oklahoma from 14th to 26th August.

First task was a 60-mile out-and-return made difficult (for such a type) by a 15-knot cross-wind. Only four reached the turning-point and two got back, Ed Dawson winning at 26.9 m.p.h.

Next a 106-mile out-and-return plus free distance. A 20-knot quartering headwind brought down all but two on the first leg, but A. C. Williams covered 181.5 miles in an outstanding flight.

Free distance on the third day promised the competitors a downwind flight at last, but a front forced them to deviate, either into calm air and weak thermals on one side, or good lift with a cross-wind on the other. Marshall Claybourn won with 218 miles. Next day, a rest day, was "ideal for a vulgar downwind dash", and Jim Long, the only non-U.S. entry, went 284 miles to Washington, Kansas.

After three non-contest days, the last task was speed to a point 38 miles downwind and back, but only five got there and one, Ed Small, made 6 miles of the way back.

Williams won the contest with 3,437 points and earned the new but perpetual Marian C. Cruce Trophy, a silver punch-bowl with a dozen silver cups. Next in order were M. Claybourn, 3084; T. Falk, 3031; E. Dawson, 2365.

HIGH C.—The pilot who earned his C Badge with a flight to 30,540 ft. (last issue, p. 518) was Rudolph Wacker, not R. Schuetter as wrongly shown in the badge list originally issued.

DIAMONDS. — Elmer Katinszky has earned Three-Diamond badge No. 63.

MARFA REGIONAL.—This contest was won by Ted Chandler. Ben Greene was only 16 points behind and Dr. Steinhoff third. There were six contest days.

Soaring

YOUTH SOARING.—Under the NY-SOAR Scheme, which began in 1959, this year's youth camp at Harris Hill, N.Y., from 14th to 20th August, brought a total of 165 flights by the cadets with aggregate of 39 hours. *Newsletter*

WEST GERMANY

NATIONAL CHAMPIONSHIPS. — These will be held from 14th to 28th May. Production models of the AS-12 will be flown by Heinz Huth and by Hans Werner Gross (who will afterwards take his to the U.S. Nationals at Marfa).

Immediately before this, a new International Competition, somewhat on the lines of the French "Huit Jours d'Angers", will be held by the German Aero Club at Freiburg (?) from 30th April to 12th May. Participating will be the German international team, pilots flying new sailplane types, and representatives from as many European countries as possible, both West and East.

The usual Junior Competition on the Wasserkuppe will be held at Whitsun and the period following.

Aviasport

SIMPLICITY WITH PERFORMANCE. — An all-metal sailplane of original design, the M-1, has been produced by Michael-Lorenz Meier, of Hamburg, with high performance yet simplified construction which should enable it to be sold for about £1,200-£1,500. The rectangular wing has a very high aspect ratio of 26 with a span of 42 ft. 8 in.; the section is Eppler 303. The pilot, in the reclining position, has the control stick on his right. The T-tail is all-moving both horizontally and vertically. A gliding angle of 1 in 40 at 64 m.p.h. is expected to be achieved, and minimum sink should be 2.1 ft./sec. Maximum wing loading is 7.85 lb./sq. ft. *Soaring*

CABLE INCIDENTS.—A warning paragraph on care needed to avoid accidents caused by winch cables reveals that in bygone years two children have been fatally injured in such accidents.

GERMAN LOCAL RECORDS. — These (equivalent to U.K. local records) will be recognized as from 1st January, 1967. Either the start *or* the landing *or* one turning-point must be in the territory of the Federal Republic. *Aerokurier*

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MOTORIZED SAILPLANES

GERHARD BLESSING, the Committee member for motorized sailplanes, discussed the advance in this field at the A.G.M. of the Gliding Section of the German Aero Club which was held in October at Heidelberg.

During 1966 the following two questions had been in the foreground:

(a) Evaluation of gliding performance on motorized sailplanes.

(b) Two-seater training.

In order to arrive at an accurate evaluation for motorized sailplanes, relevant practical trials were carried out at Oerlinghausen. A barograph, switched on and off by the engine, has been developed to record engine running time. It is to be hoped that during the next German Nationals motorized sailplanes —for example the SF-27—could also fly.

So as to obtain more experience, it is intended to hold the first German Motorized Sailplane Contest during 1967, probably at Schwarze Heide in Nordrhein-Westfalen. As possible tasks for such events in the future one thinks of:

1. An arrival contest.
2. Navigational and handling ability tests.
3. Goal-and-Return flights.
4. Goal flights.

In future the training on motorized sailplanes should stay in the foreground. In England they have set aside 1 million DM for the development of a suitable two-seat motorized sailplane [This is incorrect.—ED.] and the intention is to train glider pilots mainly on this machine. First experiences in motorized gliding training at Bergzabern show already that at least twice as many flying hours and training time are being achieved as against using a two-seater glider.

The club at Leverkusen, which owns two RF-3's, has undertaken an interesting experiment by sending glider pilots round a 300-km. triangle in these machines and then in suitable weather conditions they flew the same triangle in a Ka-6. Such preliminary training flights with motorized sailplanes helps the glider pilot a great deal in subsequent high-performance flying.

One has also come to the happy conclusion that the glider pilot who has

been trained on the Motorfalke can just as easily step into a Motorspatz as into a glider. The way is thus made easy for a big development in the field of glider training. Further gliding courses using motorized sailplanes have been planned.

One of the most technical problems is the development of a silencer. However, this brings with it a penalty on performance, namely a weight increase of 11 to 13 lb. One therefore puts one's hope on a suitable four-stroke engine, these being well known to run naturally somewhat more quietly. *Aerokurier*

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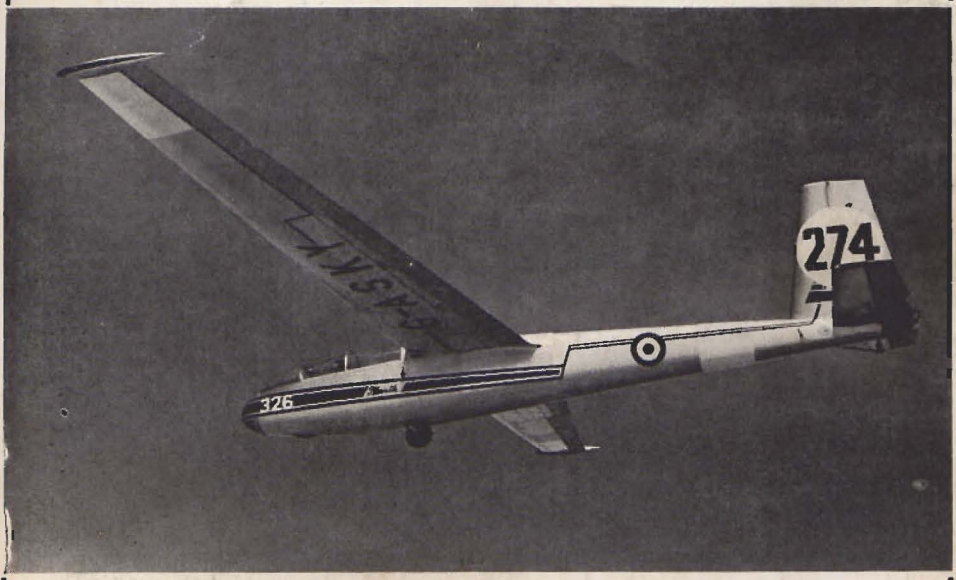
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