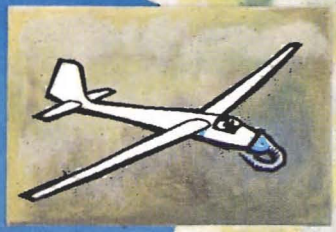


SAILPLANE & GLIDING

August — September 1972 30p









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SAILPLANE & GLIDING

OFFICIAL ORGAN OF THE BRITISH GLIDING ASSOCIATION

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Cover by Peter Fuller, illustrating Mike Field's flight to 42,500 ft on May 9

Published by the British Gliding Association, 75 Victoria Street, London, SW1H OJB Tel. 01-799 7548/9

Printed by Hampshire Printers Limited, Rankine Road, Basingstoke, Hants.

THE SHOBDON SURVIVALS

By GEORGE LOCKE

The pilots taking part in the National Open/Standard Class Gliding Championships, held at Shobdon, Herefordshire, from May 27 to June 4, 1972, were not to be envied. Stormy weather and hilly country combined to make conditions very difficult, and competitors had to use all three kinds of lift—thermal, hill and wave—in order to merely survive, let alone fly respectable distances or put up fast speeds. The Herefordshire Aero Club hosted the competition, making everybody very welcome, and it was made clear once again that gliding can be carried out in company with power flying in a reasonably harmonious fashion. Maps by John Glossop.

SHOBDON has for a long time been publicised, with some justification, as a favourable site for wave flying. It lies in the foothills of the Welsh mountains, and the best wind direction for wave is something north of west.

Task setter Jack Harrison has had considerable experience of wave flying in the area and in the competitors' handbook stated quite clearly that, on suitable occasions, wave tasks would be set.

Thus, Shobdon became the first British Nationals for many years where tasks were planned which would make particular use of any kind of lift other than convective.

Harrison wrote in the handbook: "There is much controversy over whether or not wave tasks should be set. The wave experts want the opportunity to take advantage of their experience. Those who have hardly flown in wave are convinced that it is all a question of luck. Wave tasks *will* be set provided two important criteria can be fulfilled.

"Firstly there is the problem of offering all pilots the same opportunity of getting away. Experience at Shobdon has shown that it is possible to launch over 20 gliders all into wave even with the launch period spread over more than two hours; with the fast launch rate that should be possible with nine tugs, it should be quite feasible to launch one class, at least, with complete fairness. A wave task launch would be to 3,000ft with the start line deleted.

"The second major problem is that of photographing turning points from above cloud. The wave tasks are out-and-returns with alternative TPs, one task along the wave to the north, the other to the south. The alternative TPs are in pairs, one some three miles downwind of the other. Thus, it is hoped that if one TP is not visible, the other, being some half-wavelength up or downwind, should be clear of cloud. The photo interpreters will be flexible in their interpretation as allowed in the latest rules on TP photos.

"The actual TPs are water features, and as such are relatively easily visible in the gloom beneath 7/8 cloud. The task setter has, in fact, flown both tasks himself, and the TPs are in good wave positions."

The wave turning points were: Abergavenny A and B (three miles south-east of the town at Llangattock [railway bridge over river] and at Llanvihangel [sharp bend in river] and Ellesmere A and B (southern ends of Ellesmere and Colemere respectively).

All perfectly clear—but not conducive to calm thoughts for many pilots. "I've never flown in wave," many were heard to say as they gathered for the official opening on Saturday, May 27. Would they be able to cope with these alien intrusions into the sacred territory of the British Standard Thermal? The weather didn't help. As Sir George Farmer, chairman of the Rover Car Co Ltd (which



Bernard Fitchett piloting the Range Rover

has loaned four Range Rovers to the British team for the World Championships at Vrsac in July) officially declared the contest open, many pilots were casting anxious glances outside the briefing tent. The omens weren't good. There was a blustery westerly blowing and it was overcast.

A race to Dunstable was bravely declared, but a trough was crossing the country which deposited frequent gouts of heavy rain on Shobdon, and the task was cancelled. However, the air was slowly drying out and stabilising, the wind veered to the northwest and the showers became less frequent. One or two pilots rigged in the afternoon, to have a look round the area. Then others followed. The first few to be launched were soon back, with reports of exceedingly turbulent aerotows. Then one or two contacted wave, the air continued to dry, and by 16.00 several were soaring, having contacted the lift over Presteigne, a few miles NW of the site.

Eventually, nearly everybody rigged as the skies continued to clear, and for an hour or two pilots were contacting wave without any difficulty. It later became more difficult to locate, but many reached 12,000 to 13,000ft before breaking off their climbs, and four reached 19,000ft —John Glossop (ASW-15), John Monteith (BS-1), Ben Rood (Cirrus) and Steve White (Std Cirrus); Glossop and Monteith claimed Diamond gains.

Many pilots contacted the wave upwind, over Presteigne, but others found it downwind of Shobdon. Some thought the pattern was confused, particularly later in the evening, and the last pilots to launch failed to contact at all, although the sky looked superb at times, with cloud reduced to 2/8.

The wind did not abate, and many pilots thought their tows—which were taken to as high as 4,000ft—were the roughest they had experienced. Landings were by no means easy, either. Turbulence on the circuit was severe, and although the final approach on Shobdon's west run was straightforward, most pilots came in with plenty of height to spare. There was a lot of gusting, and several pilots experienced difficulty in getting their machines into the rather restricted grass landing area in the smooth manner beloved of by CFI's. One Kestrel performed a kind of waltz six feet up in the air for at least a hundred yards before it was permitted to plop onto the ground.

By and large, though, it was smiles all round; a most encouraging finish to a most unpromising day. Pilots had had the chance to have a good look round the Border country, several venturing quite far afield, many had experienced their first real wave, and they must have felt considerably happier about the prospect of a wave task during the week.

FIRST BLOOD

It came sooner than they expected—Sunday.

The wind was still strong (20-25kts) but had backed to south of west. There were some weak fronts to the west but



Barrie Dobson



May 28 situation at 09.00gmt; forecast and route

it was expected to clear in the lee of the Welsh mountains in the afternoon. A 171km triangle via Bridgnorth (to the NE) and Ellesmere was set.

The sky remained overcast all morning (with evidence of wave activity aloft) and the task was changed at 14.00 to the northern wave task—the out-and-return to the alternative Ellesmere turning points. The tow would be to 3,000ft and there would be no start line.

The weather greeted this decision with a derisive drizzle, and Brennig James got in some practice for the task by throwing polystyrene boomerangs all around the Herefordshire Aero Club restaurant.

However, the met men, Russell Johnson, nobly assisted by Peter Wickham, promised a clearance by 16.00, and, lo and behold, a clearance of sorts arrived. There were still masses of high cover, but lumpy, raggedy cu were also evident, and a tug took off to check the wave.

By a quarter past four, more cloud was approaching from the west, but the snifter tug was proudly declaring that wave had been found at 3,000ft near Shobdon, and at 5,000ft near Presteigne. All systems, apparently, were go, and the first Open glider (Lemmy Tanner's ancient, wooden, hopelessly outclassed Dart 17R) was launched at 16.28. The others followed in quick succession.

The wind was as strong as on Saturday, and the tows as rough. Flashes of thin, silvery light reflected by the wings of the tugs and gliders could be seen as they fought the turbulence under the anaemic sun peering blearily through the grey high cloud.

Pretty soon, a good percentage of the Open Class were back for relights, although Tanner spent nearly an hour fighting weak but turbulent thermals at



High climb ahead? Len Woods donning his electric hose

circuit height to the north of the field. Eventually he, too, gave up the struggle. Nobody seemed to have found the wave, although several crept off cautiously on track. The Standard Class was scrubbed, to its relief. But the Open pilots had to battle on, forcing their way painstakingly along the outward leg, extracting a few hundred feet of thermal here, a bit of broken wave there, and giving themselves a chance to breathe by holing up on the Mynd.

The trouble was that the clearance hadn't been sufficient to brew up any decent thermals, and the wind, though producing wave, was not from an ideal direction. The alignment of the Welsh hills was such that while NW winds were good, SW winds produced very mixed, confused and evanescent patterns of activity. A Standard pilot, Don Austin, who flew for fun—or perhaps one should say for the hell of it—contacted the wave further upwind than the Open pilots ventured and reached 10,000ft.

None of the Open Class contacted anything substantial, however. Only two pilots exceeded the minimum scoring distance (60km)—Nick Goodhart (Kestrel 17, 69.9km) and Con Greaves (Kestrel 19, 63.6km). Four others achieved Silver distance but no score for their pains—Alf Warminger (Kestrel 19), Ralph Jones (Nimbus 2), Derek Piggott (Kestrel 19) and George Burton (Kestrel 19c).

Burton's effort included three hours of hill soaring. He did make use of a little wave but left it as he thought it was too weak to use (2kts). In retrospect he realises he should have stuck with it and taken it higher; he wasn't used to the idea of not being drifted while climbing. He left the Long Mynd at 3,300ft and glided it out. Warminger also made a final glide from the Mynd; there were club aircraft flying so he decided not to cloud-fly and left at 3,400ft. Ralph Jones (who had arrived at the Midland Gliding Club site via some hill soaring at Craven Arms) did likewise.

Nick Goodhart also arrived at the Mynd via Craven Arms; he, like several other competitors, were able to use some "sort of cloud street" to help stay on track. He achieved 4,000ft at the Mynd and glided it out like the others. Although there were bits of lift about, he gradually ground to earth, "striking it a glancing blow" a few miles short of Ellesmere.

So, at the end of the first day, Nick Goodhart was in the lead with four points, Con Greaves second with one, and everybody else equal third.

INTERLUDE OF DEMOCRACY

Mondays are traditionally the worst days of the week. The euphoria of the weekend has worn off and there are only the hangovers left.

The euphoria of Saturday's afternoon wave had been quickly squashed on Sunday. The Open Class has scraped its way among the hills of the Border country and the Standard Class had been happy to let it hog the flying. If Monday had dawned bright and cheerful, with nice tufty cu, zephyr breezes and 10kt thermals, everybody would have been happy. But no, the wind was as rough as ever



Contest director Mike Harper shoulder-charging John Cardiff during a game of football



"Who's for poker until the rain stops?"

and storms were building everywhere. Many pilots, especially those entered with brand-new Open Class steeds like the Kestrel and Nimbus, were already worried about field landings; the possibility of another day like Sunday didn't fill them with enthusiasm, and the Standard pilots, who'd already heard tales of ground loops and wind gradients, weren't looking forward to their first bout with the raging elements.

As a result, the Monday morning feeling saturated Shobdon at the nine o'clock briefing . . .

"And that's another thing. Briefings at nine o'clock! Much too early!"

The forecast was for a strong westerly, laden with heavy showers, although with good patches in between. An out-and-return to three alternative TP's in the Cheltenham/Nympsfield area was set. Standard class first. First launch 10.30 . . .

"Ten thirty? Is this a realistic time?" somebody asked.

Peter Wickham had to admit that 11.00 was probably the earliest that anybody could reasonably expect to remain airborne.

Jack Harrison and contest director Mike Harper looked glum. The whole idea of the early briefings (and the later than usual times for last take-offs) were to extract the best chances of flying should the weather prove indifferent. If deterioration was expected, then the early briefings would be helpful in getting everybody away. If a late clearance, especially for wave, was likely, then the late last take-off times would be invaluable. It is possible that a wave task on Saturday could have been achieved with a first take-off as late as 16.00.

"All right. We give in. Eleven o'clock. But everybody must be ready in case it cooks up quickly."

Democracy had won the day.

The weather did not cook up, however, as the competitors waited patiently on the grid. "What's the point of us shivering on the grid when it's obviously no good?" was the cry.

At 12.00 the task was changed to a dog-leg race to Nympsfield, and at 12.45 everybody was stood down for a further briefing at 14.00. The task was eventually scrubbed, amid a continuous stream of heavy showers which, the met men said, may have been positioned over Shobdon by a stationary wave flow over the Welsh hills.

Democracy reared its head again in the afternoon in the briefing tent, in the shape of one of the by now traditional discussions on competition structures. Instigated by the BGA Flying Committee and chaired by Ian Strachan, it covered much the same ground as previous discussions and once again demonstrated that there were almost as many opinions as there were pilots.

It was very evident that the Sport/Club Class contest was regarded as a second-class competition, in spite of it being valued equally for rating purposes. One suggestion was for an intermediate handicapped class competition (equivalent to the Sport/Club class) between the nationals and regional contests. Another pilot said that the Sport/Club competition had knocked the bottom out of the regionals, which were now undersubscribed.



Con Greaves

There seemed to be an atmosphere of general dissatisfaction with the present British competition structure, but there was no clear sign of a concerted mass of opinion moving in a single direction. Towards the end, people were beginning to fidget and drift away.

For a meeting of this kind to be of any real value, it needs exceptionally skilled and firm direction from the chair, a difficult feat to achieve at the best of times. Ian Strachan did his best, but when the meeting is composed of such a group of hardcore individualists as the cream of British competition pilots, democracy rapidly curdles.

GEOGRAPHY LESSON

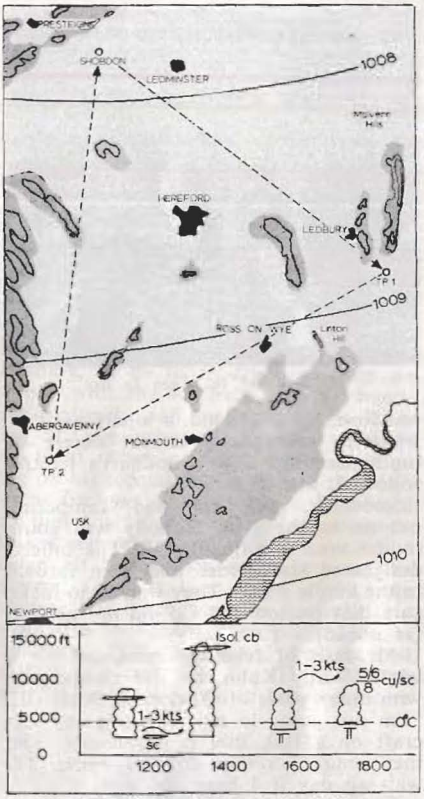
A depression scooting across the north of Scotland kept the wind both high and westerly for Tuesday's pleasantries. A weak trough was expected to cross the area before midday. In the afternoon, weak to moderate thermals kept apart by dead patches were expected. The wind would veer towards the NW in the afternoon, and at 3,000ft was likely to be a stiff 30 knotter. There was a chance of some weak wave to be contacted from thermals.

Briefing was postponed to 11.00, at which time Jack Harrison described the task, a 145km triangle via the M50/A417 road junction and Llangattock, with ebullient optimism.

"It's probably too ambitious. The first leg (downwind) should be easy, and there's a bolt hole on the Malvern Hills just north of the turning point. They should be soarable, though I've never done so. The second leg will be tough going, but the third leg should be easy if the wave works. If not, that'll be tough, too. First launch 12.30, last launch seven o'clock."

And the Standard Class had the doubtful honour of going first. By 11.30, there was about 7/8 cumulus and stratocumulus, and it looked promising. At 12.40, the first competitor was launched, John Cardiff in the Std Libelle. Conditions were soarable but not brilliant, and several Standard pilots landed, although quite a few others crossed the start line at reasonably comfortable heights.

But while the Standard Class fought



May 30 forecast and task route

the turbulence, something akin to a revolution was happening on the ground. The Open Class decided *en masse* to hold, and select their own take-off times. And at half past one, the scene was one of the scarred, empty runway, some tugs patiently waiting, a row of Open Class sailplanes parked at the southern edge with their tails tucked into the growing crops, and a little knot of pilots bemoaning the weather.

Two pilots had hung discs on the pilot selected take-off time board.

Then, at 13.45 — and conditions still looked much the same — one of the parked gliders was pulled forward. It was George Burton's Kestrel. Gentle felicitations of goodwill accompanied Burton: "Blackleg! Scab!" The Kestrel



Hanging out the linen to dry

was lined up into wind, a lonely oasis of white in the broken tarmac desert. A tug started up. Then Goodhart's Kestrel followed, and Delafield's.

Suddenly, everybody was scampering out on to the grid. Nobody was going to the time selection board. The official designated start order had been thrown to the ample winds. They wanted to make sure that Burton and Co did not get too far ahead.

An oasis of rebellion remained for a while. Wally Kahn, an old campaigner with many years of experience, declared: "I'm not going to risk breaking my aircraft on a task that is impossible. The met assures us that it'll get better. I'll wait all day if I have to."

The breaks were against the Open Class, however. Quite a few failed to get away from their launches and had to land again. According to the chief tug pilot, Tony Gaze, the dropping zone (Presteigne) was in the downdraft of a wave; a wave slot was clearly visible for quite a long time.

This wave activity made what should have been a relatively straightforward first leg rather tricky. The meteorologists suggested that there was a gentle up and down motion of the airmass generally which had the effect of damping down lift even in areas where cumuli were present, but boosting the thermals in others.

Thus, quite a number of pilots of both classes landed early on. But those who survived to the first TP hadn't really achieved anything. The minimum scoring distance for the Standard Class was on the TP, and for the Open a few miles along the second. And it was clear to many that the patchy weather (showers were adding their blessings to those of the more subtle wave activity) would make progress along the second leg exceedingly difficult.

It was a time for backs-to-the-wall tactics, and the successful pilots (ie, those who clawed a few pitiful kilometres more out of the sky than the others) fell into two groups. One — the larger — hopped painstakingly and heart-poundingly from ridge to ridge, taking the rare thermals when and where they came. The others sat patiently on the Malverns and waited until they could catch the elusive wave.

The winner, by far, was Mike Garrod (ASW-15). He was the only one to reach the second TP, flew a distance of 97.5km, and took eight hours in the process. He had no trouble getting to the first TP and having rounded it retired to the Malverns for an hour and a half. Eventually, at about 15.00, he was able to dive upwind about seven miles on to a shallow ridge, and from there worked his way to the hills south of the second leg. Good lift from one hill got him to Ross-on-Wye, and a 6kt thermal enabled him to leap to the Monmouth area. Conditions looked quite dead, and he hill-soared south almost to Newport, where



"Quite summery, what?"—Brennig James



"I refuse to have anything to do with motor gliders"

he crossed to Usk. At eight in the evening he got a "sort of cloud street" to Llangattock before the elements finally defeated him.

John Cardiff, the first launched, hung around Shobdon at first waiting for conditions to improve, but they never did, so he set off at cloudbase. He was down to 1,000ft near Ledbury before getting his best thermal of the day: "Eight knots in rain. Had to circle at 60kts with the rain on the wings." This took him to 5,500ft. After rounding the TP, he flew back the way he had come for some distance under a cloud street, was reduced to hill soaring, got away from that hill quickly and then sat on a hill just east of Hereford for an hour before he got away again, to 2,500ft. He bored off on track, but couldn't quite make the next ridge, landing at St Weonards, a distance of 71.25km.

Several other pilots adopted similar tactics. The second group — those who contacted wave from the Malverns — included Ray Foot, Steve White and Lemmy Tanner. Foot waited for two hours on the ridge, and made three unsuccessful attempts to leave before contacting wave, which took him to 4,000ft. He glided it out to Bridstow, a total distance of 65.25km from Shobdon; he compared the achieved glide angle of his new Nimbus 2 not favourably with that of his former Skylark 3.

Steve White (Std Cirrus) got to the Malverns at about 13.00, and sat there for an hour before sneaking to the TP and back. Hill soaring heights on the Malverns were between 1,500 and 2,000ft. Although he tried to thermal up the second leg, he kept drifting back. At 17.30, he was still on the Malverns, when he phased in with a wave which took him to 6,000ft. He could see a big storm coming from the west and flew at it hoping for some further lift. "All I got was rain and ice in cloud, and had to land five miles south of Hereford. I'd have done just as well jumping from hill to hill up the second leg, but I was hoping for the big wave. But the storms kept killing potential wave activity off."

Lemmy Tanner and his venerable Dart, however, were keeping a crafty eye on the storms, from their vantage point on the Malverns. The Dart had by far the worst penetration in the Open Class, and it would take low cunning (or high cunning, to be more exact) to keep on a par with the Kestrels and Nimbuses. He'd already had one precipitous landing, at Leominster, and had had a relight at 16.00. After creeping down the first leg on his second try, he soared the Malverns for two or three hours. It seemed to him that if he waited long enough, he would eventually find wave. The ridge lift became smoother between the storms, until at last, about 19.00, one shower left some wave in its wake. He worked it to 3,000ft, then pressed on to Ledbury. Still in wave, he reached 4,300ft, tip-toed past the TP, and was able to maintain height in bits and pieces



John Cardiff

of wave for a while. Eventually, down to 1,000ft, he saw Ray Foot's machine in a field. Since place soaring was being used, he decided to land there; had points scoring been in use, he would have pressed on.

He, like George Burton on Sunday, made the observation that using non-drift wave lift in strong winds was better than thermals, and hoped for a similar day on Wednesday.

In all, eight Open and 13 Standard Class pilots scored. Tanner and Foot led the Open, with 12 points, with Burton, Delafield and Frank Pozerskis (Cirrus) equal third with eight. Garrod's eight hours earned him a slender two point lead (21) over Cardiff, with White third (17) and Ted Shephard (Std Cirrus) and Bernard Fitchett (Std Cirrus) fourth equal.

Six pilots failed to get away from Shobdon; one or two did not, perhaps, try very hard since considerable apprehension was being voiced about field landings in the strong winds. One pilot damaged his machine.

It was far from an ideal day for the new generation of high performance gliders like the Kestrel and Nimbus. Ralph Jones, for example, was soaring a bowl part way down the first leg in his new Nimbus 2. A rainstorm suddenly swung the wind parallel with the ridge. The lift disappeared. There was only a very small field available. He S-turned towards it and pulled out the brakes and landing flaps. A hedge suddenly loomed high in front of him, and he closed them both, shot over the hedge, opened brakes, flaps and tail parachute all at once, flopped in and ground-looped successfully, without damage. "One has to be an octopus to pull all those levers at once," he gasped.

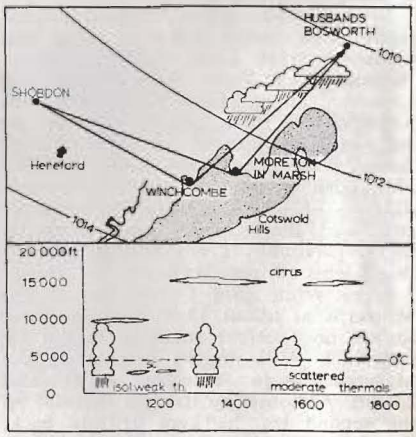
A DIRTY DOWNWIND DASH

Wednesday was a bit of a doddle by comparison. For a start, pilots were able to luxuriate in their feather beds for half an hour longer than previously—pressure from certain quarters had persuaded the organisation to have briefings at 09.30 instead of 09.00.

Secondly, the wind wasn't rocking the caravans quite as violently. Tuesday's low was now in the northern North Sea and moving slowly east, and the pressure was rising. Winds at flying heights were expected to be north of west, 25kts, at noon, decreasing to 15kts by early evening. The air mass low down was very moist with a lot of strato-cumulus and cumulus in the morning, base about 2,000ft. Impacted in this were larger clouds, rising to 7,000ft and delivering frequent showers. The cloud would slowly decrease and showers become isolated, but some high cirrus was likely to approach from the west later on. Thermals would be isolated and weak in the morning, becoming moderate in the afternoon.

Jack Harrison, apologising for making everybody flog their way into wind yesterday, was obviously adopting a belt-and-braces philosophy when he set a standby task in case the first task appeared to be out of the question by the time of the first launch (12.00). The primary task was a 140km out-and-return via either one of two points near Cheltenham.

By noon, it had looked soarable for at least an hour, and the wind certainly was not as strong as hitherto. A snifter had reported a cloudbase of 3,000ft and thermals of 2-3kts. However, the upper cloud seemed to be increasing more quickly than anticipated, and when the first Open glider was launched, at 12.40, the task had been changed to the standby—a 150km dog-leg race to Husbands Bosworth via Winchcombe church or Moreton-



May 31 situation at 06.00gmt; forecast and route

in-the-Marsh railway station (the gentlemen's convenience on platform one).

Although a few pilots, in both classes, had to have relights, conditions seemed to be quite reasonable, if patchy, towards the east, and it looked as though for the first time since the championships started that crossing the start line might have some significant bearing on an individual's result. In the event, seven Open and four Standard pilots reached the goal, and John Williamson got to within a gnat's whisker of HB in the Cobra 15. All but a couple of the field achieved more than 100km, and a large number got to within a very few miles indeed of HB.

It appears that the Standard Class, launched after the Open, had generally better conditions, and three of the four who got to the goal made much faster times than any of the Open pilots. But it also seems that, although there was no way of knowing it in advance, it was vital to get to Husbands Bosworth as early as possible. A huge storm was brewing near the goal and blocked off many of the later pilots, particularly those in the Standard Class, who were rained out of the sky. John Williamson, for example, had started his final glide with 1,000ft to spare and ended up with 200ft too little.

Barrie Goldsborough, who made the fastest Open time (76km/h) in his Diamant 18, was the last of his class to be launched. He found that he had to plan 20 miles ahead. At 6,000ft south-west of Banbury, he had to let down to 4,500ft to get under the airway. He picked up an 8kt thermal eight miles out, and made a final glide from 3,000ft, arriving at the same time as Nick Goodhart.

Goodhart, unfortunately, crossed the wrong finishing line. To correct matters, he then crossed the right line, but found himself short of airspeed. To make matters worse, he experienced difficulty in getting the undercarriage of the Kestrel 17 down. By this time, the airfield was out of reach and he landed in a field outside the boundary, damaging the glider and putting him out of the contest.

Martin Seth-Smith and John Monteith also damaged their gliders while making field landings; both were well away from the Shobdon area.

Lemmy Tanner had another happy day, as indeed he should; if the Dart was going to keep up with the Kestrels, downwind dashes were a must. He was launched about two-thirds of the way down the Open list, and set off as soon as possible. His plan was to stay as high as possible, taking every bit of lift he could.

Ray Foot (Nimbus 2) was one of the first off, and had to go south of track as far as Hereford to dodge storms. However, the edge of one, at Evesham, provided him with 10kts to 8,000ft, from which he was able to make his final glide, but the detour slowed his speed to 64.75km/h.

Gough and Garrod went off as quickly as they could after being launched. Gough, flying a Std Cirrus, kept to the high ground of the Cotswolds after rounding Winchcombe. There he met Delafield and Tanner, and climbed to 5,000ft before starting to catch Delafield up in cloud. He therefore left the Kestrel to it and pressed on. They met up again at Gaydon, half-way along the second leg, and Gough flew conservatively as there was rain ahead. He arrived at HB at 400ft, with Tanner seconds behind and John Delafield a few minutes later.

Garrod started off very fast and used three clouds (highest point 4,800ft) on the way to the Malverns. Conditions were not quite so good on the run in to Winchcombe, which he turned at 2,500ft. However, after turning, he ran into a line of cumulus which had moved down from the NW to the Cotswolds. This enabled him to fly at more than 75kts for about



John Williamson

15 miles past Leamington without circling, and a final climb to 4,000ft after that got him in with 500ft to spare and a winner's speed.

George Burton was perhaps the most unfortunate. He tried to dodge a storm 10 miles on from Moreton-in-the-Marsh by flying to the east of it, but it kept building up in that direction and eventually forced him to earth well east of track in heavy rain. He thought the original task should have been flown, as there were fewer storms to the west.

The best speeds were: Open, Goldsborough, 76km/h; Vic Tull (Diamant 18), 73.5km/h; Tanner, 72km/h; Goodhart, 71.25km/h; Delafield, 68km/h.

Standard, Garrod, 88.75km/h; Gough, 84.5km/h; Fitchett, 83.75km/h; Cardiff, 53.25km/h.

OUT ON A LIMB

If any pilots had said at briefing on Thursday that flights of 300km would be achieved, they would have been laughed all the way out of Herefordshire. The weather to date had kept many competitors' spirits as well as their machines low, and Thursday at first wasn't looking any better except that the wind had dropped to a few knots, vaguely from the direction of Wales.

A low and its associated clamp was approaching SW England and would move east along the Channel. Although conditions to the NW of Shobdon would be fairly good in the morning, some high cover would encroach, and the better weather later on was expected to be in Lincolnshire, where there would also be some high cu-nimb development.

A race could have been set, the organisation said, but the presence of airways and cu-nimbs decided them to set a Cats Cradle squeezed between the Birmingham and Manchester control zones. It was a weird shape; the TPs were at Shrewsbury, Bridgnorth, Shobdon, Newport (Salop) church (tightly knitted together like the business end of a spoon) and Lincoln cathedral, the end of a handle. First launch, 10.30. Standard Class first. "It should be soarable as soon as you go. Play around the TPs to the NW for a few hours, and when the cirrus arrives, fly off to Lincoln. Enjoy the cu-nimbs and then nip back to the west."



Wally Kahn

As the competitors emerged at 09.45, it was looking quite reasonable to the NW and west. Spirits brightened and people hurried to get their machines rigged and on to the grid by 10.30.

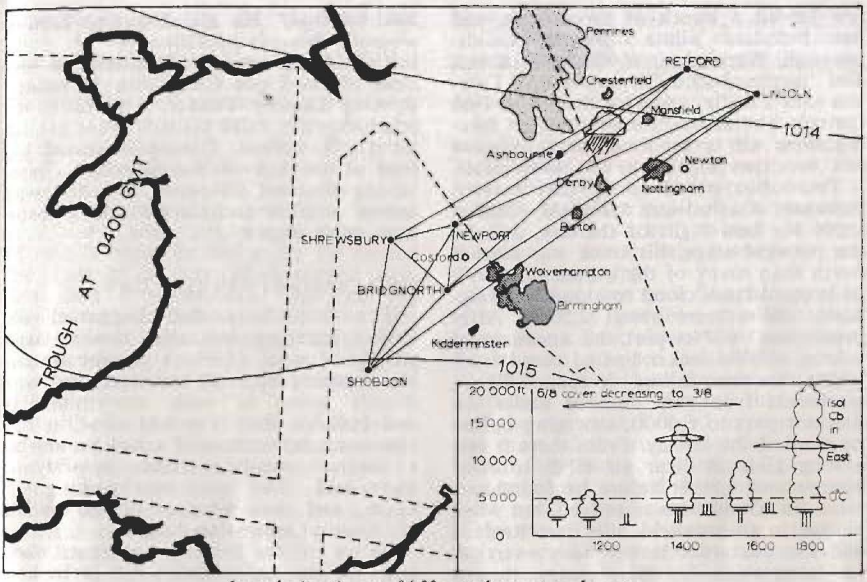
They very nearly missed the boat. If briefing had been at 09.00, there would have been time to get the first launch off at 10.30. If everybody had been rigged before briefing, there would have been no problem. But neither situation applied, and so by 10.30 the grid was by no means ready and the sky was already threatening to boil over into massive cumulus and showers.

Pilots were none too happy about the task, either. "A Cats Cradle is a prescribed area distance task," somebody said. "This one's all distance and no area."

An additional TP was therefore added: East Retford, about 25km from Lincoln.

It was 11.00 before the grid was ready and the first pilot, Bernard Fitchett, was launched. The last, Ralph Jones, took off at 11.37, by which time the sky was seething with heavy, deep cumulus, particularly to the north. Although there were one or two relights, pilots appeared to have little difficulty getting away from the immediate vicinity of the site. Cloud-flying was obviously going to be essential, but the icing level was low, visibility was not very good, and showers developed rapidly in the spoon. There was no question of dancing merrily round the various TPs. It was a question of pure survival and getting out of the area to Lincolnshire as soon as possible. If possible.

About half the Standard Class, launched first, managed to escape under the airway, but only four of the Open



June 1 situation at 04.00gmt; forecast and route

did anything significant. Those four — Delafield, Burton, Goldsborough and Alf Warminger (Kestrel 19) all exceeded 200km. Most of the other Open pilots landed in and around the spoon after covering distances of between 25 and 70km. (Frank Pozerskis [Cirrus] thought it was good business to fly 69.25km and only score two points fewer than Warminger, who flew 229.25km).

There was a better grading of distances in the Standard Class, and it was obvious that the earlier one was launched the better his chances were. However, it was still possible to get away from a relight. John Williamson (Cobra 15) landed at Ludlow, got back to base, was launched again at 13.00, landed back, and from his second relight at 13.30 got to Newark after a flight of 173km.

Fitchett, the first Standard pilot launched, confessed that he should have left the site as soon as possible, but he messed around a bit first. Conditions began to get very bad. "Although the airway was in the way, my only chance was to get under it. After getting to Bridgnorth at 6,000ft, I went to Litchfield, under the airway. There was a large blue gap to the north and NW, between two lines of storms which ran WNW to ESE." There the bulk of the day's successful pilots appeared to congregate.

Cardiff and White tried to get to the far side of the gap. White failed to reach the next band of lift by 500ft and Cardiff landed outside the cradle area.

"The rest of us stayed on the southern side of the gap, near Burton-on-Trent, for quite a long time. Eventually, it brewed up, and we could cross the gap to good cu forming in the east, the storms having moved on. Getting to Ashbourne was fairly easy, and I got to 11,100ft near there." He glided to East Retford, making the TP at 5,000ft, but couldn't decide whether to go to Lincoln or to head back, as a storm appeared to be forming at Nottingham. "It looked good at Lincoln so I went there, reaching 8,000ft on the way. By then the air to the west looked as though it was dying due to the Nottingham storm, so I diverted south outside the cradle to take another climb to 8,000ft."

From there it was a straight, final glide to Kimberley, five miles WNW of Nottingham. Distance, 263km. Time, nearly six hours. Fitchett was best by a

few km of a bunch of three Open and five Standard pilots: Burton, Goldsborough, Warminger, W. Dickson (K-6E), Ted Shephard (Std Cirrus). Barrie Dobson (Std Libelle) and Ron Sandford (Std Cirrus). The common denominator forcing them all to land on the homeward run was that big storm at Nottingham.

Two other pilots broke that barrier, however: Garrod and Delafield. Garrod made the best flight of the day, and on the outward stage, his track was further north than many of the others. Sixth off, he hopped from cloud to cloud to Bridgnorth. Bases were about 2,500ft. After proceeding to Newport, he encountered a long, double-decker line of cloud from which rain was falling. It looked like a sea-breeze front. He climbed under the blackest part to 6,500ft, emerging before he reached the airway. From there it was a long glide in clear air ENE to Ashbourne and 1,500ft before he found any more lift. Conditions improved, but when he got to Chesterfield, the East Retford and Lincoln areas looked very overcast. He hung back for 20 minutes, then a 10kt climb took him to 10,000ft.

Although he intended to turn East Retford, he couldn't locate it, so went on to round Lincoln. The Nottingham area posed no special problems (he was earlier than the others) but the rest of the way back to Shobdon was a struggle. He finally came to rest at Cosford, 343km and more than seven hours after taking off.

The honours for perhaps the most intelligent piece of flying go, however, to John Delafield. He was one of the group who were held up by the blue patch at Burton-on-Trent, where, logically, he spent some time in George Burton's company. After helping each other to get to 3,500ft when the conditions perked up again, he gave Burton the slip and went north to Chesterfield, where convection was deeper. A 7,000ft climb near Mansfield enabled him to get to East Retford. "I then had to choose between going on to Lincoln for the extra distance or returning. I chose to return as a storm was starting to brew west of Mansfield, and this threatened to cut me off. I charged into it, climbed to 8,500ft and just managed to get to the good weather at Burton-on-Trent again. It was plain sailing as far as Cosford, but clamped west of that." He glided out to earn a winner's distance of 326km.

This flight brought Delafield to the head of the Open Class with 53 points, pushing Lemmy Tanner, who failed to score, down to third place, a point behind (at 41) Ray Foot. Garrod increased his lead at the top of the Standard Class, having amassed 93 points. Fitchett was second with 81 and Cardiff and Dobson joint third with 64.

TWO CONTESTS IN ONE DAY

The first thing that happened on Friday morning was that briefing was postponed until 13.30. A frontal system was looming up from the west, and was shortly going to soak everything. It was possible that it would clear in the afternoon, however, and a task would be a distinct possibility then—possibly a wave task. The wind was picking up again, and was forecast to be WSW 20/30kts at operating heights.

As we left the briefing tent, there were hints of thermal activity, but it looked very grey towards the west, and it was quite obvious that the rain was on its way. Pilots and crews dispersed to take care of domestic chores, etc.

I decided to play truant. It seemed highly unlikely that a task would materialise at all, save late in the day. It had been a personal intention of mine to visit a nearby town called Hay-on-Wye on a suitable no-contest day to do some book-hunting, so I grabbed the



Ralph Jones

opportunity and set off to hitch-hike there. It was a singularly difficult job, and involved a lot of walking. I hoped the rain wouldn't be too bad. At first, the weather was pleasantly warm, with the sun peeping through. Surprisingly, it stayed pleasantly warm. The rain didn't materialise. Instead, cumulus continued to pop here and there. By noon, when I reached Hay, conditions looked very good, and there was still no sign of rain. I began to feel guilty I'd missed the start of a very good contest day. But then I remembered that nothing would happen before 13.30, save perhaps some pilots tearing their hair impatiently. It was sure to start raining soon. I continued to nose through old books.

By the time I got back to Shobdon, it was all over. There had been not one but two contest days rolled into one, in a manner of speaking. Two? There had been a thermal task for most, but a wave task for several, and a pure, pure wave task for one.

As the morning wore on, it was apparent that the cold front had slowed down, and that the problem was no longer one of getting a task after it had passed, but one of trying to squeeze one into the ever weakening convection before it came.

"You can't win," contest director Mike Harper declared unhappily. "If we'd said at morning briefing 'rig now', it would have rained. We didn't, so it didn't."

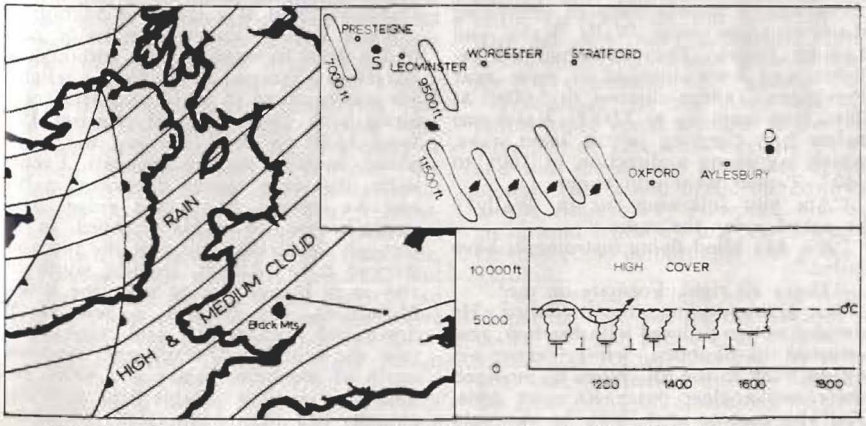
The only possible task was, of course, a race eastwards towards better thermals, and Dunstable, 165.75km away, was declared as the goal.

In addition to the weakening thermal activity, some weak wave was expected. This could increase in strength as the front drew closer, and would be contactable from the tops of the cumulus, which would reach about 6,000ft. Whether it would help matters or not was a moot point.

The two classes were launched as soon after 13.30 as possible, the first away being Frank Pozerskis of the Open Class. Pilots were dropped at 3,000ft instead of 2,000 to give them a better chance of contacting lift. In spite of that, nearly half the contestants failed to score at all, and most of the remainder fell to earth before they had gone 100km. There was a significant cross-wind component, and most pilots landed north of track.

However, the weakening thermal activity at Shobdon was by no means the sole reason for the poor showing. As expected, convection improved considerably towards the east, but firm wave activity above it was affecting the thermals quite considerably, lining them into cross-wind bands and making them very difficult to use.

One would climb a few hundred feet as the thermal drifted through the rising part of the wave. But as it drifted into



June 2 situation at 09.00gmt; forecast and route, with Tanner's wave flight indicated

the sinking area, the thermal would be broken up. Many pilots were sunk as they pushed their way downwind towards the goal. Their stories were all the same:

"The wave killed off my lift" (John Glossop).

". . . so good, I thought Dunstable was in the bag. Strong thermal near Pershore. Then rough 10kts sink. Lenticular above me. I hit the ground in an onion patch" (Frank Pozerskis).

"I was one of the last off. Conditions were poor. I took my courage in both hands and was down to 600ft three times. Scraped to Edgehill, then at Banbury had a climb at 6kts to 4,000ft. But each of the next three thermals were cut off by wave" (Carr Withall, who made the best Standard Class distance, 138.75km).

"Thermals, though strong, were narrow and didn't last long. I found myself getting north of track and couldn't get to the better weather to the south east. I didn't appreciate soon enough how the thermals were being lined up by the wave" (Mike Garrod).

One competitor who appreciated the situation quickly was John Delafield. Seeing early on some high lenticulars to the south of Leominster, he flew south along a cross-wind line of thermals. Once having got well to the south, he found that the thermals east of the Cotswolds were better organised and subsequently had little difficulty completing the task.

Several pilots who had landed early returned to Shobdon for relights. Among those with a forlorn hope of improving their distances were Wally Kahn and Lemmy Tanner. They both had late relights, and were dropped in wave near Presteigne. Tanner climbed to 5,000ft at 2kts, then crept up to 7,000ft. Kahn was below him climbing in the same wave, which lay along a direction of 160° to 340°. Tanner went into cloud.

"Are you following me in, Wally?" he asked, over the radio.

"No. My blind flying instruments have failed."

"That's all right. Formate on me!"

But Kahn declined the invitation. He decided not to proceed with the task, and returned to Shobdon, while Tanner set off on track to the SE. When he emerged there was a clear patch 10 miles wide. Halfway across, at 4,200ft, he ran into wave which built up to 5kts and took



As good as an umbrella—photographing the task board

him through a sheet of strato-cu. This wave he thought was caused by the Black Mountains, and ran approximately 150° to 330°. He came out of the top of the cloud at 7,500ft and climbed another 2,000ft. Further to the south lay another system of waves, and he jumped to this and worked it to 11,500ft. He then jumped downwind from wave to wave, working each upcurrent, and heading about 150° when gliding to the next. This part of his flight was carried out between 9 and 10,000ft; he lost relatively little height with each jump, and made about four in all. He came to the edge of the strato-cu at Oxford, and used further bits of wave to help him reach Dunstable at 19.30 at a speed of 54km/h.

Ralph Jones achieved the major part of his flight in wave as well, although it started as a thermal scrape from a relight. He was confined to a hill near Hereford, along with Derek Piggott (Kestrel 19), from 16.00 to 18.00. He saw the wave about, messing up the thermals. Eventually, the wave moved downwind a bit and he caught it off the ridge. The strength was 5kts. He climbed in it through the stratus, out over the top and worked it to 10,000ft, heading south to stay in it. It was coming from the Black Mountains. He hopped a few crests downwind towards the goal, sank back into the cloud at 7,000ft and emerged north of Blenheim Palace at 3,400ft. He glided it out to a suitable field at Whitchurch, less than 15km short of Dunstable.

There his troubles really began. Although the landing was safe enough, it seemed to him that the entire GPO was ganging up on him. For some time during the evening—by which time the rain had finally arrived—there were telephone difficulties at Shobdon, and it was many hours before his crew were able to contact and get to him.

With only two days left, RAF officer John Delafield was firmly in the lead in the Open Class with 72 points, having won two days. Delafield had been abroad, in Canada, for some time, and had not flown competitively since the World Championships at Marfa. Goldsborough was second (59), Tanner third (58), Pozerskis fourth (48). Foot had not scored today, so he fell to fifth place (42) and British team member George Burton lay sixth (40 points).

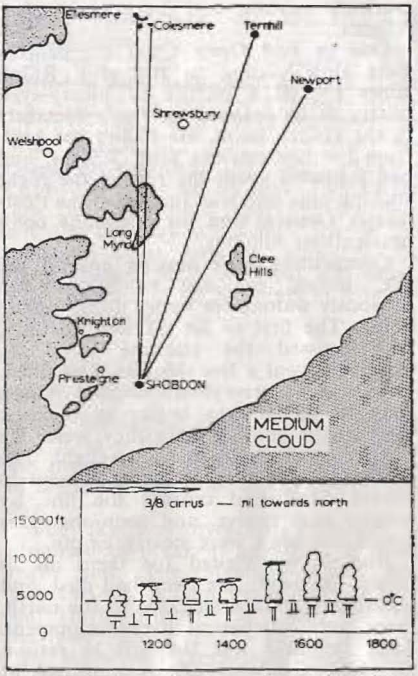
Although Garrod had lost his 100% record in the Standard Class, he was third for the day, and comfortably retained the overall lead with 109 points. Second and third were British team members John Cardiff (82 points; second for the day) and Bernard Fitchett (81 points; he unfortunately failed to score). Fourth was White (71), fifth Dobson (69) and sixth Williamson (57).

A CLOSED-CIRCUIT SPEED RACE AT LAST

Ten Open and five Standard pilots completed the closed circuit race set on Saturday, June 3, and for almost the first time in this nationals, some of the proud owners of new Kestrels and Nimbuses were able to flex their wings at speed.

However, the weather was still a long way from ideal. A cold front lying over the SE of England was moving only slowly away, and the edge of a sheet of cloud associated with it lay over the Shobdon area in the morning. It would recede SE only very slowly, thus eliminating that as a task direction. Conditions to the north were likely to be reasonable, however, with moderate thermals, but there would also be some showers, so an out-and-return with four alternative TPS was set: Ellesmere 146.5km, Colemere 143.5km, Ternhill airfield 145km and Newport (Salop) 135km.

The wind would be a little south of west at operating heights, 20/25kts, and



June 3 situation at 08.00gmt; forecast and routes

there was a possibility of wave activity above the convection, which would top out at about 6,000ft due to a stable layer above, meteorologist for the day John George said. A further layer of cloud could encroach on the Shobdon area later on as a baby depression formed in the cold front, which trailed back to the SW approaches of England.

The choice for the pilots was quite simple—they could go north to the Ellesmere pair of TPs, cross-wind all the way, and with the definite possibility of wave to use. They could beetle off downwind to the nearest TP, Newport, but have an upwind battle on the return journey. Or they could compromise and make for Ternhill.

The Standard Class had the honour of starting first, and the first take-off was made by Fred Knipe (Std Libelle) just after 11.00. He was also the first to land out, unfortunately, one mile south of the field. Although conditions were looking quite reasonable, it obviously wasn't

cracking weather, and there were a few relights.

One or two Open Class competitors were slow getting to the grid. Ralph Jones looked a picture of bleary-eyed misery as he dragged his feet reluctantly to the launch point. He hadn't got back from his late retrieve until 3.30am, and had probably spent the rest of the night sticking pins into wax images of the Postmaster General and his telephone communications minions.

Competitors were staying around the site, testing out the conditions and obviously waiting for better things before going. The first to set off was Dickson, who crossed the startline at 11.50. Pozerskis went a few minutes later, then, after midday, everybody decided it was time to go. It was beginning to look blue to the south, where they were. To hang around might mean a relight. The north looked better, so off they went in droves. Half had crossed the line by quarter past twelve, and soon the skies round Shobdon were nearly empty.

And so we waited for them all to return. By 14.00, the wind had died, and although it looked soarable to the north, there were patches of overdevelopment. John Delafield was the first to return, at 14.20. Goldsborough was second at 14.58 then, in quick succession, Jones, Burton and Pozerskis. The superior performance of the Open Class aircraft was showing itself in the results, for perhaps the first time since the contest started. Both classes had left the site at about the same time, but the first Standard Class machine did not return until 15.25 — Joe Lysakowski (Std Cirrus).

Conditions remained intermittently soarable all afternoon, and one or two pilots who completed the task had a second attempt, to try and improve their times, but without success.

What happened *en route*, then? It was by no means plain sailing; most pilots had to contend with areas of underdevelopment, but at least they were spared the interference of wave on their thermals. Most of the successful pilots tended to make track towards the westerly past of the task area and several found that they had to venture well into the foothills of the Welsh mountains where conditions appeared to be best, but topographical hospitality was dubious. Carr Withall damaged his glider in a field landing at Montgomery.

Cardiff, who made the fourth best Standard time (36.3km/h), was forced after rounding Ternhill to head west because it looked claggy everywhere else. He got very low, among hills and terrifyingly small fields with not a road in sight. He managed to cling to the air for an hour and a half, when conditions improved to the east. He only identified his position when he saw a K-13 looping over a hill—the Mynd. As there was a lot of sink about, he took his last climb to 7,000ft to make a very conservative final glide. Fitchett, too, went west of track on the way back but landed near Knighton.



PILATUS B-4 demonstration-tour throughout England in August 1972 (for further details please contact PILATUS AIRCRAFT LTD., CH-6370 STANS/SWITZERLAND)

Ron Sandford, who won the Standard with 51.8km/h, did so from a relight. When he crossed the start line (at 12.50) the weather looked grim, overdeveloped and wet to the north. It was brighter to the west, however, so he ventured over the foothills of the Welsh mountains. Conditions were good almost to the TP (Ellesmere) although the large gaps made him cruise slowly. He was able to increase his cruise speed to 80-90kts for a while, however, before conditions deteriorated after Shrewsbury from whence he flew at maximum glide and took the maximum height he could. His final glide was made from the south end of the Mynd.

Con Greaves won the Open Class at 62.5km/h, but since his speed was only fractionally higher than those of Delafield (62.1km/h) and Jones (60.6km/h), they scored the same number of points. Jones chose the short route to Newport, with some lack of confidence, ditching his water ballast over Shobdon. He wished he hadn't, as he found the task straightforward, with thermals of 4/6kts. There was, however, a problem area near Newport where he encountered a different airmass. He didn't venture high in cloud—it was difficult to find the cores and there was icing.

Delafield started in the middle of the gaggle which departed about noon. He decided to head for Ellesmere so as to minimise his headwind on the return. He climbed to 5,000ft near Ludlow, and then encountered thermal induced wave in the lee of the Mynd and progressed for 10 miles towards the north in this. Boring off on track, he got rather low near Shrewsbury because of getting into the sinking part of the wave and had a worrying time on his way out near Ellesmere. On the return, he kept well to the west, and encountered Con Greaves on his way out in a reasonable thermal to the west of Shrewsbury. The Mynd was no help when he got there, but he found 4kts under the only storm that did not look decayed.

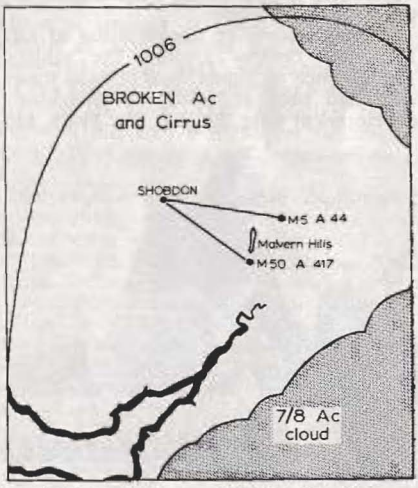
Lemmy Tanner spent nearly an hour in the Shrewsbury area before turning Ternhill. He found the head wind quite strong; the Dart didn't seem to be going anywhere and he took four hours to complete the task. He took off at 16.15 for a second go, and nearly made it back with a faster time, but fell short at Craven Arms.

By and large, the competitors who started a little later, kept west of track and went to the westerly TPs were better off than those who chose Newport—as Mike Garrod will testify (see p286). He failed to complete the task, allowing Cardiff to creep up on him. There were now only 10 points separating the two, and the last day could well change the Standard Class balance, although the Open seemed prety well cut and dried, with Delafield over 20 points in front of Goldsborough.

AN EXERCISE IN HALF-UPMANSHIP

But Sunday changed nothing, except that it gave the Standard Class a sixth, but insignificant, contest day with scores of the same magnitude as the Open's first day.

The sky was overcast. Although it promised to break at any time, it never really did. The Standard Class was launched into a light westerly on an out-and-return dribble via either of the motorway junction TPs at the ends of the Malverns. Conditions were weak, cloud cover to the west was becoming more and more solid, rain was on the way, and nobody seriously believed any-



June 4 situation at 09.00gmt and route

body could even stay up, let alone perform cross-countries. It was described by one pilot as an exercise in half-upmanship. Incredibly, two pilots achieved the minimum scoring distance — Tony Watson (Std Libelle) and Lysakowsky.

Even more incredibly, Lysakowsky rounded the TP and made it back to Shobdon — a hundred kilometres at 25km/h. Maximum points—four. Runner-up, two. The rest third equal with nought.

And the Open/Standard Class National Gliding Championships 1972 were all over as far as the flying was concerned.

VALE

The contest was closed by Dr Alan E. Slater in the evening, and the trophies presented by Miss United Kingdom, Marilyn Ward, who had spent the day at Shobdon on behalf of Woolworth's; the firm had made a considerable last-minute donation to the British team for Yugoslavia.

Although the weather during the competition had often been flukey, the results certainly weren't. The generally accepted top pilots, by and large, finished at the top, and British team members George Burton, Bernard Fitchett and John Cardiff acquitted themselves well. Nick Goodhart would undoubtedly have also been near the top had it not been for his unfortunate accident.

A major topic of conversation at any Nationals centres around the gliders. The absence of Sigma disappointed many who had been following the machine's development over the past few years, but it did give a demonstration flight on the last Saturday. The BG-135 was present throughout the week, and also gave a number of demonstration flights.



Miss UK, Marilyn Ward (L) and George Burton

But as far as the new hot ships—Kestrel 19 and Nimbus 2—were concerned, there was very little to write about on the performance side. Conditions gave very little help to these machines and there was no real opportunity for them to show their paces. John Delafield did remark, however, that the Kestrel 19 "has the ASW-12 beat all along the road, the flat polar making it very good at the high speed end". On the basis of a comparison flight with Ralph Jones's Nimbus 2 in wave, he thought the Kestrel superior to that.

And the first motor glider to be entered as a full competitor in a British competition? Ian Strachan's SF-27M slotted in very well in the grid, but the machine did not have a very successful competition.

The other new face was the Cobra 15, flown quite successfully by John Williamson. It appeared to be as good as the Standard Class glass machines, save perhaps at the low-speed end.

The organisers cannot be praised highly enough. They came from two clubs — Bristol & Gloucestershire and Midland — and were organising the competition from a third, basically non-gliding, site which was by and large unfamiliar to them. Although the weather was unco-operative, a lot of flying was achieved, and it is safe to say that far less might have been carried out at another venue that week. If the day-to-day running of the competition did at times lack the smooth precision of the clubs which have run many successful competitions *at their own sites* over the years, a pleasant air of informality more than made up for it. And through it all, the members of the Herefordshire Aero Club kept smiling, helping out in many ways and proving to be excellent hosts.

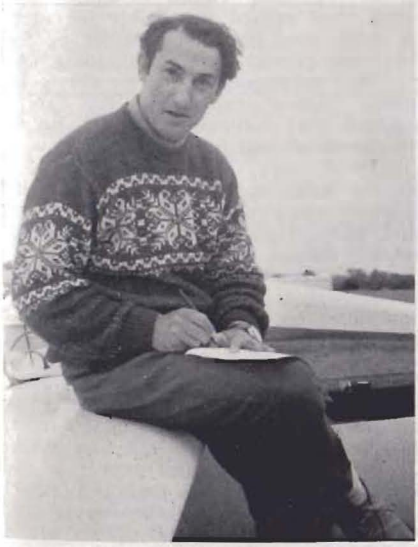
They also contributed a Rallye Commodore to the tug fleet, which included a second Commodore, a Condor (belonging to the Tiger Club), Dunstable's Tiger Moth, an RAFGSA Chipmunk, Terriers supplied by Mike Costin and Jim Knight, the Bristol Club Auster and the incredible Polish tug Wilga 35, which was on a demonstration tour at the time.

THE OPEN CLASS

By JOHN DELAFIELD

COMPETITION gliding must surely demand the highest level of both rational and rapid decision-making of any sport. I feel justified in making this claim as, in my youth (but of course I'm still in that pleasant phase of life!), I was one of those who played most sports: None of them demanded the high level of mental activity that our own competitive sport requires.

From my viewpoint the Nationals at Shobdon, and the weather we had, made this decision-making even more critical than usual. With the generally high winds we had, wave played havoc with thermals and one had to make a positive effort to work out the precise effect this was having, and then use it to one's own advantage. I should say here that I am a novice with wave. My logbook records a total of only 2½ hours wave flying prior to Shobdon. It would have been most interesting to have a number of experts in wave flying in the championships as they might well have produced some interesting flights.



John Delafield

So, on the one hand, with the high winds and waves upsetting our traditional mode of cross-country flying and making everything most tiresome, we did, on the other hand, at least gain the benefit, if such it can be called, of being able to retire to a suitable hill and think things out. I believe I am justified in saying that those who were not prepared to hill-soar could not expect to do well in this particular contest.

Our thermals were also abnormal in that they frequently developed into large storms which effectively "blotted-out" large portions of the task area. It was virtually essential to cloud-fly in such circumstances and to take the requisite height before attempting to cross the areas of clamp. Sometimes it was necessary to wait in one area for a few minutes to allow conditions ahead to improve. Pressing on if the lift is weak is all very well on good days but there are times when to do so would merely precipitate a premature landing. When to press-on and when to slow down is a matter of fine judgment and we certainly had our fair share of this type of exercise at Shobdon.

As for sheer speed flying, we had very little opportunity to really get going at it this year, except on portions of two of the tasks. This was a pity as I do not believe a contest is really satisfactory without at least 50% of the tasks being completed races. Alas, we cannot control the elements and must make do with what we are given. Our tasksetter, Jack Harrison, did very well to get so much flying out of the poor conditions we did have.

My recollections of these Nationals are, therefore, ones of healthy respect for the influence of wave on thermals, of the need for caution in conditions of storms and overdevelopment and above all of the need to stay mentally alert in the air. I know we all enjoyed these championships and the excellent organisation both on the BGA side and especially by our hosts, the Herefordshire Aero Club. Shobdon, 1972, may not have had the best weather for Nationals but it was a good contest and I certainly enjoyed it. But I am entitled to be biased!

THE STANDARD

By MIKE GARROD

IT'S 15 years since I entered my first Nationals with an Olympia 2. Lasham '57 was a vintage year, even T-21's completing a 100km triangle. Shobdon '72, in spite of acres of glass-fibre, was typified by the non-return of most contestants.

One cannot blame the tasksetters, nor the pilots. Only "Splasham '67" could have been rated worse than this, and never can I remember the first three days as a washout. Another unusual feature was the general lack of pre-contest practice.

My own feelings prior to the contest were that I'd be fortunate to finish in the first ten. The advantage of the use of a glass-fibre ship had dwindled to almost nothing—practically everybody had them! Few top class pilots were missing, which hardly put me in a winning mood! Just how the result came out is still beyond my comprehension.

Day one had over 30kts of wind aloft, and no consistent thermal activity. Never in contest flying have I done any significant hill-flying, but this became a battle with the geography of Herefordshire and Monmouthshire. A quarter million map is hardly adequate for this game, as it's possible to soar shallow hills in strong wind conditions that barely show any contours. Having never flown the area before, one had to judge from the back of a strange hill whether it had a soarable edge on it's upwind side, and use every ploy to maintain height in getting to it. A direct line approach to the second turning point just wasn't practical (dead into wind across a large flat valley) so I struck off track and finally approached it across wind.

The race to Husbands Bosworth was the only day in the whole contest with nicely spaced cumulus clouds, though somewhat upset later by showers. By pure chance an active line of shower clouds moved across my track up the second leg, permitting a very fast run of at least 15 miles without circling. An extra thousand feet on the last climb proved to be a wise decision.

The Cats Cradle day, with cumulonimbus spread out, rain, and associated dead areas, meant that high climbs were a must. This was a chancy day, as one never knew while penetrating mile upon mile of solid cloud if usable lift was in range. Airways were also a handicap, but fortunately were not blotted out by storms when I happened along. An early start paid dividends, and no attempt at MacCready ring flying kept me aloft until late evening.



"It's worth the struggle"—Mike Garrod receiving the Standard Class trophy from Miss United Kingdom

Day four was a difficult day, with rather poor lift under 7/8 upper cloud cover. Tempting clouds beckoned one south, but proved impossible to reach. A brief area of good weather at the Malverns proved to be my undoing, and on the assumption that it was good ahead "upped" the speed. Too late I realised that maintaining one's altitude was essential, and fell to earth half way.

June 3, with four turning points to choose from, was yet another day with showers and strong winds. Which route, and when to go? How would the cloud scenery change in the course of the day? It was difficult to decide, and I opted for Newport. One awful struggle very low down half way out, a brief, almost classic half an hour with one climb on the way home to 5,500ft, and then a "last day of Splasham 67" type situation arose which I recognised too late. Fifty square miles of dead air behind a shower, and we ground to earth half way home. To see the circumstances arising is one thing; to circumnavigate them is another!

And so it's over. The lessons taught: Open and Standard Class gliders are a match in weak thermal conditions; the

right decisions and a slice of luck are much more important. It helps to be thoroughly familiar with one's steed, and I got the impression that many pilots had barely flown their new possessions. Reliable instruments are an absolute must, and one had to be prepared for five or six hours of cloud flying. This implies being able to fly in cloud with a turn-and-slip and no horizon. Last, but not least, it helps not to bend the glider!

The proof of the pudding will be in the eating! The *Daily Telegraph* contest, with many top class pilots from home and abroad, will be a very hard nut to crack. This Standard Class champion is forecasting nothing!

TASKS

May 28	Open Out-and-return via Ellesmere (146.5km) or Colemere (143.5km).
May 30	Open and Standard Triangle via M50/A417 junction and Llangattock (146km).
May 31	Open and Standard Race to Husbands Bosworth via Winchcombe (143km) or Moreton-in-the-Marsh (142.25km).
June 1	Open and Standard Cats Cradle Shobdon, Bridgnorth, Newport (Salop), Shrewsbury, East Retford and Lincoln.
June 2	Open and Standard Race to Dunstable, 165.75km.
June 3	Open and Standard Out-and-return via Ellesmere (146.5km), Colemere (143.5km), Newport (Salop) (135km) or Ternhill (145km).
June 4	Standard Out-and-return via M5/A44 junction (100km) or M50/A417 (90km).

Final results
Open Class

	Pilot	Sailplane	28.5 4	30.5 12	31.5 33	1.6 20	2.6 19	3.6 26	Total Points
1	Delafield, J.	Kestrel 19	0	8(3=)	25(5)	20(1)	19(1)	26(1=)	98
2	Goldsborough, J. B.	Diamant 18	0	0	33(1)	17(2=)	9(5=)	17(6=)	76
3=	Tanner, L. E. N.	Dart 17R	0	12(1=)	29(2=)	0	17(2)	12(9)	70
3=	Pozerskis, P.	Cirrus	0	8(3=)	19(8)	12(5)	9(5=)	22(4)	70
5	Burton, G. E.	Kestrel 19	0	8(3=)	2(16=)	17(2=)	13(4)	20(5)	60
6	Foot, R.	Nimbus 2	0	12(1=)	22(6=)	8(6)	0	17(6=)	59
7=	Greaves, C. M.	Kestrel 19	1(2	7(6=)	22(6=)	0	0	26(1=)	56
7=	Jones, R.	Nimbus 2	0	0	11(12=)	5(9)	15(3)	26(1=)	56
9	Warminger, A. H.	Kestrel 19	0	3(8)	15(9)	14(4)	5(8=)	8(11)	45
10=	James, D. B.	Diamant 18	0	0	13(10)	0	9(5=)	14(8)	36
10=	Tull, V. F. G.	Diamant 18	0	0	29(2=)	7(7=)	—	—	36
12	Goodhart, H. C. N.	Kestrel 17	4(1)	0	29(2=)	—	—	—	33
13	Piggott, A. D.	Kestrel 19	0	7(6=)	6(15)	0	5(8)	6(12)	24
14	Kahn, W. A. H.	Kestrel 17	0	0	2(16=)	7(7=)	0	10(10)	19
15	Simpson, C. R.	Kestrel 19	0	0	11(12=)	0	1(10)	3(13=)	15
16	Woods, L.	SHK	0	0	10(14)	0	0	3(13=)	13
17	Monteith, J. R.	BS-1	0	0	12(11)	—	—	—	12
18	Rood, B. W. T.	Cirrus	0	0*	2(16=)	1(10)	0	0	3

Final results
Standard Class

	Pilot	Sailplane	30.5 21	31.5 36	1.6 34	2.6 20	3.6 35	4.6 4	Total Points
1	Garrod, M. P.	ASW-15	21(1)	38(1)	34(1)	16(3)	12(14=)	0	121
2	Cardiff, J.	Std Libelle	19(2)	31(4)	14(11)	18(2)	29(4)	0	111
3	Fitchett, B.	Std Cirrus	14(4=)	35(2=)	32(2)	0	16(9=)	0	97
4	Dobson, B. F.	Std Libelle	10(6=)	27(6)	27(4=)	5(8=)	23(6=)	0	92
5	Williamson, J. S.	Cobra 15	6(8=)	29(5)	22(7)	0	31(3)	0	88
6	White, S. A.	Std Cirrus	17(3)	20(8=)	20(8)	14(4)	16(9=)	0	87
7	Sandford, R. A.	Std Cirrus	0	20(8=)	24(6)	5(8=)	35(1)	0	84
8	Lysakowski, E. R.	Std Cirrus	4(11=)	9(17=)	9(13)	11(5=)	33(2)	4(1)	70
9	Burton, A. J.	Std Libelle	4(11=)	15(13=)	16(10)	11(5=)	20(8)	0	66
10	Glossop, J. D. J.	ASW-15	0	19(12)	18(9)	0	23(6=)	0	60
11	Withall, C. L.	Std Cirrus	0	22(7)	0	20(1)	16(9=)	—	58
12	Gough, A. W.	Std Cirrus	0	35(2=)	5(15=)	8(7)	8(17=)	0	56
13	Shephard, E. G.	Std Cirrus	14(4=)	0	27(4=)	0	12(14=)	0	53
14	Austin, D. C.	Std Cirrus	6(8=)	14(15)	12(12)	0	12(14=)	0	44
15	Dickson, W. W.	K-6E	10(6=)	2(21)	30(3)	0	0	0	42
16	Welsh, J. H.	K-6E	0	10(16)	0	0	27(5)	0	37
17	Saundby, R. P.	Std Cirrus	0	20(8=)	0	0	16(9=)	0	36
18	Watson, A. J.	Std Libelle	0	20(8=)	5(15=)	0	4(19=)	2(2)	31
19	Strachan, I. W.	SF-27M	0	5(19=)	4(17)	0	16(9=)	0	25
20=	Knipe, F.	Std Libelle	4(11=)	5(19=)	7(14)	1(10)	4(19=)	0	21
20=	Seth-Smith, M. P.	K-6E	6(8=)	15(13=)	—	—	—	—	21
22	Haynes, K. W.	Std Libelle	0	9(17=)	0	0	4(19=)	0	13
23	Wilkinson, K. G.	ASW-15	0	—	—	0	8(17=)	0	8

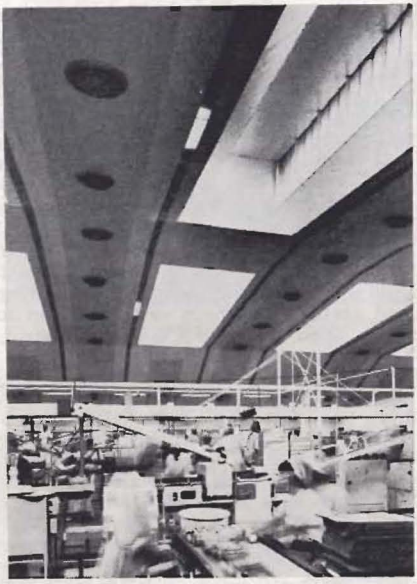
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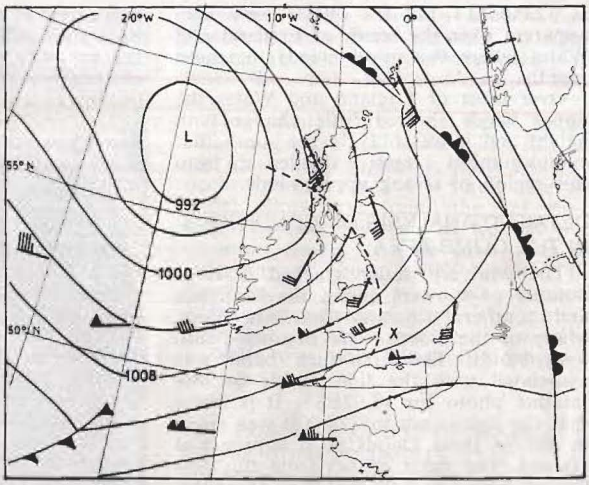
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Fig 1. May 9, surface chart at 13.00BST with wind arrows showing velocities reported at 300mb (about 30,000ft)



THE WEATHER FOR THE 40,000ft CLIMB

By TOM BRADBURY

THIS is a preliminary account of the conditions prevailing in the Swindon/Oxford area during the afternoon of May 9, 1972, when Mike Field broke the British altitude record for gliders. There are still points to be cleared up and it is hoped to complete a more detailed study when the barograph trace is available.

The general situation was analysed from routine surface and upper air observations together with satellite photographs of the cloud pattern shortly before the flight began. The routine observations were not in themselves adequate to supply the kind of details needed but fortunately the Meteorological Research Unit at Malvern was able to add a wealth of information on the development and movement of cloud patterns shown by high powered radar. Malvern also supplied a special print-out of radiosonde data and photos taken from the height/range radar presentation looking upwind earlier that day.

GENERAL SITUATION

The midday chart (Fig 1) shows a depression west of the Hebrides with an unstable southwesterly airflow over the British Isles. There were minor troughs of low pressure in this airstream. One such trough produced a very clear line of shower cloud which may be seen in the satellite photo (Fig 2) stretching from southwest Scotland to the Lancashire coast and thence over the west Midlands to Dorset. Off the southwest of Ireland a more active trough was developing. This feature subsequently became a small depression when it reached the English Channel next morning. Ahead of this developing low there was a westerly jet stream with wind speeds of about 100kts at the 30,000ft level. The core of the jet stream was extending towards Brittany



Fig 2. Enlargement of satellite photo for 13.02BST, showing cloud pattern over Britain with line of shower cloud

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at 12.00GMT but the effects were also apparent over the south of England and Wales where the upper winds increased rapidly.

Over most of England and Wales the upper winds showed little change with height and it was only in the south that cumulonimbus clouds extended up into this region of strong upper winds.

DETAILED ANALYSIS OF CONDITIONS IN THE CLIMB AREA

The Malvern radar tracked a large number of showers across the Midlands and southern England that afternoon. Many of the clouds were organised into long bands. The first such band was associated with the line visible on the satellite photo for 13.02BST. It is likely that the first climb to 12,000ft was made in one of these clouds as it approached Oxford. The radar echoes from this first line weakened as it moved away eastward.

Both satellite and radar showed more active shower areas further west at this time. One of the most active clouds of the day appeared between Bristol and Swindon. The echoes were so strong from this cloud mass that numerous cells could still be seen when the radar attenuation was set down to 40db. Fig 3 shows the

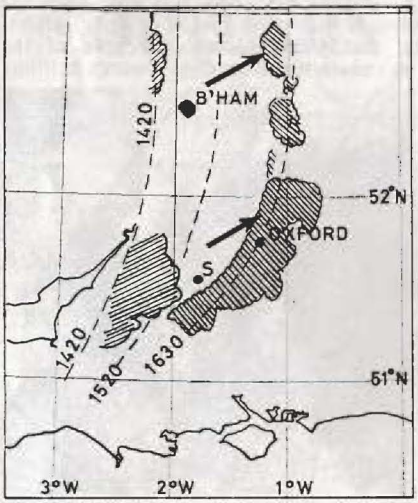


Fig 3. Movement of major cloud line from 14.20 to 16.30BST. The eastern boundary at 14.20 and the entire cloud outline at 16.30 are shaded

movement of this cloud mass. The pecked lines show where the approximate centre lay at 14.20, 15.20 and 16.30BST. The eastern boundary at 14.20 and the entire outline at 16.30 are shaded.

The position, approaching the Swindon/Cricklade area at 14.20, makes it fairly certain that this was the cloud in which the major climb began.

The individual cells composing this cloud mass moved with a speed of 24kts (±2kts) from 240 degrees and it is likely that the glider drifted downwind at approximately this speed during the cloud climb. The cloud itself was between 10 and 20 miles wide and about 70 miles long. The actual height of the summit was not measured but radio soundings indicated that some tops probably reached the tropopause, which was between 28,000 and 30,000ft. Although this was above the majority of cloud tops to be expected that day, and well above the tops measured west of Malvern a few hours earlier, this estimate agrees closely with the pilot's account. A large jet aircraft which flew just north of the area of the climb at this time reported smooth conditions at 35,000ft, and it is improbable that there were any cloud tops near that level.

When the glider headed out into clear air on a WSW course it took a track which only slowly diverged from the edge of the cloud, which lay NE/SW at that time.

It is clear from examination of contour charts and upper winds reported by radiosonde stations that the air at 20,000ft and above was moving considerably faster than the cloud cells. The difference in the relative speeds of cloud cells and upper winds reached a maximum of about 25kts near the tropopause at 30,000ft.

It is not unusual for cumulonimbus to extend upwards into a region of strong winds. A long anvil of cirrus cloud can often be seen streaming downwind from the summit of such a cloud where the updraft ceases. However the great bulk of the cloud seems little affected.

AIRFLOW OVER CUMULUS AND "THERMAL WAVES"

When a thermal ascends, a considerable mass of air is carried upwards to



Mike Field *Photo: Julian Jardine*

levels where the wind may differ from that at the level where the thermal first formed. It takes time for the horizontal momentum of the thermal to be changed and the ascending mass of air does not immediately respond to the different winds aloft. The stronger and more continuous the vertical currents the less the thermal is likely to be deflected by the changed winds aloft. Isolated narrow cumulus towers can often be seen to tilt when they rise into a layer of faster moving air but heavier masses of cloud seem little affected.

As a cumulus cloud grows some air is entrained into the sides but a portion of the surrounding air is pushed aside. The cloud may be thought of as acting like a rather porous hill. When there is an airflow across the cloud some of the air is deflected round the summit but part is forced to rise over the top. The updraught produced this way has been found to be strong enough to allow a glider to soar the windward side of a cumulus just as if the cloud were a hill. When such clouds are scattered it has proved difficult for a glider to rise appreciably higher than the cloud top. However, when cumulus clouds form streets it has been possible to climb several thousand feet above their tops when the wind aloft blows across these streets.

The phenomenon has been termed "Thermal wave". This wave-like flow up and over the cumulus is most likely to occur when the air aloft is stable. German glider pilots have found thermal waves over cloudless thermals as well as over cumulus clouds. In one case when an inversion at about 8,500ft limited the thermals, a glider was able to reach 12,000ft in a thermal wave. It is remarkable that on this occasion the wind at 12,000ft was only 10kts (References 1 and 2).

THE POSSIBLE CAUSE OF WAVES ABOVE CUMULONIMBUS ON MAY 9, 1972

A few hours before the time of the climb Malvern radar had been scanning the airflow upwind over Wales. No sign of lee waves was detected. This is not surprising because the air was already very unstable with cumulonimbus tops measured at 5km (about 17,000ft). It is unlikely that the Welsh mountains would set off lee waves in such conditions. Waves do sometimes develop after the passage of a shower but one such shower was tracked by radar and no sign of lee waves was seen behind it. It therefore seems reasonably certain that no orographically produced waves existed that afternoon.

The wave flow which was encountered after the glider left cloud seems to have been caused by the long line of cumulonimbus which acted as a barrier to the strong upper winds. An airflow of some 25kts across this cloud barrier might be expected to develop a vertical motion sufficient to set up a wavelike flow not only over the summit of the cloud but also several thousand feet upwards into the very stable air of the lower stratosphere.

It may be noticed that the winds above 30,000ft decreased with height until, at the top of the climb, the speed was no greater than that of the cloud cells. A decrease of wind with height is often thought to inhibit wave flow. While this generalisation often holds true it is not

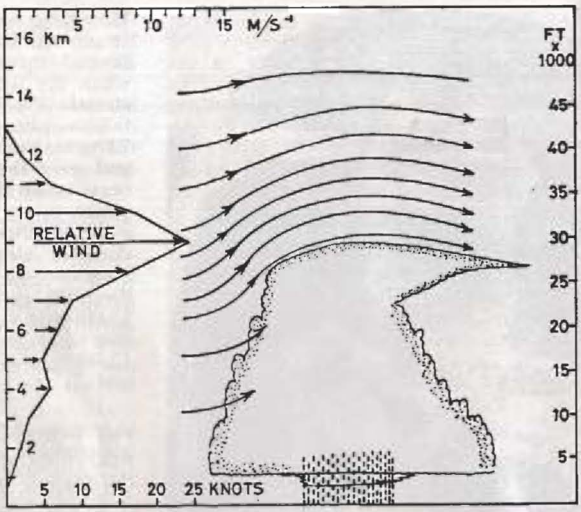


Fig 4. Possible cross section of cloud showing wind speed relative to the cloud at different levels and assumed pattern of airflow

a rigid rule. The recent BGA reports of wave flights over Britain revealed a case when gliders were able to soar above 10,000ft although the winds (measured upwind of the Pennines) showed a decrease of 50% between 5,000 and 10,000ft.

The short period of cobblestone turbulence at 35,000ft has yet to be explained. Numerous aircraft reports of turbulence were examined. Only one aircraft crossed the area of interest at 35,000ft at this time and that did not observe any turbulence there although the pilot did report slight turbulence when climbing through the tropopause earlier.

It is known that clear air turbulence can be caused by a series of waves becoming progressively steeper and then breaking. The process has been observed both in the atmosphere by radar and also at an inversion under water; in both cases the behaviour appears similar except for the difference in scale. The estimated rate of climb in the stratosphere suggests that the glider was soaring a wave with a very steep slope to the airflow. Unfortunately there is not enough data to test this theory, and since the air at that level was likely to be devoid of any discontinuity which would refract radar beams one would not expect it to be detectable from the ground.

CONCLUSIONS

The glider entered a particularly vigorous cumulonimbus which formed part of a line of shower cloud which was moving east north east at a speed considerably less than that of the winds between 20,000 and 35,000ft. The top of this cloud is likely to have reached the tropopause at between 28,000 and 30,000ft where it acted as a partial barrier to the strong upper winds. The effect of the cloud was to produce a vertical motion in the winds blowing over it and this in turn set up a wave-like flow which extended more than 12,000ft into the stratosphere. By flying out of the cumulonimbus on the up-wind side the glider entered the wave flow on its ascending side and was able to climb far above the cloud top.

Had the pilot turned downwind to clear cloud, or come out of cloud below about 20,000ft on the up-wind side, it is most unlikely he would have located any wave lift. It is also unlikely that this kind of thermal wave would have developed further north where there was no marked wind shear at the top of the cloud.

I should like to express my gratitude to the staff of the Meteorological Research Unit at Malvern who provided a very large number of tracings from radar

PPI photographs, worked up a radiosonde ascent of exceptional detail, and also sent a series of range/height photos demonstrating the absence of waves from the Welsh mountains.

I am also grateful to Mr S. G. Cornford, who provided data from reports of clear air turbulence, and to Dr J. P. Kuettner for information on "Thermal waves".

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MOTOR GLIDERS—THE ENGINE AND COMPETITIONS

By ANN WELCH

In any competitive sporting activity there are rules, and these, sculpturing the sport as they do, express its underlying philosophy. Nowhere is this more apparent than in the formulation of rules to cover motor gliders, both in traditional gliding competitions and in all-motor glider contests. In this article, Ann Welch discusses some of the factors to be taken into account as the motor glider movement gains force and direction.

THIRTY-TWO motor gliders were entered in the Third Motor Glider Competition, held at Burg Feuerstein, West Germany, from June 4 to 11, 1972. The pilots obviously enjoyed themselves, and the organisers were able to gain further experience about rules and scoring systems. There are basically three problems to be solved: The current too wide range of aircraft and engine performance; scoring systems; and, most important of all, to clarify the purpose of a motor glider competition.

This is a matter of philosophy tinged with economics. Should, for instance a motor glider competition be a carbon copy of a glider championship or should it exploit the presence of a power source by encouraging some free use of the motor, or giving tour type tasks?

At Burg Feuerstein most things have been, or are being, tried. The first year, a fixed quantity of fuel was available to be used without penalty during each task. Last year a simple formula penalised a pilot 10 points for every minute of engine time. This year the penalty was raised to 15—and found to be too high.

There is now general agreement that the penalty should not be linear, but progressive—small for minimal use of engine and rising steeply. A pilot who used engine continuously for the whole flight should find himself without any points at all. On two contest days this year no pilots used engine (other than for launching) and on one day some engine was used by every pilot. In general the older competitors felt that no free engine time should be permitted, while the young ones felt that the potential of the motor glider would not be fully exploited unless some use of the engine was encouraged in a positive way.

The wide variety of aircraft in the competition was interesting technically but such a range does not ease the path of organisers. Divided into Class A (higher performance) and Class B (lesser), there was further subdivision into single- and two-seaters. In Class A there were more single seaters, with the ASK-14 and SF-27M leading the field, and in

Class B two-seaters provided the bulk of the entry—mostly the well-liked Falke.

The organisers accept that a wide and exploratory range of aircraft has to be lived with if development is not, at this stage, to be stifled. Tasks were typical glider contest tasks, but all to a goal; the principle being accepted that if a competitor does not complete the course, he will get no points at all.

With a motor glider class in World Championships in prospect, it will be necessary to decide on certain principles, because there is no question that the rules of a World Championships have a considerable directive effect on the development—and price—of the aircraft concerned. Certainly the most important principle to be decided concerns whether the engine may be used free only for take-off and retrieving, with penalty for *any* use of motor during the task, or whether some engine use will be permitted during the task without penalty.

To penalise *any* use of engine retains common ground between gliding and motor gliding championships, whereas to permit some free use of motor will result in different soaring techniques, and will certainly affect the efficiency of engines. More important, some free use would tend to balance the weight and possible drag penalty of carrying a motor, and help avoid the relegation of motor glider competitions to second class performance status.

If some free use is permitted—for instance 1 minute of engine time for each whole 25km of task distance—this immediately makes possible a wider variety of tasks, including even tours of more than one day.

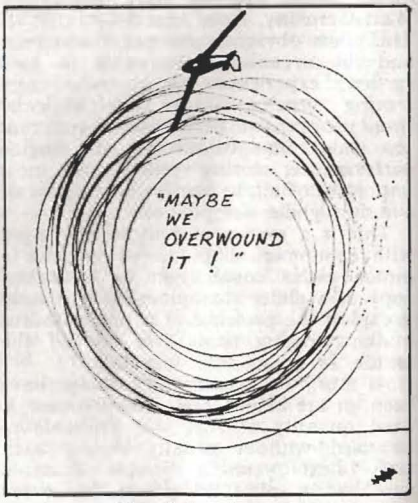
Further principles to be considered are whether the currently accepted idea of no points for uncompleted tasks and progressive penalisation for increasing use of motor are correct. Obviously, no useful work on scoring systems can be done until these points are decided.

The next step towards the inclusion of motor gliders in World Championships is to decide what class or classes there should be. If there is more than one class, development will be encouraged on a wider basis than for a single class. On the other hand it can be argued that there are not enough designers and manufacturers to cope with producing new motor gliders for two or more different World Championship classes; and small entries with a wide performance scatter would result. If this is considered sufficient reason to start initially with a single motor glider class in World Championships, then what should this class be? For single-seaters or two-seaters (with a crew of two)? Perhaps surprisingly there are more arguments in favour of the two-seater, than of the single-seater. These, in no special order, include:

(1) A motor glider is likely to be always more expensive than a glider, but this may not be so important if two people are flying.

(2) A crew in glider championships has his driving. Unless a motor glider crew—and it is necessary to have an assistant for each pilot—is in the aircraft he has nothing to do.

(3) There is an enormous gap between the school two-seater glider and the exotic 22-metre ships. There is currently no means of training pilots to fly slippery aircraft, and many are broken unnecessarily. There is no incentive for manufacturers to produce high performance two-seat gliders, because schools cannot afford them, and because pure soaring pilots prefer to fly alone. This argument does not apply to the same extent to high



The clockwork mouse

performance two-seat motor gliders because there is a much wider variety of uses to which they can be put.

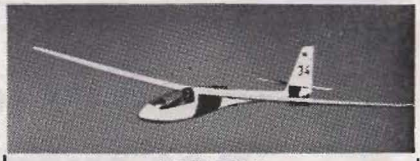
(4) Championship soaring in gliders is firmly a solo sport, but there is increasing concern that our whole approach to gliding is devoted too far in the direction of a single-pilot pinnacle. A two-seater motor glider class could give an opportunity for wider opportunity at the top of the pyramid. There are new techniques to be developed and a wider variety of tasks is possible.

To look for good reasons for a single-seater motor glider class in World Championships is more difficult—at least initially. Generally, the majority of pilots who today fly single-seater motor gliders do so for their own pleasure, rather than for the stimulus of competition, and not many pure soaring pilots who have reached world championships standard are likely to transfer to motor gliders. It will be new pilots who are attracted to a somewhat different sort of soaring who will eventually fly motor gliders in world championships.

Since the motor glider has a greater free ranging potential, the pilots who will develop this aspect of soaring may well be those who find distance flying, navigation, and/or working together with the same crew—as in some racing dinghy classes—the most satisfying form of flying. Just because distance flying has, for practical reasons, virtually disappeared from major soaring championships, this does not mean that there are not pilots who prefer this form of flying.

Why should not motor glider competitors go off for a two- or three-day triangular tour? Gliding, with or without motor, is not a spectator sport. Just because glider championships have become thermal-soaring races around closed circuit courses does not mean that motor gliders have to do the same. The potential to cross mountains, use wave, and navigate far over new country exists in the motor glider and in the concept of touring tasks.

These are some of the ideas that came out of discussions at Burg Feuerstein. They are obviously neither conclusive nor complete, and should be regarded only as a basis from which to collect our thoughts on the future of motor gliders in championships.



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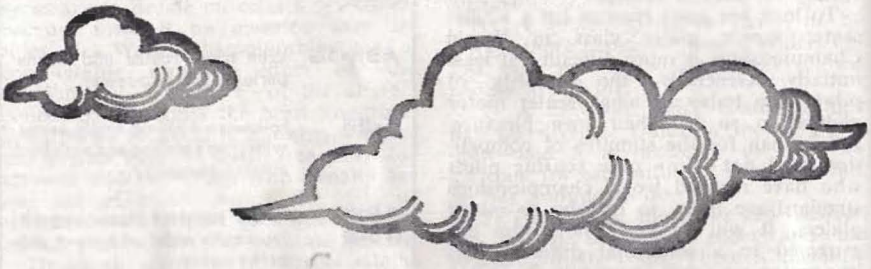
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Some days not even the sky's the limit.



Anything could happen at The Daily Telegraph's European Gliding Competition. When top British pilots take on some of Europe's best.

And on 'Sunday and Bank Holiday Monday' (27th/28th August) everything's taking to the air. Starting with 'Tiger' aerobatics all the way through to parachuting and ballooning—weather permitting.

It's up, up and away from 19th to 28th August at the London Gliding Club, Dunstable Downs, Beds.

The Daily Telegraph

Mrs M. Toft of Burton & Derby Gliding Club wishes to announce the safe arrival of the first leg of her Bronze C. The delivery, after an indecently long gestation period, was not unduly painful, complications were transitory and the experience was on the whole enjoyable.

A HAPPY EVENT

By Mrs MARION TOFT

HERE is the inside story.

It was 11 o'clock of a June morning. There was grey clag to the right of the airfield, booming cumulus to the left and it was my turn to fly.

Pete, the duty instructor, advanced on me. "Head for the nearest cu," he said. "If you gain any height, try for those coming up behind. You might find some corking thermals under them, so watch you don't get sucked into cloud."

I laughed heartily. Thermals, on seeing the combination of me and the K-13 approaching, always disappear in the opposite direction. Sucked into cloud—ha, ha, ha!

I hooked on to Golf Romeo, the tug, and we were off to the clouds. At 2,000ft under a big brown one I pulled the bung and did a climbing turn away from the tug. The altimeter shot up 200ft before I'd completed the turn. I thrust down the excited gremlin that always sits in the cockpit with me. How many times have I gained 200ft only to have them snatched away in the next few minutes?

Sure enough, the climb settled down to zero sink, but by now I was at 2,500ft and had drifted downwind back over the airfield. I headed for the next cu upwind.

Ee-ee-eeeeee.

The audio screamed and I screwed the K-13 round. Six up! Eight up! "Down, gremlin! This can't last."

But at 3,000ft I didn't care. I took a hasty look at my watch. 11.15. Three-quarters of an hour yet were needed for a Bronze C leg. Roll on 12 o'clock, I thought.

Wisps of cloud drifted past the cockpit. The K-13 was bumping her head on the brown ceiling. My gremlin, disguised as my conscience, said "Remember your briefing." Obediently, I headed the K-13 away from the cu and on towards the next.

The glider began to sink at 6kts, then at 8kts. This was more like her usual performance with me at the controls. Her height trickled away. She flew sedately, now far below a great cu-nim.

Then things started to happen. First her vario screamed. I screwed her round in a tight turn. The needle shot to 10 and stuck there, and the altimeter wound from 2,200 to 2,800ft in seconds. I took a bearing on the airfield—due east. This was going to be good, I thought.

I reached cloud-base at 3,000ft. "Briefing," shouted my gremlin.

"I know—I know. I'll only *brush* the cloud. Honest."

The world disappeared. The vario shrieked. The altimeter rose.

"Briefing," cried my gremlin.

"Oh shut up," I said. This cloud flying was easy. The speed was 50kts, the turn and slip showing a steady turn to port

and the altimeter still winding up.

At 3,500ft my gremlin was getting objectionable. "You're not cleared for cloud flying. You've got no maps."

"Oh, all right," I said regretfully. "I'll fly out of the cloud."

I levelled the K-13's wings and brought her onto an easterly heading. The airspeed was increasing. Rapidly. Seventy knots; stick back to slow her. What's wrong? Nothing happening. Still 70. Hard back.

The ASI suddenly unwound. 70. 50. 30. 10. 0. Ow—ow—ow—.

Stick forward to recover. The speed shot back to 70. *Calm down.* Ease back —why won't the speed drop off? Back some more—still 70.

Ow—ow—ow—. Another stall.

"What's wrong?" I shouted at my gremlin. He laughed silently.

I pulled the brakes out as the speed shot up to 80. The vario still showed 10 up, screaming.

"I'll never get out of this cloud," I wailed. "I'm sorry, Pete. I should have listened to your briefing. I won't do it again. Ever. But how do I get *out*?"

Not even the capricious K-13 can keep on climbing despite repeated violent stalls. At last the ground appeared. I turned her onto an easterly heading, and there was Church Broughton airfield, five miles away, 3,000ft below and very reassuring. My watch showed 12.00. I headed back to base.

It was very satisfying to burn off 3,000ft over the airfield, using spins and tight turns with full airbrakes, and finally to touch down at 12.15 to claim the first leg of my Bronze C.

Golf Romeo, the tug, touched down a few minutes ahead of me. The pilot laughed when he saw me land.

"I've just been out looking for you," he said. "When you weren't back after an hour everyone assumed you'd landed out. I can't imagine why."

I can. It was because I'd never soared before.

THE FUTURE OF THE BRITISH NATIONALS

By CHRIS DAY

ARE the British Nationals good enough to bring out the best in our top pilots? If not perhaps the weather doesn't give us a good enough break. If not! Perhaps! Maybe! What can we do? How do we re-think the problem?

The clubs in this country go to a lot of trouble to provide competitions but are hampered by the weather. smaller clubs have a problem with the size of competition, etc.

All these questions have been bandied about for years. We still hold split Nationals for various reasons: Syndicate members wishing to fly the same aircraft in Nationals can only do so if held on different sites at different dates; at least one Nationals may have good weather in the event of the other being bad. Etc!

Those of us lucky enough to have flown in the French Nationals at Angers have had an insight into their way of doing their thing! They hold the Nationals at usually the same site every year over a two-week period. They have two classes only: Open and Standard.

Competition is high, and the pilots take it all very seriously. As a consequence, places in Nationals are fought for hard in regional competitions and the end result is competition between the best pilots in the land, which in turn produces a fine team for the world championships. They, of course, encourage foreign competitors who, I know, look forward each year to a first class competition.

This surely is the main theme: *First class competition.* How do we achieve this? Maybe we should nominate three major sites in the country where the Nationals could be held. These sites should be able to cater for a competition of 60 or more gliders. They should also be prepared to extend their facilities to cope with two-week competitions. Why two weeks?

Holidays now tend to be longer and therefore the gliding part can be extended

Chris Day is a member of the BGA Flying Committee

without breaking up the happy home, and we can all still fly down to Bermuda for a holiday with the family.

And the knottiest problem of all, the weather: I think we have all suffered from one week of rain and gales with the occasional task on mediocre days. Maybe two weeks will give us a better chance.

Once the site is selected for a two-week period, what about the pilots? At present we have 80 places in Nationals competed for by about 100 or so people. Why not reduce the number of places to 60, made up of 30 Open and 30 Standard ships. The Open class would be open to all. The result would be a national competition of a higher standard. The reduction of Nationals places would result in more people entering regionals, to compete for fewer places in the ultimate competition.

This is no simple solution to all our problems, but just an idea to chew over. However, what do we want? A chance to compete against the best pilots in the land or just to compete? If the latter, why not do away with Nationals and just have regionals—no, of course not!

The British National Championships should be the top competition in the country and therefore the top 100 or so pilots should compete for 60 or so places, (ideally to include foreign entries) thus ensuring that our top Nationals pilots are World Class, and not just Nationals class. We are in danger of being outclassed by our friends across the seas; it's time for change.

What about 1973? How about a first class competition on one site for a two-week period? An offer has already been made to the BGA to this specification, and is at present under consideration.

GENERAL & BGA NEWS

GLIDING FACILITIES AVAILABLE AT SHOBDON

THE Herefordshire Aero Club, which hosted the Open/Standard Class National Gliding Championships at Shobdon recently, is offering facilities for aero-towing gliders from Shobdon during the winter wave season. The primary tug aircraft is a 150hp Rallye Commodore, but although it will be available during the winter, availability cannot be guaranteed in the summer as it is the club's only touring aircraft at present. It is hoped that a privately owned Terrier will also be equipped with a towing hook before the winter.

Glider pilots who wish to fly from the site have either to become full or temporary members of the club. Full membership costs £5 per annum, and towing will be charged at normal club aircraft rates. Temporary membership, valid for a month, is 50p, but is at present only available for one month in any 12. Charges for aerotowing are £1.50 to 2,000ft and *pro rata* thereafter.

Free parking for caravans and trailers is available. The club also hopes to operate a two-seater training glider by the end of the summer, under BGA rules. Further information regarding gliding activities from Mike Gibbons, Middlemoor, Presteigne, Herefordshire, tel Presteigne 412, or David Corbett, Ox House, Shobdon, Herefordshire, tel Kingsland 351.

ITFORD GOLDEN JUBILEE

THE Golden Jubilee celebration of the 1922 Itford meeting (S&G April, p124) will take the form of an Open Day to be held on Sunday, September 3 at the site of the Southdown club at Firle, near Eastbourne.

The gates will open at 10.00 and flying events will take place at intervals during the day. The programme includes glider aerobatics, displays by the Tiger Club and demonstrations by several sailplanes, old and modern. Vintage gliders will be exhibited on the ground.

The site is off the main A27 Eastbourne-Lewes road, near Selmeston, and will be signposted from both towns. Cost of admission, £1.00 per car.

MIKE FIELD HEADS NATIONAL LADDER

AIRWAYS club pilot Mike Field, who broke the British and United Kingdom absolute altitude and altitude gain records on May 9, literally climbed to the top of the National Ladder published for June 6. His single flight scored him 2,768 points, and he lies 25 points in front of Mike Garrod (2,743 from four flights). Third is Mike Costin (2,086 from four flights) and fourth Chris Lovell (1,959 from two).

FIRST BRITISH 500km TRIANGLE IN A K-6

ALAN VINCENT, a fully rated instructor with the Essex club, became the first pilot to complete a 500km triangle in a K-6E. On Wednesday, June 28, he flew the triangle North Weald, Norwich, Uttoxeter, North Weald in just under 10 hours. He took a wire launch at about 10.00, and reported no fantastic rates of climb; most of his flying was carried out within the height-band between 4-5,000ft.

His flight was the first 500km triangle from North Weald.

On June 30, Derek Piggott, flying a Phoebus C, achieved about 500km of a 575km triangle Lasham, Bath Racecourse, Lincoln, Lasham. He landed near Thame.

WEATHER HITS NORTHERNS AS WELL

FRED KNIPE (Std Libelle), chairman of the Yorkshire Gliding Club, won the Northern Regionals with 43 points. Only three contest days were achieved and a total of 12 pilots entered. Knipe won every day.

CUPS AND SAUCERS FOR 1972

Are you a competition pilot? Do you like to collect trophies? I'm sure most of us from time to time have shown friends this or that cup for sporting events. Gliding is no exception, and we have a number of "pots" awaiting collection by adventurous pilots. Below is a list of same, and I would like to hear from you if you think you qualify. Maybe you have a friend who is too shy to claim for himself. A free ticket for two for the BGA Ball goes with each award. So ladies, has your husband or boyfriend won a cup? There could be a new dress in it for you!

Ladies, who is going to complete the longest flight this year? The CALIFORNIA IN ENGLAND TROPHY is waiting for you.

The greatest gain of height—Mike Field would you believe?—or who will go one better? The DE HAVILAND CUP for the high flyer.

A good day and a fast 100km triangle—the FRANK FOSTER TROPHY.

An even better day, and the fastest 300km triangle—the MANIO CUP awaits the lucky pilot.

For the longest closed circuit in a two-seater—the SEAGER CUP, and the longest closed circuit in a single seater—the VOLK CUP.

Any pilot completing the longest flight of the year—the WAKEFIELD TROPHY.

How many fully rated Instructors has your club gained in the last two years, and how many members in the same period? Your performance could win you the ROBERT PERFECT TROPHY.

Trophies galore, and also cups for the National Ladder. If you think you are eligible for an award, or know of someone who is, please let me know via the BGA.

CHRIS DAY,
Flying Committee.

GLIDING CERTIFICATES

DIAMOND DISTANCE

No	*Name*	*Club*	*1972*
1/42	A. A. Vincent	Essex	28.6

DIAMOND HEIGHT

3/143	J. D. Glossop	Bicester	27.5
3/144	M. J. Field	Airways	9.5

DIAMOND GOAL

2/421	J. V. Brain	In USA	4.1

GOLD C COMPLETE

322	J. V. Brain	In USA	4.1
323	R. W. A. Miller	Fenland	25.4
324	K. Kieley	Four Counties	12.4
325	R. H. Cooper	Fenland	29.2

GOLD C HEIGHT

Name	*Club*	*1972*
R. C. Bull	Lakes	22.4
K. Kieley	Four Counties	12.4
K. T. Gardiner	South Wales	7.5
R. H. Cooper	Fenland	29.2

GOLD C DISTANCE

J. V. Brain	In USA	4.1
R. W. A. Miller	Fenland	25.4
R. B. Larkinson	Southern Cross (in Australia)	7.1
A. M. Wray	Dorset F/C	23.5

SILVER C

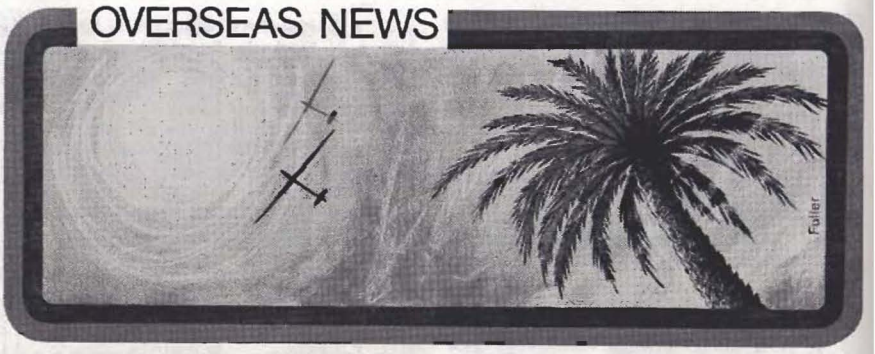
No	*Name*	*Club*	*1972*
3129	C. W. Thomas	Coventry	9.4
3130	A. J. Norrie	Thames Valley	28.4
3131	K. Durrant	Cotswold	15.4
3132	D. S. Elsden	Thames Valley	25.4
3133	B. E. Russell	Bicester	25.4
3134	R. H. Brown	Glasgow/W Scot	24.4
3135	N. R. H. East	Eagle	25.4
3136	B. V. Smith	Worcestershire	1.5
3137	D. B. May	London	1.5
3138	J. Budd	Surrey/Hants	25.4
3139	J. M. W. Howlett	Fulmar	29.4
3140	A. Sands	Ulster/Shorts	9.4
3141	K. J. Merron	Thames Valley	24.4
3142	F. Sharples	Nakuru (Kenya)	20.2
3143	J. Higgins	Fulmar	29.4
3144	C. J. Unitt	Nakuru (Kenya)	1.4
3145	D. Dooley	Surrey/Hants	17.5
3146	A. S. Bright	Cambridge	17.5
3147	D. A. Salmon	Derby/Lancs	17.5
3148	Phyllis Neighbour	Derby/Lancs	19.5
3149	D. Kemp	Two Rivers	6.5
3150	W. A. Godber	London	17.5
3151	G. W. M. Neill	Angus	20.5
3152	J. M. Woodford	London	28.5
3153	R. G. Holm	Phoenix	19.5
3154	A. H. Noon	Midland	29.5
3155	J. S. W. Tuck	Imp College	10.12.71
3156	E. F. Best	Phoenix	19.5
3157	L. Glendinning	Hambletons	20.5
3158	J. A. Evans	Humber	4.6
3159	P. E. Gillett	Lakes	21.6
3160	I. M. Stockdale	Bristol/Glos	3.6
3161	A. Pepper	Humber	1.6
3162	E. Hopper	Ouse	4.6
3163	C. A. Wills	Thames Valley	5.6
3164	J. A. McCubbin	Airways	8.6
3165	G. M. Laughton	Phoenix	7.5
3166	M. C. Mead	Mendips	14.6
3167	D. F. Jeans	Airways	16.6
3168	J. B. MacGillivray	In USA	24.5
3169	G. C. F. Puritz	London	16.6
3170	A. F. Thomson	Swindon	16.6
3171	G. E. Gothard	Coventry	3.6
3172	J. Fiennes	Imp College	16.6
3173	T. Fox	Surrey/Hants	16.6
3174	R. M. Beach	Thames Valley	12.6
3175	R. J. Large	Cranfield	1.5
3176	D. K. Gardiner	SGU	18.6
3177	P. Larcey	In Australia	3.1
3178	J. Macklin	Dorset F/C	28.6
3179	K. A. Jones	Crusaders	24.6
3180	J. S. Weston	Ulster/Shorts	28.6
3181	M. K. Norris	Chilterns	1.7
3182	M. J. Robinson	Hambletons	24.6
3183	J. A. G. Oxberry	Bicester	28.6
3184	R. G. Williams	Two Rivers	10.6

PROVISIONAL ENTRIES — SPORT/CLUB CLASS NATIONALS

DUNSTABLE, AUGUST 5 to 13

Pilot	*Club Class*	*H'cap %*	*Sport Class*
Ellis, C. A. P.	Skylark 3B	100	
Brown, H. F.	Skylark 3F	100	
Vennard, D.	K-6E	94	
Day, C.		90	Dart 17R
Camp, G. W. G.	?	or	?
Hood, L. S.		88	Std Cirrus
Lombard, W.	K-6E	94	
Cook, R.	Oly 403	100	
Cousins, R.		88	Std Libelle
Smith, G. E. M.	K-6E	94	
Zealley, T. S.	K-6E	94	
Ince, D. H. G.		88	LS-1
Graham, J.	Oly 463	102	
Harrison, K. A.		88	Std Cirrus
Gaunt, T. R. F.		88	Std Libelle
Orme, H.		88	Std Cirrus
Bridson, D. S.		88	Std Cirrus
Cockburn, D.	K-6E	94	
Hogg, A. J.	Oly 419	96	
Wynch, J.	K-6CR	94	
Cooper, R. H.	K-6E	94	
Wishart, R.	K-6E	94	
Oulds, T.	K-6E	94	
Foot, R. A.	Oly 419	96	
Farmer, A. T.	K-6E	94	
Gill, C. J.	K-6E	100	
Lee, D. G.	K-6E	94	
McLuckie, R.	K-6CR	100	
Simms, J. A.	K-6CR	100	
Hanson, D.		88	ASW-15
Manley, N. K.		88	Std Libelle
Ramsden, P.	Skylark 3B	100	
Jeffries, J. R.	K-13	106	
Morison, S. M.		90	Dart 17R
Aldous, R. F.		88	Std Cirrus
Smith, R. J.		88	ASW-15
Cook, P.G.	K-6E	94	

OVERSEAS NEWS



Please send news and exchange copies of journals to the Overseas Editor's new address: A. E. SLATER, 7 Highworth Avenue, Cambridge CB4 2BQ, England.

NORWEGIAN HOLIDAY

By JUSTIN WILLS

SCANDINAVIA. The Land of the Midnight Sun! How about some midnight thermals for a change? Letters to Finland, Sweden and Norway produced a disheartening pause, followed by the news that the Swedish Nationals were restricted to Swedes, and the Finns were conserving their energies for 1973.

Then came an enthusiastic 'phone call from Harald Hoymyr in Oslo. Yes, they were having a National Championships from June 10-18 and they would welcome a British entrant. Harald explained that the number of entrants (10) was very much smaller than at our Nationals but, as he put it in a subsequent letter, "we have a lot of fun anyway". As I would be the first overseas visitor in the competition it would become the First Open Norwegian Championships. The £10 entry fee, including aerotows, was payable on arrival, so Tony Joss, Gillian Howe and I hitched up the Std Libelle and away we went.

One great advantage of travelling to Norway is that the majority of the journey is done while you are asleep on a boat. We sailed from Tilbury to Gothenburg and from there it was a morning's drive to Maarud, the site of the championships.

There was a little uncertainty at the Swedish/Norwegian border, since there seemed to be no-one about, so we pressed on. Then we had trouble locating the airfield, although we had a map showing its position. Eventually we enquired at a factory which appeared to be occupying the space on the map, and were shown a 25 yard wide strip bordered by a dust road on one side and a cornfield on the other. The presence of two pink markers at the far end, some



500 yards away, and a low shed with a glider wing sticking out convinced us that this was it.

We retired to lunch a little thoughtfully, and on our return met Hans Lund, director of the contest, who had just driven down with his caravan from his home north of the Arctic Circle. We soon learnt that the Norwegians are both very self reliant and competent, as we watched Hans erecting signs that vehicles should give way to oncoming gliders and heard him explain the quick pushing off system used when an aircraft landed. Throughout the contest this worked perfectly despite several closely spaced arrivals—to the disappointment, I suspect, of our crew's photographer.

Maarud lies 60km NE of Oslo, on the banks of the Glomma, the longest river in Norway. It rises under the snows of the Skarsfjället east of Trondheim. For much of its length it flows due south, before bending SW and flowing the last 150km out into the Oslofjord. Maarud is 25km downstream of this bend and the country here consists of pine covered hills, lakes and fertile valleys offering good landing fields. The river is used as a conveyor belt, and every day we took off over strings of logs floating downstream to the paper mills.

To everyone's great disappointment the first three days of the contest were rained off. During our 14 day stay in Norway, four days were unflyable, seven days were quite good and three days really good. Apparently the weather is normally better than this, but at least it was very much better than the corresponding period in the UK!

Anyway, after a day in Oslo and another day fishing (quite successfully), we started flying in earnest. The first task was a 110km dogleg out-and-return up the Glomma valley, and the second task was a 120km triangle, also to the east. On both days there was a certain amount of medium cloud and it was well worth going into cumulus over the sunny areas to cross these gaps.

The weather on the third day was really good, with cumulus over the hills at 8am, lasting until 7pm, despite a seabreeze in the late afternoon. The pilots of the lower performance gliders sportingly voted to show the English some more of Norway, and we were set a 312km out-and-return to Koppang, in the north. During the flight we crossed over to higher country, some of it still under snow; visibility was tremendous, the view terrific. Despite a 20km diversion round a blue hole caused by Lake Mjosa, and fluffing the final thermal, the flight took me just over 4 hours. A more aggressive approach, perhaps, aided by more water ballast, could have reduced this by 25 minutes, despite the cloud-streets lying across track. My best achieved climb was 875fpm for 3¼ minutes, with cloud base at 8,000ft.



Justin Wills landing the Std Libelle
Photo: Gillian Howe

For the last day we had a 130km triangle, with the final leg directly into an increasing SW wind, and halfway back along this leg it became apparent that I was not getting the 20:1 glide angle I needed. Sparing a thought for the poor Muchas, I was soon down to 800ft over a rounded hill eight miles short. The only hope seemed to be to try to reach another rather larger hill some three miles upwind and across the river. After gaining 200ft in a tiny thermal I set off, pursued by my crew. A little reduced sink enabled the Libelle to scrape round the flank of the next hill, and after a heartstopping 15 seconds when it appeared that I was too near the foot of the hill to soar, there was a heave and the pine trees began to move satisfactorily downwards past the wingtip. A thermal soon appeared and we were home.

Throughout the competition everyone was extraordinarily kind to us. Briefing was held in English for our benefit, and when they perceived our inability to consume an evening meal at 5pm, the owner of the Maarud factory (which makes potato crisps called Potet Gull and cheeses called Og) arranged for us to use the company's kitchen and sitting room where we could watch the TV weather forecast in comfort.

The Norwegians are very keen that more British pilots should compete in their Nationals next year. Anyone who does go is guaranteed a warm welcome and some fascinating flying with exciting possibilities due to the long soaring hours available in a day and some very strong conditions. The gliding movement is still very small and not at all blase, so anyone with an Oly 463 or better will find themselves the centre of attraction. Although the country is 1,200 miles long and contains only 3.7 million people, they are remarkably evenly spread and outlandings offer few problems, although it is important to keep a lookout for wires which abound, and a good wheelbrake could be useful in the mountains.

We came home via Kristiansand to Harwich and *en route* visited Notodden, the Norwegian Gliding Centre. But Notodden deserves a separate article to itself.

Leading handicapped results

1	J. Wills	Std Libelle
2	H. Hoymyr	Phoebus A
3	Meerlum	K-13
4	T. Johannessen	Phoebus B

WEST GERMAN GLIDER PILOT VISITS MOSCOW

FOLLOWING the success of exchange visits between Rumanian glider pilots and the Wasserkuppe Pilots' Union last year, one of its members, Klaus Harnach, visited Moscow in the hope of contacting Soviet glider pilots as a preliminary to a possible similar exchange in the future.

He learned from a Soviet glider pilot that the USSR has 3,000 glider pilots divided among 30 clubs. Pupils have to put in 15 hours and 100 flights with an instructor before going solo. They fly mostly Blaniks, which are always used in national contests so that results show comparative performances of pilots only. But there are also about a dozen Fokas, and three of the A-15 type which are to be entered for the World Championships. In the winter flying still goes on, with a small snow-skid under the Blanik and another under the YAK-12 tug. Why not, Herr Harnach suggests, do the same when there is snow on the Wasserkuppe?

The object of his visit was to take another step towards his group's ambition to make the Wasserkuppe, where soaring flight first began, into a meeting place for all glider pilots from East and West, as it used to be. He does not mention that Soviet pilots have been there before, in 1924, and that a German party made a return visit to the Russian gliding site at Koktebel in the Crimea, where Johannes Nehring put up a world's distance record of 24.4km and Ferdinand Schulz a duration record of 12 hours 7 minutes in 1925.

NIMBUS 2 DOMINATES HAHNWEIDE

SEPP ARMBRUST (Nimbus 2) and Polish pilot Miroslaw Krolikowski (Std Cirrus) won the Open and Standard classes respectively at the 7th International Hahnweide contest, held from May 6 to 15 in West Germany. A total of 72 pilots from 10 countries participated.

Four successive contest days were flown before three score-less days spoilt things. However, the last day provided the largest task of the contest—a 244km triangle with six Open and two Standard pilots averaging over 100km/h.

The contest was divided into three classes—Open (18 pilots), Standard (47) and Two-seater (eight). The German team for Vrsac, with the exception of Neubert, also took part, and visitors who were practising for the World Championships included Zegels (Belgium), Teuling (Holland) and Hauenstein, Wetli and Ruch (Switzerland). The other 14 foreign pilots came from Austria, Belgium, Italy, New Zealand, Poland, Switzerland, South Africa and the USA.

Except for the first day (a 127km Open triangle and a 115km Standard out-and-return) the tasks were the same for the two major classes. They were triangles of 188, 202, 201 and 244kms respectively.

The Nimbus 2 won on three days—the first two by Holighaus and the third day by Armbrust. On the last two days the type came second and third, the winners on these days being Hauenstein (AN-66) and Teuling (Cirrus). The latter put up the fastest speed of the contest, 108.6 km/h.

In the Standard class, Krolikowski of Poland won convincingly in a Std Cirrus. Helmut Reichmann, defending World Champion, also flew a Std Cirrus as his LS-1 for Vrsac was not ready.

The two-seater class had four out-and-returns and one triangle and was won by a team of three pilots flying a Bergfalke 4—W. Hoffmann, P. Dröghoff and J. Runge.

LEADING FINAL RESULTS PLUS VISITOR PLACINGS

Open Class

1	Armbrust	Nimbus 2	2729
2	Holighaus	Nimbus 2	2687
3	Hillenbrand	Nimbus 2	2680
4	Stuhr	Kestrel 17	2408
5	Teuling (Holland)	Cirrus	2329
6	Zegels (Belgium)	Kestrel 17	2322
9	Hauenstein (Switz)	AN-66	2025
14	Fontana (Italy)	Cirrus	1289
16	Wetli (Switz)	ASW-12	795
17	Smet (Belgium)	Cirrus	708

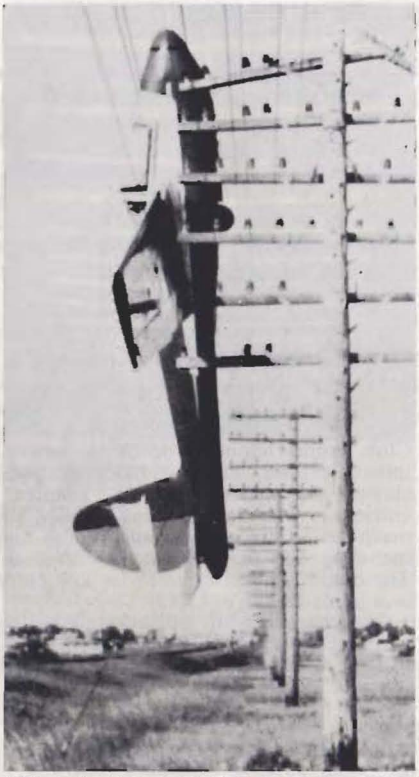
Standard Class

1	Krolikowski (Poland)	Std Cirrus	2290
2	Schäuble	Std Libelle	2134
3	Spychiger (Switz)	Std Cirrus	2092
4	Reichmann	Std Cirrus	2080
5	Glöckl	LS-1c	2066
6	Ruch (Switz)	Std Cirrus	2037
7	Schneider	LS-1c	2002
8	Tesch	LS-1c	1956
20	Hedinger (Switz)	Std Libelle	1573
23	Kendall (NZ), Rupprecht	Std Cirrus	1527
27	Tresslar (USA)	ASW-15B	1440
30	Baumann (Switz)	Std Libelle	1390
37	Adele Dankowska (Poland)	K6-E	1337
31	Bourgard (Belgium)	Std Cirrus	1185
39	Jackson (S Africa), Wernet	LS-1c	1140
41	Szabo (Austria)	K-6CR	1102
44	Koblinsky (USA), Neumann	ASW-15	879

HANNA REITSCH IS SIXTY

"FOR the second time thirty" is how *Luftsport* heads its announcement of the 60th birthday of Hanna Reitsch, who has had a long career as Germany's leading woman glider pilot, as well as fame for her other aviation achievements. *Der Flieger* gives a potted biography:

Born March 29, 1912, at Hirschberg (near Wolf Hirth's gliding school at Grunau—both places have since been renamed). Took up the study of medicine in 1932 with the object of becoming a Flying Doctor in Africa. Gliding certificate in 1931, power flying licence in 1932. Gave up medicine in 1934 to become a research and test pilot at DFS (Research Institute for Soaring).



Glider piloted by Michael Gropp (18) entangled in telegraph wires near Regina, Saskatchewan Photo: Associated Press

Some of her leading soaring achievements were: 1937, first soaring flight across the Alps; 1938, winner of German distance soaring contest with a flight from Sylt to Breslau (now Wroclaw); also a number of German women's records. She was also the first woman in the world to fly a helicopter (1937), a rocket-propelled aeroplane (1942) and a jet aircraft (1944). She is still going strong: 1970, German women's goal-and-return record, 520km; 1971, winner in women's class in first World Helicopter Championships.

SWISS NATIONALS—RECORD ENTRY

A RECORD number of 22 Standard and 12 Open Class pilots took part in the Swiss Nationals, which were held at Grenchen and resulted in five contest days for each class.

Hillenbrand of Germany won the Open Class with 3,865 points, followed by Wetli (3,748), Hauenstein (3,657) and Spychiger (3,229). The Standard Class was won by Lüthi (3,996) followed by Nietlispach (3,948).

RHODESIAN NATIONALS

THE 1972 Rhodesian National Championships will be held at Warren Hills airfield, home of the Salisbury Gliding Club, from October 9 to 20. It will be unhandicapped, and divided into three classes—Open, Standard and "Limited", entries to the latter being limited to machines with a performance up to and including that of the K-6E and Vasama. The minimum performance for any entry is a glide angle of 28:1.

The championship will be preceded by a competition week, from October 2 to 7. Further details from PO Box 390, Salisbury, Rhodesia.

DANISH DISTANCE RECORD

THE Danish distance records also crumbled on the day that Hans-Werner Grosse flew 1,440km from Lübeck to Biarritz (see S&G June, p 223). On April 25, Paul V. Franzen flew 730km in a Cirrus from Boruz in Denmark to Bad Nauheim in Germany, beating "Cowboy" Jensen's record of 692km, set up in the USA in 1962, and Age Dyhr Thomsen's Danish local record of 636km.

He was launched at 10.30 and proceeded with the help of a tailwind from the NNE. Avoiding Hamburg's control zone, he passed west of Hanover at 16.00, then carried on by Hamelin, Holzminden and Kassel. Until then, his operating height had been around 3,000ft, but now he began to climb higher, eventually reaching about 7,500ft. After Giessen, Frankfurt's zone had to be avoided, and he landed at Bad Nauheim, 4km from the zone, at 18.33.

Franzen started gliding in 1947 and obtained his Silver C in 1962 and Gold in 1968 (*Flyv*).

SCOTT WINS SAILPLANE DERBY

WALLY SCOTT and his ASW-12 won the Smirnoff Sailplane Derby, a transcontinental sailplane race from Los Angeles to Baltimore held from May 1 to 18. Second of the six competitors was Paul Bikle (T-6), third John Ryan (Nimbus 2), fourth Ross Briegleb (Kestrel), fifth A. J. Smith (Caproni A-21) and sixth Einar Enevoldson (Diamant 18).

The winner flew nearly 1,800 miles of the 2,500 mile course; unsoarable weather in two areas for several days forced the competitors to tow their machines by road to better weather in order to keep to the race schedule.

The first race, from Pearblossom (Sierra Madre) to Phoenix, was the derby's longest, 340 miles. Ryan, who lives in Phoenix, won; Scott and Briegleb also finished.

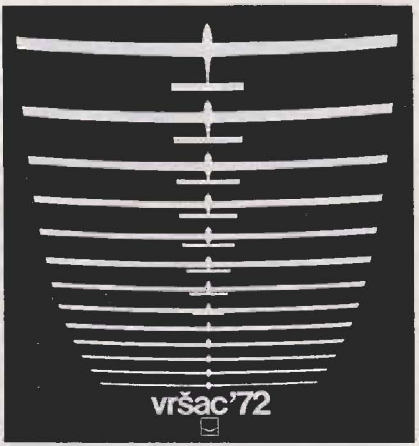
All contestants completed the next leg on May 2, a 313 mile run to Las Cruces (New Mexico). Achieved heights of 17,000ft asl and 10kt climbs enabled Ryan to win at 67.6mph, with Scott and Smith close behind.

Conditions on the first part of the next day's leg, a 267 mile race to Odessa, Texas, were superb, but they weakened as a different airmass was later encountered. Scott won at 77.4mph; only Smith failed to finish.

Several days of bad weather from the Gulf of Mexico forced a road convoy NE to Tulsa to be undertaken before the next task was flown. Conditions were marginal, Scott's winning distance being only 94 miles. The next leg started at St Louis—230 miles to Joliet. All pilots finished, Scott winning at 48.5mph. They all completed the next two legs: 190 miles to Bryan, Ohio (Scott winning at 48.5mph) and 104 miles SE to Marysville, Scott winning again.

Wet air from the north stopped flying for the next three days. The last task was very difficult—240 miles from Akron, Ohio across the Alleghenies to Frederick, Maryland, in very stormy conditions. Scott made the best distance, 213 miles. Bikle detoured well to the north to take second place.

Göran Ax of Sweden, flying a Nimbus 2, won the Open Class of the World Gliding Championships, held at Vrsac, Yugoslavia, from July 9 to 23. Matlas Wiitanen of Finland (ASW-17) was second, Stanislav Kluk (Poland, Jantar) third and Nick Goodhart (Great Britain, Kestrel 19) fourth. Britain's George Burton (Kestrel 19c) was sixth. Only 60 points separated the first four. The 19m World Cup was won by Kluk, with Goodhart second. Jan Wroblewski of Poland (World Open Class champion in 1965) won the Standard Class in an Orion, with Eugene Rudensky of USSR (ASW-15) second and Franciszek Kepka (Poland, Orion) third. Britain's John Cardiff (Std Libelle) was 25th and Bernard Fitchett (Std Cirrus) 32nd. There were 89 participants.



WORLD CHAMPIONSHIPS MARRED BY FATALITIES AND STORMS

THERE were two fatalities, a mid-air collision in which both pilots had to bail out and other landing incidents and accidents in what must probably be the most disastrous world championships ever held. For this, weather which was far worse than genuinely could ever have been expected must take a share of the blame—thunderstorms ravaged the competition period and on some days introduced a very strong element of luck into the flying. On others, a combination of storms, poor general visibility (which also characterised the championships period) and sub-standard task-setting rendered conditions far from safe.

Lajos Varkozi of Hungary was killed in a fully bonded Cobra 15 while flying in a cumulonimbus cloud on Monday, July 17. Although a statement had not been issued by the Yugoslav investigators at the time of going to press, John Strugnell (UK distributor for PZL, manufacturer of the Cobra) reports that the pilot was struck directly by lightning and knocked unconscious. The glider was intact when it struck the ground at high speed, killing the pilot.

Wolfram Mix of Canada, flying a Std Cirrus, sustained serious injuries while making a field landing on Friday, July 21. This, according to Ann Welch, was an accident which could have happened anywhere. He was coming in low to land over a bend in the road. His wheel touched the shoulder of the road and bounced. Somehow the glider was turned until it pointed along the road; the cockpit collided with the bumper of a lorry which at the moment of impact had just braked to a halt. He was flown to hospital in Belgrade by helicopter, but died from his injuries on Sunday morning.

The championships suffered numerous problems, in addition to the stormy weather which made retrieves extremely difficult. Not the least of these problems was the theft of equipment from gliders after field landings while the pilots were

THIS ISSUE

This issue is being published on August 8, a little later than usual, in order to accommodate the news of the World Gliding Championships. The report in this issue is of necessity brief. A full, illustrated account will be published in the October issue, which will be published at the normal time—September 26.

Included will be details and photographs of the new Polish sailplanes Jantar and Orion, the Italian Calif A-15 Open Class machine and a Yugoslav-developed 17m motor glider.

away trying to contact their crews. Three pilots scored no points after the cameras containing their turning point photographs had been stolen. Visual evidence of having turned a TP from other pilots was not acceptable in the rules.

The task-setting was open to criticism. On the second contest day, a goal race was set, the last 50-80km of which was over high mountains with cu-nimb activity forecast. Ann Welch, a vice-president of CIVV and Britain's representative on the body, says that the task would have been better to have been a goal race to Skopje, 100km closer and where a large number of pilots landed.

A few days later, a short out-and-return was set for both classes on a day which subsequently proved to be a non-contest day. Some pilots and team managers thought that sending both classes on the same short task was unsafe (because of the collision risk) in the conditions of poor visibility which prevailed. The organisers were reminded of the regulation in the CIVV Sporting Code which states that wherever possible a different task should be set for each class. As a result, the next two days featured different tasks for each class.

On the last contest day, however, Saturday, July 22, the same 200km triangle was set for both classes. Visibility was poor, cloudbase was expected to be 2,000ft and thunderstorms were brewing when launching took place at about 11.00. It transpired that the whole of the task area was covered by cells of the same thunderstorm, and there was torrential rain. One or two pilots reported that they were giving up and landing.

David Innes (LS-1) and Ake Pettersson (Nimbus 2), competing in the Standard and Open classes respectively, collided in cloud at about 4,000ft. Both pilots bailed out, and Innes sustained a severe fracture to his leg.

"As a result of this collision," Ann Welch states, "there is at this time a very strong feeling among the competing teams that cloudflying should be totally banned from world championships. A decision should not, however, be made in such an emotional atmosphere; it is essential that time be allowed to enable everybody to think the matter over carefully and take into account all considerations before any decision is made."

ENTRY LIST AMENDMENTS

The final line-up totalled 89 pilots from 28 countries, late entries coming from Czechoslovakia, USSR, Brazil, Bulgaria and Hungary as well as France. Roumania cancelled its entry.

The final breakdown was 51 Standard and 38 Open contestants.

Additions and amendments to the list published in S&G, June 1972, p186, are:

OPEN CLASS

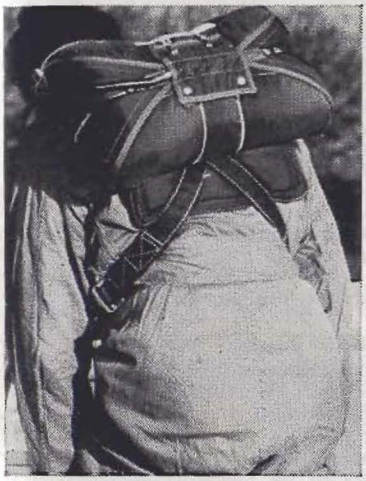
Argentina Rudolfo Hossinger (replacing Araoz), Cirrus.
Czechoslovakia Frantisek Matausek (Kestrel 19).
Jak Satny (Kestrel 19).
Finland Transferred to Standard Class, Mikko Asikainen.
France Michel Mercier (Nimbus 2).
Robert Geskis (ASW-17).
Holland Daniel Pare (Kestrel 17).
Musters Cees (Cirrus) (replacing Van Steinfoorn).
USSR Illar Link (Phoebus C).

STANDARD CLASS

Brazil Claude Juniqueira (Urupema).
Plinio Juniqueira (Urupema) (brothers).
Bulgaria Alexander Ronseff.
Czechoslovakia Tadeas Wala (Cobra 15).
Jaroslav Vavra (Cobra 15).
Finland Mikko Asikainen (ASW-15B) (transferred from Open, replacing L. Liljamo).
France Jean-Pierre Cartry (Libelle H-201).
Francois Ragot (LS-1).
Hungary G. Petroczy (Cobra 15).
L. Varkozi (Cobra 15).
USSR Yuri Kuznetov (ASW-15).
Eugene Rudensky (ASW-15).

A number of pilots, although remaining in the class as previously listed in S&G, are flying different machines.
Open Zegels, Kestrel 17; Mamini, ASW-12; Wiitanen, ASW-17; Neubert, Kestrel 604; Goodhart, Kestrel 19; Zoli, Calif A-15; Serra, Nimbus; Pryde, Kestrel 19; Hauenstein, Nimbus 2; Johnson, ASW-17.
Standard Roberto Rizzi, Std Libelle; Walsberger, ASW-15B; Balukin, Std Libelle.

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PRACTICE WEEK

The practice week preceding the contest featured a number of fly for fun short triangles and four days of official timed practice day tasks. Many pilots took the opportunity on the unofficial days to practice cloudflying.

The first official practice task, on July 5, was a 308km triangle for both classes: 114km NW to Mol, 72km W of S to Venac, 114km E to Vrsac. Conditions were good, with a light wind from a westerly quarter and thermals of up to 8kts. Most pilots completed the task, the fastest times being achieved by Mercier of France (Nimbus 2) and Smith of the USA (Nimbus 2) — about 115 and 111km/h respectively. Both George Burton and Nick Goodhart (Kestrel 19s) completed the task in about three hours. The best Standard Class time was about 108km/h; John Cardiff (Std Libelle) and Bernard Fitchett (Std Cirrus) averaged about 90km/h.

A more ambitious practice task was set on Thursday, July 6: A 414km triangle for both classes with a short first leg of 87km to Lok, then 186km SSE to Paracin and 141km W of N to Vrsac. Although conditions were excellent at first, with cloudbases of 7,000ft by noon, they deteriorated rapidly, and many pilots cut the corners of the triangle in order to avoid landing out. All four British pilots completed the task, with times between 4:15 and 5:20.

Friday July 7 was characterised by very humid weather and extensive cu-nimb development in the afternoon. Out-and-return tasks were set (250km via Kragujevac to the S for the Open and 170km via Elemir to the N of W for the Standard). Few pilots attempted the tasks, and fewer completed them. Fitchett was one of these, in two hours. There was a cu-nimb 30 miles across over Kragujevac, and hail was sufficiently severe as to strip the Woolworths emblem off Fitchett's machine.

Saturday was similarly humid, with large cumulus, the risk of cu-nimbs later and poor visibility. A triangle was set—240km; 107.5km NNW to Zrenjanin, 73km SSE to Omoljica and 59km NE to Vrsac—but all pilots had to be on the ground by 16.00 to enable a local aerobatic team to practice for the air display on July 9, the official opening day. Pilots flew, but took things easy.

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A GOOD START

The championships proper got off to a good start on Monday, July 10, when a 358km triangle for both classes was set. The previous day had seen about 100,000 people attend the official opening ceremony of the championships, which was accompanied by an international exhibition of light aircraft. It was opened by Milenko Bojanic, chairman of the Serbian Executive Council, on behalf of the championship's patron, President Tito.

Monday's task started with a 111.6km leg WNW to Becej, followed by 156.6km SSE to S. Palanka and a final leg of 89.7km to Vrsac. Moderate to strong, mainly blue thermals were forecast, with a light NE wind, and a maximum temperature of 32°C. The southern part of the course was expected to be patchy, and the second leg turned out to be difficult. Briefing, which should have been at 08.00, and flying were delayed for an hour because of a temporary ban on flying west of Vrsac. The take-off direction was changed by 180° during the launching after a number of Open

Class pilots had objected to being launched downwind.

Fifty-nine of the 89 competitors completed the task. Nimbus 2s took the first three Open places, with Ax (Sweden) fastest at about 3:38. Smith (USA) was second (3:41) and Mercier third (3:48). Zegels (Belgium, Kestrel 17), Kluk (Poland, Jantar), Jinks (Australia, Kestrel 19) and Tabart (Australia, Kestrel 17) also took under four hours; Burton and Goodhart took a very few minutes more.

Reigning Open Class Champion George Moffat (USA) made the best time in the Standard Class in his Std Cirrus—about 4:04; team-mate Ben Greene (LS-1c) was second at 4:10 and reigning Standard Class champion Reichmann (W. Germany, LS-1F) third with 4:19. Cardiff and Fitchett took about 4:45.

The leading scores and those of the British pilots were:

Open 1 Ax (Sweden), 1,000; 2 Smith (USA), 974; 3 Mercier (France) 928; 14 Burton, 839; 23 Goodhart, 756.

Standard 1 Moffat (USA), 1,000; 2 Greene (USA), 974; 3 Reichmann (W. Germany), 923; 32 Fitchett, 792; 33 Cardiff, 788.

DOWNWIND OBSTACLE COURSE

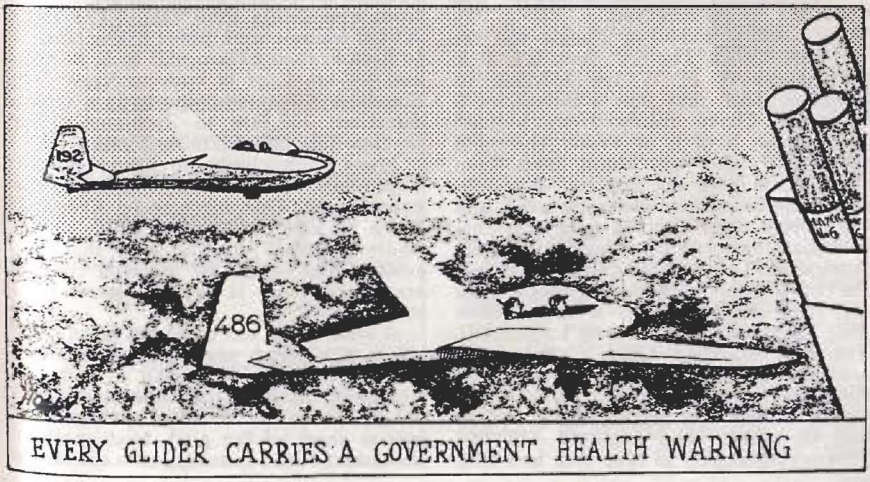
Tuesday, July 11, featured an obstacle course almost to the Greek border in the mountainous south in the form of a goal race for both classes to Bitola, 449km. A 5-10kt NW wind and high cover were forecast, with weak to moderate thermals. Conditions would, however, improve towards the south, with cloudbase of 5-6,000ft. There would be a risk of cu-nimb development later.

The prospect of such a task, the latter part of which was over rugged country with peaks of 7-8,000ft, was unwelcome to many pilots. Crews, too, did not relish the prospect of long, arduous retrieves, with radio contact likely to be lost early on and telephone services minimal.

No pilots completed the race. The best distance was made by Johnson (USA, ASW-17), 393km. Team-mate Smith (Nimbus 2) flew 380km, and four pilots 361km: Goodhart, Schubert (Austria, Kestrel 604), Kluk (Poland, Jantar) and Link (USSR, Phoebus C). The best Standard distance was put up by Rudensky of USSR (ASW-15), who flew 358km, and Wodl (Austria, ASW-15), 352km.

About two dozen pilots (more than a quarter of the field) landed 100km short of the goal at Skopje, scene of a major earthquake disaster several years ago, to achieve 348km. Among these were George Burton. Cardiff and Fitchett flew about 320km. A number of the pilots who landed at Skopje were forced to do so because of thunderstorm activity. Others, however, had returned there after flying further on.

Five sailplane sustained minor damage, including those of Smith, Greene and Link. Retrieve difficulties were monu-



mental, and the rest day declared for Wednesday very necessary indeed to get everybody back in time for a task on Thursday. The weather on Thursday was not suitable for a task, and this enabled everybody to recover and effect necessary repairs as far as possible.

Scores after two days:

Open 1 Smith, 1,923; 2 Ax, 1,878; 3 Johnson, 1,867; 4=Kluk and Zegels, 1,778; 8 Burton, 1,717; 13 Goodhart, 1,665.

Standard 1 Moffat, 1,949; 2 Rudensky, 1,922; 3 Reichmann, 1,895; 4 Wroblewski (Poland, Orion), 1,882; 12 Innes (Guernsey, LS-1), 1,815; 21 Fitchett, 1,685; 22 Cardiff, 1,681.

AUSTRALIAN WINS DOGGED DAY

The third contest day was achieved on Sunday, July 16, after stormy weather had curtailed flying not only on Thursday, but on Friday and Saturday as well. The storms were so heavy that at one time the airfield was flooded and many trailers were submerged up to their floors.

An attempt at a task was made on Saturday—a goal race of about 270km. However, the first gliders were launched into heavy rain and soon landed. It was only when the remaining competitors refused to take off into such unsoarable conditions that the organisers postponed launching to a time when conditions would be more favourable. But conditions did not improve sufficiently for a contest to be achieved.

On Sunday, a 340km triangle was set for both classes. The first, long leg, took competitors N of W for 158.1km to Subotica. Then they flew a little E of S 70km to Cenej, followed by a final 112.5km leg S of E to Vrsac. The wind at flying heights was about 25kts from the east, making the last leg very difficult. Conditions were generally weak, and the more successful pilots were only able to remain airborne by climbing in cloud. Australia's Tony Tabart (Kestrel 17) was the only pilot to complete the course (in 5:20), finishing with a conservative final glide following a climb to 12,000ft. The best Standard Class distance was achieved by Switzerland's Ruch (Std Cirrus) who made 314km. Many pilots landed on the last leg, including Burton and Goodhart, who achieved 269 and 253km respectively to take 16th and 19th places for the day. Fitchett and Cardiff both landed on the first leg.

Many of the leading pilots fared badly, and there were a number of changes in the leadership, notably Tabart's rise to second place in the Open and a complete change in the top three in the Standard.

Leading scores after three days:

Open 1 Ax, 2,771; Tabart, 2,655; 3 Johnson, 2,626; 4 Satny (Czechoslovakia, Kestrel 19), 2,606; 12 Burton, 2,470; 17 Goodhart, 2,372.

Standard 1 Ragot (France, LS-1), 2,848; 2 Nolte (E. Germany, Cobra 15), 2,795; 3 Innes (Guernsey, LS-1), 2,690; 4 Wroblewski, 2,620; 31 Cardiff, 2,053; 34 Fitchett, 1,977.

TRAGEDY

Having broken the run of four non-contest days on Sunday, things looked all set for a successful second week of the contest.

Not a bit of it. Although Monday provided a success for the British team—Goodhart winning the Open Class task—it was a tragic day for the championships as a whole and the Hungarians in particular. Lajos Varkozi, flying a Cobra 15, was killed in an accident following an encounter with a "tornado-type thunderstorm". A Yugoslav enquiry into the accident was opened.

A line of thunderstorms moving across the northern part of the task area wrought havoc and prevented many pilots from completing their tasks. The Open 309km triangle took pilots 85km N of W to Elemir, then 132km SSE to S. Palanka and 89.7km E of N back to Vrsac. The Standard 214km triangle was in a similar direction: 107.5km to Zrenjanin, 73km to Omoljica and 59km to Vrsac.

Many high climbs to about 18,000ft were made, and extremely heavy hail was encountered. One machine—a Cobra 15 flown by an East German pilot—was so badly damaged by the hail that permission was sought by the East German team to replace it in the contest by a spare Cobra.

A total of 19 out of 51 Standard Class pilots completed their 212km triangle; many diving though a wall of rain and low cloud to cross the finish line. Many others were forced down a few kilometres short of the goal. Nietlispach of Switzerland (Std Libelle) made the fastest

time, 3:11, and the two Russians Kuznetzov and Rudensky (Cobra 15s) close behind with times of 3:19 and 3:22. The first to return, however, was Teuling of Holland (LS-1). His effort brought him to second place overall, while Wroblewski, Open Class champion in 1965, took over the lead.

Nick Goodhart was the only pilot to complete the Open Class task, taking 4:47 to do so. His performance lifted him from 17th place to 8th. Burton landed at the second turning point. Ax of Sweden retained the Open Class lead, but Tabart slipped back several places, his position being taken over by Witaanen of Finland (ASW-17).

During the task, Goodhart climbed in a cu-nimb at 2,000fpm for 10 minutes, reaching 28,000ft.

After four contest days, and with only a maximum of five remaining, there were few clear indications as to who was likely to win. A mere 300 points separated the top 10 Open Class pilots, and a similar number the Standard. Both Goodhart and Burton were well within striking distance of the leaders in the Open Class, but Cardiff and Fitchett, lagging by 900 and 1,300 points respectively, faced a Herculean task. David Innes, who flew for Britain at Leszno in 1968, remained well in touch, however, with 4th position.

Leaders, British and reigning champions' placings after four days:

Open 1 Ax, 3,630; 2 Wiitanen, 3,491; 3 Kluk, 3,475; 4 Satny, 3,427; 5 Neubert (W. Germany, Kestrel 604), 3,392; 6 Jinks (Australia, Kestrel 19), 3,385; 7 Mercier, 3,382; 8 **Goodhart,** 3,373; 9 Tabart, 3,349; 10=Smith & Johnson, 3,320; 14 **Burton,** 3221.

19m Class 1 Kluk, 3,475; 2 Satny, 3,427; 3 Jinks, 3,385; 4 **Goodhart,** 3,373; 5 Tabart, 3,349; 6 Muszczynski (Poland, Jantar), 3,244; 7 Matausek (Czechoslovakia, Kestrel 19), 3,228; 8 **Burton,** 3,221.

Standard 1 Wroblewski, 3,556; 2 Teuling, 3,494; 3 Nolte, 3,492; 4 Innes, 3,393; 5 Ragot, 3,386; 6 Kepka (Poland, Orion), 3,345; 7 Rudensky, 3,315; 8 Kuznetzov, 3,277; 9 Cartry (France, Libelle H201), 3,235; 10 Karlsson (Sweden, Std Cirrus), 3,224; 25 Moffat, 2,805; 31 **Cardiff,** 2,652; 38 Reichmann, 2,442; 44 **Fitchett,** 2,243.

THE LAST THREE DAYS

Five possible contest days—Tuesday, Wednesday, Thursday, Friday and Saturday. Five days in which to change a storm-beleaguered, chance-dependant championships into a modestly successful one.

Unfortunately, Tuesday and Wednesday were both eliminated by poor weather. Although a task was set on Tuesday—a 158km out-and-return—and some competitors made several attempts to start, conditions were very weak and by 15.30 most of the gliders were back on the ground.

No task was set at all on Wednesday.

Flying was renewed on Thursday, July 20. The Open Class task was a 309km triangle via Senta and Kac, while that of the Standard Class was a 198km triangle via Lukicevo and Plocica.

Only nine Standard pilots exceeded 100km on another day of thunderstorms, and so it was a no-contest day for that class. Cardiff would have been placed fourth for the day.

Four pilots completed the Open task, which was won by Wiitanen at 80.6km/h. Neubert, Kluk and Mercier were the others to finish; Burton landed 10km

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short, with many others, in rain, and Goodhart landed half-way along the final leg. As a result, Burton improved his overall position to 11th, and Goodhart slipped back to 14th. But still only 500 points separated the first 14.

Friday featured a 372km out-and-return via Borovo to the west for the Open Class and a 252km out-and-return via Kragujevac to the south for the Standard.

This time the Standard Class had a better time of it; although the Open Class did achieve a contest day, it was devalued. Only one pilot completed the Open task—Wiitanen winning the second day in succession at 65.1km/h to earn 640 points. Goodhart was second with 494, but Burton finished 20th for the day. Wiitanen took over the leadership from Ax, with Kluk in third place, Neubert fourth, Goodhart fifth and Burton 12th after six contest days.

The Standard Class achieved its fifth contest day, with 28 pilots completing the course. Wroblewski was fastest at 71.6km/h, followed by Rudensky, Moffat and Teuling. Cardiff and Fitchett both failed to complete the course, finishing 32nd and 34th. The overall leadership now saw Wroblewski firmly established, followed by Teuling, Rudensky, Kepka and Innes. Cardiff lay at 33rd place and Fitchett 44th.

The day was marred by the tragic accident to Wolfram Mix, which occurred near the turning point.

The last contest day, Saturday, July 22, proved to be a triumph for the British team. It is reported that conditions were foul—poor visibility, low cloudbases and thunderstorms—or different cells of a single vast storm—covering the task area, which was the same for both classes: A 238km triangle via Lisiciji Jarak towards the west and S. Palanka to the SE before a final leg on an E of N heading back to Vrsac.

Nobody completed the task. Nick Goodhart made the best Open distance (182km) to score 1,000 points and Burton was close behind to take second place and 950 points. Holighaus was third, Ax fourth, but Wiitanen came 13th to lose the overall lead to Göran Ax, who became Open Class champion. Goodhart finished in fourth place behind Wiitanen and Kluk, but only 56 points separated him from the winner. Burton's flight pulled him up to sixth place, behind Johnson.

The best Standard Class distance for the day was 187km, 5km further than the Open winner's, and was made by Cartry of France (Libelle H-201). Wroblewski was second, scoring 973 points, and Fitchett and Kepka tied for third place scoring 941 points. This was Fitchett's best flight of the contest. Cardiff came 13th.

Wroblewski thus became a world champion for the second time, finishing 300 points in front of his nearest rival, Rudensky of Russia. Kepka was third, Teuling of Holland fourth and Cartry of France fifth. David Innes slipped back to 12th place after his unfortunate mid-air collision with Ake Pettersson. Cardiff finished 25th and Fitchett 32nd. Defending world champions Moffat and Reichmann were 19th and 24th respectively.

Gerry Burgess, manager of the British team, said that he thought it was the toughest world championships he had been involved in, with considerable wear and tear on everybody. The whole team was to be praised for their efforts, and the Range Rovers proved themselves magnificently suitable for the job.

The British team had gone out with high hopes of winning the 19m cup, and not only came very close to succeeding (taking second and third places in that) but also came within an ace of winning the entire Open Class contest. "Nick improved his position steadily throughout the championships, won outright on two days, and we took both first and second places on the last day," he said.

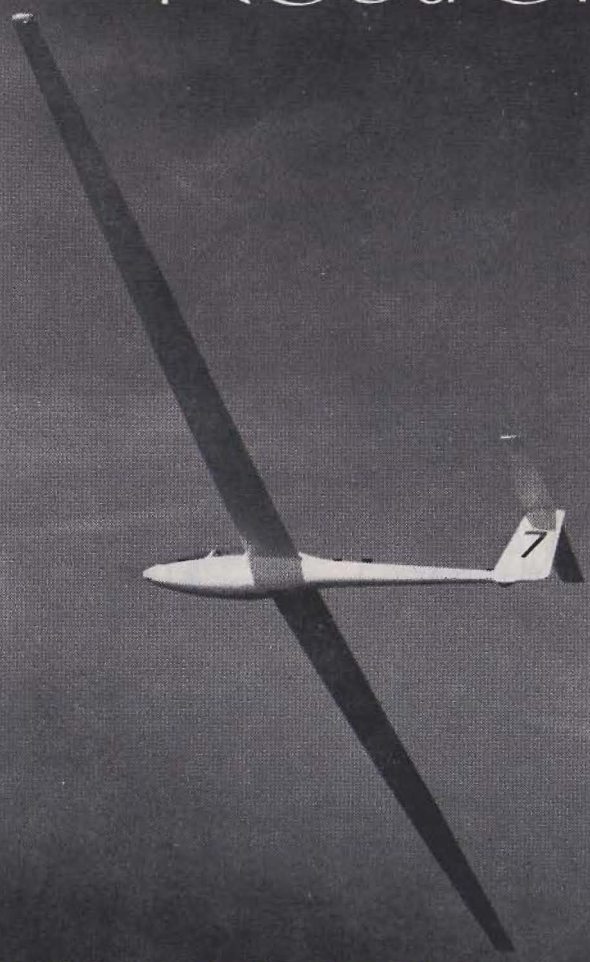
FINAL LEADING RESULTS

Open 1 Ax (Swed, Nimbus 2), 5,816; 2 Wiitanen (Fin, ASW-17), 5,786; 3 Kluk (Pol, Jantar), 5,779; **4 Goodhart** (GB, Kestrel 19), 5,760; 5 Johnson (USA, ASW-17), 5,451; **6 Burton** (GB, Kestrel 19c), 5,284.

19m Class 1 Kluk, 5779; **2 Goodhart,** 5,760; **3 Burton,** 5,284; 4 Muszczynski (Pol, Jantar), 5,153; 5 Satny (Czech, Kestrel 19), 4,944; 6 Matusek (Czech, Kestrel 19), 4,846.

Standard 1 Wroblewski (Pol, Orion), 5,529; 2 Rudensky (USSR, ASW-15), 5,219; 3 Kepka (Pol, Orion), 5,107; 4 Teuling (Hol, LS-1), 5,097; **25 Cardiff** (GB, Std Libelle), 3,856; **32 Fitchett** (GB, Std Cirrus), 3,658.

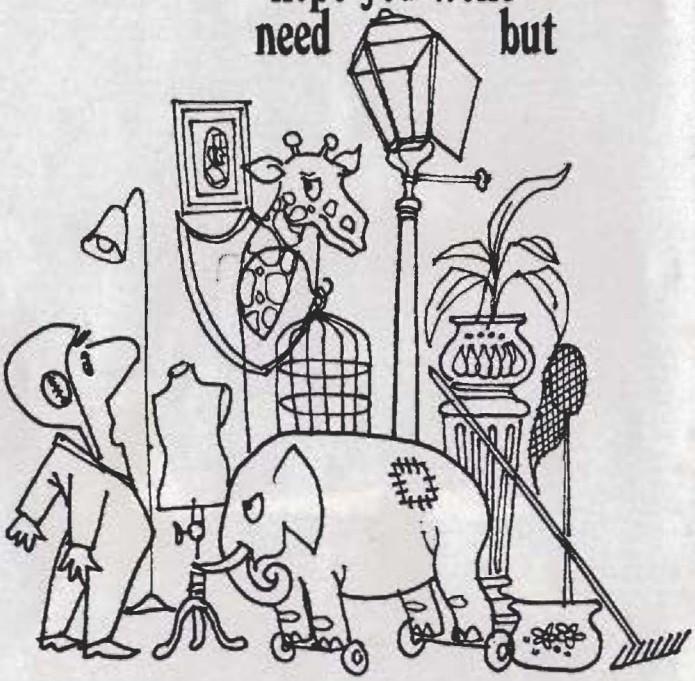
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ARE WE FLYING TOO FAST?

By FRANK IRVING

IT IS evident that the errors and confusions mentioned by George Burton (S&G, February, 1972, p27) and Duane Eisenbeiss (letter, S&G, June 1972, p245) arise because the pilot is presented with two sets of data, from the ASI and variometer respectively, which are only compatible at one height. George's observations are, of course, quite correct although the introduction of the expression "sea-level" into his discussion seems to have obscured the issue somewhat. And Mr Eisenbeiss has obscured the issue even further, particularly when talking about the effect of cruising speed errors on achieved cross-country speed. This, then, is an attempt to clarify the various matters raised so far, with some constructive suggestions.

EFFECT OF ALTITUDE

The usual construction for finding the best cruising speed (Fig 1—with which readers must be thoroughly bored by now) is correct at any altitude provided that either (a) all speeds, in both the forward and vertical directions, are "true" or (b) all speeds are "equivalent". The diagrams relating to cases (a) and (b) are then exactly the same shape but the scale of the latter is the former multiplied by the square root of "σ" the atmospheric relative density. As drawn, the diagram assumes still air between the thermals, but similar considerations apply to the corresponding diagram for sinking air between the thermals.

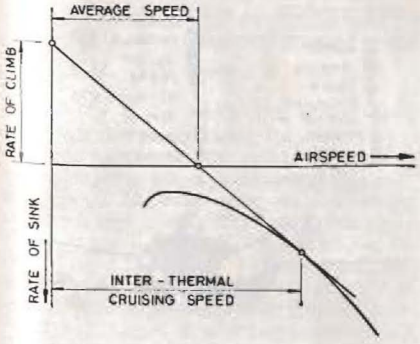


FIG.1

The difficulty which arises—as in George's article — is that *mechanical* variometers (PZL, Winter, etc), display true vertical velocities while airspeed indicators display equivalent airspeeds if perfect instruments are assumed and position errors are neglected. In theory mechanical variometers are subject to a slight effect due to height but in practice it seems to be negligible, as shown by George's calibration and as confirmed by recent measurements at Imperial College by Mike Salisbury.

Hence, in contemplating the effect of altitude, one can deal in true rates of climb and sink, as displayed by a mechanical variometer, in conjunction with a series of polars drawn in terms of true speeds. A different polar will be required at each height, obtained by scaling the polar expressed in equivalent speeds by the factor 1 divided by the square root of "σ". Having obtained, say, the optimum inter-thermal true airspeed, this must be converted back into an equivalent airspeed (EAS) if it is to be useful to the pilot.

Alternatively, we can deal in equivalent rates of climb and sink in conjunction with a polar drawn in terms of equivalent speeds. This is probably the more convenient process, since a single polar curve then applies at all altitudes (neglecting the effect of Reynolds number) although the equivalent rates of climb and sink are no longer those observed directly by the pilot.

Manufacturers' polars, whether measured or estimated, are normally presented in terms of equivalent forward speed and equivalent rate of sink (which are, of course, the same as the true speeds at sea level). If the calibration of the MacCready ring is deduced from such polars, any position error correction must be subtracted from the equivalent airspeed figures to obtain indicated airspeeds. For the present purposes, position errors are ignored.

As George implies, use of the Mac-

Cready ring at altitude leads to excessive inter-thermal speeds because the pilot is regulating his equivalent airspeed by reference to an instrument displaying true vertical speeds. There are therefore two additive effects;

I) Due to the pilot setting the ring datum to the true rate of climb and not the equivalent rate of climb; and

II) Due to the pilot regulating his inter-thermal equivalent speed according to the graduations on the ring set against a true rate of sink as opposed to the equivalent rate of sink.

By way of example, consider a Std Libelle and assume a mean true rate of climb 2m/sec (3.88kts). Near sea-level, the best inter-thermal speed will be 130km/h (70kts), both equivalent and true, and the average cross-country speed will be 79km/h (42.6kts), both equivalent and true.

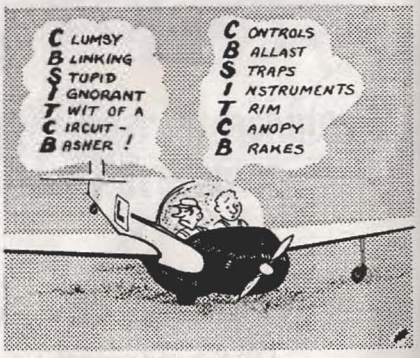
With the same true rate of climb (as shown by a perfect mechanical variometer or an altimeter and stop-watch) at 3,000m (9,840ft), where the square root of "σ" is 0.8615, the equivalent rate of climb will be 1.723m/sec (3.34kts). The best inter-thermal speed will then be 124km/h EAS (66.9kts) and the average speed will be 73km/h EAS (39.4kts). However, the *true* average speed will be 73 divided by 0.8615=84.7km/h (45.7kts).

If, in the latter case, the pilot has set his MacCready ring to 2m/sec and then adjusts his speed in the manner described by George until his EAS matches the figure on the ring against the variometer needle, he will have to fly at about 135km/h (73kts). In other words each of the effects (I) and (II) above contributes about an extra 3kts to the excess of speed. The loss in average speed due to flying too fast is almost impossible to assess accurately by drawing diagrams, but a calculation as explained below suggests that, in this case, the total loss would be about 0.8km/h (0.4kts) true airspeed.

In view of the margins by which championships are won, this is getting significant. However, it all assumes that the pilot can assess his rate of climb accurately: In this example, the true and equivalent rates of climb differ by about 14% and it would be a bold pilot who reckoned to be able to estimate his mean rate of climb to that order of accuracy without the aid of altimeter and stop-watch. In the above example, the pilot will be cruising too fast by 11km/h EAS: As Anthony Edwards, *inter alia*, has noted, it pays to cruise too slowly rather than too fast. In the case considered here, cruising too slowly by 11km/h EAS, giving a speed of 113km/h EAS (61kts) would lead to the same loss in average speed. But at 113km/h, the glide angle would be 33.6, as opposed to 25.3 at 135km/h, with correspondingly less worry about finding the next thermal.

To summarize all this, one clearly does tend to fly too fast if one blindly obeys the MacCready ring and hence suffers some small loss in average speed and a significant diminution in the chance of finding the next thermal. In the above fairly typical example, a rough rule would be to use the MacCready ring, but subtract about 4km/h per 1,000m (3kts per 5,000ft) from the speeds it shows. One could, of course, calibrate the MacCready ring so as to be correct at some average cruising height.

All of this confusion would disappear if the variometer could be persuaded to show equivalent rates of climb and sink. It should not be too difficult to devise an electric variometer to do just this. Electric variometers do not behave in the same way as the mechanical varieties: Relative to the true rate of climb, they tend to under-read at altitude. The measurements by Mike Salisbury mentioned earlier were primarily aimed



Pre-take-off thoughts

at investigating this effect and showed that the ratio of the indicated reading to the true rate of climb was approximately the same as the air density ratio, "σ". So all one needs is a pressure transducer, a knowledge of the standard atmosphere pressure-density relationship and, no doubt, even more transistors and suchlike. Clearly, if one used a MacCready ring in conjunction with a present-day electric variometer, one would tend to cruise too slowly.

EFFECT OF ERRORS IN CRUISING SPEED

If we consider small departures from the optimum cruise condition it is evident that, *to a first order*, they have no effect on the average speed. We therefore have to consider the second-order effects.

Despite all the detailed aerodynamic influences which might be expected to introduce departures from a simple law, most gliders in a fixed configuration have a linear C_D versus C_L^2 curve. Assuming this to be so, then it is a simple matter to assess the effect of an error in the inter-thermal cruising speed. The result, assuming that I haven't got confused in the series expansions, is:

$$\frac{\delta U_x}{U_x} = \left\{\frac{\delta U}{U_1}\right\}^2 \left\{\frac{3U_1^4 + U_0^4}{3U_1^4 - U_0^4}\right\}$$

where δU_x = loss in average speed
U_x = maximum average speed
δU = error in cruising speed
U_1 = optimum cruising speed
U_0 = speed for max L/D

(See Fig 2, in which the errors have been greatly exaggerated for clarity).

These speeds can be either all true or all equivalent (or a judicious mixture—with care). The final term, as one would expect, is not greatly different from unity in most practical cases. For example, its value is 1.14 when $U_1/U_0 = 1.5$. So, omitting the final term, a rough rule is that a 10% error in cruising speed produces a 1% loss in average speed and a 20% error produces a 4% loss.

Obviously, this is pretty rough and

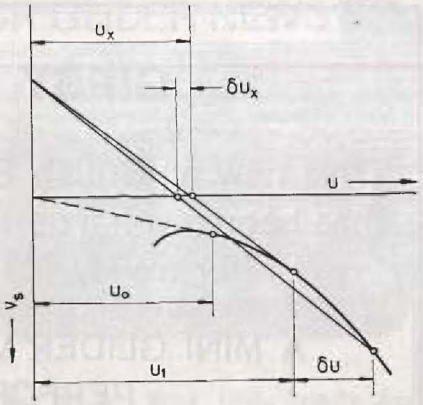


FIG. 2

fairly small departures of a real polar from the simple theoretical shape can have a large influence. For example, if, due to some quirk of behaviour of the wing profile drag co-efficient versus lift coefficient curve, part of the polar were nearly linear, then under some circumstances, quite large changes in cruising speed would have negligible influence on the average speed. Even so, it is rather difficult to believe Mr Eisenbeiss' figures for the Standard Cirrus; it is very easy to achieve such results by slight inaccuracies in plotting.

SUMMARY

1) If, at altitude, a pilot regulates his equivalent airspeed by reference to a variometer displaying true vertical speeds in conjunction with a MacCready ring calibrated for sea-level, he will fly too fast between the thermals.

2) The loss in average speed will not be very great, but the chance of finding the next thermal may be reduced significantly.

3) The situation can be improved by fitting a MacCready ring calibrated for some mean operating altitude.

4) The whole problem could be eliminated by devising an electric variometer which displayed "equivalent" vertical speeds.

5) The approximate effect of errors in cruising speed on achieved average speed can be assessed from a simple formula.

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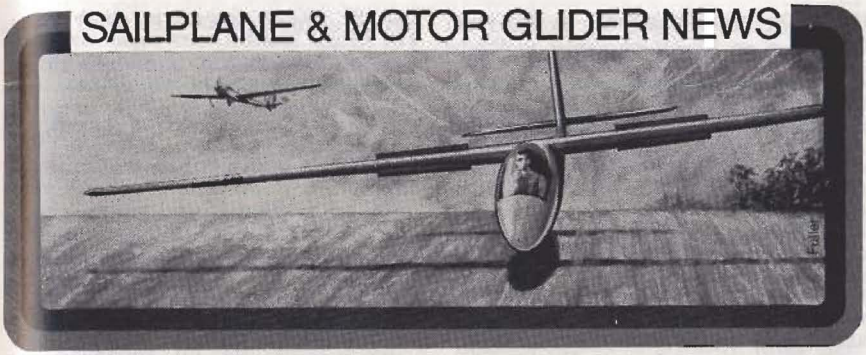
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MANUFACTURERS AWAKE

A plea for series production of a sophisticated single-seat motor glider

By IAN STRACHAN

AT the recent Open and Standard Class championships at Shobdon, much discussion ensued in the periods of bad weather about the future of our sport. Few would deny the place of the high performance single seat motor glider (HPMG) in the future, especially with Air Traffic restrictions becoming more severe, and the pattern of farming making field landings more hazardous.

The problem is that a suitable machine does not exist at present. When presented with a really good specification for the HPMG, many British championships pilots expressed great interest, several saying, "Well, of course I'd buy one like *that*—the trouble at present is that the motor glider has just not been *developed* enough."

Meanwhile the manufacturers try and outdo each other in competing in the same market, and do not seem to be looking to the large international sales which surely must fall to the first of them to come up with a viable HPMG.

The most advanced production line motor glider is still the SF-27M, which was flown in German nationals as long ago as 1968. Its fully retractable engine and K-6E soaring performance (except in weak thermals) surely show designers the way to go. Since 1968, Scheibe has added an electric starter and a pneumatic strut which compresses on engine retraction, thus aiding the extension of the engine before re-starting.

But what is needed now is more span. Most big gliders of the 1970s are carrying water ballast. How much more useful would it be to have "engine ballast" on a congested launch point, or when about to land in a field far from home! So, manufacturers and designers, take an existing advanced glider, put into it a suitable engine mounted on an SF-27M type retractable strut, and do your best to fulfil the specification below. My partisan hope, naturally, would be a Slingsby-built Motor Kestrel 19. How about it, George?

SPECIFICATION FOR A HIGH PERFORMANCE SINGLE SEAT MOTOR GLIDER

The points mentioned are in order of importance, 1-8 being particularly fundamental.

(1) *General Philosophy* When soaring with the engine off, the machine's characteristics should closely correspond to those of existing high performance gliders. These include handling qualities, cockpit layout, performance, ancillaries such as airbrakes and flaps, etc. The machine should firstly aim to be a viable high performance soaring machine, only as a secondary function carrying the engine—for convenience and as an aid to increasing the time spent in participat-

ing in the primary activity, in this case *soaring*.

(2) *Thermalling performance* This, engine-off, should be as good as or better than that of a Std Cirrus, with the machine at a "soaring all up weight". Soaring AUW is defined as that of a fully equipped machine with a 200lb pilot and fuel for 150km of flight in still air. It is essential that any measure or calculation of thermalling performance takes account of very weak thermal conditions. The machine's low speed polar should either be similar to the Std Cirrus, or if minimum sink were higher it must be achieved at a significantly lower speed.

(3) *Maximum glide ratio* This, engine-off, should be better than 38:1.

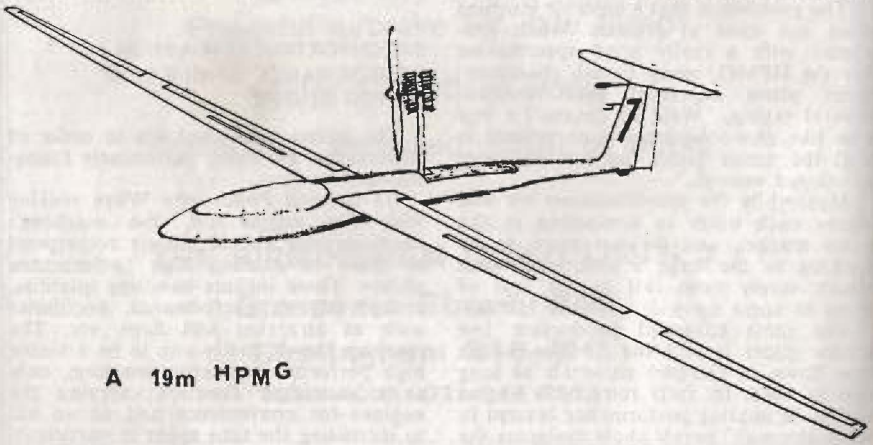
(4) *Restarting the engine* while airborne should be 99.9% reliable, assuming the pilot made correct selections. It should be actuated by a single action which shall not require any physical effort or mental concentration. It should be possible to thermal the machine down to the same altitude as a normal glider, select a field and make an approach to the field as far as actually using airbrakes. Having ascertained that a safe landing in the field is possible, the engine-start circuit should then be actuated. This would extend the engine without effort on the pilot's part, and when extended would make a microswitch contact which would cut in the starter. When the engine developed power, the airbrakes would be retracted and the throttle opened to climb away. The height loss between engine selection and the development of enough power to climb away should not exceed 100ft in the approach configuration.

Notes on restarting If a lightweight cartridge starter is used, a breech of at least six shots should be designed. If an electric starter is used, it should work on 12 volts and a ground power connection should be fitted for starting from car electrics. The engine, when running, should recharge the glider batteries.

(5) *Sink rate* at 80kts should be 3kts or better (1.6 m/sec at 150km/h) engine-off, at soaring AUW.

(6) *Removal* The engine should be designed to be easy to remove, eg, by use of pip-pins and push-pull connectors. The machine must have a full clearance to fly with engine removed. The designer should ensure that as much weight as possible is removed by this process—for instance it may be possible to remove not only the engine but its mounting strut at the same time. The object should be that, with no specialised tools, it should be possible to remove the engine and make the machine ready for flight, as far as the engine ancillaries are concerned, in 10 minutes. For refitting a serviceable engine and making ready for inspection and engine test-running, 15 minutes.

(7) *Take-off run* on short grass to 50ft in still air (ISA+10°C and at soaring AUW, to be 400 yards or less. The speed



A 19m HPMG

at 50ft to be the "take-off safety speed, V2".

(8) *The normal glider characteristics,* mentioned as the overriding design requirement in (1) above should include the following:

(a) Full airbrake and/or flap arrangements to make normal short field landings;
(b) normal glider towing hook for launching;
(c) normal stressing and clearance for cloud flying at soaring AUW;
(d) normal rigging, derigging and trailer stowing characteristics; and
(e) capability for full glider instrument and oxygen fit.

(9) *Engine-on rate of climb* to be at least 400ft/min (2m/sec) at climbing power, still air, ISA +10°C and at soaring AUW.

(10) *The undercarriage* to incorporate shock absorption devices and to have a powerful wheelbrake.

(11) *Engine-on cruise* Range on a full tank of fuel should be at least 300km in still air. It should be possible to use the radio on both transmit and receive while running the engine.

(12) *The engine* should be a production line type for which spares are readily available.

(13) *The increase in price* over a glider of similar soaring performance should not be greater than £1,000. The aim should be to decrease this differential as numbers of orders increase.

(14) *Ground handling* Provision should be made for temporary wing tip supports such as hoop springs at the tips, to enable unassisted take-offs to be made. Either the machine should be capable of taxiing (steering by using a steerable tailwheel) or provision should be made for fitting a towable tail trolley and a wing tip trolley for ground movement to the launch point by one person.

(15) *Long range transit* Consideration should be given to the design of overload fuel tanks and luggage panniers (all detachable) to enable the machine to be taken, for instance, from the UK to Zell am Zee, Angers, Lezno, etc. In the "Long Range" configuration, a 500km minimum range starting at maximum AUW would be required, without assistance from thermals.

This specification is easily within the state of the art at present. Perhaps the most difficult part is to find a suitable engine. Between 35 and 40bhp are required, at a high power/weight ratio. So —manufacturers—awake—do some research—get the production lines going. There will be plenty of orders. And more soaring achieved to boot. Our sport may be changed somewhat, but the sort of machine envisaged will enrichen it.

BG-135 PRODUCTION STARTED

THE Birmingham Guild Ltd has started production of the first batch of six BG-135 gliders (S&G, June, p235). The first is expected to be ready by the end of the year, and the price has been set at £2,300. A trailer is also available at £300.

The modifications to be incorporated on the production model include an extended aft canopy for improved visibility, a new instrument panel to provide more knee room, two clear vision panels and a ventilator to the front of the canopy.



Schletcher ASW-17



BG-135 nose with the firm's emblem

The hood is mounted on a steel frame with two fasteners.

For greater ease of rigging, the main and rear spar pins will be raised and aligned so that the wing tips can be lowered to the ground. The tail inspection panel will have a simplified fastener and the cone will have four extra frames with a thinner skin. The tailplane will be actuated by pushrods and the overall saving in weight will be around 20-30 lbs. This weight will be added to the cockpit load figure.

Further information from The Birmingham Guild Ltd, Grosvenor Street, West Birmingham B16 8HL.

VINTAGE GLIDER NEWS

THE flag of old gliders is to be borne to the fore by a Kranich 1 which has been entered in the Lasham Regionals, reports Chris Wills.

The Minimoa at Dunstable—imported from the Continent last year—has been lying for two or three months, and is reported to fly very well. Work on the Minimoa at Lasham, shelved during the winter, has started again and progress has been rapid. The fuselage has been reskinned. The woodwork in the wings was completed last year.

Lou Glover's Gövier is believed to be nearly ready to fly at Husbands Bosworth, and the Scud 2 based at Dunstable was removed on March 14 for restoration by a firm in the North.

The Rheinland, a marvellous German 1943 sailplane designed by the Aachen Akaflieg, has flown successfully at Bickmarsh. The original Rheinlands were built about 1937/8.

It is hoped that a vintage glider rally will be held in 1973, possibly at Husbands Bosworth in conjunction with another competition.

ELLIOTTS DRAWINGS (CORRECTED NOTE)

NORMAN ELLISON states that he is looking after the original Elliott tracings for the Eon Baby and Olympia sailplanes on behalf of Slingsby Sailplanes and with the agreement with the BGA (see note in S&G, June 1972, p 239). Prints of these tracings are available to owners of these sailplanes to assist servicing and repairs of them, and a charge is made to cover the cost of printing.

The care of these drawings is undertaken as a spare-time activity only, Mr Ellison adds, and this activity is in no way connected with either Slingsby or Torva Sailplanes. Enquiries should be sent to Norman H. Ellison, "Glerup", Springfield Lane, Kirkbymoorside, York YO6 6LU.

SIGMA NOT AIRTIGHT

AN excess of miscellaneous profile drag and insufficient time to sort the problems out before the World Championships at Vrsac were the reasons for Sigma's withdrawal from the contest. Frank Irving, a member of Operation Sigma Ltd, stated that the excess of miscellaneous profile drag was 7lb at 100ft/sec. This appeared to be mainly due to things not quite fitting properly and leakage through various gaps round control surfaces.

The flaps in performance at 60kts was measured to be 40:1, and the performance in the British Standard Thermal approximately equal to that of the Kestrel 17. Sigma's performance would be up to expectations if this drag is eliminated. It is hoped that the project will continue, with the Australian 1974 World Championships as the target.

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THE THREE DAYS OF BOOKER

By MIKE FAIRMAN

BOOKER is rapidly making its mark on the British gliding scene as the home of record breakers. It was from here that the first 500km triangle flight in the United Kingdom was made, and the present speed record for that distance is held by a Booker-based aircraft. A few weeks ago, the British and United Kingdom height records were well and truly smashed—by a Booker-based, club-owned glider, and it was with this background in mind that many of us entering its regional contest had hopes of perhaps a record breaking gliding meet.

We were nearly right, although possibly not in the direction that we intended—in fact it looked for a while that Booker might go down in history as the first regional meeting that didn't qualify as a competition.

At the initial briefing, Arthur Doughty, our competition director and task setter, informally opened the contest, in spite of the weather's distinct air of non-occasion. Indeed, only the briefing tent in which we were assembled appeared anxious to get airborne. The reason for the frustration was a cold and very strong north-east wind which was to persist for half the period of the contest.

The lightest moment of that briefing was provided by Ian Hobday who, with chalk in hand, prepared to illustrate the layout of the various facilities on the site: "Now, about the loos . . . I'll use this board . . ."

Some very interesting aircraft were to appear this week, among the most impressive being the KH-1, designed and built by Ken Holmes and piloted in the contest by Howard Torode. Although not yet "finished" and still suffering from spontaneous undercarriage retraction, the performance would appear to be at least up to Dart 17R standard. When one considers the present state of the art of glider design and construction, it is pleasant to find that the day of the homebuilt glider is not yet over, and I can only marvel at Ken Holmes' initiative and application.

Another impressive aircraft, although in another sense, was the Polish Wilga 35 glider tug. Here, at last, was to be seen a thoroughbred, designed specifically for the job it was doing; I'm told that four-minute turnrounds were being achieved on a non-contest day, to say nothing of an impressive triple tow one afternoon. The general configuration, slots, flaps and slow flying characteristics put one in mind of a giant sized "Zaunkönig".

MAY 14

Forecast: Low pressure over France and Germany, anticyclone near Iceland. Strong north-easterly airflow, unstable but with variable layers of upper cloud. Low stratus early, soon clearing. Weak thermals by 12.00gmt. Moderate thermals mid-afternoon, but probably dying out with the arrival of upper cloud in late afternoon. Thermals very broken due to strong winds and variable upper cloud.

After a freezing night, the like of which only caravan dwellers can appreciate, Arthur set us a task, a 102km crosswind race to Nympsfield. It looked as though keeping on track would be the big problem, which indeed it was. Most of the gliders didn't get beyond the Chilterns—a few were scattered further along the track, and three reached Nympsfield. Peter Trenchard in an SHK made the best speed but tied on handicap with David Bowden in a K-6E. Brennig James was third in his Diamant 18. Peter Trenchard reported a fairly uneventful flight, and was surprised not to see more finishers. David Bowden's effort in the K-6E was particularly noteworthy in view of the strong cross-wind component. No mere flashes in the pan from these two, either—as we were to find out later. However, the fact that so many pilots failed to score would suggest that the early stages of the course were rather chancy.

"Shep" Sheppard landed twice in the same place on this day (I do hear that it was a girls' school playing field). On the second occasion, he thought he'd forgotten his wing pickets—only to find

them on the grass under his wing tip, left there from his first landing.

MAY 17

Forecast: Low pressure over continent affecting south-east corner (Kent and Essex). Cold front over Scotland and western Ireland. Medium cloud over NW England and North Wales and a "col" area over central England. Active thermals by 11.00, 3-4 kts (occasional 6kts). Unstable layer 2-7,000ft in east, rather more shallow but thermals frequent in the Midlands. Light winds, moderate visibility, poor near industrial areas. (In the event, some more moist air was probably drawn into the south-west of the task area, damping down activity at the first turning point.)

After two cold and dreary non-contest days, the sight of the sun and a definite suggestion of warmth when one was sheltered from the wind, cheered us as the hours ticked by on the grid. Arthur had set us a 200.5km triangle via Broadway tower in the Cotswolds and Hellidon tower, near Daventry. While reviewing the various hazards we would encounter *en route*, he drew attention to the perils of landing at Moreton-in-the-Marsh airfield, now a large fire brigade training station, swarming with trainee firemen who would certainly not pass up the chance of getting to grips with a real live aeroplane crash.

The lengthy wait at the grid was due to the weather's reluctance to start brewing, although when it did, local conditions rapidly improved to record breaking standard—flying from Booker to Kidlington was an absolute joy and we were all going to get round the course in time for an early tea.

But no, just beyond Kidlington the clouds formed up into great wide moribund streets and the visibility deteriorated quite suddenly from over 20 miles to about four. The radio chatter took on a more sober note as many pilots reported themselves in difficulty. Visibility from Moreton-in-the-Marsh onwards became even worse and Broadway tower, not noted for its conspicuousness at the best of times (how *did* it get into the BGA's album?) disappeared for long enough to sink many pilots trying to find it.

Only half the field survived the first leg, and of these, four completed the course. Barry Atkinson in the Kestrel 19 arrived home three-quarters of an hour before anyone else, but dropped to fourth place on handicapp. Chris Rollings won the day in a Skylark 4, followed by David Bowden and Peter Trenchard. All the finishers reported weak conditions on the last leg, although David Bowden found good lift over woods to get him home.

It is interesting to note that both Rollings and Trenchard were flying in their first ever competition, and Bowden in, I believe, his second—moreover, all were in "old fashioned" wooden aircraft. The Standard Class glass-fibre ships had yet to show some form. Still, it was early days yet—or so we thought.

MAY 19

Forecast: Slow-moving trough west of Ireland, unstable air mass, slack gradient over East Anglia and Midlands. Cu building, convection strong, thermals 3-5kts (up to 8kts in cloud). Variable upper cloud, thermals erratic but some good.

With a fine flourish, Arthur announced that he was "throwing the ball into our court", and we all realised it was to be the dreaded cat's cradle, or "Bikle's Basket". Turning points: Didcot towers, Edgehill, Pitsford Reservoir, Potton TV Mast, Bregborough Brickworks and Booker.

This turned out to be the most successful day of the whole meeting, possibly more hours being flown than the rest of the week's total. Most pilots managed to stay airborne until after 5.30, some for up to two hours later, and there seems to be no definite evidence as to which part of the course was to be preferred. Some pilots said they "should have stayed in the Edgehill area, where the conditions were excellent" and others "made the mistake of going to Edgehill, where conditions were terrible". Visibility was very poor—especially near cloudbase, when it was often necessary to descend a thousand feet or so in order to be able to assess the weather ahead.

Once again, Barry Atkinson in the Kestrel 19 beat everybody else, once again he was fourth for the day. At last the Standard Class glass ships had a re-

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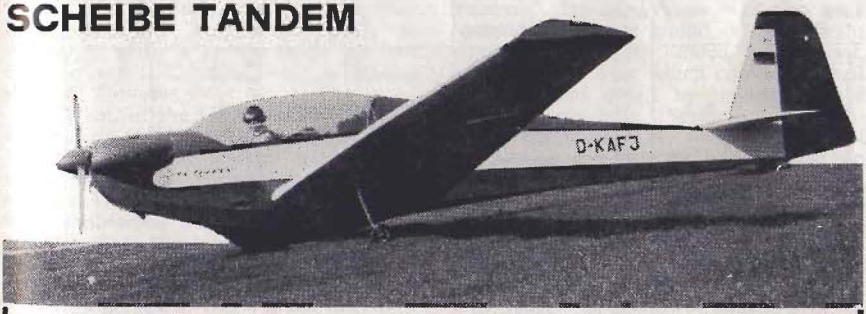
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presentative in the top placings; Tony Watson in a Std Libelle was first with 247kms. Peter Trenchard was second, with 235kms, which comfortably improved his leading position, and Chris Rollings third, 216 kms.

I believe that it was on this day that Dr Brennig James offered a unique perk to his crew—a free prescription for anyone straining his back whilst derigging.

Sunday, May 21 held some faint promise, which unfortunately didn't materialise until after 1.15pm, when it was decided to close the contest. Philip Wills kindly agreed to present the prizes.

Our thanks are due to Arthur Doughty, Ian Hobday, Mike Batstone and their helpers for working so hard for us—having had a hand myself in running regional competitions in the past, I know how the organisers suffer bad weather even more acutely than the pilots do. The weather forecasts were accurate, the tasks well judged, the launching was smooth and the control point was efficient.

There were no prangs.

COSFORD ACHIEVES SIX DAYS

THE Junior Inter-Services Competition, held at RAF Cosford in the west Midlands, over the same period as the Wycombe regionals, fared somewhat better, although task-setting was plagued by the persistent stiff NE winds. Six contest days were squeezed out of the sky for the Sport Class and five for the Club.

There were, however, several outlanding mishaps, the worst of which was on the first contest day, May 13, when Roger Clemo (K-6CR) crashed on landing near the Forest of Dean. The glider was severely damaged and the pilot sustained leg injuries.

R. J. Lyndon, flying a K-6E, won the Sport Class with 124 points, while D. R. Andrews (K-8) won the Club Class with 68 points. There were 21 and 16 competitors respectively.

WYCOMBE REGIONALS

Final results *Pilot(s)*	*H'cap* %	*Sailplane*	14.5 15	17.5 40	19.5 44	*Total Points*
1 Trenchard, P.	84	SHK	15	36	42	93
2 Bowden, D.	94	K-6E	15	36	35	86
3 Rollings, C.	98	Skylark 4	4	40	39	83
4 Atkinson, G. B.	74	Kestrel 19	DNF	36	38	74
5 James, D. B.	80	Diamant 18	12	24	34	70
6 Sheppard, F.	94	K-6E	0	32	30	62
7= Ellis, J. J.	88	ASW-15	0	22	34	56
7= Watson, A.	88	Std Libelle	0	12	44	56
9 Hill, M.	88	Std Cirrus	0	—	25	
Winning, E.			—	29	—	54
10 Wood, D. M. J.	88	Std Cirrus	0	—	—	
Saw, G.			—	29	24	53
11 Fairman, M. C.	94	K-6E	0	26	23	49
12 Cousins, R.	88	Std Libelle	0	16	28	44
13 Keogh, B.	94	K-6E	8	20	12	40
14 Torode, H.	86	KH-1	0	16	20	36
15 Wathen, A.	90	Dart 17R	—	12	—	
Kape, J.			0	—	15	27
16 Pettifer, R.	90	Dart 17R	0	—	18	
Whiteman, P.			—	5	—	23
17 Bowden, R.	98	Pirat	1	16	4	21
18= Leo, C.	98	Dart 15	0	12	8	20
18= Wyman, B.	94	K-6E	0	5	15	20
20 Margetts, D.	94	K-6E	0	—	10	
Winfield, K.			—	8	—	18
21 Strachan, I.	96	SF-27M	8	—	—	
Walker, D.			—	6	1	15
22 Williamson, J. S.	88	Cobra 15	8	—	DNF	
Strugnell, J.			—	6	—	14
23 Pope, M.	90	Dart 17R	0	DNF	6	6
Hors Concours						
White, S. A.	88	Cobra 15	—	—	42	
Cardiff, J. D.	88	Std Libelle	—	—	27	

JUNIOR INTER-SERVICES COMPETITION — Sport Class

Final results Pilot(s)	*H'cap %*	*Sailplane*	13.5 30	14.5 16	15.5 24	16.5 24	17.5 34	19.5 29	*Total Points*
1 Lyndon, R. J.	94	K-6E	27	0	24	20	30	23	124
2 Brownlow, J.	96	Olympia 419	30	2	16	24	17	29	118
3 Waller, C. J. N.	94	K-6E	27	12	20	12	13	25	109
4 Allen, D. K.	88	Std Cirrus	8	16	7	24	34	16	105
5 Kieley, K.	94	K-6E	0	5	19	20	23	27	94
6 Sharman, R. C.	100	K-6CR	4	9	13	20	28	12	86
7 Chinn, G. M.	100	Skylark 3F	23	0	7	16	20	12	78
8 Goodman, C. W. S.	94	K-6E	23	0	12	0	17	19	71
9 Breen, A. G.	94	K-6E	0	13	7	8	21	21	70
10 Brindle, G. F.	94	K-6E	0	9	7	8	32	12	68
11 Burgess, A. E.	90	Dart 17R	12	—	3	—	10	—	
Loveland, A. S.			—	0	—	20	—	16	61
12 Jarvis, H. R.	94	K-6E	19	0	11	8	13	5	56
13 Brooke, M. E.	100	K-6CR	0	0	0	14	26	8	48
14 Colvert, T. M.	102	Olympia 463	16	—	18	—	3	—	
Young, R. D.			—	0	—	8	—	DNF	45
15 Goozee, P. K.	102	Olympia 463	6	—	19	—	3	—	
Bawden, A. E. C.			—	0	—	1	—	0	29
16 Elsom, M. L.	94	K-6E	1	0	3	16	7	0	27
17 Fox, J. A.	94	K-6E	13	5	0	4	2	2	26
18 Clemo, R. W.	100	K-6CR	23	DNF	DNF	DNF	DNF	DNF	23
19 = Taylor, J. C.	94	K-6E	12	0	DNF	DNF	DNF	DNF	12
19 = Munday, D. F.	100	K-6CR	12	DNF	DNF	DNF	DNF	DNF	12
21 Moorehead, P. A.	100	Skylark 3	0	0	0	0	3	5	8

The first contest day featured a 157km race to RAF Colerne via Hereford race-course for the Sport and a 134km race direct to Colerne for the Club Class. J. Brownlow was the only Sport pilot to reach the goal, at 50.4km/h, while S. Easton made the best Club distance, landing one kilometre short of Colerne.

D. Allen, of the USAF, made the best distance on the Sport Class task on May 14—96km of the 134km triangle via Long Mynd and Whitchurch railway station. The into-wind second leg was near impossible. The Club Class task—a 99km out-and-return via Ellesmere—saw one pilot finishing, G. Millward at 27km/h.

A 132km race to Usk via the M5/M50 junction was set for the Sport Class on the third contest day, May 15, while the Club Class essayed a straight 105km race to Aston Down. Nobody completed either task; the best distances were 119km by R. Lyndon in the Sport and 81km by C. Elliott in the Club.

There was no task for the Club pilots on May 16, but 14 pilots completed a short 90km out-and-return via Comber Lake set for the Sport. J. Brownlow won at 51.4km/h, with D. Allen second on handicap, although his actual speed was the fastest, 54km/h.

May 17 had a light wind and a 250km triangle via Long Marston and Shobdon for the Sport and a 119km out-and-return via Shobdon for the Club. It was Yankees' day—D. Allen was the only Sport pilot to get round, at 40.1km/h; most of the others landed on the last, into-wind leg, over which convection had been damped down by industrial haze from Birmingham. Seven pilots completed the Club task, with USAF pilot D. Parrish winning on handicap in an Olympia 2 at 44km/h.

On the sixth day (May 19), the Sport Class pilots had to make up their minds about their routes on a prescribed area distance task with turning points at Church Broughton airfield, Syerston airfield, Husbands Bosworth airfield and the M1/A617 junction. J. Brownlow made the best distance, 242km, and second was K. Kieley, 206km. The Club class had a race of 119km to RAF Spitalgate. Two reached the goal, the winner being Sgt Rooke at 43km/h. Second was P. Andrews, the eventual class winner, at 34km/h.

The contest was closed on Sunday, May 21 by Air Vice Marshall H. Bird-Wilson, chairman of the RAFGSA.

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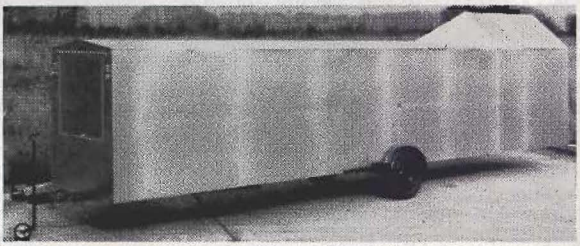
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LOCAL PILOT WINS WESTERNS

KEITH ALDRIDGE, a member of the Bristol & Gloucestershire Gliding Club, won the Western Regionals, held at Nympsfield from June 10 to 18, by more than 600 points from his nearest rival. He was flying a Std Cirrus. A total of 23 gliders competed.

He won three days outright out of a total of six. The weather was far removed from the idyllic conditions experienced last year, and although six contest days were achieved, five were devalued (the old, 1,000 points, scoring system was used).

The first Saturday was a no contest day, and a Cats Cradle task on June 11 produced short distances only, achieved in weak conditions. The turning points were at Frome railway station, Cirencester church, Membury mast, the M5/A38 road junction at Bromsgrove, Stratford railway station and Shobdon airfield. Aldridge made the best distance, 130km. Bernard Barry (K-6E) landed at Cirencester after failing to turn both Frome and Membury because of heavy showers. Although he covered about 160km, he failed to score.

Pilots were provided with a 220km triangle via Stratford railway station and Shobdon airfield for the next day, June 12. The weather, however, provided them with showers, a particularly bad specimen of which sat over Worcester on the second leg for the express purpose of preventing many from reaching Shobdon. Aldridge again made the best flight, landing at Ludlow, although British team member John Cardiff, flying the Std Libelle *hors concours*, completed the task.

Wednesday, after a no-contest day on Tuesday, brought a 192km out-and-return via the Long Mynd and the usual ration of showers. This time, one tucked itself in over the Mynd to force many pilots to either land there or in the vicinity. Tony Watson (Std Libelle) made it almost all the way back and Cardiff finished yet again.

The next day, June 15, was an example of fantastic forecasting by Tom Brad-

WESTERN REGIONALS

Final results *Pilot(s)*	*H'cap* %	*Sailplane*	11.6 479	12.6 931	14.6 761	15.6 874	16.6 1000	17.6 325	*Total Points*
1 Aldridge, K.	88	Std Cirrus	383	931	261	842	1000	286	3703
2 Smoker, J.	98	Skylark 4	252	789	439	444	852	325	3101
3 Hill, B.	88	Std Cirrus	194	—	343	—	674	—	
Winning, E.			—	652	—	836	—	134	2833
4 Southwood, M.	84	SHK	—	591	—	722	—	287	
Throssell, M.			134	—	320	—	609	—	2663
5 Watson, A.	88	Std Libelle	285*	0*	761	772	581	197	2596
6 Johns, H.	98	Skylark 4	34	800	420	664	289	266	2473
7 Vennard, D.	94	K-6E	20	714	0	874	717	159	2464
8 Bunker, R.	94	K-6E	—	581	319	—	242	—	
Martin, P.			166	—	—	572	—	159	2039
9 Gay, M.	100	Skylark 3F	129	811	250	313	221	239	1963
10 Terrett, R.	94	K-6E	138	704	14	605	0	68	1529
11 Barry, B.	94	K-6E	0	591	258	326	271	82	1528
12 Gaunt, N.	100	MD-1	—	581	99	—	221	—	
Crawshaw, G.			86	—	—	427	—	60	1474
13 Lilburn, D.	88	Std Libelle	0	743	343	314	—	—	1400
14 Duke, A.	100	K-6CR	—	608	—	0	221	—	
Upson, G.			204	—	327	—	—	0	1360
15 Woodhouse, I.	88	Std Libelle	88	44	128	605	454	34	1353
16 Stoddart, R.	98	Dart 15	0	698	384	0	231	0	1313
17 Pope, M.	90	Dart 17R	295	717	0	11	226	38	1287
18 Roberts, D.	106	Olympia 460	264	551	—	31	—	0	
Gibbons, J.			—	—	71	—	356	—	1273
19 Smith, F.	98	Skylark 4	0	306	190	324	213	168	1201
20 Davis, W.	84	Cirrus	0	0*	113	685	228	0	1026
21 Perrott, R.	108	Skylark 2	—	648	0	0	0	77	725
22 Wales, D.	84	SHK	0	0	183	85	191	0	459
23 Simmonds, T.	98	Skylark 4	73	124	157	0	60	0	414

* *Indicates penalty*

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bury. If the competitors could be launched into one single promised slot in the high cover, there was a chance they'd get to Lasham. A 134km race there was duly set (via Bath Racecourse) and 10 pilots arrived, although at no great speed. David Vennard (K-6E) won the day with 50.29km/h. Joe Smoker (Skylark 4) unfortunately overflew Lasham.

The fifth contest day, Friday June 16, was a 223km triangle via Keynsham factory and Gaydon, and a single competitor (Keith Aldridge) completed it at about 50km/h. The last contest day was Saturday June 17, and featured a goal race to Enstone via either Winchcombe or Moreton-in-the-Marsh railway station, all of 70km. Conditions were not conducive to record-breaking soaring and the day was the most heavily devalued of the six points-wise. Joe Smoker made the fastest time, 58km/h.

Thus, Nympsfield continued the British trend towards uniformly unwholesome gliding competitions in 1972, weatherwise. Otherwise, it was an occasion of good cheer, highlighted perhaps by British team member John Cardiff having a 30-second flight in a hang glider —"a bit like flying a wheelbarrow".

EQUIPMENT NEWS

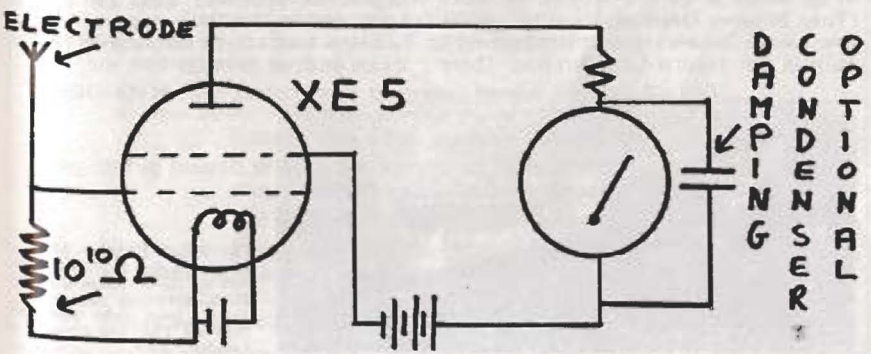
DISTANT DETECTION OF THERMALS

By BRENNIG JAMES

DISCERNING readers may recollect my previous distinguished writings on this topic way back in 1960 (S&G, June, 1960, p155). Since then I have done some experimental flying in my Diamant using the apparatus described more or less in that article.

There was an XE5 miniature electrometer valve at each wing tip shorted by a 10^{10} ohm resistor and the outputs were fed to a pair of meters on the instrument panel. The electrodes were small needles projecting from the leading edge and the instruments were so sensitive that a charged hair comb sent them off the full scale, as would also rubbing the leading edge of the wing. Full scale deflection was ± 3 volts but the current would be 3×10^{-10} amps.

When flown in this configuration on July 14, 1968, I found that the needles twitched around madly all the time in a manner which was impossible to correlate with thermals or anything else. When I flew to 8,000ft in cloud, they continued to twitch even though I got mildly iced up, but on leaving the cloud laterally the needles then immediately became still. But on re-entering the cloud from the side, they began to twitch again in the same manner.



Clearly the time constant of the meters was too short so I shorted the meters with a pair of electrolytic condensers to give a time constant of about two seconds.

Now things made a bit more sense but it was still impossible to correlate meter readings with thermals. In this condition I flew a 100km triangle on June 28, 1970 (Booker, Didcot, Weston-on-the-Green, Booker). When circling in Smoky Joe's thermal (which comes from the cement works near Kidlington) the needles went over to one side consistently when I was on one side of the circle.

I have since discovered that this factory has a 50 kilo-volt dust precipitator in the chimney so what I was detecting was the space charge in the smoke produced by this.

This is the only result I have obtained which correlates specifically with anything and it agrees with some previous work done by Vonnegut. The previous findings in cloud are very striking and paint a picture of a cloud which looks like a floating Faraday Cage.

The conclusions are that space charge measurements correlate well with atmospheric turbulence, but that with the present apparatus the wood cannot be seen for the trees.

THE POWER GAME

ENGINE TBO's AND CONCESSION ON GYPSY MAJORS

AIR Registration Board Notice No 35 will shortly be re-issued (issue 4) in which a 20% extension of TBO (Time Between Overhauls) will be offered over and above the manufacturer's bulletin life, reports Dick Stratton. There will be a calendar life requirement outlined in the Notice, but CAA Airworthiness Division has stated that, in respect of Gypsy Major engines, it is willing to consider judging such engines individually on their merits if application is made by the owner for a concession against the calendar requirements of the notice.

This revision of TBO's and the concession on Gypsy Majors was negotiated by the BLAC Technical Committee.

METAL PROPELLERS

An Accident Bulletin on the failure of two-thirds of one blade of a propeller on a Beagle Airedale used for glider towing has recently been issued. There are four or more such propeller blade failures on record in the UK on a variety of aircraft. The crack propagates from stone damage at the leading-edge, or on the crown of the camber of the front surface. These failures will be accelerated if a propellor is operated within a range of engine RPM at which the blade is resonant, known as the "red band".

Watch your prop and read the operating and maintenance manuals!

GLIDER TUG REQUIREMENTS

BCAR's Section K is being revised, and a paper for glider towing requirements will be discussed between CAA and the BGA Technical Committee.

FALKE ENGINES

One sample in the UK has passed the 800 hour mark (without top overhaul) and is still going strong "on condition".

The CAA has stated that it will not impose an approved TBO on an "unapproved" engine, ie, a type which does not meet formal type certification requirements such as twin-ignition, etc.



The Polish PZL-104 Wilga 35 glider tug has a phenomenal rate of climb, claimed to be 250m/min with one glider. Details from John Strugnell, Daltrade Ltd, 110 Cannon St, London, EC4.

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CORRESPONDENCE

BALLOONS AND FIELD LANDINGS

Dear Sir,

Balloonists are getting used to being unjustly pilloried by the Press. Several of the popular Sundays recently carried an alarming story about balloons getting in the way of aircraft taking off from Heathrow and implying that balloonists had infringed controlled airspace. All quite untrue—but just try to get them to print a denial (the *Daily Telegraph* was an honourable exception).

Now we always thought S&G was something else altogether so imagine our surprise when we read your ill-informed comments on page 180 of the last issue concerning relations between the British Balloon and Airship Club and the National Farmers Union. May I try to answer the points you raise to put the record straight?

(1) You state the BBAC Code of Conduct for pilots was produced because the NFU "has been very disturbed at the increased number of balloon air movements". Not so. The BBAC, entirely on its own initiative, approached the NFU to get their approval of our Code because we recognise our responsibilities to farmers just as much as glider pilots do.

(2) ". . . anything less than the greatest degree of pilot skill combined with ideal . . . weather conditions makes a balloon likely to cause considerable damage to a farmer's property." Strangely enough it is very difficult to cause "considerable damage"—whatever the weather and however unskilful the pilot. I have made about 150 balloon landings and some of the glider pilots you occasionally see limping about at Dunstable will confirm that they have not all been made with the greatest degree of skill. Yet not once have I been asked to pay 1p of compensation to a farmer (and neither has my insurance company) for any landing damage. You will have to take my word for it that my experience is typical.

(3) "Balloons are fat and clumsy and can only go whither the wind taketh them." Ouch! I suppose they may appear to be clumsy but a balloonist can still be trained to put his balloon down in the field of his choice. With the latest improvements in burner design balloons can ascend (and descend) at up to 1,000ft/min within a few seconds of taking a decision. We may deliberately go up to 10,000ft in order to fly on a track perhaps 40° or 50° different to the one we would take at 500ft. By flying between these two extremes it is possible, within limits, to "steer" a balloon to a selected field.

Of course our record is not perfect; sometimes an error of judgment is made and a farmer is justifiably upset. But remember that around half the 40 or so holders of PPL's (Balloons) also fly gliders and we are seeing to it that balloon flying instruction includes a very thorough brainwashing on pilots' responsibilities to the farming community. In the end, just like glider pilots, we have the strongest of all motives to do this—self-interest.

Vice-Chairman, The British Balloon and Airship Club.

ROGER Q. BARRETT.

DO IT YOURSELF GLIDERS

Dear Sir,

I was very interested in the article in S&G, June, 1972, p232 about the KH-1. Before the war, when gliders were often crude and cheap (by today's standards) a number of people designed and built their own machines. Many of the machines made before 1939 and described by Norman Ellison were built by enthusiastic individuals with a little help with the larger components. Nobody can literally build a glider alone; it just is not possible.

Both the late Mr Fred Hunt and the late Mr R. F. Stedman based their machines on the book *Sailplanes* [C. H. Latimer-Needham, 1932]. Mr Hunt had his fittings made by Abbott Baynes but Stedman beat out his own in a bedroom workshop, usually in the small hours to the distress of his wife. Mr Hunt was a joiner and had a reasonably good workshop but Mr Stedman, who processed 16mm cine films for a living, had most of his two-seater (which he called "City of Leeds"), made in his own private house:

The fuselage in two parts in the front room; wing spars in the two cellars made into one; ailerons (14ft by 2ft) in the hall; tailplane and elevator in the bedroom and ribs and struts in any odd corners left over.

For sheer persistence, the efforts of the late Mr E. T. W. Addyman are hard to beat. In spite of losing his right hand in a glider crash at Saltergate, Eric taught himself to use his left and build the Zephir in 1933 followed by two primaries in 1934 which he called Standard Training gliders. The outbreak of the war put a stop to a light plane he was building after completing most of the fuselage.

This was never completed and it, together with the primaries, now belong to the Northern Aircraft Preservation Society and are being restored. The Zephir, after being presented to the Society, has disappeared from store in Leeds and is now presumed burnt.

I have recently heard from Mr Ellison that a former acquaintance of mine who I had long ago given up for dead has been for 10 years building a Luton Minor which should fly soon.

Bradford HAROLD HOLDSWORTH

NOTE: Mr Holdsworth, who holds C number 344 (the second to be gained at Sutton Bank) designed and built a single-seater in 1931.

THE SAFETY VALUE OF PILOTS' LOG BOOKS

Dear Sir,

In the June 1973 S&G, Dunstablighter made a particularly good point in his last two paragraphs. In asking what happens on off-days to the 10-20 annual hours man he is addressing a far greater population than many might think. His words "see above" might be taken to suggest that he is one of those who do not know within 50% (10 hours in this case) honestly how much they *have* flown.

Allowing for the fisherman's reach of most glider pilots when talking about their achievements, it is not unreasonable to imagine that the hundreds in the 5-25 honest annual hours category would claim to be 10 to 50 hours folk, and so on.

Was Dunstablighter really saying let's all keep accurate log books so that we and the CFI can see who is likely to frighten who and to break what? If so he has my vote; I regard a properly made up logbook as almost as big an advance in flight safety as being able to persuade W*** K*** not to wear 49 pairs of P**d sun glasses at once, even if they *were* free.

Upavon DONALD SCARFE

CONTROL COLUMN JAMMING AGAIN

Dear Sir,

Having read the report on stick jamming in a Blanik in the April 1972 issue of S&G, it would seem sensible to corroborate the report with news of a similar occurence.

On this occasion, it was during some dual aerobatics in a club Blanik that the rear seat slid forward while a loop was being executed, and a hammer stall was narrowly averted.

It is obvious this is a vice common to the type, and Blanik operators should therefore take careful note.

Ulster & Shorts' Gliding Club W. T. CRAIG

NATIONALS STRUCTURE

Dear Sir,

Further to the discussion held at Shobdon during the Open/Standard Class Nationals in respect of the structure and what pilots require of the Nationals, I would like to put forward my ideas on the issue. It would also appear that a large proportion of the competing pilots thought similarly.

(1) There should be only one Nationals consisting of the Open/Standard classes of approximately 60 pilots. Where possible the same tasks would be flown, but scored separately, and would be unhandicapped.

(2) To qualify for the Nationals a rating list similar to the existing set-up would be kept with, say, the bottom 20-25% of the pilots being replaced each year by the top 20-25% of the regionals pilots.

(3) Only five qualifying regionals would be held, four civilian and one services. (This, along with the Nationals, would accommodate virtually all the existing competition pilots in the country at present.) If, in the course of time, the number of competition pilots increased, a further regionals could be held.

(4) If clubs other than those holding a regions wished to hold a competition or task week, these would not be rated competitions, but to have flown in such a competition could be the basic requirement to enter a regionals. (This assumes that the number of competition pilots will increase.)

Some of these thoughts may seem bloody-minded to pilots sharing aircraft and flying the less hot ships, but I think it is realistic to say that 85-90% of the top competition pilots are now flying hot ships.

While one cannot ignore the minority completely, surely the very vast majority should be catered for.

Guiseley, Yorks. FRED KNIPE

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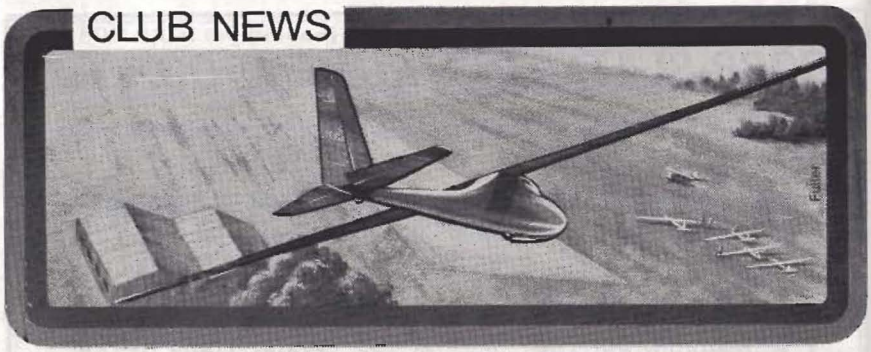
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CLUB NEWS



Copy and photographs for the October/November issue should reach the Editor, S&G, British Gliding Association, Artillery Mansions, 75 Victoria Street, London, SW1, telephone 01-799 7548, not later than August 16.

Copy and photographs for the December 1972/January 1973 issue should be sent to the Editor not later than October 8.

June 21, 1972

ANGUS—round and about

SEVERAL members hired the Bocian and spent the first week of April at Aboyne, the Bocian being aero-towed there and back. The weather was disappointing, however, although Sheila Sturrock converted to the Swallow. There were several solos during April, and Gordon Neill has completed his Silver C with a cross-country from Aboyne to Milltown.

On Saturday, April 22, Tom Docherty took his T-21 (which the club had been using) to Riverside Park, Dundee, along with a Portmoak K-13. It was a fine gliding day, with lots of cumulus clouds above Dundee, and a few members were there to take advantage of the aerotow experience and the K-13.

Pete Murray and Alex Watt were at Islay during the weekend of April 8/9. Pete is supervising the C of A of the Islay club's T-21; this glider had previously belonged to the Angus club.

Bill Buchan has prepared and installed a new engine in the winch. The cylinder head had been burst by frost action and, with customary nonchalance, Bill repaired this damage and provided the winch with an engine which it was hoped would give a better performance in difficult conditions. Unfortunately, this engine hasn't lived up to expectation. The club's glider trailer, without a skin for some time, has been taken in hand by Dick Ritchie, who has now attached a plywood skin.

J.S.

AQUILA—now at Hinton-in-the-Hedges

WE have moved once again and are now based at Hinton-in-the-Hedges (still near Brackley) and, as a result of an agreement with the Americans at Upper Heyford, hope that this will be our last move. We have even erected the framework of our hangar!

At our last annual dinner, the two female flying members of the club (Jean Godfrey and Liz Clarke) between them won three of the four trophies awarded annually: For the greatest height gain, the longest distance flight and the award for the person who had done the most in the past year for the club. We don't really agree with Women's Lib—we just like to keep the lads on their toes! However, Dave Catt, who won the other trophy (presented to the member who had achieved the most in gliding over the year) really earned the honour. He has worked hard for the club through all our problems and has turned out to be a good pilot.

Derek Godfrey has achieved an ambition. He has now got a fully operational double-decker bus on the airfield. Besides being a good landmark, it is fully equipped downstairs as a canteen and upstairs as a signal room, briefing room and storage space.

We have recently bought an addition to the club fleet—a T-21B, which will assist in the training of the influx of new members we have had since moving to Hinton.

E.A.C.

BRISTOL & GLOUCESTERSHIRE—school children gliding scheme

THIS year's Western Regionals were won by Keith Aldridge, flying the Nympsfield-based Std Cirrus. Keith won three of the six tasks, scoring 3,703 points out of a maximum possible 4,274, and Derek Vennard won one of the other days. Derek was placed 7th overall, and Howard Johns came 6th, with 2,464 and 2,473 points respectively. Congratulations to these, and thanks to all who organised the competition.

Three Silver C distances were flown on Saturday, June 3, at the end of the club's first task week this year. Ian Stockdale flew 98km to the Mynd, Tony Gillett landed near Banbury, and Bob Chisholm went to Gaydon. Apart from these, three pilots have flown "Lead C" cross-countries, the farthest being 2½km. Midweek flying continues alongside our holiday courses, and on one of these days Don Chatterton achieved Silver height.

We have recently commenced a scheme with Gloucestershire Education Committee to make gliding available to school pupils at a reduced subscription; flying takes place on Wednesday and Thursday evenings at present, but we hope to have gliding approved as a school-time activity before too long. Finally, we congratulate Ron Sandford on his 7th place in the Standard Class at Shobdon, and his win on the fifth day.

M.J.C.

BUCKMINSTER—gliders return to Saltby Airfield

SALTBY airfield, 6 miles southwest of Grantham, became active with glider operations during the Whitsuntide weekend—28 years after the USAAF C-47's, C-53's, and Horsa gliders flew in after taking part in the invasion of Sicily and Italy. The eastern half of the airfield, part of the Buckminster Estate, is now the home of the new Buckminster Gliding Club.

A steering committee of five, urged on by Brian Spreckley, had been in existence for several years, lacking only a suitable site. The tremendous encouragement from the Buckminster Estate to use Saltby airfield overcame this.

We have an Eagle and three syndicate single-seaters, and use car-and-pulley launches. We hope we will have the use of a tug by the time this is in print. Access from the east is via Saltby Heath farm (off the Skillington—Sproxton Rd), from the west via Saltby village (past ironstone quarry).

Should you visit by air, note our superb "cloudbase detector" which is four miles south south west of the airfield (Waltham TV aerial—1,480ft AMSL).

Among the 30 founder members we have 7 Silver Cs, 3 assistant instructors, and 15 solo pilots. The club committee, formerly the steering committee, is as follows: Secretary, Clive Leslie; treasurer, Don Bricknell; ground equipment, Peter Walker; CFI, Brian Spreckley; chairman Roger Allton.

R.A.A.

COVENTRY—traction engines and boggy retrieves

ANOTHER Whitsun holiday brought forth our annual fund-raising Traction Engine Rally. This time it was marred by bad weather but was nevertheless a great event attracting 13,000 people. Despite the poor conditions, an aerobatic display was given by Mike Watkins and Bob Mitchell (of World aerobatic fame), in their Stampe and KZ-8 respectively. The RAF honoured us with a visit on the Monday, showing off their virtuosity in a Puma helicopter.

The weather at HB has been so bad of late that hardly anyone has done anything flyingwise, worthy of note, apart from a few very wet cross-countries resulting in boggy retrieves.

The courses are filling up well and there have been a few instructor's

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courses held at HB. We were visited on one of the latter by Mike "Rocketman" Field who recounted his epic flight.

There are likely to be some changes on the committee at the AGM, which is looming up. Several committee may not stand for re-election and new faces will no doubt replace the "old" ones. We have again experienced an excellent financial year and things look rosy for the future; bar profits almost exceeded the flying profits.

We have a new tug aircraft to play with, a Rallye Commodore; the launch rate has risen considerably.

Our congratulations go to Ken Pearson, an instructor and life member, who has been made the Mayor of Northampton.

V.G.

DERBYSHIRE & LANCASHIRE—keeping in touch

THE first half of 1972 at Camphill, in common with the rest of the country, has not produced good soaring weather, but in spite of this we manage to keep flying. In fact, there has been more cross-country flying than for some time. During our task week held in May for early cross-country pilots, five gliders flew a total of 1,600kms. Mary Neighbour and Dave Salmon both completed their silvers during the week.

Our courses have also been enjoyed by both members and visitors under the supervision of our resident instructor Joe Weelan. Visitors have come from Blackpool, Coventry and Leeds clubs. One wet weekend in June, a Cobra 15 arrived for a demonstration but unfortunately the weather was not flyable.

More members have gone solo and some bronze C's have also been gained. The K-4's are proving to be excellent training machines, and our latest—the third—is looking very smart in white with dayglow nose, tail and wingtips.

Chris Buxton has joined the instructor ranks and is rarely seen away from the flying field.

Five members took three aircraft to Lasham for a week, the Libelle syndicate went to Compton Abbas for a week, and other syndicates have spent weekends at Portmoak, Dishforth and Husbands Bosworth. Visiting other clubs is a good way to keep in touch with the rest of the gliding world and helps to knit us all into one nationwide movement, giving us a better chance to fight the restrictions which keep nibbling away at our freedom. Only by sharing our views and ideas can we hope to keep gliding free from bureaucracy and red tape.

P.H.

DEVON & SOMERSET—16 enter task week

ALTHOUGH socially a success, a visit to the Long Mynd by three of the K-6E syndicate the first week in May proved frustrating due to the terrible weather, which had not improved even by June for our task week. Conditions taxed both John Fielden as task setter and the pilots who managed to fly. Sixteen aircraft with their crews competed, including Peter and Pauline Kingsford (who came joint second) and Mike Honey, who gained first place from the Kent club, and Kay and Mike Lee from Essex & Suffolk who were lucky to get sixth place as they turned their outfit over on the way down and managed to repair the glider in time for the second day's flying.

The Dart 17R and Oly 463 shared second place with Pauline. Two days only were remotely suitable for cross-country flying but despite thunder, hail, torrential rain and gales of wind, morale remained high and everyone seemed to enjoy themselves. The usual party on Saturday evening rounded off a week which would have been superb given better weather.

A.E.R.H.

DORSET—task week a washout

WE have lost a lot of launches so far this year and badly need favourable conditions to restore activities to last year's levels. Our first task week was an almost total washout, the worst on record, and those who took the week off for it had to call up all their glider pilot's reserves of patience and resignation to end the week in good spirits. One beneficiary (the only one?) of the disastrous weather was the trailer which a syndicate was trying to get finished in the

hangar. This got to the painting stage and is a very professional job of which Barry Thomas, as designer and executioner-in-chief, can rightly be proud. Perhaps the next task week at the end of August will afford opportunities for it to be seen and admired in your part of the world.

M.L.B.

LINCOLNSHIRE—circuit chock-full of choppers

A REPORT from Bardney has not appeared in these columns recently although our village Pop Festival has been reported nationwide. This meant chaos over the Bank Holiday week-end both on the roads and in the air, our pilots at times sharing the circuit with police choppers! We also entertained many interested visitors over the period.

Weatherwise, the season has been poor so far, little soaring being done until the past few weekends. Several members had a pleasant, but not very soarable week at Portmoak in March. Our thanks to SGU—we shall be back!

Several changes were made at our AGM, the main one being Charlie Jennings taking over the chairman's seat.

Our twin drum Wild winch built into the rear of a motor coach is now working well after initial troubles. On the occasions when troubles have occurred we have used our polypropylene rope "motor bungey" with success.

On a rather sad note, we have lost a dozen or so members, including three instructors from the Nottingham and Derby areas, who have formed, under the enthusiastic leadership of Brian Spreckley, a new club at Saltby airfield between Grantham and Melton Mowbray (see p349). We thank them for their past support and wish them luck in their new venture.

J.R.S.

LONDON—two competitions in August

PRACTICALLY every club in the country must have done less flying compared with last year, and the London club is no exception. There have been few flights of note, the best being a 250km out-and-return by John Cardiff in

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his world comps Std Libelle. Frank Pozerskis clocked up 100km/h in his Cirrus round a 100km triangle, but unfortunately was not observed officially. In spite of inclement weather, the K-8 pilots have achieved several Silver C distances, the most notable by Geoff Bailey.

The AGM in April voted Tom Zealley back onto the general committee, and has resumed his onerous task as club chairman. Bernard Tubbs is now vice-chairman, and Mike Garrod continues as chairman of the flying committee. On the social side, Nicole Young joins Barbara Deans on the house committee, and there are already plans laid for the coming winter's entertainment.

August this year promises to be the busiest period in the club's history, with two competitions. Roger Barrett has once again been volunteered into the running of the Sports/Club class contest, while John Jeffries and Tony Deane-Drummond have overall responsibility for the *Daily Telegraph* contest. Some twelve overseas pilots are coming for the latter, including the world record distance holder Hans-Werner Grosse, and in conjunction with seventeen top UK pilots this should be a fascinating event. It is planned to continue club flying on a restricted basis during both competitions.

M.P.G.

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MIDLAND—Diamond wave

ALAN PARKINSON has resigned after five years as Treasurer. We shall miss his wise, forceful and often picturesquely expressed contribution to debate. Ron Hayes, with five years as Secretary behind him, moves to Treasurer, and Don Brown has taken up the Secretaryship.

Saturday, May 27, was interesting. John Anstey arrived as usual in the late afternoon and rigged his Skylark for an evening constitutional. He was bungeyed into a not particularly promising sky, but had barograph and oxygen just in case. In the air he found a strong wave developing and reached 18,500ft asl for his Diamond height. There were other good climbs that evening, including one to 14,000ft asl in the K-13 flown by Ken Woolley and a visitor—and there were gliders from the Nationals at Shobdon sharing the same wave.

About a dozen of our members put in time at Shobdon, helping with the championships in assorted capacities. They enjoyed the experience in spite of the indifferent weather—and as we held one of the K-13's there for the week, they also got some flying.

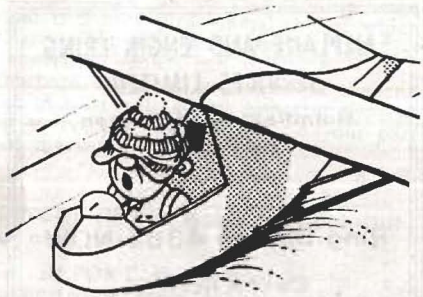
W.J.T.

NORFOLK—danger of losing site

WHEN these notes were written, in the middle of June, we were faced by the prospect of losing our site. Our agriculturally-minded landlord decided that he would no longer tolerate even the occasional cable dropped in his growing crops—despite offers of compensation quite out of proportion to any damage caused.

National Coach, John Heath, spent a weekend with us, and awarded three full instructor categories and one for motor gliders.

Norfolk may not have a Marfa-type landscape but Denny Snelling in the



Skylark 4 recently covered 182kms during a 7½hour flight. One other notable event was a "blind landing" performed in the Tutor, due mainly to a combination of an open cockpit and a woolly hat!

STOP PRESS: We gained a reprieve by agreeing to operate aerotows during the crop-growing months, and reverting to wire-launches during the winter.

C.E.H.

PETERBOROUGH & SPALDING—growth

CONGRATULATIONS go to Brian Bourne, who attained his assistant instructor rating at Husbands Bosworth in early May. Another member went there in July for the same purpose. All our six instructors have attended a recognised BGA course.

The number of aircraft flying under the club banner has now jumped to 10: Bocian 1E, T-49, Tutor, Skylark 2, Skylark 3, Skylark 4, M-100s, Beagle Terrier and Beagle Tugmaster (tugs) and "Currie Wot", aerobatic single-seat biplane powered by a 60hp Lycoming engine which is a scale model of a Tiger Moth and keeps our tugpilots happy.

J.V.L.

SURREY & HANTS—a Kestrel for the club

THE gloom continues. Most old hands say it's the worst season since the war, etc, etc. Things have brightened a little though in the past week or so. Four 300km flights have been done so far, against 50 or so by the same time last year.

We have placed an option on a Kestrel 19 for delivery in early 1973 to replace one of our 17M Phoebuses. Until the weather does something other than be continual winter (5° of frost on June 9!) there will be nothing to report. However, Daphne Poynter completed her Silver C a week or so ago after a long lay-off from gliding—well done.

C.L.

WOLDS—Leeds Gliding Club renamed

THE Leeds Gliding Club was re-named the Wolds Gliding Club after a recent meeting of club members decided that the new name was more appropriate for our present location, at Pocklington at the edge of the Yorkshire wolds.

Although this is the first time we have appeared in "Club News", the club was formed at Tholthorpe in the North Riding in 1968 and moved to Pocklington early in 1970. The club fleet consists of a K-7 and Skylark 2, and the club also has the use of a privately owned Olympia 2B and a Slingsby Sky.

We have an excellent soaring site at Pocklington, the dry chalky soil provides lots of thermals, and we also contact wave at times. We hope to explore nearby Millington Ridge (600ft) in the near future.

J.G.S.

WYCOMBE AIR PARK—bus in full service

NEWS of Mike Field's fantastic flight arrived too late for our congratulations in the last edition of S&G. However, one thing is certain: It will put him amongst the immortals, and who knows —we may see his name in the New Years honours list.

The Wycombe regionals were marred by disappointing weather that only gave us three contest days (see p329). In fact it has been a poor season so far compared to last year and we are well down on hours flown though total launches are not so bad.

A temporary halt on membership to the Thames Valley Club has been made

necessary due to the amount of *ab-initio* pupils and the pressure on our training facilities particularly during courses.

The Airways club has replaced its Skylark 3 with a new Pirat which is proving to be very popular, and has also acquired a K-6E.

Messrs Beach and Saw have purchased an immaculate Rhönbussard dating back to the '30s to add to the collection of historical aircraft at Booker.

Our double-decker bus is in full service now and has been completely fitted out to include base station radio and logkeeper's office, while the top deck has been set out with glass-topped tables with air maps mounted underneath. With the seating, it can provide a good lecture room, and during the winter added comfort, thanks to all the many people that lent a hand in this venture.

The Thames Valley dinner/dance this year will be held on Thursday, October 26 at the Bellhouse Hotel, Beaconsfield and we hope by that time to have enjoyed some better weather.

K.W.W.

YORKSHIRE—15,000ft summer wave

AS a tribute to Joe Provins, whose sudden death in April shocked and saddened us all, the club speed trophy is to be known as the Provins Trophy. For 17 years Joe's humour and wit cheered club members and he is greatly missed.

The syndicate K-8 now graces our skies and on his first flight in it Malcolm Sutherland climbed to 7,000ft in wave, staying aloft nearly five hours. On June 3 Alan Kenworthy climbed to 15,000ft in wave, the highest so far this year, and on a more modest note Chris Wilson took the Mucha to 5,000ft in cloud for his Silver height, gaining 5 hours at the same time.

The longest flight in this generally disappointing soaring season was Barrie Goldsborough's attempted O&R to Leicester on May 16, when he covered 314 of the 360kms. Congratulations to him on making 2nd place in the Open Class Nationals at Shobden.

Another newcomer is the Tutor owned by Terry Wright and co. When it takes to the skies the old stagers become all misty-eyed and reminiscent and Terry has become very popular of late—is it his charm or can it be that we all want to fly it?

S.V.G.

SERVICE NEWS

CHILTERNS (RAF Abingdon)—brand-new bar and clubroom

GOOD weekend soaring weather continues to elude us at Abingdon. So far (June 1) we have been unable to complete any closed circuit tasks, but every Sunday night the CFI predicts superb conditions for the following weekend. He's bound to be right soon! However, away from the club site our pilots have done quite well. In his first ever competition Bob Sharman, flying our K-6CR, gained a very creditable 5th position in the Sport class of the Junior Inter-Services Competition. In the Club class of the same competition Geoff Millward came 4th, or was it 3rd?

The Comps themselves were very well organised by Dickie Feakes, Al Farmer, Jim Martin and Co and George Ross and the Wrekin club's hospitality was greatly appreciated by both pilots and crews. We would all like to come back again. The only cloud to darken the week was the number of out-landing accidents.

Back on the home front, there has recently been a change of club chairman. Wg Cdr Eric Reeves has been posted and his place taken by Wg Cdr Bruce Thompson, a club member of a few years past. The club owes a great deal to Eric and his family who have all put in a lot of work in the past year. Our brand new bar and clubroom is a standing example of what can be done with enthusiastic chairmanship. (Of course the decoration was done by all club members.) Eric and Valerie's two daughters are already carrying on the family name in gliding circles. Sue recently went solo on the first flying day after her 16th birthday and sister "Dee" is club secretary and a K-8 pilot herself.

We all hope that by the time this is published we have had some good week-

ends and have completed a good few 300km triangles. All we have been able to do so far is draw them on the maps!

G.M.

CLEVELANDS (RAFGSA) & HAMBLETON (BGA)—soaring aplenty

THERMAL and wave soaring has continued apace over the last two months. CFI Barry Nowell gained his Gold height, and on another occasion took a Bicester visitor to 13,000ft in the Blanik after a long struggle between thermal and wave at 4,500ft. Mike Greaves climbed to Gold height, but, unfortunately, without a barograph. There were four Silver climbs up to 9,000ft in one day, and a total of 700km cross-country flown on another. Colin Walker was three times unlucky for his Silver duration but his determination should be rewarded by the time this gets to print. Our congratulations go to club member Alistair Arnold, who achieved 2nd place in the Junior Inter-Services Club class.

The two extremes of the clubs' training efforts have produced 11 first solos and 10 new instructors.

Squadron Leader Peter Odling has taken over as deputy chairman from Squadron Leader Ted Wood. An enjoyable farewell party was held at the club for Ted on June 17. Colin Aber has exchanged the bar job for the "joys" of club treasurer.

The club Auster was out of service for two weeks but we still had the use of the Chipmunk for aerotows. Our second Auster should be with us very soon, after some 11 months away on a major overhaul. Julian Earnshaw's Dart is flying now after a rebuild by Gerry Kemp; and lastly, a Clevelands syndicate has acquired a Kite I.

M.I.O.

CRUSADERS (Cyprus)—soaring going well

THE soaring is really going well now, with two recent Gold C climbs. Three fairly new pilots have also gained their Silver heights and many Bronze have also been achieved.

A notable achievement was that of Dave Coy, who completed 21½ hours flying in five days. Congratulations also to Chalky White and Kevin Allen on completing their five hours.

F.P.G.

EAST MIDLANDS (RAF Swinderby)—tray retrieving

A VERY successful *ab initio*/soaring week was held from May 27 to June 2 when six Bronze C legs were achieved and five students went solo. Deputy CFI Chris Watson, who organised the week, made two cross-countries in the K-13 and also got his Gold height in the K-8.

During the week, members of the Humber club from Lindholme came with their K-6CR, and the K-7 from Cranwell was also used.

Considerable tray-retrieving activity has also been going on, between Lindholme, Sturgate and ourselves.

Dave Cockburn, our CFI, has been globe-trotting again, but is now back safely. While in Singapore, he helped the Anzuk club at Simbawang. He reports that flying in an open T-21 without a shirt is an experience.

THE BARON

FULMAR—from dawn to dusk

THE last quarter has been a very successful one for the Fulmar and Highland gliding clubs. Bob Lloyd completed his Silver with a cross-country from Bicester during a soaring week and John Fraser, Jeff Howlett and John Higgins completed their Silvers with cross-countries from the club field at Milltown.

Eddie Handley and Tug Wilson gained Silver heights and Shirley Higgins and Tug Wilson gained Bronze C legs. Seven trainee pilots went solo.

The highlight of the quarter was the visit of our President, Air Vice Marshal Wakeford. The weather was poor but he was able to meet and talk with members of both clubs and keep his hand in with several circuits.

Another notable event was the soaring week at Bicester when ten members of the Fulmar Club enjoyed the facilities at the centre. The weather was not so good but the experience was invaluable.

The next event of note is the "Longest Day" celebration. A traditional Fulmar

event, the aim is to fly from dawn to dusk for a fixed sum. Dawn and dusk in this latitude are synonymous so the longest day is well named.

We say farewell to our CFI George Illey—our loss may be Mawgan Vales' gain although I do know George is buying a house in Cornwall so even gliding may have to take a back seat. We wish George and Lesley all the best in their new home.

M.R.

KESTREL—sterling work from nut-strangler

AFTER a poor winter during which little flying was done, the club is swinging back into its usual 100 launch a day style. Cross-country flights have started again and the qualifications are flowing in.

The club fleet now boasts three two-seaters, five single-seaters and even a primary and we are looking forward to the arrival of a Cirrus in June. Dave Dripps, our Irish nut-strangler, is doing sterling work on our third winch, which is nearing completion, and should be in operation before very long.

Four of our pilots took part in the Junior Inter-Services championships at RAF Cosford this year: Brigadier Peter Goozee and Howard Jarvis in the Sports class and Alan Bishop and Don Webber in the Club class. Our Deputy CFI, Leigh Hood, is flying in the Nationals later in the year and we wish him all the best.

Recently we have had a few friends from the Chilterns club drop in. It seems they have adopted us as their Silver C goal as we are just over 50kms away.

H.R.J.

PHOENIX (RAF Brüggen)—canvas hangar

SINCE our last appearance in S&G, happenings at the Phoenix club have been many. The most important was the erection of a Romney type canvas hangar on the airfield where we can, at last, leave the aircraft rigged after flying. Secondly, thanks to the efforts of those who turned up when the weather made flying impossible, our new clubroom has been built next to the workshop. The airfield caravan is at present undergoing a refit and it is hoped to have it fully operational in the very near future.

We welcome to the club several new members, among them Robbie House, Trev Blanchard, Leslie O'Neil, Jerry Wallace and Scott Murphy. Farewell and many thanks also to Norman Irvine, who has left us to return to the UK.

On the flying side, with the first soaring trip of the year being done on January 30, it looked as if the weather was going to favour us for a change. A visit to Issoire produced a Silver duration for Godfrey Duff and George Laughton achieved 57km on a cross-country. Since then certificates have been gained fairly regularly. Mick Parkin and George Laughton have completed their Silvers, Robbie Walshaw his Bronze C and a fair amount of cross-country flying has been done.

The club participated in the RAFGGA competitions held at Puddleborn, sorry Paderborn, from May 13 to 22. Once again the weather played its hand and reduced the airfield to a mudbath for the first four days. However, the remainder of the time produced good soaring conditions and several good flights were made.

P.H.

RAFGSA CENTRE (Bicester)—membership reaches 500

POOR weather conditions and two competitions has resulted in reduced activity at Bicester, particularly cross-country flying.

In the Junior Inter-Services competition held at Cosford our pilots were well placed, especially Ginger Jones and Doug Parrish in the Club class and John Brownlow and Jerry Breen in the Sports class. Worthy of mention is Lemmie Tanner's creditable performance in the Dart at the Open class Nationals, and he and Andy Gough have been selected to fly at Dunstable in August. John Glossop in the ASW-15 finished well up in the Standard class and he and John Monteith had flights in wave to well over 19,000ft and, subject to confirmation, obtained their Diamond heights.

Membership has reached the 500 mark and we continue to attract a fair proportion of our USAF colleagues from bases as far afield as Alconbury.

A.E.B.

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Cs of A have been completed on several aircraft and we have already had gliders away on competition flying. The weather has been of a depressing variety —rain and strong winds—so the absence of the gliders has caused less anxiety than in previous years. Lift has been unfriendly and flights of respectable lengths have only been obtained in the K-6E and John Evan's Oly 419, "Yellow Terror".

After many hours of hard work from John Dabill, club facilities have been improved considerably and on June 10 we were able to entertain Odiham's club for the AGM of the Army Gliding Association in colourful surroundings. The meeting coincided with the arrival of a Cirrus, which had an airing at Upavon for one day before being packed off to Odiham for Leigh Hood to fly in competitions. We wish him luck and await its safe return in August.

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