



JUNE 14, 1982.

Wings!

Special price 75p

Britain wins Bleriot — by a mile!

Main picture shows John Stirk at the Southern take-off at Lachens.

Below, Bleriot team captain Bob Harrison takes off into Tittendale, Yorkshire (one of the American Cup sites) on a Fledge

Picture — Alan Metcalfe

Airwave and UP

— the exclusive story of
"the deal that never was",
page 10

British Clubs Guide

Supplement



**NOW FOR
MILTON'S
USA!**



Bettina Gray pic

The American Cup

Yorkshire Dales, June 12—20

Handley joins Hiway

VETERAN designer Miles Handley has joined Hiway hang gliders in a move designed to make the Welsh firm "more professional".

Handley — whose remarkable innovative approach inspired the Gulp and Gryphon gliders — is working on a machine to replace the cancelled Alien project.

A pre-production prototype of the machine has already been test flown and director John Ievers said it was hoped the glider would appear in time to catch the back end of this year's competition programme.

The glider is a near 100 per cent double surface machine, as yet un-named, based on the Alien airframe.

Unique

"We have done away with the tail," said John. "Miles has some new ideas about the pitch stability and in its own way the glider is probably as revolutionary as the Gryphon."

Secret of the new machine will be a "Welsh Connection" enabling it to combine high performance with easy handling.

Said John: "The thing about Miles Handley which makes him unique among all the designers in Europe and the States is that he is not first and foremost a hang glider designer, but I am confident he can do for us a professional job."

He will do design work on the full range of Hiway manufacturing operations. He was previously working as a designer for an international company with no aviation connections.

Hiway order books are now reported to be full for two months. The company's Demon 150 has won its British CoA and is also available in stiffened form for triking.

Meanwhile, Alien designer Bill Payne is working freelance on the project, helped by former Hiway man Joe Binns and John pledged to consider putting the machine into production if it was "sorted out".

Floater fear

THE Sigma Floater intermediate glider — flown by an estimated 150 UK pilots — is to be tested urgently on the BHGA test rig following an unexplained tuck at Devil's Dyke in which the pilot escaped unhurt.

Paul Bateman was practising stall recovery in stable conditions.

"I was flying quite a way out in front of the hill with about 200ft. I was doing a stall almost from normal flying speed. The nose went up less than 45 degrees and then it just fell straight through very quickly into the vertical and a second after it went on to its back and I fell into the sail and it tumbled about five or six times," he said.

Paul, a Pilot One, landed upside down on the wreckage, the king post taking the impact, about two thirds of the way up the hill.

Amazingly he went on to complete the purchase of a Comet which he actually flew that day.



Picture shows Paul, inset, and the remains of his Floater

Pictures — Michael Carnet

Spring again brings its toll

MAY 1982 will go down as one of the most tragic months in British hang gliding.

Apart from the stunning news of the death of Howard Edwards, there was a British death at Lachens, France, the loss of one of Ireland's top pilots and a number of serious accidents and "near misses" up and down the country.

Again, the combination of spring thermals and, perhaps, lack of airtime over winter seems to have taken its toll. Reports from all over Britain indicate that clear skies, a high sun and generally cool air have combined to produce radical conditions, particularly around mid-day. Pilots have encountered off-the-clock ups followed by ten-downs.

Accident co-ordinator Diane Hanlon again stresses the importance to pilots of being AWARE of weather conditions on different sites — 30mph on one site is not the same as 30mph on another. Beware advice from pilots who make light of rough conditions — and watch gliders in the air. If in doubt, wait until conditions mellow.

The following reports are based on available information and are "journalistically" correct. Full investigations are being carried out.

Raymond Kidd

A 45-YEAR-OLD member of Sheffield hang gliding club, Ray Kidd from Rotherham was "seriously ill" in Hallamshire Hospital, Sheffield, as Wings! went to press.

He was flying a Skyhook Safari at Stanage Edge on May 16 when the glider was reported to have tucked about 200ft. above and in front of the ridge. He was carried back over the edge of the hill where he hit a stone wall, suffering head, face, back and internal injuries.

Ray got his Pilot One at the Northern School of Hang Gliding in April 1981 and was described by leading Sheffield flier Len Hull

as "a fantastically steady pilot who was careful and listened to everything you said".

The wind on the 400ft. hill was south west force three to four and conditions were thermic when the accident happened about 3.30pm. He is a father of three.

Ray Zschorn

RAY Zschorn, a member of the Western Counties Hang Gliding Club since 1975, was killed at Lachens, Alpes Maritimes, on May 18 after he hit trees on a bottom landing approach.

Ray was pilot two rated and was flying a Typhoon in conditions reported as "calm" by Mike de Glanville. He was trying to land in a recognised field restricted by poplars on one side and power lines on another and had done a number of 360s to lose height. He is reported to have straightened out before hitting the trees with a wing tip and spiralling in from 50ft. The accident happened during a club trip and was just after the departure of the British team from Lachens. He lived in Plymouth.



Trevor Wilde

TREVOR Wilde died near Mount Leinster, County Carlow, on May 9. His Lightning apparently inverted in turbulence, righted itself, but with both leading edges broken and hit the hill downwind. He lived for about half an hour but did not regain consciousness.

John Heron writes:

"The cups and trophies that litter his home bear witness to

Trevor's ability and enthusiasm as a pilot. The widespread grief at his death is evidence of his qualities as a friend.

He loved flying: he thought of hang gliding, and the camaraderie that is part of it, as his way of life, as much as his sport.

Trevor came into hang gliding early in 1975 having been Irish Karting champion in the 210 Villiers class for two years running, and was looking for something new and different.

For many years he was the trail blazer in Irish hang gliding: the first to fly Killiney Hill... the first to go cross country... the first to discover that thermals really do exist...

As with many aspects of his life he pushed hang gliding to its limits.

If Heaven exists, Trevor is there right now wanting to know where's the action.

We loved him and will miss him."

JOHN Rankin, one of Scotland's most experienced pilots, is recovering in hospital in Dundee after surviving a 700ft. vertical fall after an in-flight failure.

He has a badly broken pelvis and severe bruising from his harness which stopped him hitting the ground as the glider broke under the initial impact.

John's parachute had reportedly been stolen and he was awaiting delivery of a Skymaster unit — he doubts whether a hand-deployed chute would have passed through the wreckage.

The accident came just days after John claimed a new Scottish distance record of 37.8 miles from the Tinto hills. He was flying a Wills Wing XC 220.

John took off from the 3,000ft west face of the Cairnwell, Glenshee, where he is one of the two pilots most experienced in the local conditions. He is a senior instructor and has been flying since 1975.

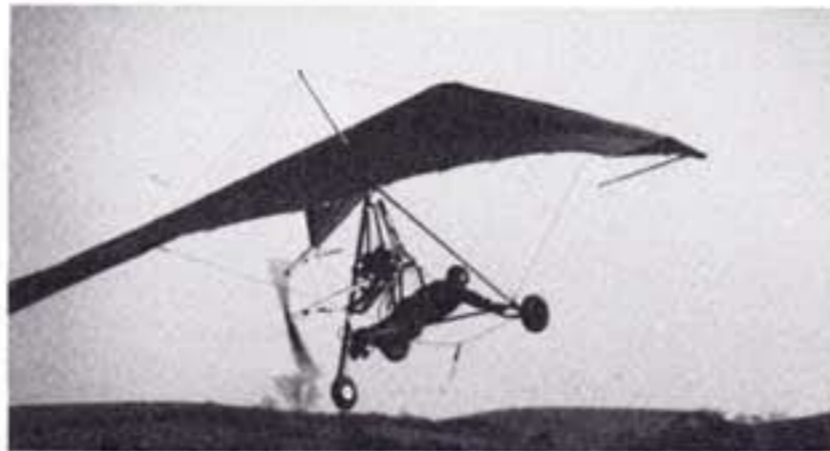
The wind was WNW 22-26mph with strong thermal activity suppressed by wave at 5,000ft. Witnesses watched him lose a lot of height in sink as he flew to Maell Gorm, reaching the base

Tragic death of Howard Edwards

Luton Leader pic



Pictured, right, Howard Edwards dressed to represent BHGA interests before Dunstable magistrates and, below, on his prone trike unit.



HOWARD Edwards — a member of BHGA council and one of the sport's most likeable personalities — died in a microlight accident at his Dunstable Hang Gliding School on May 18.

He was flying a Chargus Cyclone fitted with a prone trike unit developed by himself. He was completing a circuit pattern watched by four students when the aircraft was seen to drop a wing and enter a dive which steepened until he hit the ground. The impact was aggravated by the location of the power unit above the pilot and he died shortly afterwards.

A joint BHGA/BMAA investigation is taking place and there will be an inquest on June 25. Mike Watson for the BHGA told BHGA council recklessness and negligence had been entirely ruled out. Airframe failure is also understood not to have been a factor. Conditions were calm.

BHGA chairman Roy Hill described Howard as "a prime mover in pioneering new developments in the sport".

Howard was a man who lived for hang gliding and who saw power as means of extending the soaring capabilities of hang gliders rather than as an end in itself.

It was to this end that the lightweight prone trike was conceived. Howard was also keen to develop new methods of training hang glider pilots ab initio using dual power units and towing techniques

developed with Bill Brooks.

He was a man deeply liked by his students who would always put his own creature comforts second to the aim of teaching students who showed genuine commitment. He often gave free and cut-price lessons to such pupils and will be sadly missed by all who knew him.

He leaves a wife, Sandra, and two children. The Dunstable School is to be sold as a result of his death.

News of Howard's death prompted an immediate response from his pupils and his friends in the sport, anxious to donate to a fund for his family.

Sandra Edwards wishes to thank all those who sent wreaths to Howard's funeral and all others who have shown kindness.

This fund is being co-ordinated by the Dunstable Hang Gliding Club and anyone wishing to contribute should make cheques payable to the club and crossed "Howard Edwards family fund". They should send them to Terry Prendergast, Chairman DHGC, Holbrook Cottage, 32 North End Road, Steeple Claydon, Bucks, MK 18 2PG.

Stan Abbott

of the hill at about 300ft. AGL and 1,400ft. below take-off. He contacted a thermal and climbed about 1,500ft. in a minute before his glider was seen to "go over the falls" and stabilise nose-down, fall about 100ft. before being seen to shake "as though it was a piece of paper held at the ends" before falling the remaining distance in between five and ten seconds while rotating about the keel.

Gustav Fischnaller and Irene Dunthorn watched from 1,700ft. below take-off. Gustav thought the glider pulled out of the dive and broke, Irene thought it tucked and broke. Both leading edges were found broken inboard of the cross-tube junction.

John writes: "I have always been of the opinion that as long as one looked after and maintained one's glider, there was no way it would break up in mid-air. Aerobatics excluded, Scottish weather I felt could not produce anything to worry my glider. I WAS WRONG.

My advice to anyone thinking of flying cross country is 1) buy a new CFX glider. 2) Buy yourself a parachute.

"I wish to take this opportunity to thank all those involved in my rescue, and of course the helicopter team."

Airworthiness

The BHGA Airworthiness Board has now decided what type of **STRUCTURAL TEST RIG** to build, with the sponsorship money from Foster's Sports Foundation. The manufacture of this rig is open to tender and interested persons should write to Barry Blore for further information as soon as possible.

Tenders invited

THE BHGA test rig is now operational again and is being used to establish operating procedures and obtain data on existing hang gliders. writes **BARRY BLORE**. Manufacturers are welcome to submit their gliders for appraisal.

Ray Kidd — condition improved, still in intensive care. See P2.

Wings!

The best laid plans of mice and editors... May Wings! was supposed to appear about a week after the end of the British Open but we had "production difficulties" and offer apologies for the delay. Entries for the May Crosstube word will be accepted up to June 21.

SA

Colin better

A bright spot in a black month for accidents was the reported total recovery of Pennine flier Colin McCormack who broke his neck at Winter Hill a year ago.

Gunner's win

Gunner Astrand — the Swede with the amazing tongue featured in May Wings! — has won the Scandinavian Cup on an Airwave Magic.

Wings!

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The victorious British team, pictured by Mark Junak. Back row, from left — John North, Bob Harrison (capt.), Andy Wilson, Pete Hargreaves, Donny Carson. Front — Keith Reynolds, Jim Brown, Steve Goad (manager), Michael Carnet, Tony Hughes. Inset, John Stirk.

Pas ce soir, Josephine!

The Bleriot Cup saw 20 pilots fly more than 8,000km in 600 hours with Britain gaining a remarkable winning margin of over ten per cent at Lachens.

THIS was to be the fifth Anglo-French team championships — in 1978, 79 and 80 it was held at Lachens Mountain, 20 miles from Cannes on the Mediterranean coast.

The first two competitions were drawn but the third was won by the French using their intimate knowledge of the unique mountain air currents. Our pilots came back with stories of brilliant flying. They said Lachens was different; that you had to be there for days to begin to know how to fly it and that we should never send a team with pilots who hadn't previously been there to learn.

To prove the point, in 1981 the Bleriot was held in the Yorkshire Dales, where we won the cup for the first time.

I couldn't quite believe it when the letter came telling me I'd been selected to fly for Britain for the first time. After all, I finished 19th in the League last year, had little or no experience of mountain flying, and it was April 1st. It was no hoax and for one reason or another the better-known British pilots — Carr, Calvert, Slater, Hobson and Bailey were all missing from the team.

As a result, the French later dubbed us the British 'B' team and were so confident they declared their intent to double the British score. Perhaps they were a little hasty, with Wilson, Hughes and Carnet having finished in the top seven League positions; Harrison, Reynolds and North having considerable worldwide competition experience, including Lachens and Owens Valley; Donny Carson coming second in the Scottish Open and also winning the League final; and Stirk, Brown and myself having held British distance records.

We landed on the village of La Roque at the foot of Lachens mountain four days before the start of the competition after:— missing a hovercraft that never really existed; doubling back some 20 miles to fill up with petrol; driving for two hours round the unlit backstreets of Paris directed by a pilot we later nicknamed Dynarod, and flying ten gliders at 70mph with

by Pete Hargreaves

a Ford Transit van underneath them over a hump-backed bridge.

We had intended to have four practice days, but arriving at the gite (a sort of youth hostel that looks like a church) in the late afternoon left us with just three.

The Brits practice

The first day dawned clear and bright and it soon became apparent that our manager Steve Goad and Captain Bob Harrison were going to organise, teach and train their team all about flying the mysterious mountain ether in just three practice days — whether we liked it or not! We were each sold maps, an offer you couldn't refuse, and with breakfast over the briefing followed.

The object of the competition would be to fly as far as possible round and round a triangular course of about 50km. Each pilot was to carry a camera photographing first his glider on the hill, then from the air a start gate followed by each turn point and finally the glider in his landing field. The film was all-important: no film = no points.

Our practice task was to take us from take-off on Lachens mountain, over the back to the Baroux ridge where we were to photograph the start gate at Séranon village; over the back again, then along the 12km ridge nicknamed the "Milk Run" to the first turn-point; back along the Milk Run and over another valley onto the Teillon ridge which leads to the Teillon mountain itself and the second turn-point, then back to Séranon to complete the 50km circuit.

Having studied the course on the map we all piled into the van and set-off on a conducted tour of the course by road.

Our varicos itched as we studied the terrain in the burning sun — mountain peaks, massive ridges, sheer rockfaces, tree-covered slopes and the valleys, nicknamed Jaws and Chez Dracula with "limited" landing areas (none). Against the

skyline, not far away, the pure white peaks of the Alps contrasted strongly with the green valleys and deep blue sky.

It was 1pm before we arrived at the top of Lachens mountain, 5,600ft ASL. We rigged our gliders and fitted the newfangled speed bars supplied by our secret weapon, Michael Carnet, an Englishman with a suspiciously French accent, who was actually going to sell them to the French team until we shamed him into submission!

Take-off was from the 2,500ft south easterly tree and rock-covered mountain face, that looked down on our village of La Roque. Regardless of the prevailing wind direction, this baking slope usually became soarable by midday.

It was good to get in the air, and before long with a couple of thousand feet above take-off we set off over the back on the first glide to the Bauroux ridge. It proved difficult to read the conditions: A ridge could be soarable for hours or just for short periods, switching on and off depending on the cloud cover, sun direction, wind direction and mini sea breeze fronts that occasionally travelled up and down the valleys.

The end of the day saw many of us scattered round the course with only Carnet, Wilson, Harrison and Brown completing it. Jim Brown returned with a story of five hours in the air, eventually completing the course with an eight-mile into wind glide, pausing to work the evening thermals floating out of the trees and finally landing back at the gite. I wasn't sure whether to believe him at first, but it was just the first taste of Lachens magic, the delights of which we were all soon to sample.

Our second practice day proved to be our only bad weather day with a few pilots gliding down from the mountain in the drizzle at the end of the day, after waiting in vain for it to "get good". This day also brought us the bad news that our third practice day was to become an official practice day, to be flown and scored as a real competition day, with the scores to be used only if bad weather struck later in the week. So our four practice days had effectively been reduced to just one!

Official practice

The two teams met for the first time at the briefing on this official practice day. The circuit was to be virtually the same as we had already practised.

We inadvertently started what became the ritual "wind-up", by all attaching our maps to our speed bars, wrapping them around a sheet of Mylar shaped into an aerofoil section. The French had been disturbed by these bent bottom bars and maps, but when we combined them it was just too much.

All rigged and ready to go, we sampled the French "wind-up" when they suddenly de-rigged and drove off to the confined westerly take-off. After much deliberation and seeing our long lost wind dummy, Joe Binns, come circling back up the mountainside, we decided to "go for it". It paid off and before long we were wheeling 5,000ft above the frantically rigging opposition.

It was on this day that I first sampled the delights of the Teillan mountain. An irregular conical shape, it stood 6,200ft ASL, with many sand, shale and rock-covered faces; the midday sun made its slopes soarable through some 270° of the compass, regardless of the prevailing wind.

The lift was gentle at ridge height, but stick your wing over the top of the mountain and it would nearly get ripped off in the generous lift. Once in this convergence above the mountain the vario needle would hit the endstop: ascending at some 1,500ft/min it took no time at all before you reached cloudbase at about 12,000ft. ASL.

The view from here was unbeatable — the massive mountain flattened beneath, winding roads reduced to pencil lines, vivid turquoise lakes — to the North, the stark white peaks of the Alps, just tickling the clouds, and to the south miles and miles of Mediterranean coastline. If you looked very carefully you could make out the occasional tiny, insect-like shape of another hang glider scraping along the ridge below, or even a white stick insect silhouette of a sailplane.

My flight ended at 7.45pm after completing two circuits and spending 6½ hours in the air. I had taken my time flying the course and had been overtaken by gliders at various times, so I was amazed when I discovered I'd flown the biggest distance of the day: 110km. Mike de Glanville was second, also completing two circuits, followed by Harrison, Hughes, Wilson and Carnet with just under two. With a 200 point lead over the French we realised we were quite capable of winning, even though it was partially due to the French tactical error at take-off. We started to pray for the bad weather without which that day's score would never be used.

In any case we could do with a day to recover, finally going to bed exhausted and slightly drunk.

The first real day

(Monday)

The day's triangle was to be similar to the previous day's, but to be flown in the reverse direction. The start gate at the Brouis preceded turn points at La Batie, Gréolières and Séranon to make a 48km course.

Many of us thought that once in the air we would at least be out of the grasp of our team manager, but this was not to be. Just as you were tiring of being in the air and convincing yourself that conditions were subsiding so you could land, a white and orange glider with number 26 on it would appear from nowhere. No matter which direction you turned, or how much speed you pulled on, he would be 100 yards ahead circling in any patch of lift he thought might be of use to you (why he wasn't selected for the team I'll never know) then as suddenly as he had appeared he would be gone, off to another part of the sky to find another Brit to aid. Or was he?

The end of the day saw two Frenchmen, de Glanville and Girardet, with the longest flights of just under two circuits. The best of ours



Tony Hughes, Steve Goad and Teddy

were Carson, third, and Stirk, fourth with just over one circuit, until the film was developed, at least. It was a blow the next day when we discovered that Donny Carson's camera had not been winding properly and we had lost valuable points. However, there was at least the consolation that Césarani caught in severe turbulence while photographing a turn-point, had lost his camera!

The official score eventually revealed — 557 points to the French and 562 points to the Brits, giving us a five-point lead.

The second real day

Tuesday's circuit was a 27km triangle with a 16km start leg. The start gate was again at the bottom of the Brouis followed by turn points at St. Auban, Thorenc and Séranon.

The new course proved more difficult to fly than we imagined. I remember finding myself trapped on the Harpille peak with Tony Hughes trying to work "blue-meany" thermals to gain the height necessary to jump the 3km valley ahead of us onto the Milk Run. I followed Tony across the valley, watching the top of the next ridge to judge the glide angle.

We were just going to make it, perhaps clearing the trees with only a 100ft or so, then, suddenly — Whap!! it was like being hit with a giant fly-swatter. I felt a little uneasy as my straps went slack, but gritting my teeth and keeping my toes crossed I reached the other side with four feet to spare.

I did not enjoy this day's turbulent flying. After taking my turn-point photo I got really low on the Milk Run, spending considerable time collecting squirrels before eventually reaching the Caille plateau, where numerous others landed.

Again the French had the longest distances, with Renaud first, Khomstedt second, St. Marie, Fauchier, Carnet and Wilson in equal third, followed by six British and two French in equal seventh. Even after losing 72 of John Stirk's points on an unrecognisable photo of St. Auban (taken from 10,000 ft with a 3ft focus) we won the day with 641 against 624 giving us a total lead of 22 points.

□ □ □

By now the routine was well-established. After landing you derigged your glider as quickly as possible, so as not to encourage any French pilot flying over (a trick we learned from them), then you could sunbathe while awaiting the pickup for anything from five seconds to five hours. Our recovery driver and photographer Alan Metcalfe was invaluable. He worked just

as hard as we did, driving endless kilometres. Within a couple of days he knew the mountain roads like the back of his hand and there wasn't a manoeuvre he couldn't execute in the team van. His instructions were to collect corpses and drop them in at the pizza palace, where there was only time for food and wine before bed.

The third real day

Our maps were proving invaluable. In response to this, the competition organiser Hubert Aupetit started to set newer, bigger and more challenging tasks — orienteering by hang glider.

The third day saw the most adventurous of these excursions, a 29 km out-and-return flight, not just once but as many times as possible! The start gate was again the Brouis, followed by turn points at the Barrême and our pizza restaurant.

There were lots of cunning tricks going on in the air. Jim Brown found himself flying one-on-one against a Frenchman over the "Plaine Hostile". On finding a good "heavy-duty" thermal he pulled on speed and flew through it so that the Frenchman wouldn't come flying over to join him. A hundred yards later he went back to the thermal expecting his opponent to continue, but he couldn't find it, and neither could the Frenchman! It turned out the Frenchman had a brain just like Jim's and had been telling a near identical story to his team mates.

The trip to Barrême turned out to be the real mindblower, flying off into the Alps and navigating as you went. Although the course looked simple on the ground, most of us would have got lost without our maps. Reaching Barrême, the distant turn point, you felt you could reach out and touch the towering white peaks.

The end of the day saw Tony Hughes with the longest flight, being out, return and out again to Barrême. Second place went to de Glanville and Roussot, with 3km less, followed by Harrison, Khomstedt, Wilson and Carnet.

The flying we had had so far was exceptional and reputed to be just like Owens Valley: using the rough, heavy-duty thermals for the climb and run technique of covering distance. Undoubtedly Grenoble, 100 miles away, could have been reached if only the task had been set.

The scores were a bit of a shock to us, with the French taking 621 to our 595, removing our carefully built-up lead and giving them a four point advantage.

The fourth day

It was good news to find that, we were to fly our favourite triangle again, Séranon, Gréolières and Escagnolles.

We knew the course and by now we should be really getting to grips with the mountain ether.

Again the day brought exceptional weather and stories to go with it. With gliders spread from take off to several thousand feet above, two jet fighter aircraft came screeching towards us. The first one came straight through the middle of the pack, but the second in a bid to avoid us, performed a massive wingover, to present John North with a close up view of two Exorcet missiles strapped to its belly. "God Will these French stop at nothing?" we thought.

□ □ □

Mike de Glanville, having landed on the Milk Run looked up to see his pursuer Michael Carnet also making a landing approach at about 50 feet. As he held up a wind indicator in the almost still air the trees started to rustle and a rush of warm air gathered as though a dust devil were forming.

continued over...



Photo Norman Lomax

Meet the **MAGICIANS!**

1982 1st League

- 1st Bob Calvert
- 2nd Graham Slater
- 3rd Mike McMillan

1982 Bleriot Cup

- 1st Michael Carnet GB
- 2nd Tony Hughes GB
- 3rd Bob Harrison GB
- 4th Andrew Wilson GB
- 5th Mike de Glanville F

1982 Fosters British Open

- 1st Johnny Carr
- 2nd Mike de Glanville
- 4th Tony Hughes
- 5th Robert Bailey

Congratulations to Bob Calvert
for a **MAGIC** 108 miles and to the British
Bleriot Cup Team for a **MAGIC** performance


**AIRWAVE
GLIDERS**

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Three Gates Road, Cowes, Isle of Wight, PO31 7UT, Tel. (0983) 296042

Magic I is BHGA approved
Magic II is No British C of A

...from page 5

Within seconds, Michael had cored the rising air, and circled skywards bidding farewell to Mike with a Tarzan-like war cry, which echoed down the silent valley. Michael went on to do the furthest flight of the day, and probably the whole comp, with nearly three complete circuits and a distance of over 150km. Wilson was just behind, followed by Khomstedt, then four other British pilots with two circuits.

The French wondered what hit them. With 682 points to us, they had 519, giving us an overall lead of 158 points. From that day the course became known as the British Triangle.

The fifth real day

Friday brought another new task, which we dubbed the French Triangle because it had four turn-points. Again start gate at the Brouis followed by turn points at La Batie, St. Auban, Gréolières and Séranon, making a 48km triangle with a 9km start leg.

It proved tricky getting away from the Brouis, most pilots only managing to gain 1,500 of the 3,000 ft necessary for a safe crossing of the Plaine Hostile. This was not helped by a French tactic to kill the Brits by 360ing in the opposite direction with their eyes closed.

The British thermalling techniques saw most of us safely across, but many of the French died on the plain.

Steve Goad was still up to his tricks. He apparently spent a good deal of his time in the air looking for French suckers to lead astray, circling in sink, flying through lift, he tried every trick in the book. On one occasion, while thermalling above a Frenchman working height to jump the next gap, he suddenly set-off deliberately with insufficient height, and the bar to his knees. The Frenchman, in a panic reaction, not wishing to lose his wind dummy, followed. Once well on the way across the gap Steve waited until his prey wasn't looking, turned round and flew back to the ridge. By the time the Frenchman realised, it was too late. Another few minutes saw him down.

The best flight of the day was by Carson, with 1½ circuits, (and film to prove it) closely followed by Carnet, then de Glanville and Hughes.

The day gave us another 11 points on our lead, bringing it to 169 points.

The last day

The last day, with winning in sight, they sprang on us a new triangle with two unknown turn-points. The last one was technically very difficult to get, and outside our experience. The 48km triangle consisted of the Brouis start gate followed by turn points at Soleilhas village, Gréolières, La Batie, Séranon.

The British proved to be as keen as ever, with a number of hair-raising episodes. Andrew Wilson, while thermalling very low, hit a patch of sink. The options were few: fly into the power



Brouis start gate



Soleilhas turn point



Gréolières turn point



Escragnoles turn point

lines, or perform a precisely-controlled crash in a clearing caused by the absence of one tree. He had flown his heart out for over five hours and, on regaining consciousness, found himself dangling in the wreckage of his glider and gazing at his open camera, the all-important film exposed.

Surprisingly all was not lost as he had taken four shots of the last turn-point, so there was still sufficient evidence on the film to claim the flight.

The end of the day saw the results we had hoped for, with more besides. Only four pilots had completed the circuit, all of them British, two of whom went on to do it twice. Hughes had the greatest distance followed by Harrison, Carnet, then myself. We beat the French on the day by 246 points, more than doubling our lead to 412 points, the final scores being 3,657 to us and 3,245 to them. Half the British film fell into a tank of chemicals while hanging up to dry — the photographer had had quite a lot to drink!

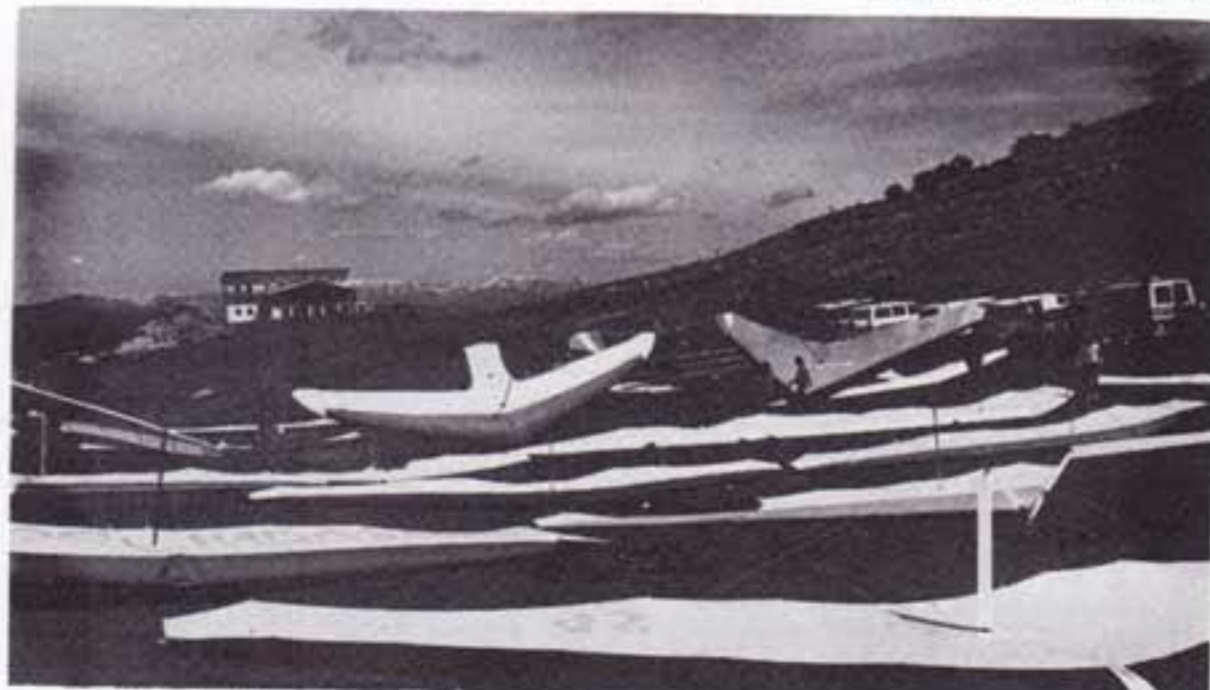
Conclusions

Why did we win despite the odds?
Bob Harrison and Steve Goad did a brilliant

job in organising and co-ordinating us as a team. They collected rules and hints for flying Lachens from previous teams and passed them on. As our experience grew, so it was shared, and new ideas sprung up, eventually enabling us to fly the area as though it were our home ground. We proved the British League breeds pilots of international status, even among its relatively low placings. We also proved to be the physically fitter team, a decisive factor in rigorous competitions of this duration.

Alan Metcalfe, proved another indispensable asset, picking us up from the roadside, collecting films, and delivering us to the Pizza Palace was just the ticket at the end of a hard day's flight. Jenny Ganderton, flying as an unofficial British representative, also gave a very creditable performance, flying with the team each day and often beating several French and British pilots. I have little doubt that next year will see her the first woman to qualify for the British League.

At the end of a hang gliding orienteering competition battled out over eight thousand kilometres of cross-country flight and 600 hours of airtime, the British B team had beaten the French on their home ground, with a margin on the scores of over ten per cent.



The Lachens rigging area — note the Alien brought by Bill Payne

Picture — Alan Metcalfe

Individual placings

Pos'n	Pilot	Day 1	2	3	4	5	6	Total
1	GB Carnet	68	80	81	100	96	86	511
2	GB Hughes	46	71	100	80	78	100	475
3	GB Harrison	68	71	87	80	73	90	469
4	GB Wilson	64	80	81	95	73	45	438
5	F de Glanville	100	71	97	26	83	51	427
6	F Khomstedt	53	93	84	91	73	24	418
7	F Renaud	53	100	70	39	73	30	365
8	F Girardet	100	71	22	46	65	60	364
9	F Roussot	53	53	97	72	14	60	349
10	F Fauchier	64	80	29	62	60	47	342
11	GB Carson	35	48	45	80	100	32	340
12	GB Hargreaves	38	71	74	25	41	68	317
13	F St. Marie	64	80	77	44	24	20	309
14	GB Brown	64	71	22	39	45	60	301
15	GB Stirk	74	47	26	69	17	61	284
16	GB North	41	71	15	80	27	45	279
17	F Césarani	12	34	59	67	24	60	256
18	GB Reynolds	64	37	66	34	14	30	245
19	F Darlet	35	27	32	44	60	20	218
20	F Collot	35	21	54	29	45	16	200



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the wing is attached to a power unit.



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Mid-air collision

THE gruesome 1" hole in the leading edge, pictured above, was the result of a midair collision at Nont Sarah's, Pennines, between a model glider and a hang glider.

Pilot Gordon Thorne landed safely after the incident when he was flying his Demon on a beat of the ridge at about 150ft above take-off.

"I was flying along straight and level, when all of a sudden this model glider did a loop right in front of me. As it came over the top of the loop, it hit my leading edge with its nose and then fell earthwards," explained Gordon.

"At that stage I had no idea what damage had been done so I landed as quickly as possible to check. It was only then that I realised how lucky I had been."

Lucky indeed. The glider had

by Tim Moran

pierced the leading edge just between the cross tube attachment and the nose. It was a miracle that the leading edge of the Demon had actually stayed in one piece.

The world speed record for a radio-controlled glider in straight and level flight stands at 580kmh (approx). That is very fast, and the damage that could be caused by a missile hitting any object at that speed is unthinkable.

Said Gordon: "Apart from the obvious dangers involved, the guy flying the model didn't even have any insurance on which I could claim my damages. I hate to think what would have happened if this model had actually hit me."

British Universities Fly-in

THE 1982 Universities Fly-in was organised by Mike Tomlinson and Rob Hobbs at South West Wales.

by Rob Hobbs

Friday morning dawned, and the marvelous new weather computer at Cardiff gave a forecast of "S.E. going through S.W. to West, 12-14 knots dying off later, with a cloudbase at around 600' to 800'."

Not exactly XC weather, but at least it was flyable, as the Fly-in set off for Llanstephan which would take most of the forecast directions.

Pilots prepared for battle. At this point, or shortly afterwards, the wind gods noticed our little games, and decided to stop blowing.

Only the first pilot was able to soar, as wind conditions went lighter, unfortunately for the Loughborough flyer Sandy Nicol, who managed to complete the task on his Azur even as the wind dropped away to a whisper.

The bottom spot landing was then opened to all pilots and there were some interesting landing approaches, notably by Sandy: several pilots and judges were gathered close to the spot when Sandy approached and all agreed he was going to overshoot by a long way, being higher on his final approach than other fifth generation gliders which had already overshoot.

However, Sandy yelled "Select Mush-Mode!" and slowed the glider into the most de-graded glide angle seen on an advanced glider, and managed to land perfectly within a few feet of the spot. The amazing thing is that the glider showed no sign what so ever of wanting to drop a tip even when so grossly abused!

Saturday saw a full complement of 45 pilots

at Rhosilli Down and Graig Fawr.

At Rhosilli over half of the novice pilots were successful in stand-up landings within 50 yards of the centre of the spot. Best score was from Salvatore Marinari from Newcastle University, who landed 2.7m from the centre.

At Graig Fawr, the more experienced pilots were also getting some very enjoyable flying. A spot was made on the top of the hill, with pilots allowed up to three attempts. Dave Smith from Bristol scored 1.3m from the centre, many other pilots being disqualified from the task, as soon as they went XC.

Four pilots made between six and eight km, using a Cyclone, an Azur, a Magic and a Demon. The best distance of the day was achieved by Rob Hobbs making 10.01km, on a Lightning 170.

Rich Shephard (Loughborough) won the Class 3 silver tankard for bottom spot landing; Dave Smith (Bristol) won the Class 2 silver tankard for the top spot landing; Rob Hobbs (S.O.N.A.*) won the Class 1 silver tankard for open XC.

Team results were: 1st, S.O.N.A. 46pts, 2nd Bristol 38pts, 3rd Loughborough 36pts.

Universities and Polytechnics in attendance were: Loughborough, Newcastle, Plymouth, Durham, Sheffield, Southampton, Bristol and hosts S.O.N.A. (Swansea Orographic Night-flyers Association — formed in 1981 in Ireland, when we only seemed to fly if conditions were orographic, or it was getting dark — but that's another story!)

Central Fighting Fund

Between early December '81 and early April '82 the following sent in much needed donations to the fund: J. Burden, M. Wild, R. Pearce, G. Kilsby, R. Sheppard, Peak HGC, Long Mynd HGC, Dunstable HGC, Sky Surfing Club, J. Brooksby.

Council thanks the members and clubs for their donations. Most members will have read articles in Wings! explaining why the Fund was set up and how the money has been and is being used. For new members, who may not have seen them, the Fund is used to pay legal costs and expenses in cases where it is necessary to protect members' rights to fly.

Army Hang Gliding Championships

THE third Army Hang Gliding Championships are to be held in the Oakhampton Area, Devon, over the period 22-25 July 1982.

Trophies include: The NATOCARS Trophy for the overall winner; The Rhine Area Rose Bowl for the Army Champion Pilot; Guest trophies for the two best guests; Student Class; BHGA P1 Class; BHGA P2 Class.

Entries are invited from hang glider pilots of all abilities and from all three services. For

your entry form and further details, send your £5.00 entry fee (payable to AHGC) to: AHGC, Sennybridge TRG Area, Brecon, Powys LD3 8PN.

Volunteers are also required to help run the Championships. We will pay £10.00 per day. Contact Jim Taggart at the above address.

CAN YOU SAY YES?

IF you can say a positive yes to any of the following questions then consider yourself a worthy member of the BHGA.

- | | | |
|--|--------------------------|--------------------------|
| | Yes | No |
| 1. Do you know the exact breaking strain of a frayed hang strap? | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Do you know how far an A-frame will bend before it breaks? | <input type="checkbox"/> | <input type="checkbox"/> |

- | | | |
|---|--------------------------|--------------------------|
| 3. Can you identify the aerodynamic differences between a BAT and a GULL? | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Have you sold your book of BHGA ANNUAL DRAW TICKETS YET? | <input type="checkbox"/> | <input type="checkbox"/> |

Sell your tickets, score a YES and prove your worth to the BHGA. Closing date June 25.

Barry Blore

There's magic in the air

“He's a chap best known in hang gliding circles as a yachtsman and in the world for his hang gliding exploits...”

That's how Rory Carter's best man described him to assembled guests at his wedding three years ago.

All that's changed now — for in two years, a little luck, some good timing and a lot of shrewd business sense have helped Rory steer his Isle of Wight-based Airwave Gliders from nothing into perhaps Europe's leading hang glider manufacturer.

The days when the 32-year-old father-of-two slaved to earn an honest crust as a naval architect specialising in unfashionable multi-hill designs are behind him. Now Rory Carter = Airwave Magic, the wing flown by 20 out of 49 pilots at the Foster's British Open; the wing chosen by British Champion Johnny Carr, XC champion Robert Bailey, French no.2 Mike de Glanville, British XC record holder Bob Calvert, World no.3 Graham Slater, Tony Hughes, Andrew Wilson... the Airwave hall of fame roll call goes on...

STOPGAP

That Airwave's nine workers put in 12 hours a day to turn out ten gliders a week while the order book is full to October tells its own story.

The Airwave success may not be magic but nor is it simply good luck — in the days when guys on the hill were still calling Rory a yachtsman he was busy working on a 100 per cent double surface wing called the Stork. It was a big wing designed for sink rate which in those days was seen, rather than speed, as the key to XC distance.

“It was a somewhat revolutionary structure with struts and no wires anywhere and a means of control that didn't work,” said Rory as he pored over the sturdy Stork airframe stowed lovingly in a hallowed corner of the Airwave sail loft.

“It gave roll and adverse yaw in any quantity you liked,” he recalled as Patsy Carter told the favourite Stork anecdote about the day Rory test flew his machine from Compton Down and wrestled all the way to stop himself flying straight out to sea.

“You want to drop that Stork of yours,” top Island flier Mike McMillan advised Rory one day. He had just come back from France where he had seen Mike de Glanville flying the new Ultralite Products supership, the Comet. Mike had almost succeeded in getting a Comet — via the Swiss — in time for the French Nationals...the Americans, it seemed, were hell-bent on making sure Comets were flown exclusively by their own guys at the 1980 American Cup in Tennessee. The buzz was, though, that UP might entertain the idea of a manufacturer producing the Comet under licence for the European market.

At that point Rory — whose parting gift

Words and
pictures by
Stan Abbott

to the yachting world was a trimaran that capsized in the Observer trans-Atlantic race — had sunk no small amount of money into Airwave Gliders (registered in March 1980) in the belief that hang gliding could learn a lot from racing dinghy technology. Yet, clearly, the Stork was a long way from being ready for production.

“We were at the stage when we didn't have a lot of money — I was working on the BHGA test rig for the Department of Trade and Patsy was teaching but funds were running low.”

The idea was to produce Comets as a “stop-gap” measure until the Stork was ready to take them all by storm.

Not prepared to take no for an answer, Rory got on the phone to UP boss Pete Brock, and suggested an early meeting. Brock said he couldn't make it because he was off to the US Nationals in New York state.

“I said ‘Great! That's nearer for us,’” said Rory. Helping Rory on the Stork sail had been a young New Zealander called Graham Deegan who had found himself in Cowes after his country's withdrawal from the Moscow Olympics. Deeg had been training for four years for the New Zealand Finn sailing team and his name was a highly valued asset in the sailing world. His disappointment over the Olympics helped persuade him back into hang gliding in which he had dabbled in his homeland four years previously when he flew — and redesigned — Seagull gliders.

Rory and Deeg jumped straight on a plane for New York where Brock spent most of the week ignoring them until they finally cornered him and persuaded him that Rory's work on the test rig and Deeg's sailmaking experience were a firm basis on which to reach agreement.



The master at work —
Graham Deegan in the sail loft

The rags-to-riches
fairy tale of
Airwave Gliders

Brock suggested mutual trust would provide a good working basis and with that Rory came home, leaving Deeg in the States while lengthy negotiations with the Home Office over his work permit began.

If this had been a fairy tale and people really did believe in magic, that might have been the end of the story...it wasn't, people don't and it isn't.

Airwave sent over cash to cover royalties at five per cent on the first 100 gliders... it languished for three months in a Los Angeles bank as Rory's financial plight worsened. Then when Brock's contract finally arrived it bore little relation to what had been discussed in New York. The promised exclusivity for half of Europe was now for the UK only. The promised fully detailed plans never turned up and Rory refused to



‘£1-12-6d — you must be joking!’
Pay day, with Paul Haines and
Patsy Carter

sign the contract... and in what turned out to be the best business move of the lot, it remained unsigned.

“In practice all we got was a glider to keep, a few sketches and the sail pattern which Deeg immediately modified.”

The Isle of Wight is a comparatively depressed area in Southern terms and presented with the argument that Deeg was the key to providing jobs for up to ten out-of-work sailmakers et al the Home Office approved his work permit and production began in a local council “nursery” factory unit. The metalwork was done five miles down the road in Newport and the office work in Rory's bedroom.

It was December — three months after the Americans had wiped the floor with the rest of the world in Tennessee — when Airwave got the first gliders ready just in time for another setback...the January 81 Manufacturers Comp when Airwave learned a lesson: “Never take part in a manufacturers meet unless you're pretty sure you're going to win.”

Robert Bailey and Jim Brown worked their hearts out on gliders that were too small



The magician — Rory Carter

while Andy Wilson won all his heats in a comp which gave Hiway's Demon victory on the basis of about ten minutes air time per pilot.

Net result: Airwave couldn't break established brand loyalties and by Easter things were looking pretty bleak. Most gliders that were produced went to a dealer in Switzerland who insisted on the cumbersome American rather than British "quick-rig" fittings, a product with few attractions to the British buyer. Andy Wilson was taken on as marketing man with the brief to establish a nationwide dealership organisation, but by Easter things were looking worse.

Robert Bailey was a faithful Comet man and a handful of other League pilots flew them at the North Yorkshire League...but among them was Johnny Carr, a Fledge convert and a major coup for Airwave.

While prospects began to look up on the home front, Pete Brock's idea of a trusting relationship was proving a little different from Rory Carter's.

"We were supposed to be getting information from the States on the latest developments yet we only heard through the grapevine about this thing called the Owens Valley Racer."

Against this background of secrecy, Airwave made some changes of their own and Andy Wilson went to Owens Valley on what was effectively the first "Magic" Comet and came a notable sixth.

"From then on it just snowballed. The fact that Steve Goad came rocketing up the League table did us a lot of good," said Rory. "So much so that by the League final Calvert just had to have a Magic."

So when Brock began demanding more royalties, Airwave asked for the original "contract". Otherwise as far as they were concerned they were no longer producing Comets under licence. They never heard from him again and so the Magic was born, the name being the product of customer feedback. "It's magic!" was the phrase of the moment in the North at the time.

Originally, the question of royalties had played a big part in shaping the Airwave product, now rather different in finish to its American parent. "We had a proven product and we wanted to aim for the top quality glider with the best performance," said Rory. "It was going to be more expensive because of the royalties and so it had to be top quality."

So Airwave went for aircraft quality bolts, stainless steel fittings, bushed bolt-holes and moulded plastic sleeves for swages etc. from the outset.

The approach of 1982 saw the promise of a new supership from Hiway and a general grapevine wind-up to the effect that everyone was doing a lot of R&D. So Rory started fiddling about with the Magic and came up with a double surface wing with a free-floating

trailing edge that went like a bullet — but had no bar pressure. In the end he settled for the Magic II, sporting new tips and a wider nose angle and — with the non-appearance of the Hiway Alien — Airwave did a virtual clean-up job on the first League.

But Rory is the first to admit that while Hiway's problems may be good news for Airwave — and Solar Wings and Southdown — in the short term, they are bad for the industry in general.

It is an industry that thrives on competition — probably too much so. "It's the competitiveness of the whole thing that makes it such a risk business — if it was just a question of selling gliders to people it would be no problem.

"We have got orders coming out of our ears at the moment, but you have got to keep trying new ideas to stay ahead."

And profit margins in hang gliding are not wide enough to tolerate many mistakes. are obviously in business now and making a profit but we aren't making enough profit to spend lots of money on extraneous things like massive R&D and extensive field service units.

"I think hang gliding is a bloody good deal when you look at what people pay for yachts and so on."

So Airwave — now in a new factory at Cowes — keep a weather eye on the future as they again exploit local sailing technology to try and maintain their position. "Should we all have Mylar gliders or shouldn't we?" Where better to answer that question than on the island that pioneered its use in the sailing industry. Airwave has been testing the weathering qualities of Mylar in a naval laboratory. In simple terms Mylar costs more and lasts less long. But what does the market want... and who will be the manufacturer to corner that fickle market next year?

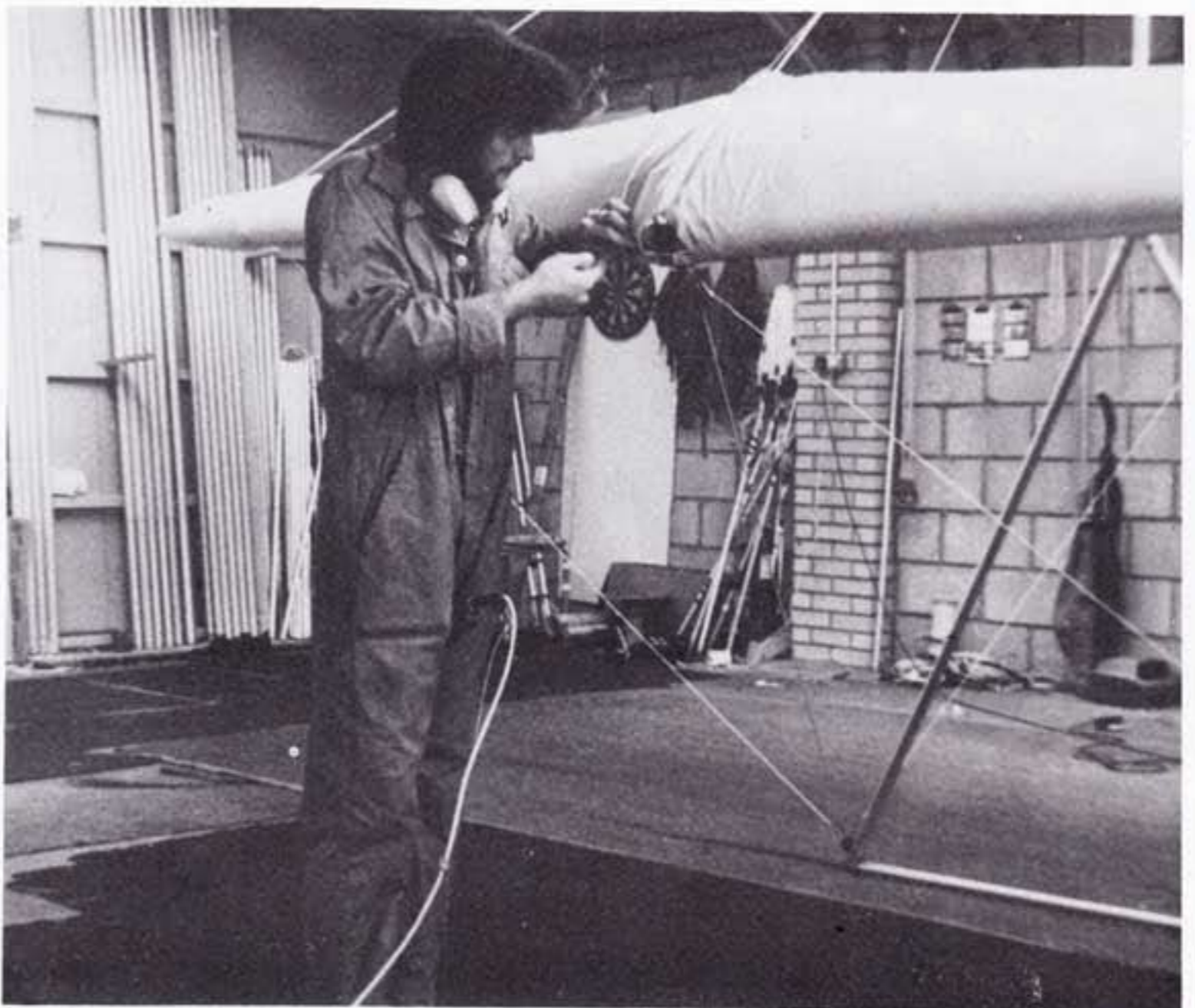
For his part, Brock — interviewed by Didier Favre in Vol Libre Magazine accuses Airwave of a breach of trust and says he is considering legal action for "copying". But, he adds: "I'm not a suing man." Wings! hopes to get an interview with Brock at the American Cup.



Chris Stanton making cross-tubes



The Stork and test team at Compton



Phil Huddleston puts the finishing touches to Mike de Glanville's Magic

It's a record!

BOB Calvert has become the first British pilot to hold an official world record, writes **RICK WILSON**.

The Fédération Aéronautique Internationale has certified Bob's January 27 microlight flight to 4,892 metres as the world altitude record.

As reported in February Wings! the flight was made on a Mainair/Solar Wings Triflyer/Typhoon combination taking off from Pleasington, Blackburn. The record is for Class C, sub-class C-1 a/o (ultralight aircraft less than 300kg), group 1 (piston engine).

"May I, on behalf of both the BHGA Council and the F.A.I. offer our hearty congratulations to Bob on being the first British pilot to gain an official World Record," writes Rick.

Meanwhile, disabled American pilot Z.E. Myers has been busy mopping up other records in the class, George Worthington-style. All were completed in December and January on a 38hp Kawasaki-powered Wizard.

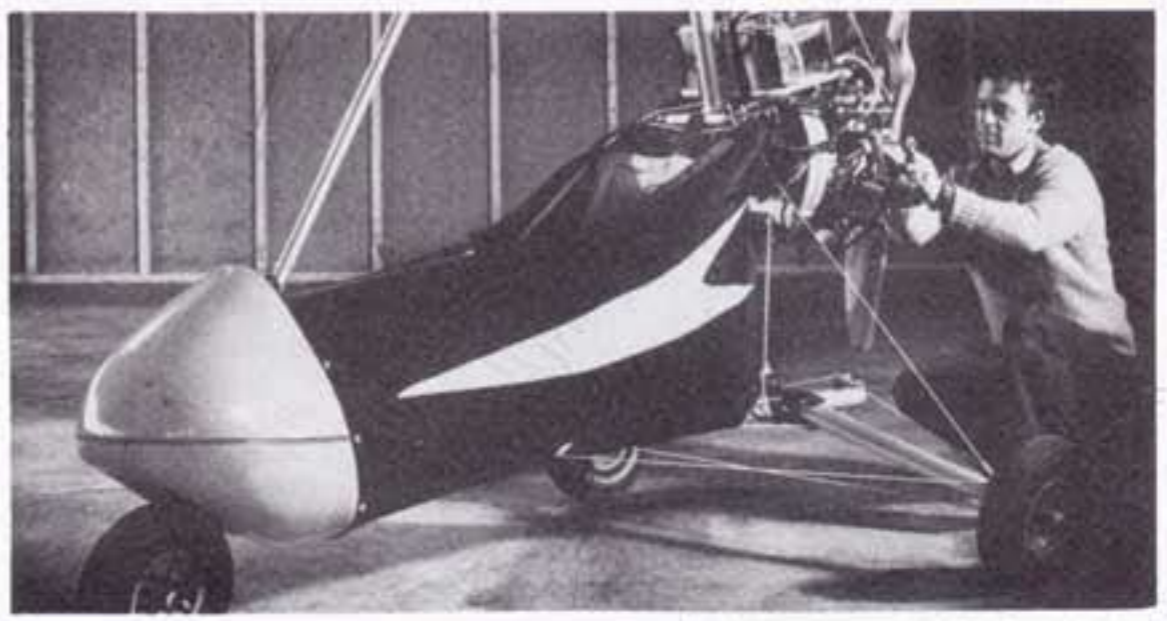
They are: distance in a straight line, 61.89km; closed-circuit distance, 60km; speed over 3km, 89.94 kmh; speed over 15/25 km base, 83.18kmh.

The FAI is poised to establish a C2a class for microlights less than 600kg at its next general conference and Mr. Myers has lodged the following on a float-fitted microlight: straight line, 49.27km; closed circuit, 60km; speed over 15/25 km base, 81kmh.

Rick adds: "The FAI and I hope that all this activity by Z.E. Myers, who is physically handicapped will inspire our pilots to even greater efforts."

"On July 14 I'm going on holiday for a month and shall return on August 11. I have asked a good mate of mine to look after this office for me. His name is Tony Keefe, and his address is, 6, Mowbray Road, Didcot, Oxon. Tel. 0235-813758.

He will take over from the first of July to the end of August.



Flying foot!

• Pictured is Geof Ball with Mainair's new trike "cockpit" which is fully folding, weighs just 6lb and costs £120 without instruments (see right). "It boosts performance amazingly by cleaning up the airflow to the prop," says Mainair's John Hudson.



16,500' over Lancs!

BOB Calvert is claiming a world microlight altitude record after climbing to 16,500 feet over Lancashire on January 27.



Flashback to February Wings!

Also in this issue...

The hang glider and microlight pilot's guide to aluminium tube – page 22

Next month

GEORGE WORTHINGTON tells how Wanderer designer and test pilot Mark Smith survived a mid-air break-up and looks at ultralight soaring



twice the memories!

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Stakes upped as Milt joins USA

IT's official — former British team manager Brian Milton will coach the US American Cup team in the Yorkshire Dales.

So the man — who with Glider Rider publisher Tracy Knauss was the inspiration behind the first American Cup in Tennessee in 1978 — takes his inside knowledge of the British team to the team perhaps most likely to upset the forecasts and beat the British on home territory.

Milton's adoption, by a unanimous vote of the US pilots, immediately ups the stakes in this contest in which Britain have been dubbed two-to-one favourites.



Anyone who knows Brian Milton will know if nothing else he is a tenacious fighter in pursuit of a cause and his acrimonious departure from the British competitions scene after the Aycliffe sponsorship row means this Cup will be more than just a team battle for him.

"I'm going to enjoy it, because it's fun," Brian told Wings! "I don't think there's anyone around who has a better idea of what the odds are than me."

"It's a fascinating thing to see whether you can take on a team and see if, within a few days you can take on the World Champions and win."

"I am also very flattered that the top American pilots have asked me, without a split — that's never happened in this country."

Milton is typically forthright in justifying what some people in gliding will see as treachery of the highest degree. "Why should I just fade away quite quickly and die?"

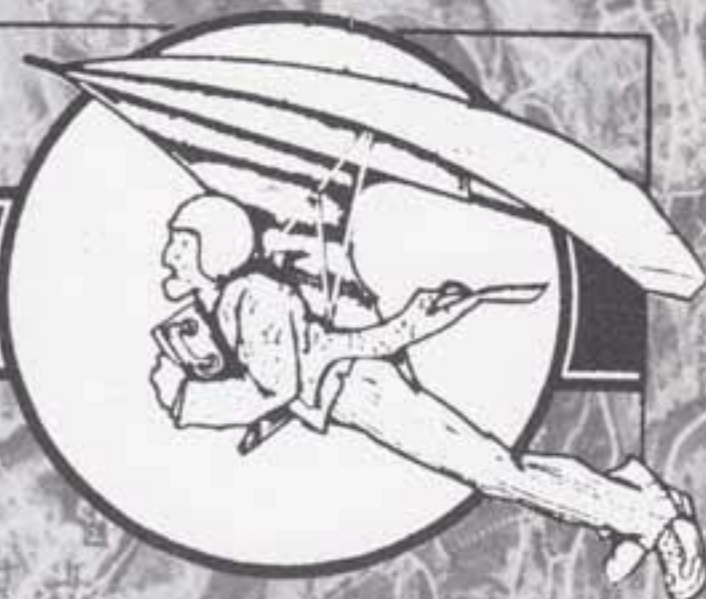
And he cites the opening lines of an editorial in the Sun of May 19 on the Falklands crisis: "The test of a friend is that he stands by you when you need him most."

Said Milton: "I stood by the BHGA for five years — I can count on the fingers of one hand the people who stood by me when I needed them. I would have given my right arm for the BHGA."

Milton's America is a strong team, but without some of the names that would instil fear in British hearts. Names like Rich Pfeiffer and Joe Greblo. Officially Pfeiffer needs to fly in the US Regionals instead to ensure his place in the next world championships. Unofficially, he just doesn't like getting beat...

The American Cup

Yorkshire Dales
June 12-20



Brazil's Pepe Lopes —
World Champion

Milton's team is: Jeff Burnett from New Hampshire, an old campaigner in the American Cup who was second in the last US Nationals; Stirling Stoll, who worked with the Gossamer Albatross man-powered cross-Channel flight team; Mark Bennett who works for UP and did well in the World Championships in Japan; Chris Bulger, "probably their equivalent of Mark Silvester" says Milton; Doug Lawton; and Bruce Case who has made 134 miles from California when cloudbase was a very British 5,800ft.



French captain
Mike de Glanville

The American team manager is Keith Nicholls, while Britain are managed by Trevor Birkbeck, from Ripon, North Yorkshire, a man who knows about as much about flying the Dales as anyone.

The same goes for team captain Robert Bailey who is flying in the Dales more days than he's not.

Names in the British team are substantially the same as those who first flew in the Cup in 1978 — Bailey, Bob Calvert, Graham Hobson and Graham Slater were all there. Tony Hughes, currently in brilliant form on his Mylar-coated Magic, and "new boy" Mike McMillan make up the six. Johnny Carr was not available for selection as he is in the British team for Owens Valley, California.

France come to the Dales with substantially the same team that was so well beaten by Britain at Lachens in the Bleriot Cup, but with the addition of ace Gerard Thevenot. The man to watch is German-born Klaus Kohmstedt who lives in Monaco.

The Canadians, coached by the USA's Pete Brock of Comet people Ultralite Products, could prove to be dark horses — as reported in Cosmopolitan, their Willi Muller did three flights over 100 miles in a week from Alberta, notching a new Canadian distance record of 141 miles in the process.

The Brazilians, too, with World Champion Pepe Lopes, have a strong side and the Swiss — second in the World Championships in Japan — and with world no.9 Walter Schonauer — will do well if they get enough early practice hacking Dales wind, a lesson learned the hard way by the French in last year's Bleriot.

As Robert Bailey put it: "A lot will turn on the practice week — if a few turn up and we get some good flying, they should give us a run for our money."

Sites for the comp are in the Wensleydale and Wharfedale area and Carlton Bank, North Yorkshire.

Past Record

PREVIOUS American Cups have always been flown in Tennessee and have been won twice by Britain and once by the USA, the last time the comp was flown two years ago. That was the year of the Comet and was also the year teams were cut from eight to six.

The full record is as follows:

1978

- 1 — Britain 348.75 (flying Gryphons, Superscorpis and Safaris)
- 2 — USA 435
- 3 — Canada 449
- 4 — Japan 726.25

Best individual — Graham Slater (GB)

1979

- 1 — Britain 416
 - 2 — USA 404
 - 3 — Canada 404
 - 4 — Australia 396
- Best individual —
Graham Slater (GB)

1980

- 1 — USA 47,816
 - 2 — Britain 41,268
 - 3 — France 38,513
 - 4 — Canada 37,642
 - 5 — Brazil 37,133
 - 6 — Australia 29,948
- Best individual —
Graham Hobson (GB)

The aerial view of the Yorkshire Dales is from a full colour map by Contour Designs of Gloucester who have maps of a number of hang gliding areas in production or in the pipeline.

The full colour 605x430mm Dales map is available for £1.50 pp from Contour Designs, 15, Churchfield Road, Upton-St-Leonard's, Gloucester, GL4 8AT.

Aero vacation courses

The Air Education and Recreation Organisation is extending its programme to encourage air-mindedness among young people.

AERO's summer aviation study courses will be at centres near regional airports, giving easy access to aircraft for flying and airport facilities for background study.

The aims are:

1. To provide an incentive for secondary school pupils studying aviation subjects to CSE and GCE levels.
2. To identify potential pilots who might then qualify for associated Student Sponsor Schemes.
3. To introduce young people to the career and recreational opportunities in aviation.
4. To offer vacation courses which combine academic study, practical work, healthy exercise, and air experience in powered aeroplanes, gliders and possibly other types of aircraft.
5. To bring young people together in a stimulat-

ing social environment offering them a challenge and a sense of achievement.

The fee of £125.00 includes all accommodation, food, transport costs, one hour's flying tuition of which 20 minutes is in the co-pilot's seat, and glider flying.

Further details from AERO National Office, The Teachers Study Centre, 118 Upper Chobham Road, Camberley, Surrey.

Lottery winners

The following are the 500 Club Lottery Winners for April 1982:-

C.S. Ford £55.70, P.J. Mason £27.85, K.J. Lang £13.92, R.A. Scott £8.35, R. Anderson £6.96, K. Litten £6.96, N.J. Moore £5.57, D. Ganson £5.57, I.D. Entwistle £4.20, R.M. Mos £4.20.

This is a total of £139.28 prize money and a like amount for BHGA funds.



Strange things happen on the Downs!

Just what ARE Bedfordshire County officers playing at? — that's the puzzling question facing hang glider pilots out on the Downs at Dunstable.

The "No hang gliding" signs appeared AFTER their own councillors decided not to appeal against magistrates' dismissal of charges against three hang glider pilots of flying in alleged contravention of a bye-law.

The lower photo shows the view over the London Gliding Club airfield ... as negotiations continue, it is the BHGA case councillors and others have acted in a partisan manner, favouring the gliding club.



INSURANCE

DID YOU KNOW

that Insurance Underwriters have paid TWICE AS MUCH TO HANG GLIDER PILOTS as a result of HANG GLIDING DEATH OR INJURY than we have paid to them in premiums. In spite of those heavy losses EXISTING RATES FOR PERSONAL ACCIDENT COVER will be maintained throughout 1982.

DID YOU KNOW

that some major U.K. Insurance Companies NO LONGER REGARD HANG GLIDING AS A HIGH RISK SPORT. In fact through us they offer special schemes for MEMBERS OF THE B.H.G.A. for LIFE, ENDOWMENT, PROTECTION OR HOUSE PURCHASE.

THEREFORE

FOR LIFE, PERSONAL ACCIDENT AND GLIDER INSURANCE.

CONTACT:

REGGIE SPOONER - INSURANCE BROKER TO:-
The B.H.G.A.
119 High Street, Newport, I.O.W.
or Telephone him or Tim Saul on 0983 522676.

HANG GLIDING IN A BEDSITTER

HANG gliding and living in a bed-sitter aren't incompatible — they just take a little working out.

My girlfriend and I manage quite nicely in a 17x17' room with our Sigma Floater breaking down to 13' — all it takes is co-operation. When anyone asks where we keep the hang glider we just say: "...in the lounge...and the bedroom, and the kitchen!"

For those mad enough to consider living in a bedsit with a hang glider as their main item of furniture here are a few dos and don'ts.

First and most importantly, DO choose a ground floor bedsitter — we didn't and wish we had. We have to wedge open our door to get the hang glider on to the landing, thrust it four feet out of a previously opened window, do a 180° turn and shoulder the glider down the stairs, avoiding the bannisters and not scraping the

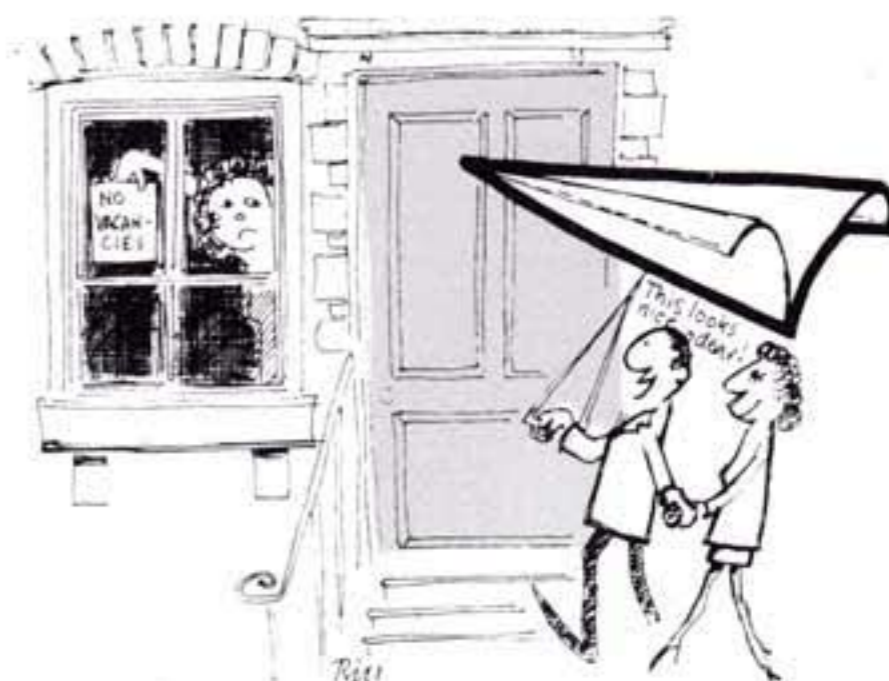
paint off the ceiling.

From here it's plain sailing as we go through two wedged-open doors and out on to the pavement avoiding any pedestrians volunteering for decapitation, on to the road avoiding traffic, and then just a quick turn around to place the glider on the car roof-rack — except that the car is parked half a mile down the road because there wasn't a parking space outside.

DON'T get on bad terms with your neighbours — it helps if they co-operate when you need them to duck in the hallway! DO choose a sympathetic landlord — the sight of you marching through the front door with 13' of hang glider on your shoulder could otherwise shorten your tenancy abruptly.

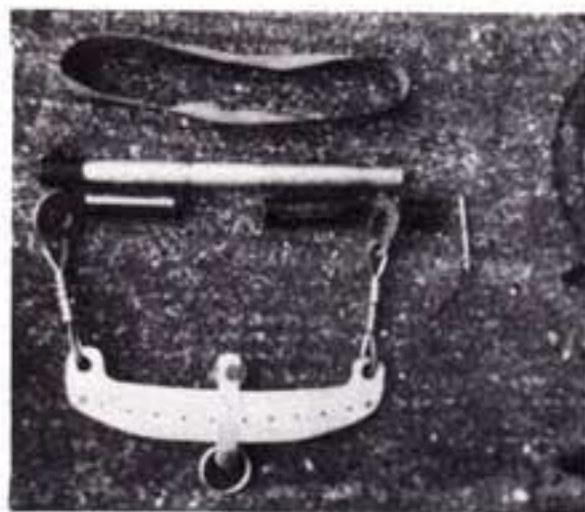
Finally, DO ensure that the breakdown length of your hang glider is less than the dimensions of your bedsitter!

Philip Pask



...Do choose a sympathetic Landlord...

La Connection Anglaise est arrivée!



by Mike Collis

THE French Connection is an ingenious device, but it is complicated, with numerous pinned joints.

The sample I have seen looked weak and unlikely to stand 6G. I have therefore invented a simpler version which I call the English Connection.

This consists of a metal bar with a slightly curved upper surface, along which runs a sealed ball-bearing. A pair of light alloy plates keep the bearing in position and support a steel ring to which the harness Karabiner is clipped. Limit stops may be fitted along the carrier bar, to control the movement of the ball bearing, although I only used these once.

The effective radius of the device may be altered by using a different curvature of the upper surface of the carrier bar. My version has only been used in roll to date, because the great span of the Sigma



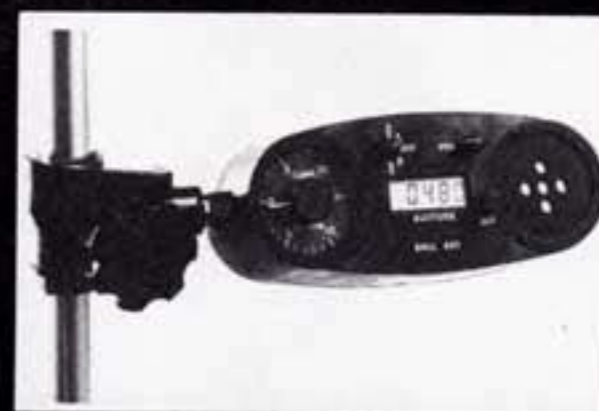
and the lack of a floating cross-boom encourages its use in that mode! It self-centres.

It also self-stows when the glider is laid flat. It is removed and fitted in seconds, being secured by a single pip-pin. It has only one moving piece, apart from the wire thimbles and the rotation of the cross-tube in the keel brackets (which last could be eliminated by a slightly different suspension of the carrier bar) and I believe it should therefore be more reliable (i.e. safer) than the French version and cost less to make. Pictured, left, is the Connection broken down to show fitting and, right, with the pilot fully aft and weight shifting right.

Readers should be warned that this type of device, when used in roll, applies a torque loading to the keel. Whether this load can be safely resisted by the glider depends on its design and this should really be properly stressed and checked by the manufacturer.

Have a Ball!

Pictured is the very latest in variors from Ball — the 651, with streamlined case and digital altimeter. It's a professional's instrument, at a "professional" price — £320 inc. VAT.



Picture, Mainair Sports

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Graham Hobson

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Above, Phil Huddleston, with speed bar takes-off at Compton.

A great success

by Barry Blore

MY opinion in a nutshell — "A TREMENDOUS SUCCESS".

Several months ago I stated my intention to give our sponsors value for money. Foster's Draught are well pleased and have invited me back for further discussion — but do not get too excited as this does not mean automatic sponsorship.

Negotiation will centre around what they want, on what date, at which locality and at what price. Wish me luck!

As a whole the Open was a complete success that obtained positive T.V., Press and radio coverage. Contrary to popular belief, I had nothing to do with the Acid Attack on hang gliders during the competition. We did obtain extra publicity, however, and I feel ashamed that some such publicity stunt did not enter my mind earlier — wait until next year though!

Out of the 107 people who contributed to this year's success I nominate just five for a special vote of thanks from me, on behalf of the BHGA: Beryl Couchman — Chairman, Shanklin Hoteliers and Guest Houses Association; Robin Ruddy — Public Relations Executive, Watney Mann and Truman Brewers Ltd; Derek Evans — BHGA Competitions Committee Chairman; Pete Scott and Mike McMillan — Isle of Wight Hang Gliding Club.

I would personally like to see this become an annual British Open but we definitely require sponsorship to offset our costs. If we do go for it next year, and link in with the Shanklin Festival again, I will attempt to get the competition completed on the first Saturday of the Festival.

This would enable other BHGA members to arrive, watch the final day's flying, experience the benefits of the Festival for the holiday weekend and then free fly from Sunday onwards, with permission from the local club, of course.



"Woops! Missed!" Johnny Carr at Afton

Power cut!

HANG gliders can hack 30mph winds — microlights really don't like them.

Fresh southerlies kept the microlight rally at Sandown Airport grounded for most of the Bank Holiday weekend, with the result that prizes donated by local sponsors were handed out to just about anyone who actually flew.

The weather meant numbers were kept down to 42 aircraft, a variety of "trikes" and rigid wings.

To make matters worse for organiser Pete Scott, the public address system blew up on the first day, but nonetheless the concours d'elegance was completed, along with a demonstration of Trevor Buckle-May's crop spraying system by John Long on a Storm Buggy.

The rally was an occasion to remember for pensioner Marian Mowat who had her dreams fulfilled when she was taken to 2,200ft. by Geof Ball on a Lightning DS and trike combination.

One of the better kept secrets of the weekend was when a Pteradactyl failed to develop full power on take-off and "ditched" into trees. The local Press was successfully diverted ten miles away!

For the future, said Pete: "We are thinking of moving the rally into the summer because spring weather is pretty unreliable".

Foster's Br

— a re

"I WONDER whether choosing the is wise?" That was the question posed in a letter to Wings! just before the open

He feared a "Mickey Mouse" contest the south of England where it had already reached might be wiser to hold the Open in the had very good reasons for wanting the comp. in

Now we have a Foster's Open champion most closely involved in the comp. give the cast an eye towards next year's event, if of Foster's again.

THE Foster's Open was a good competition in which the organisers devised the most testing tasks possible in the circumstances, — that's the view of competition director Derek Evans.

But while Derek would very much like to see a competition on the Isle of Wight next year, the title "Open" should perhaps be reserved for an event better able to reflect the current "state of the art" of hang gliding.

It is a view widely shared by top competitors and others on the flying side.

"I would say we proved that non-League pilots can cope with the sort of tasks we were setting and therefore those who didn't enter this year can be encouraged for next year," said Derek.

"That being so, there is a place for that sort of competition on the Isle of Wight which has got a lot of sites within a short distance and a lot of local support from the club and the tourist industry.

"But whether it should be called the British Open, I am not so sure, because I think we should reserve the British Open title for a competition which reflects the current skills in hang gliding — that is, XC work."

The British Open, Derek would like to see staged in Wales, the Lakes, the Pennines or Yorkshire Dales, while for an Isle of Wight event (the BHGA championships?) there might be an argument for regional heats to make up for having to limit the numbers flying in the "finals" on the Island.

As far as this year's comp went, Derek was well pleased, particularly at being able to fit in 11 tasks of which just a couple were "not great tests" of flying skill.

His biggest disappointment was in not being able to fly the "semi-finals" in which pilots

The pi viewp

who finished 21st to 30th chance to make the final cu

"The final day couldn't H we got two good pylon with the one we had be week — the Blackgang Ru

"It was largely a questio able to complete the cours the course in the best tim of skill.

"The techniques of H Glanville and Carnet were some other guys and their t

"Michael Carnet, for e the top of the cliff for the as he found the lift was

— he was so low that th actually radioed that he mu

MONEY talks! That su Champion Johnny Carr's

"If someone said to of doing XCs in the to the Isle of Wight, the go anywhere rather than th

"But I would be quite there's a competition and



John Long takes off from Sandown on his Storm Buggy/Sealander

Picture — Flight Line (Mike Griffiths)

British Open review

Isle of Wight for the British Open proposed by Scottish pilot John Rankin began.

that would only promote the sport in the reached "saturation point" and suggested it North or Scotland (in fact our sponsors in the South).

and the dust has settled, some of those their assessment of how things went and we are lucky enough to enjoy the support

Pilots' point

Both would have had a cut.

It have been better when in tasks in and finished been trying to run all

tion of stamina in being se — but to complete the possible was a test

Hughes, Hobson, de ere quite different from ir times reflected it.

example, did not see he first quarter-of-a-mile s solid below cliff level the turn point marshals must have gone down."

ns up Foster's Open ew.

ne we have a choice Lake District or going ere's no doubt I would the Isle of Wight.

ite happy if they said d it's got to be on the

Isle of Wight — it was different and I enjoyed it but I don't think as many people would have gone if there was no money involved.

"I certainly wouldn't have given up two weeks work — but when there's a thousand pounds on it it's going to be quite prestigious.

"If there had been a two-week Open in the Lake District, I probably would have gone anyway, money or no money.

"As far as the actual flying goes, it wasn't so Mickey Mouse — particularly the upwind thermalling tasks. It could have been a lot more Mickey Mouse if we'd been on the cliffs all the time."

LOCAL ace and chief competition marshal Mike McMillan was left in two minds — "There are problems on the Island with handling a lot of people on small sites. The club was going to do something smaller than last year's rally until we were approached by the BHGA because the sponsors thought it would be a good venue.

"The club feeling now is that they are not that keen to do it again because there's absolutely nothing in it for them — all it does is jeopardise sites. A lot of people took a week's holiday and ended up just watching other people fly."

On the other hand, the Island enjoys flyable conditions almost every day and there is ample accommodation and plenty to do apart from fly. "The Shanklin hoteliers had already set up the organisation which took a lot of workload off the organisers."

Flying, he said, was obviously better on the mainland but it had been bad luck to be stuck with northerlies through so many days of the Open.

"Last summer I was flying XC across the Island two or three times a week."

The Ballad of the Blackgang Run

The wind was howling thirty three
The sky was grey and white the sea
As nineteen pilots took the line
And ten miles east — the Blackgang Chine.
For twenty miles you'd be pullin' speed
Some by guts and some by greed
For Foster's gold lay to be won
By the fastest on The Blackgang Run.

Ripped from the cliff with the left wing low
It was dive for the beach and go man go
Fifty knots on the downwind track
But twice as hard to fly it back
Punching the gale round every head
Wrists on fire and arms like lead
Ten hard miles to the finish gun
Stamina won The Blackgang Run.

There wasn't much room 'tween earth and sky
Where a foot in hand was a foot too high
And a foot too high was a foot too slow
When the name of the game was "take him low"
Y'had to be fit, y'had to be strong

And y'needed arms that were five feet long
And y'needed ballast — half a ton
To stand a chance on The Blackgang Run.

Some reckoned after the ten mile burn
Y'could gain ten seconds by a downwind turn
Y'had to try to make that gain
And the ballast hit y'sail like rain
as y'pulled more speed and shot below
Y'gripped y'teeth but y'didn't slow
It wasn't all in good clean fun
That "strokes were pulled" on The Blackgang Run.

All save one made the landing field
As to his fate, our lips are sealed
But if by chance, one gale torn night
At the midnight hour by St. Catherines light
You catch a glimpse of a wing in flight
And a helmeted skull that knows no sight
Then you — like us — will know my son
That none gave up on The Blackgang Run.

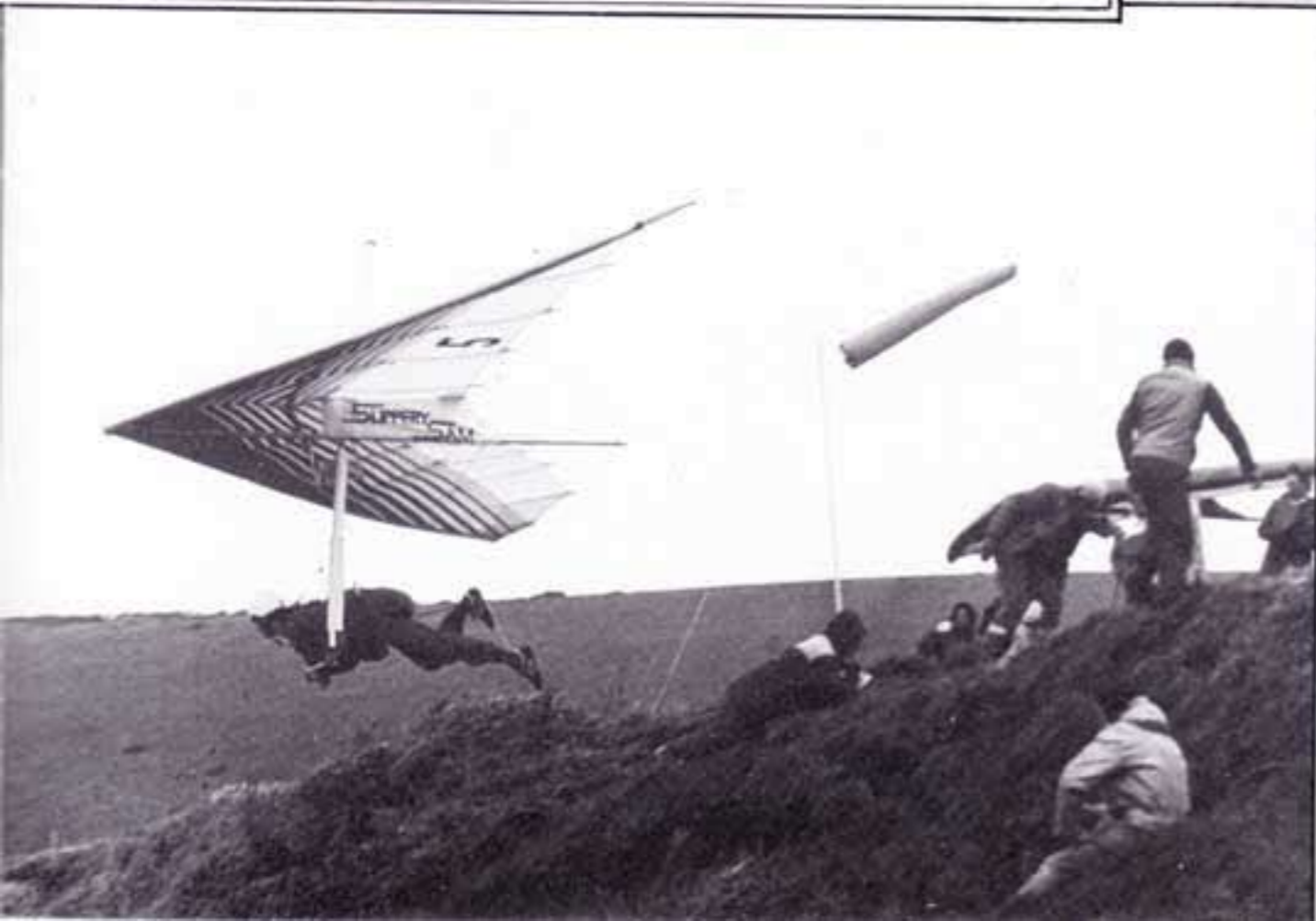
Bob.



Gerard Thevenot "cuts the tape" on the Blackgang Run

Pictures by Steve Thompson

Pictured, left, below is Tony Hughes, the fastest on the Blackgang Run and, right, Harald Zimmer on his Fafnir at Afton



A happy marriage

by Robin Ruddy of the Foster's Sports Foundation

THE Foster's Sports Foundation was set up by the brewers of Foster's Draught to lend practical and financial support to some of the country's up-and-coming participant sports.

Hang gliding was a natural choice as a sport that reflected some of that zest for living that we tend to associate with things Australian.

Certainly there can be little doubt the British Open was successful — the weather was fine, if a little unexciting at times; there was some superlative flying to be seen; a strong spirit of competitiveness that nevertheless stayed well within the bounds of sportsmanship; and a good degree of interest in the media, some of whom are at last beginning to realise that hang gliding can be taken seriously as a sport.

There's no easy way of quantifying success in terms of pints of lager sold, and certainly that's not the only way in which the sponsorship is being judged by the Foster's Sports Foundation.

What the British Hang Gliding Open did succeed in doing was to convince us that the emergent adventure sports and business sponsorship can marry well and bring the required rewards for both sides.

*The land
that God
forgot...*

PART TWO

The pilots, the wings and the challenge

*RICK MASTERS con-
tinues his exclusive
series on the Owens
Valley.*

"HEY, man, you're going to go right up into that cloud! And I don't want to go looking for you in Nevada!"

Chris Price gripped the down-tubes of the six-metre Wills Wing standard as it rocked in the gusting mountain wind. He had barely heard his brother's words above the violent flapping of the sail, but he could read the concern on his face. He peered around the 90-degree sweep of the leading edges to study the strange cloud one more time.

Motionless, suspended barely 600 metres above barren Barcroft Peak, the cloud was a frozen fluid sculpture of blending shades of grey accented with brilliant white. It seemed much like a cap cloud. Yet, there was something weird about it, about the way it curved down in front as if to point the way into the Owens Valley.

"I'll be all right," he shouted.

He had flown sailplanes. He knew about thermals and turbulence. He and his close friends, the Wills brothers, were pioneering the rebirth of hang gliding. He felt superbly confident in his ability to fly. At 23, Chris Price was a master of the sailwing. And he knew it.

What he didn't know was that across the valley an atmospheric wave had formed above the Sierra Nevada. It crested high above the range and dove into the valley, only to be deflected upward by the great White mountains to form a secondary wave. Now, above the highest peaks, dwarf wave clouds struggled to exist in the drying, desert-bound torrent while in the valley the invisible wave rotor swirled and writhed in the depths of the trough.



The Sierra wave

*Bob Symons's most famous wave picture,
taken in the early 50s from a sailplane at
32,000ft. looking south down Owens Valley.*

Reproduced from On Quiet Wings

He ran but the steps were not necessary. The wind plucked him up like a feather as he let up the nose. The rocky flank of Barcroft fell away and suddenly he was high above the ridge and the endless rows of canyon spines marching north and south.

Far below, the battered '64 Fairlane they had driven across the trackless mountain flats seemed to creep out in front of him.

He was drifting backward!

He pulled his weight forward until the control bar was touching his knees. The sail sounded as if it would burst to shreds. He looked down. He had stopped drifting back but even with the bar to its limit he could not penetrate into the wind.

He crabbed to the south, searching for weaker conditions. It seemed to take forever because any more than the tiniest bit of turn would cause him to drift back. But gradually he moved ahead until he hung 1,000 metres above the rugged canyons that spilled down from Piute Peak.

Suddenly, he encountered powerful sink. He lost 300 metres in 30 seconds. The ridges seemed to leap toward him.

Then the glider's nose pitched upward and his harness straps strained as the sink changed instantly to strong lift. He was already as far forward as he could get on the bar. It was all he could do just to keep the nose pointed out to the valley.

From the side of Barcroft his brother watched apprehensively as the glider wildly rose and fell. He had seen Chris fly many times, but never had he seen anyone fly like this! But Chris was making progress. He slowly moved away from the mountains and escaped the intense upper winds.

As he passed above a canyon's mouth, he felt a wing lift. A thermal! He banked toward the lifting wing and entered the bubble of ascending air. The valley spun below as he turned and turned again. But the glider was not efficient enough to stay with the thermal. Finally, he lost it and it was time to land.

He set up a high approach and touched the glider down on the shoulder of the alluvial fan above the little town of Chalfant. He unhooked, stepped to the front of his glider, and looked up. Above the highway, not a mile down the

sloping alluvium, the ghostly outline of a deadly rotor cloud spun lazily against the deep blue sky.

A chill ran through him.

"We thought you was a UFO!"

Chris spun around. Two men with rifles were approaching through the sagebrush. Deer hunters. They regarded the Rogallo with scepticism.

"If you'd 'a come closer, we was gonna shoot you down."

So ended the first hang gliding flight in the Owens Valley. It was September 23, 1973.

Two months later, Don Partridge, an Owens Valley native, experienced his first hang gliding flight at Torrence Beach. He was hooked! He brought a Chandelle standard to the valley in January of 1974 and taught himself to fly. By that summer, he was launching from switchbacks on the Sierra escarpment. But a launch into turbulence off the crest of the Sierra dampened Don's enthusiasm for high altitude flight in the Chandelle as he watched the wires tense and slacken and the leading edges flex a kilometre above the valley floor.



Only a few hang glider pilots, all from California, came to the Owens Valley over the next two years. They discovered that each site presented its own peculiar dangers. Rich Grigsby and Trip Mellinger flew off the Whites out of Bishop and encountered tremendous sink over Silver Canyon. They were forced to land between the sheer granite walls and the powerlines that fill the middle of the canyon.

Partridge and Steve Huckert launched their standards from two-kilometre high Coyote and discovered that the wind blowing up the face was the underside of the monstrous Sierra rotor. Steve was thrown through his flying wires and spun down 600 metres. Don remembers an endless series of tail-sliding stalls in teeth-rattling turbulence. Somehow, they made it down alive.

Then in July of 1976, Gene Blythe and Trip Mellinger set unofficial world records for distance and altitude from Cerro Gordo.

FAI. He announced in Glider Rider that he would make the attempt the following summer. He was superbly successful, flying nearly 160 kilometres from Cerro Gordo.

Don Partridge flew with George all that summer. His achievements inspired Don with the idea of the first true cross-country competition.

"Wouldn't it be great to get a lot of guys up here on Gunter?" Don asked George toward the end of the summer.

'You could feel the fear'

"We could launch 50 of them at a time and have a hang gliding contest instead of a spot landing contest!"

Don sent out invitations to the best pilots he could find for a contest in the summer of 1978, the first Cross Country Classic. Forty-six pilots came.

"You could feel the fear," recalls Don, "from people wondering, 'Could hang gliders really fly in afternoon turbulence in the Owens Valley?' That was the main thought on my mind the summer before Worthington came up. This is the deciding point in hang gliding history. If these things can actually fly in this place, the most turbulent place on earth, in the most turbulent time of day, then they're going to prove themselves as worthy aircraft. Otherwise they're just toys."

Delta Wing Kites, the world's leading hang glider manufacturer, sent a team of six to fly the new Mariah. By the third day, they had pulled far ahead of the rest. Then the team leader got into trouble above White Mountain.

To gain a little more speed from his Mariah, Gary Patmore had detuned his wingtips, a risky procedure on a glider that gave indications of being inherently pitch unstable. He was thermalling above the peak when the nose of the glider pitched up violently. He swung his weight to start a turn, but the glider was stalled. It fell through and tumbled, then tumbled forward several times before it broke. Patmore was trapped in the wreckage, his arms pinned, plummeting toward the mountain.

At the very last instant, with the superhuman effort that only mortal fear can provide, Patmore ripped his arms free and hurled his parachute. The canopy burst open just before he impacted. It saved his life, but he hit hard against the rocks. With a broken ankle, injured back and lacerated face, he lay in agony, alone on the mountainside, until a helicopter requested by another pilot who had seen him go down, arrived to rescue him.

That autumn, two local pilots received the scares of their lives. Richard Smith bought a parachute and flew with it for the first time off Coyote. Turbulence tumbled his glider and he threw it. It saved his life. Galen Rhodes, last in a string of pilots and alone at launch, was slammed into the

ground by turbulence a moment after he took off. He lay with a broken neck through the night waiting for help.

The forces must be respected

The 1979 competitions demonstrated with utter finality that the forces of the Owens Valley must be recognized and, at all costs, respected. During the Open, a pilot found himself low and about to land. Then he noticed a dust devil snaking up the foothills nearby. In a wild gamble, he decided to ride it up the mountain. He entered it within metres of the mountain's crags. After two successful turns, he was spit out and hurled with great force into the jagged rocks. The coroner reported that nearly all of his bones had been shattered.

In the Classic, John Davies encountered incredible turbulence above White Mountain. Nothing he did could keep his Mosquito right-side-up. Suddenly, he was inverted and diving at the peak. Terrified, he threw his parachute only to see the bridle severed by a flying wire. The parachute drifted away in the wind but, luckily, the force of deployment had righted the glider. He managed to fly to the highway where he packed it up, withdrew from the contest and left the valley.

Rick Starr was working lift in his Antares between the north Pit and the mouth of Coldwater Canyon when a rocketing thermal knocked him into an inverted dive. He lost so much altitude recovering that he found himself in the rotor below the edge of the canyon. The turbulence was so strong that he could not fly out of the canyon. Out of control, he nonetheless managed to flare on impact and escaped serious injury.

'The bar was ripped from my hands'

Eric Raymond, flying his Voyager three kilometres beyond Montgomery Pass at the northern end of the Whites, became engulfed in powerful lift. At an altitude of six kilometres, he pulled the control bar all the way in and tried to fly out of the lift. But he kept going up!

"Suddenly, the bar was ripped out of my hands," says Eric. "The vario swung upwards. I felt as if my arm was broken from its collision with the down-tube."

Eric finally escaped the lift, but he has made a practice of always flying with oxygen in the Owens Valley.

During the 1980 competitions, four pilots were forced down in the Whites by high winds. A French pilot stalled while making passes at take-off and crashed. The big scare went to Don Chambers who got sucked into a deep canyon and barely made it

out the mouth. Then after the Classic, an intermediate pilot attempting to launch off rocky Ray Dean's was flipped over by a sudden dust devil. Tragically, his back was broken and he was paralysed for life.

Shortly before the 1981 Open, an intermediate pilot on her first Owens Valley flight, broke her arm when she misjudged the wind gradient on landing. The first day of the Open, Dick Cassetta launched into a dust devil that he did not see. The devil was so powerful that it flipped Cassetta's Comet over on its back. He executed a full loop 60 metres above take-off. His trajectory brought him back into the dust devil, which this time knocked him into a vertical wingover. Dick recovered safely, but many at launch felt it could easily have been different.

Coming in for a landing in the heat of the afternoon, Fledge pilot Fred Hutchinson was hit by a gust and slammed along a barbed-wire fence. His leg was cut to the bone and he had to withdraw from the contest.

Her wings rocked wildly

During the Qualifier, scorekeeper Liz Sharp, flying as a contestant on her Atlas, encountered the suddenly changing conditions that so typify the often unpredictable nature of the Owens Valley. Only a few minutes after she had launched, the wind strengthened out of the north. The windstorm brought her straight down from altitude. She neared the ground above a boulderfield on the upper alluvial fan. To her horror, she realized that she would have to land flying backward at twenty kph! With her wings rocking wildly, she managed to slam the glider into the ground with the nose pointed into the wind. Over an area of many square kilometres, other pilots had made similar landings.

There were two parachute deployments above the White Mountains. Six pilots were forced down near Barcroft in winds so strong it was difficult to stand.

Even Eric Raymond was caught by a rotor after a launch off notorious Horseshoe Meadows Road. He was turned in a full circle and crashed into the almost sheer face at launch, extensively damaging the fabulous Sunseed.

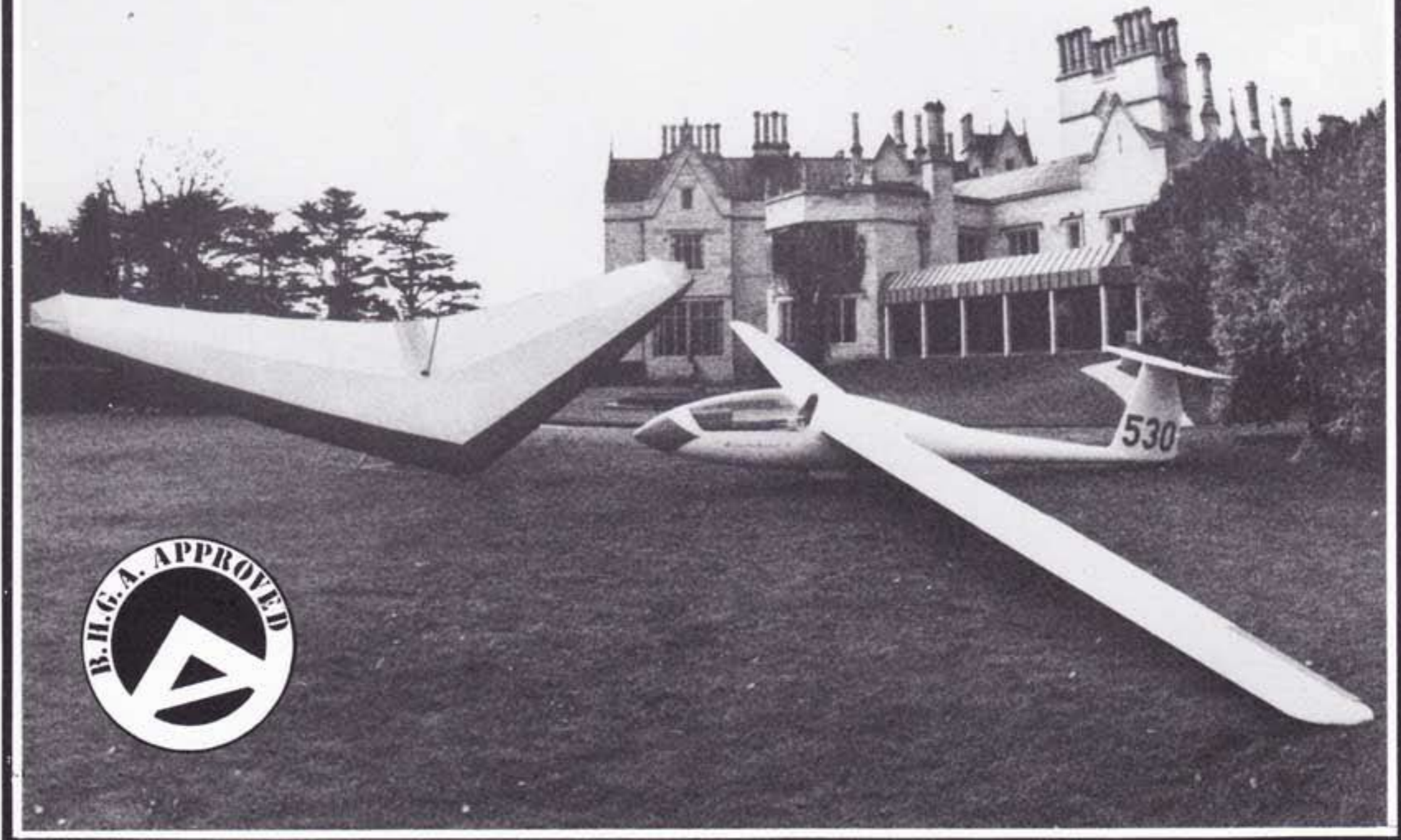
The Owens Valley demands a great level of respect.

• Rick Masters has lived in the Owens Valley since 1971. He was the Chief Timer, truck driver and Emergency Medical Technician for the 1981 Cross Country Hang Gliding Competitions in the Owens Valley. His motion picture of the meet, AOLI, COMET CLONES and POD PEOPLE is being distributed worldwide. He is studying mechanical engineering and in the summer offers a guide service to hang glider pilots new to the Owens Valley.

c Rick Masters

Next month: Looking forward: the paths diverge

A Study in Excellence



Photograph by John Wadsworth

Nimbus V courtesy of Mr. & Mrs. Phil King

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With BHGA Training Officer BOB HARRISON

No.3 Thermals – Myth or Magic

I REMEMBER as a child watching a group of vultures circling overhead. Their great wings outstretched, never flapping and yet, as I watched them, they became smaller and smaller until they were too small to see.

This troubled me no end. It was an ordinary sort of Kenya day, reasonably warm, the same blue sky and the same few, cotton-wool clouds – but how could birds do that? How could they gain so much height without flapping?

My dilemma would have been easily answered if there were a wind – but there wasn't only the occasional puff, – not enough to blow them up there. If I had been any younger then magic would have been the answer but I had stopped believing in Fairy Kings and such things by then. (He was nearly 21 – Ed!)

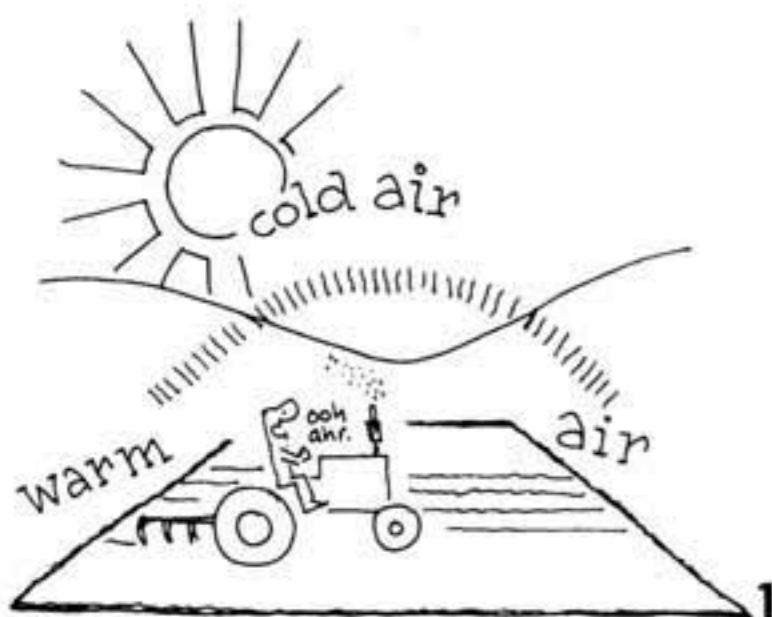
So, I did what any inquisitive child would do – I ran around in circles, arms outstretched, but nothing, nothing at all happened save my getting hot and bothered. I then did the next best thing – I went and asked my parents. They would know; they knew everything. I remember their saying something about thermals. When I asked what a thermal was I remember nothing but confusion, disbelief and a nagging thought that maybe there were such things as Fairy Kings and magic mushrooms after all.

One day, many years later, I stumbled upon some of the latter and, doubting my sanity, I turned to the Good Book for the answers.

In the Beginning

IN the beginning there was the Sun and the Sun smiled upon the earth and, as it did so, so it warmed up the earth. Now, the earth is made of many things and such is the whim of nature's mother that these earthly things warm up at rates unequal.

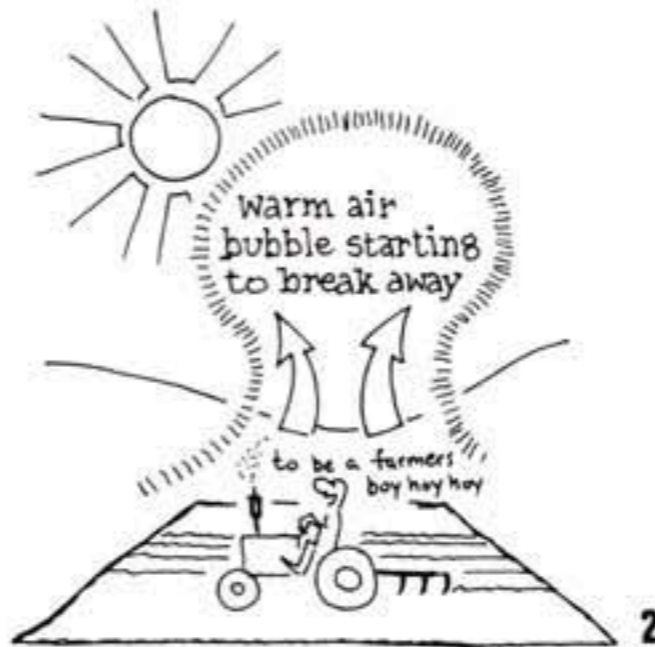
The seas, the lakes and all watery things take many passings of the sun to warm, whereas trees and bushes and rolling meadows take only one. But, the sun smiles strongest on its favourites and they are warmed up to great magnitudes in small lengths of time. In the Kingdom of the Sun these things are known as ploughed fields, concrete and tarmac, to name but a few.



All around the earth lives the air. The Air is invisible and the Sun can not smile upon things it can not see so the air is never warmed by the Sun. But as the air moves it touches earthy things and thereby it too becomes warm.

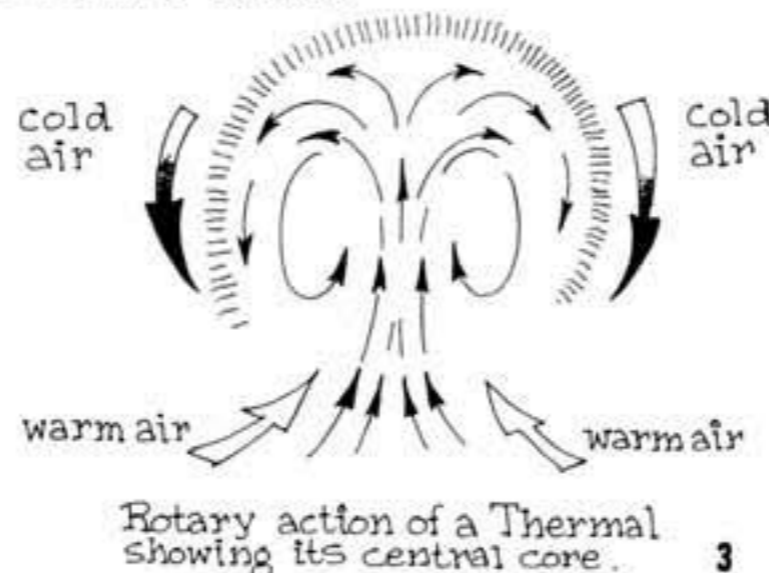
Upon Earth there is a land which is known as the Uig Bp. The Sun smiled upon this land and it came to pass that the earthly things upon Uig Bp saw the sun and were warmed by its presence and the air passing over Uig Bp touched the earthly things and so too was warmed.

There is a region of this land known as Germal Thenerator and there lived the Sun's favourite few. Upon this day of the smiling Sun, Germal Thenerator was warmed to great magnitudes in short lengths of time and all the air about so too was warmed to high degrees.



It is stated upon the Scrolls of the Laws of the Universe that the warmest of all air should rejoice and sing and arise and worship the passing of the Sun. And so it came to pass that the warmest of the air was that upon Germal Thenerator and as the air became hotter it spread and as it spread it grew in size until there was enough warmed up air to go forth and rejoice.

And so it left Germal Thenerator and commenced its journey to the heavens under the name of Thermal.



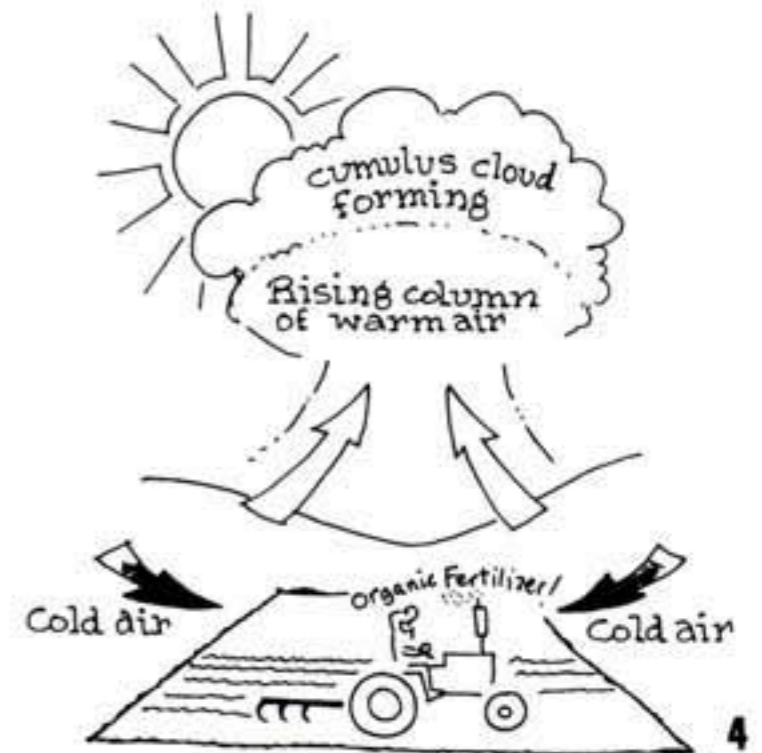
The passing of Thermal

THE invisible air surrounding Thermal was colder than Thermal and it is written upon the Scrolls of the Laws of the Universe that Thermal must rise separate and inert from the

invisible air and cool only by the means known as expansion until it matches the coolness of the surrounding invisible air.

It came to pass that the Ruler of the Laws that govern the passages and journeys of Thermal, namely King Adiabatic Lapse Rate, had ruled that today would be an average day and the Thermal would cool by 3°C/1,000ft.

And so Thermal rose and danced unseen at the rate of many (ft/min) and reached a height of 60 chains.



Now, a second ruler of the sky, King Condensation looked upon this day as he did most days and as he looked he saw a flying Gull and a soaring Pilot, both enjoying the sensation of living. And as the King looked, he saw that the Gull and the Pilot were blind to the rising Thermal. This saddened him and he said aloud, "Let there be a sign."

And so it came to pass that he introduced to the invisible air a layer of condensation. He then wrote in the Scrolls of the Laws of the Universe that Thermal, upon meeting such layers, must be seen by the naked eye of the flying Gull and the soaring Pilot.

King Condensation was a kind king and, as a reward for Thermal becoming seen, he said, "Thou shalt also be rejuvenated" by means of Latent Heat and thou shalt be called in common language Cloud and in the language of Scholars, 'Cu'."

Beyond the Infinity of Dreams

BUILT upon the inheritance of one thousand years, the Gull saw 'Cu' and he said to himself, "Thermal" and left the Cliffs of Rhosilli and steered on a bearing to Thermal and, as he did so, so he turned and, as he turned, he circled and, as he circled, he was gone. Just as the Gull saw the 'Cu' so that Pilot saw the 'Cu' and witnessed the Gull and he said to himself, "I shall forsake the aping of Monkeys and instead I shall imitate the Bird."

And, as he said this, he turned and steered towards 'Cu' and presently he too was gone.

Everything you always aluminium tube but

JOHN HUDSON, of Mainair Sports lifts the lid on the processes behind making this material on which hang gliding depends and reveals how standards are far more crucial than we might be led to believe.



Bettina Gray

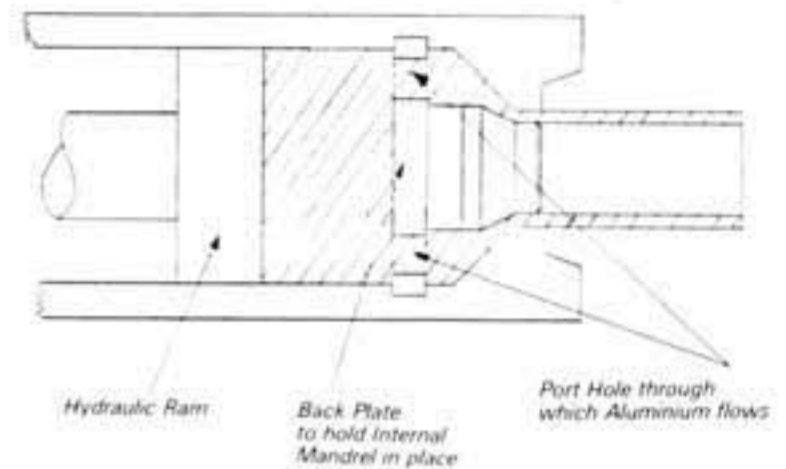


Fig.2 Porthole Extrusion

OUR industry uses miles of it. We cut it, bend it, stretch it, drill it, hammer it, file it, and hang our lives on it.

Some of us have businesses supplying other people with it; some of us build aircraft from it; but, when it comes down to it, the hang glider or microlight pilot him/herself is the one to whom the quality of this "taken-for-granted" material is of paramount importance.

The average pilot is a trusting soul who believes the adverts, the glossy brochures and the slick chat. Why shouldn't he? Surely, if you are building or selling a trike or microlight you will know to use the right tube.



I have been amazed and disgusted that some microlight manufacturers, and even aluminium stockholders, are unaware of the most basic details of tube construction and have been using, selling and promoting unsuitable grades of material for use in microlight and hang glider construction.

In hang gliding I have seen adverts for "cheap" uprights for various gliders. At the Mere, last year, in full view of Solar Wings, one man was offering cut price — like about half price! — uprights for Typhoons made, he proudly proclaimed, from HE 30 TF.

Now the average pilot could be forgiven for thinking these uprights must be right. A little chat about cutting out the middle man, low mark-ups, quantity production etc. will explain the price and the magic alpha/numeric designation may impress the average pilot who's into flying and not manufacturing.



The fact is, this enterprising salesman knows not a damn thing about the methods of manufacture or potential hazards of the tubing he was happily offering as replacements for one of the most critical structural members of an aircraft.

It's odds on that he popped round to his nearest aluminium stockholder, bought a few hundred feet of "ally tube", was sold it by an uninformed salesman and had dreams of his own "Unipart empire". It's a pity he didn't wonder why he was able to make a good profit from a product half the cost of the manufacturer's spare part.

Aluminium is the most abundant metal in the Earth's crust; and as a metal is one of the softest. Pure aluminium tube is little harder

than a lead pipe, and aluminium has to be mixed with a variety of materials like magnesium, silicon and copper to produce an alloy which will be strong and light. Around 15 alloys are generally available, but before we examine alloys, we ought to first look at how tube is made.

There are various techniques for doing this. One involves roll-forming a continuous flat strip and welding a full-length seam. This is a fascinating process to watch as a coil of flat strip, like a roll of insulation tape, is fed through numerous sets of rollers which "coax" it into an accurate tube.

It's ideal for garden furniture. It shouldn't be allowed anywhere near an aircraft. In order both to form and to weld it, the alloy is a special one which is far softer than the one we need.

A second method involves dropping a bucket-size hot billet of aluminium into a huge extrusion press and squeezing it under tremendous pressure through a small hole or die; rather like squeezing a toothpaste tube, but obviously toothpaste doesn't need a hole down the centre.

To get this hole down the centre, an internal mandrel has to be held in the middle leaving space around it which conforms to the size of tube required.

(see fig. 1)

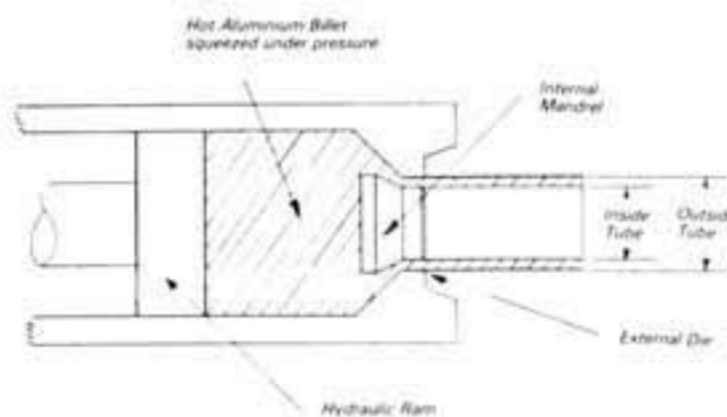


Fig.1 Aluminium Tube Extrusion

To hold this central mandrel in position, it is fastened to a plate which has three or four holes drilled in it. These holes are called "ports", and such are the pressures involved that the aluminium actually separates and flows through the ports, rejoining on the other side where it passes through the tube dia.

(see fig. 2)

Tube produced in this manner is called "porthole extruded" and if everything is right it is a sound material. If, however, slight impurities exist in the billet, or the temperature is not exactly right, the streams of aluminium may not join cohesively. This leaves a tube which may have a serious structural defect owing to a full-length imperfect joint.

Very often this defect will only come to light when the tube is subjected to stress by bending or by the millions of vibrations associated with two-stroke engines. I have a sample of this tube which is cleanly split into three separate pieces. This material is sold as HE tube and is almost certainly the stuff our friend at Mere was happily advertising for control frames.

"Mandrel-extruded" is the term for another method of tube extrusion which uses a different method for holding the centre mandrel in place. In order to eliminate the need for a back plate with ports, the central mandrel is extended right through the billet and pressure ram and is held from the back. This means that the billet has to be either drilled or pierced first.

(see fig. 3)

As you can see, the aluminium does not have to separate and stream but is just squeezed out from the billet into a thin tube. The key factor here is that the subsequent extruded tube is totally seamless. This is the important word — SEAMLESS.

Tube made extruded by the port-hole method may have as many as four longitudinal joints, so you can see how important seamless is.

It is fairly obvious that if you drop a bucket-size hot billet into a 3500 tonne extrusion press, and squeeze it out into a few hundred feet of 2" tube, you can't expect to work to fine tolerances. Obviously, smaller machines can work fairly close, but the process of hot extrusion results in a tube which may have discrepancies in tolerances.

This shows most clearly as an eccentricity of the centre. I also have samples of tube where one side is as much as 30 per cent thinner than the other, and since you can not see this other than by cutting the tube, the dangers are obvious. Imagine the leading edge of your wing being the thin side down.



In order to produce a more accurate tube, a process called "drawing" is carried out. There are a few ways but the one most used for our tube involves pulling a piece of tube through an external die, with an internal mandrel held from the back in a similar method to the seamless extrusion. The internal mandrel and external dies are smaller than the tube which is squeezed out as it is pulled through.

(see fig. 4)

This drawing process is carried out a number of times, each draw using a smaller set of dies, until a tube of the exact dimensions is obtained. For example, the extrusion press may squeeze out from a billet 10" diameter by 12" long, about 100 feet of 2½" diameter by

wanted to know about never thought to ask

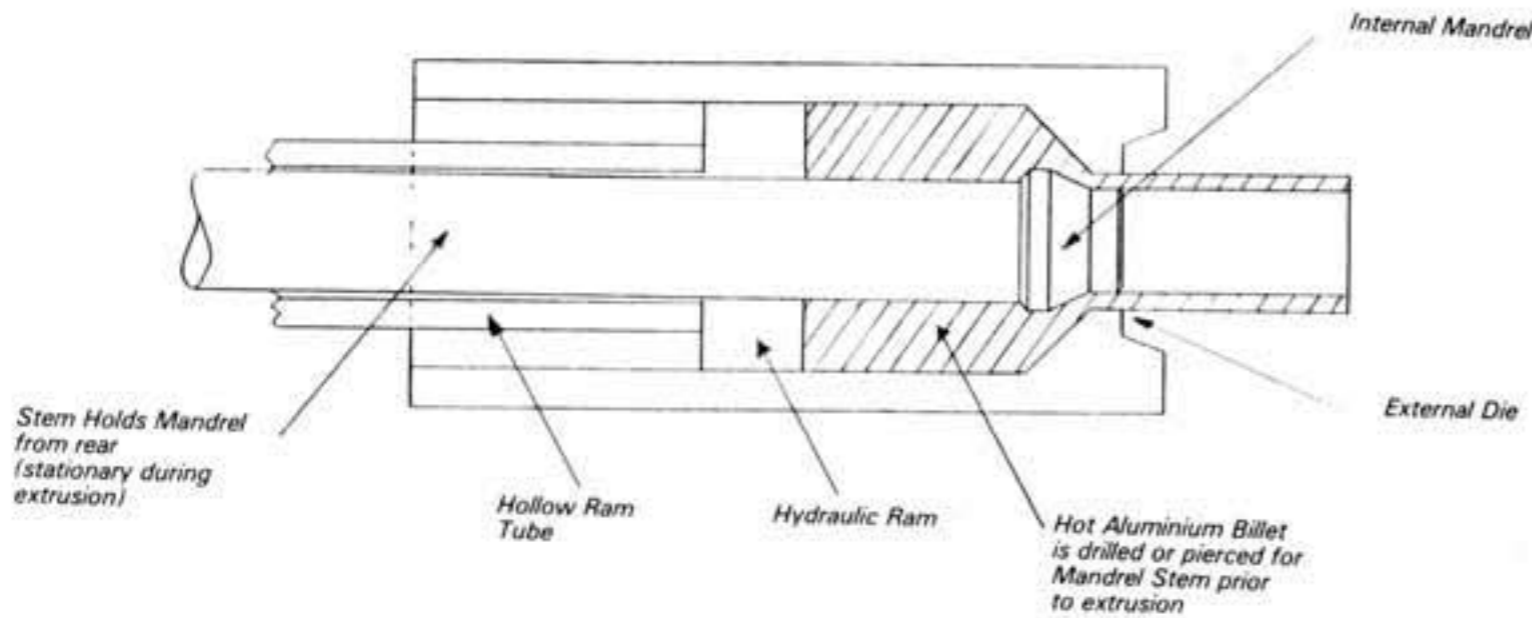


Fig.3 — Mandrel Extrusion

1/8" wall tube. As this tube comes out of the extruder it is chopped up into 10ft. lengths.

Each length is then passed to the rows of draw benches where it is pulled out and reduced down stage-by-stage until it finishes life as, say, 2" O.D. x 17 swg in 20ft. pieces.

When the tube has been through this process it is called, obviously enough, "drawn" tube, and the designation for this is HT. It must also be obvious that you could take a piece of port-hole extruded tube — HE — and pass it through a draw die and thereafter it becomes HT. Herein lies the trap for our whole industry.

The British Standards make no differentiation between seamless extruded drawn tube and port-hole extruded drawn tube. Both are classified HT, so it is obvious that you can buy a piece of HT tube which may have imperfect welds caused during the original extrusion. This drawn HT tube can split and I have had a split sample on my desk.

Whenever you order material you must specify DRAWN SEAMLESS HT and not be fobbed off with "Well it's HT to BS 1471" etc. by the salesman who, in my experience, fairly often does not know the difference.

All critically stressed aircraft tube is manufactured from seamless tube, defined in BS 3660 as a tube in which there is no split or deliberate longitudinal bonding of two or more edges by pressure, fusion or mechanical interlocking. Should we accept anything else?

You can not buy a piece of stressed aircraft tube that is not drawn seamless, but you can certainly buy HT which is not. Remember, the key phrase is: DRAWN SEAMLESS.

Most people will have heard or read of the numbers HE 30, HT 9, HT 15, TF etc. which refer to aluminium tube. As explained, the first letter refers to the means of construction; the numbers which follow refer to the alloy itself, and in general there are two in which we are interested: HT 30 and HT 15. HT 30 is the most common and is an alloy which gives good

all round strength coupled with a reasonable corrosion resistance. It is a structural alloy which anodises readily and is tough to bend or form.

For most of our aircraft structures it is a fairly ideal material. HT 15 is a high strength alloy, and as you can see from the table, exhibits a tensile strength which is around 40 per cent greater than HT 30. Put another way, you could use a smaller, lighter tube for the same strength.

Just what we need. But the problems in other directions restrict its use significantly. It corrodes very easily, even after anodising, and the slightest scratch through the micron-thick anodic film would slowly powder up as the atmosphere ate its way into the tube.

Sleeved joints would be horrific as the moisture which enters through drilled holes, rivets etc. provides perfect conditions to accelerate the process and, no doubt, you would find it had gone too far as your half-weight aircraft falls apart around you.

Since the material is also considerably harder

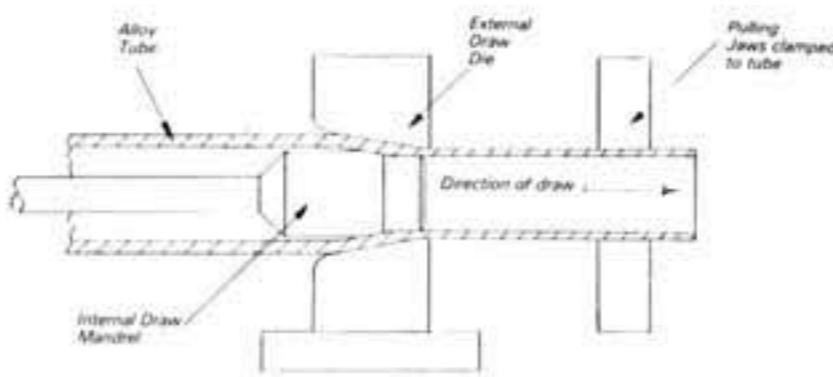


Fig.4 Tube Drawing Technique

than HT30, it is also subject to stress-induced corrosion and with our flexible craft this, too, would need careful design work to eliminate potential problems. HT 15 is a good material and a lot of work is being done to find ways to reduce these hazards. It may be that we will eventually use the material, gaining all its advantages when we have a viable airworthiness inspection procedure in operation.

The final letters at the end of the specification numbers refer to the kind of heat treatment the alloy has received. When an alloy has been pummelled into the shape we want via the extrusion press and draw benches, it is necessary to heat treat it to raise its mechanical properties to the standards we require.

This is done by a process of heating in huge ovens and then quenching in a variety of coolants over a range of temperatures. Some specifications require cold working during the various cycles, but as you can see from the table, one alloy, HT 30 for instance, can have very different properties according to the final heat treatment processes. The TB temper covers a high temperature solution heat treatment and quenching operation, which leaves the tube in a tough malleable condition and is the temper one should order when the tubes are to be bent or formed significantly. The TF temper covers a second low temperature precipitation treatment which speeds up the natural hardening process. Bending the TF tube is not to be recommended since the hard material can suffer myriad tiny fractures in the skin which may lead to fatigue failure.

Both HT30 and HT15 can be manufactured and released to full aircraft specification and in fact the material we sell at Mainair is produced to almost the exact aircraft specification. To release the material fully would need little more than additional inspection and recording procedures, but to have this done would mean around 15 per cent on the price and lots of paper work. We can not justify this, but at least are confident that we are buying tube to the highest quality we can economically reach.

No doubt the C.A.A. will have something to say about the materials we use in our aircraft, and although I feel that we should fight most strongly against the imposition of a rule demanding fully-released aircraft alloys, I do feel there should be some standards. At Mainair we feel so concerned about the use of unacceptable tube, that we intend in the future to specify that all our material is marked with our name, method of manufacture and British Standards number.

Finally, since many people are building and buying American microlight aircraft, the table shows the equivalent specifications between the U.S.A. and the U.K. standards.

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B.S.	U.S.A.	U.K. temper or Condition	U.S.A. temper or Condition	Aircraft Specification	0.2% Proof Stress N/mm	Tensile Strength N/mm	Elongation % on 50mm	Brunnel Hardness
HT-15	2014	TF	T6	BS3L63	370	450	6	135
HT-15	2014	TB	T4	BSL105	290	400	8	115
HT-20	6061	TF	T6	BSL117	240	295	7	95
HT-20	6061	TB	T4	---	115	215	12	60
HT-30	6082	TF	T6	BSL114	255	310	7	100
HT-30	6082	TB	T4	---	115	215	12	65
HT-9	6063	TF	T6	---	180	200	8	80
HT-9	6063	TB	T4	---	100	155	15	55

Other U.S.A./U.K. Specifications.	
U.S.A.	U.K.
5083	NT-8
5154	NT-5
5251	NT-4
5454	NT-51
Treatment T5	Treatment TE



All letters should be sent to the Editor at 72 Hartley Avenue, Leeds LS6 2LP and should be signed and written CLEARLY on one side of the paper only.

Why learn seated?

Dear Stan, —

Fifteen years ago I was taught to ski by a mad Scotsman who took me to the top of the hill at Aviemore, showed me how to put the skis, on, then disappeared into the mist with the cry "follow me".

I can now ski quite fast and fairly safely, but my style has been the despair of several Austrian ski instructors. Why? — because I developed a bad style to

begin with.

Just before Easter I went to the Army Hang Gliding Centre where such well-known names as Jim Bowyer and Keith Cockroft taught me to fly in the "gorilla or budgie" position. Two weeks later, in Devon, I made the natural progression to prone flying. A week later I received my first copy of Wings! and was astonished to find that schools are still teaching the seated position to beginners.

when he moved from snow-ploughs to parallel turns — now parallel turns are taught from the beginning.

Should we not learn from the skiers and overcome the hurdle of converting from seated to prone simply by removing it?

The "Void" Philip Pask referred to in the April edition certainly exists, but it does not end when you go prone — on the contrary, I believe going prone is a precursor to getting the most value from this period. Remember, it is the early lesson and "feel" which stick.

Flying seated may make the first couple of days' instruction easier, but it only builds problems for the future, come on you schools get with it — Go Gorilla!

PAUL HIND
HMS Buffalo

For those in peril

Dear Sir, —

By the time you receive this I shall be bobbing around on the sea in the area of the Falkland Islands.

I would appreciate it if you would mention all of the Royal Marine H.G. pilots out here with me as it cheers us up no end to know that some one is thinking of us.

The lads are Garry Rowley, Trevor Blunt, Frank Swift, Craig Milkins, and self.

IAN FARRINGTON
Plymouth.

GEOF L.M. JONES,
Leeds.

For strong shoulders & deep pockets

Dear Stan, —

We gladly fork out again for the annual BHGA raffle in support of funds for competitions. In so doing, we the general members are "doing our bit".

You (our leaders) will agree that competitions influence the way in which gliders develop. It would appear that the competition scene has helped to give us the present generation of glider that is attractive to those with very strong shoulders and well-lined pockets.

So what are you doing to help direct effort in the direction of a type of glider suitable for many who at present are not being properly catered for?

Should you consider splitting competitions into four types e.g. for trikes, rigids, CFXs, and single-surface flexibles?

How about a few novel experimental competitions e.g. flying new gliders against gliders with more than ten hours air time to test the effects of and rectify sail stretch?

We look to you to make this already great sport more enjoyable yet.

Reinforcing what was said

Dear Sir, —

Dave Smith asks me to convince him about the reasons for John Clark's accident and says that I seem to have ignored the effects of gravity on its airspeed.

The figures given in my analysis were obtained by careful timing and measurements taken from the movie film of the accident. It wasn't necessary to calculate the effect of gravity on the acceleration of the machine, although as a matter of course I did so.

The figures given by Dave are reasonably compatible with mine and simply reinforce what I said, i.e. that the wing never reached flying speed before it was upside down and therefore could not start to recover until it was too late.

If "A" is the point of release of the chute, "B" is when the glider is vertically

nose-down and "C" is when it is totally upside down, then it is obvious that if the average speed from A to C is 23 mph, then the speed from A to B will be below average and the speed from B to C will be above average. The average speed would probably be the actual speed at round about point B.

As this machine stalls at about 26 mph it seems quite obvious to me that it did not reach flying speed until it was too late.

It has been calculated that a figure of 295 lbs of "thrust" through the centre of mass of the pilot and trike would have been necessary to accelerate the trike sufficiently to raise the glider nose into a recovery path. As the rate of rotation

on the pitch axis was fairly uniform throughout the whole manoeuvre, a very large force would have been needed at any point to effect recovery.

Where was this force to come from? Not the engine (because that was stopped). Even if it had been running it could not have provided this sort of push.

The wing could not provide it — at least until flying speed was reached, by which time it was upside down.

It is highly debatable if an inverted wing, badly deformed by negative loading, even with nothing broken, could recover after inversion. However, the tips broke and stabilised the machine so that it could not recover from the inverted position. And a good job too, because by then it would have been too low.

LEN GABRIELS
Skyhook Sailwings Ltd.,
Oldham.

A good word for drogue chutes

**'Half-wit'
editor
goofs
again!**

Dear Editor —

It seems to me from recent conversations that even seasoned hang glider pilots are still sceptical or unaware of the value of drogue chutes for landing double surface wings, so I thought it worth putting a good word for them in print.

I used a drogue chute for real on four occasions this January in the Kerio Valley area of Kenya, and am now of the opinion that a drogue should be considered essential equipment, on a par with an altimeter or a vario, if there is a possibility of having to put down in a tight landing area in no wind conditions.

An example of the kind of landing area I'm thinking of would be a small clearing surrounded by sharp thorn trees, perhaps even downwind, or where the end of the landing field is blocked by tall trees or other obstacle so overshooting would equate to crashing.

If the pilot is to feel free to make the most of thermal lift while flying over this kind of terrain, the ability to make precise landings in tiny areas is very reassuring. The drogue chute does just this. Would a sailplane pilot fly a glider without spoilers?

The technique is to throw out the drogue chute on the final approach. The glide angle can then be degraded at will to worse than, say, a Scorpion or SST. Having become accustomed to

the glide of double surface machines, I found the degraded angle of descent quite dramatic. Correctly judging the glide of a double surface when the final approach path is over alternate lift and sink or turbulence, must need a strong element of luck. The drogue eliminates the luck element.

My experience is that encountering severe turbulence while the drogue is employed is not a problem. This was my main fear prior to trying one, but it turned out that control is apparently unaffected. However, I have no experience of making more than a 45 degree turn, or landing in wind with the drogue deployed, e.g. a top landing. Note that once deployed, a drogue can not easily be recovered, so it should not be considered where overshooting is permissible.

Once the more obvious of the possible snags have been considered, there is so little to go wrong with the deployment of a drogue that I would count on it functioning 100 per cent of the time. So I would commit myself to landing in an area where a successful landing would depend

on the proper functioning of the drogue.

The one I used was made by Adventure Sports Equipment, S. Yorks, and consists of a flat circular (i.e. not sewn from gores) piece of polyester cloth, 36" diameter, with a 3" apex hole. When deployed behind the glider, this drogue is somewhat unstable, moving rapidly in six or seven feet diameter circles and the bridle consequently wraps several times around the keel stinger, although without much apparent adverse effect. Has anyone discovered if a drogue made from conventionally shaped gores also suffers from this same kind of instability?

Finally, some of the more obvious snags. The chute is supplied in a tube with an end cap which should be removed, as this cap causes a vacuum when an attempt is made to pull the chute out fast. This caused my hand to lose grip on one trial. Also, this container tube must be securely strapped to the upright so that it doesn't get flung out with the chute. Lastly, some sort of precaution should be taken to prevent the clip which is supposed to slide up a back wire, from snagging on the ferrules at the A-frame end.

LINDSAY RUDDOCK
Englefield Green,
Surrey.

Lets have a glider test panel

Dear Stan, —

I would like to comment on your editorial in March Wings! regarding valid glider tests. As you say, most of the top pilots do have varying degrees of commercial links with manufacturers, but are you seriously suggesting that none of them has any objectivity or integrity whatsoever? Having a panel of perhaps three pilots doing the test, with their individual comments might be one way to ensure a reasonably accurate report. The panel could maybe include a league pilot and an intermediate

flier, to get a good range of viewpoints.

Quite apart from the handling and performance aspects, which will always be somewhat subjective without the aid of a dynamic test rig (whatever happened to the BHGA car rig??), the reports could list the actual FACTS of the various gliders, for example the weight (a point the manufacturers' brochures always seem to fib about), the cost of spares, the number and location of dealers and the actual materials used in the gliders.

These are all very important to someone

looking to buy a new glider and there is no question of subjectivity about these FACTS. The manufacturers could have a preview of the report before it went into print, and their comments could be added to the report. I believe the reports would encourage the manufacturers to rectify any minor faults found during testing, faults which might otherwise go uncorrected.

This has happened as a result of tests in American hang gliding publications.

Incidentally the Sealand report hardly

constituted a formal, thorough test — it appeared to be off-the-cuff conflicting comments from a couple of unknown (to me anyway) pilots.

P.S. Keep up the good work with Wings! — it's always full of interesting stuff!

WILLIAM WHITE,
Randwick,
New South Wales

• Latest news on the test rig as Wings! goes to press, is that (fingers crossed as usual) it is in working order and should be fully operational as you are receiving the mag — Ed.

The faked cover picture on the Fosters issue was a particularly half-witted idea likely only to increase the layman's confusion about the principles of flight (this was our first public issue) and, worse, to perhaps mislead pilots who don't spot the deception into trying to emulate this sort of cliff level stunt flying.

The picture informs on neither gliding nor photography, and is poor artwork to boot. By all means get the sponsor's name in, but lets retain our credibility and integrity.

Yours
BOB BALDWIN
Brighton

• Another of you guys who shoot from the hip, eh?!

What do you do when you get just one picture of Alum Bay and one of the Foster's glider two days AFTER deadline? Do you have a go at creating a "possible" picture even though the glider will be partly downwind whatever you do; do you go for total unreality and mount it like some preserved butterfly in a glass show case (as it appeared on the Shanklin Festival programme); or do you cop out and stick a picture of a bog standard at Mere on the cover instead?

C'mon Bob, our sponsors are new to hang gliding, as you were too once, and I'm sure if we're lucky enough to have them again next year they'll know to provide plenty of shots to choose from if we ever have to resort to doing a montage again.

Incidentally, it states clearly on page 3 that the picture is a "fake" and a canvass of pilots at the League and the Open largely allayed my own misgivings that the cover was a bit of a bodge job —

Ed.
(P.S. This was NOT our first public issue, anyway)

ENGLISH	FRENCH	DUTCH	SPANISH	ITALIAN	GERMAN
HANG GLIDING	VOL LIBRE	ZEILVLIEGEN	VUELO LIBRE	VOLO LIBERO	DRACHENFLIEGEN
HANG GLIDER, WING, KITE	AILE VOLANTE, AILE DELTA	ZEILVLIEGTUIG	ALA DELTA	AQUILINE, ALA DELTA	DRACHEN
PILOT	LIBERISTE, PILOTE	ZEILVLIIEGER	PILOTO	PILOTA	DRACHENFLIEGER
TO FLY, TO GLIDE	VOLER, PLANER	VLIEGEN	VOLAR	VOLARE	FLIEGEN
AIR, SKY	AIR, CIEL	LUCHT	ARIA, CIELO	AIRE, CIELO	HIMMEL
SAIL	VOILE	ZEIL	VELA	VELA	SEGEL
TUBE	TUBE	PIJP BUIS	TUBO	TUBO	ROHRE
CROSS-BOOM	TRANSVERSALE	CROSSBOOM	BARRA CRUZADA	TRASVERSALE	QUERSTAB
LEADING EDGE	BORD D'ATTAQUE	LEADING EDGE	BORDE DE ATAQUE	BORDO D'ATTACCO	SEITENROHR
KEEL	QUILLE	KEEL	QUILLA	CHIGLIA	KIEL
CONTROL FRAME	TRAPEZE	STUUR FRAME	TRIANGULO	TRAPEZIO	STEUERBUGEL
UPRIGHT	MONTANT	UP RIGHT	BARRA LATERAL	MONTANTE	SEITENTEIL
CONTROL BAR	BARRE DE CONTROLE	CONTROL BAR	BARRA DE CONTROL	BARRA DI CONTROLLO	BASIS
KINGPOST	MAT	KINGPOST	MASTIL	TORRE	TURM
WING TIP	BOUT D'AILE	TIP	BORDE MARGINAL	ESTREMITA ALARE	WING TIP
DEFLEXOR	DEFLEXEUR	DEFLEXOR	DEFLECTOR	DEFLETTORE	OUT RIGGER
WASHOUT STRUT	BAGUETTE DE CALAGE	FLOATING TIP	TIP	BACCHETTA FLOTTANTE	SWIVEL TIP
TRUNCATED TIP	SAUMON	DROOP TIP	ESTABILIZADOR LATERAL	CONVOGLIATORE LATERALE	DROOP TIP
SLIDING BOX RIGGING	PLIAGE PARAPLUIE	SLIDING CROSS BAR SYSTEM	SISTENA DE PARAGUAS	APERTUIRA A OMBRELLO	SCHNELLAUFBAU SYSTEM
AIRFRAME	STRUCTURE	FRAME	ESTRUCTURA	TELAIO	RAHMEN
LEADING EDGE POCKET	FOURREAU	LEADING EDGE POCKET	MANGA	DOPPIA VELA	SEITENTASCHEN
KEEL POCKET	POCHE DE QUILLE	KEEL POCKET	BOLSA DE QUILLA	PINNA	KIELTASCHEN
BATTEN	LATTE	ZEILLAT	SABLE	STECICHE	SEGELLATTEN
BILLOW	LOBE VRILLAGE	BOLLING	BOLSA DE VELA	TUNNEL	TUNNEL
TWIST	VRILLAGE	WRONG	TORSION AERODINAMICA	SVIRGOLAMENTO	VERWINDUNG
DIHEDRAL	DIEDRE	V-STELLING	DIEDRO	DIEDRO	V-FORM
NOSE ANGLE	ANGLE DE NEZ	NEUSHOEK	ANGULO DE MORRO	ANGOLO DI NASO	NASENWINEL
AREA	SURFACE	OPPERVLAK	SUPERFICIE	SUPERFICIE	FLACHE
SPAN	ENVERGURE	SPAN WIJDTE	ENVERGADURA	APERTURA	SPANNWEITE
ASPECT RATIO	ALLONGEMENT	ASPECT RATIO	ALARGAMIENTO	ALLUGAMENTO	STRECKUNG
SINK RATE	TAUX DE CHUTE	DAALSNELHEID	COEFICIENTE DE DESCENSO	TASO DI CADUTA	SINKGESCHWINDIG KEIT
PROFILE	PROFIL	PROFIL	PERFIL	PROFILO	PROFIL
YAW	LACET	GIEREN	GUINADA	IMBARDATA	GIEREN
ROLL	ROULIS	ROLLEN	BANQUEO	ROLLIO	ROLLEN LANGSACHSE
PITCH	TANGATE	STAMPEN	PICADO	BECCHEGGIO	ROLEN QUERACHSE
WIRES	CABLES	VERSPANNING	CABLES	CAVI	VERSPANNUNG
OVER-CENTRE CATCH	ETARQUEUR	HEFBOOM SPANNER	TENSOR	TENSOR	SCHNELLSPANNER
RUDDER	GOUVERNE AERODYNAMIQUE	TIP ROER	MANDO AERODINAMICOS	COMANDI AERODINAMICI	RUDER
WEBBING	SANGLE	BANDER	CINTAS	CINGHIA	BANDER
ROPE	CORDE	ZEIL	CUERDA	CORDA	SEIL
PUSH-PIN	BROCHE A BILLE	PIP-PIN	PASADOR AUTOMATICO	PUSHPIN	QUICK PINT
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SOARING HANG GLIDERS

by Ann Welch and Roy Hill

Written jointly by the President and the Chairman of the British Hang Gliding Association and illustrated throughout with diagrams and pilots-eye view photos, *Soaring Hang Gliders* shows the pilot a multitude of ways to improve his knowledge and ability and avoid dangerous errors. The first

section includes how to fly with maximum precision when ridge soaring; hang glider characteristics; how to extract the best performance from your aircraft; and which type of hang glider to buy. The second section covers soaring weather; thermals, and how to find them under the clouds; and the best speeds to fly for varying conditions. The problems associated with soaring among mountains or in wave lift are discussed, with emphasis on how to avoid powerful downcurrents. The third section considers map reading; finding your way over strange countryside; avoiding controlled airspace; and how to land in small fields.

John Murray **paperback** **160 pages** **91 photos & drawings** **£5.95**

AEROSPACE INFORMATION CENTRE,
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Michael Carnet's dictionary of flight

IF you are going abroad this summer, you need this dictionary of hang gliding.

You can find all the usual words relating to our sport in five languages.

French speaking countries include Belgium, Switzerland, Canada and Luxembourg and many African countries.

German speaking countries include Austria, Switzerland and Lichtenstein (hang gliding is banned in East Germany).

Italian is also spoken in part of Switzerland and Spanish in most of South and Central America and Mexico.

Dutch is only spoken in Holland and half of Belgium. I know, there is not much flying in these countries where, if you stand on top of your helmet you can see the sea from anywhere! But now, learn and talk to the Flying Dutchman!



CANADA Seven tons and a new record!

WILLI Muller has smashed the Canadian distance record and joined The 100-mile Club thrice over in an amazing week.

The full tally is:-

April 23, Willi Muller 141 miles
May 1, Stewart Midwinter 116 miles
May 1, Willi Muller 115 miles
May 2, Willi Muller 126 miles
May 2, Stewart Midwinter 114 miles
May 2, Chris Sali 114 miles
May 2, Howard Vandall 109 miles
All flights were launched from Cochrane Hill, Alberta, which is 330' above the landing area. Launch is 4,400' ASL. After leaving the hill the rest of the flights were over flat land — the prairies.

In an eight-day period we had 1,457 miles flown off Cochrane Hill by 27 pilots averaging 54 miles each (this includes the pilots who flew 3 miles). The mileage was accumulated on three days.

Flight report next month.

USA

WITH the arrival in Britain of the 100-mile club, they're already moving on to bigger things in the

States where Pete Brock of UP Sports is offering \$5,000 to the first pilot to crack 200 miles. Just one snag... you have to be flying a UP glider.

ZIMBABWE First XC & a record

R.W. FOSTER writes from Rusape, Zimbabwe —

"It was a hot, clear blue day in Umtali, Zimbabwe's eastern border city, with the wind gusting slightly but only up to approx. 10mph.

I rigged my wing, which is a home-built copy of a "Sigma 12M" (from photographs in Wings!), and sat down to wait for the wind to pick up a bit but by 10-15am. there was still no change so I clipped in my supine harness and launched from the east side of the Umtali Heights View Point which is a short ridge (200 metres).

"I was just about to start doing some turns over the field when there was a brief sink and then suddenly lift and the vario was chirping merrily away at 300-400fpm. up. I had no problem staying in the thermal.

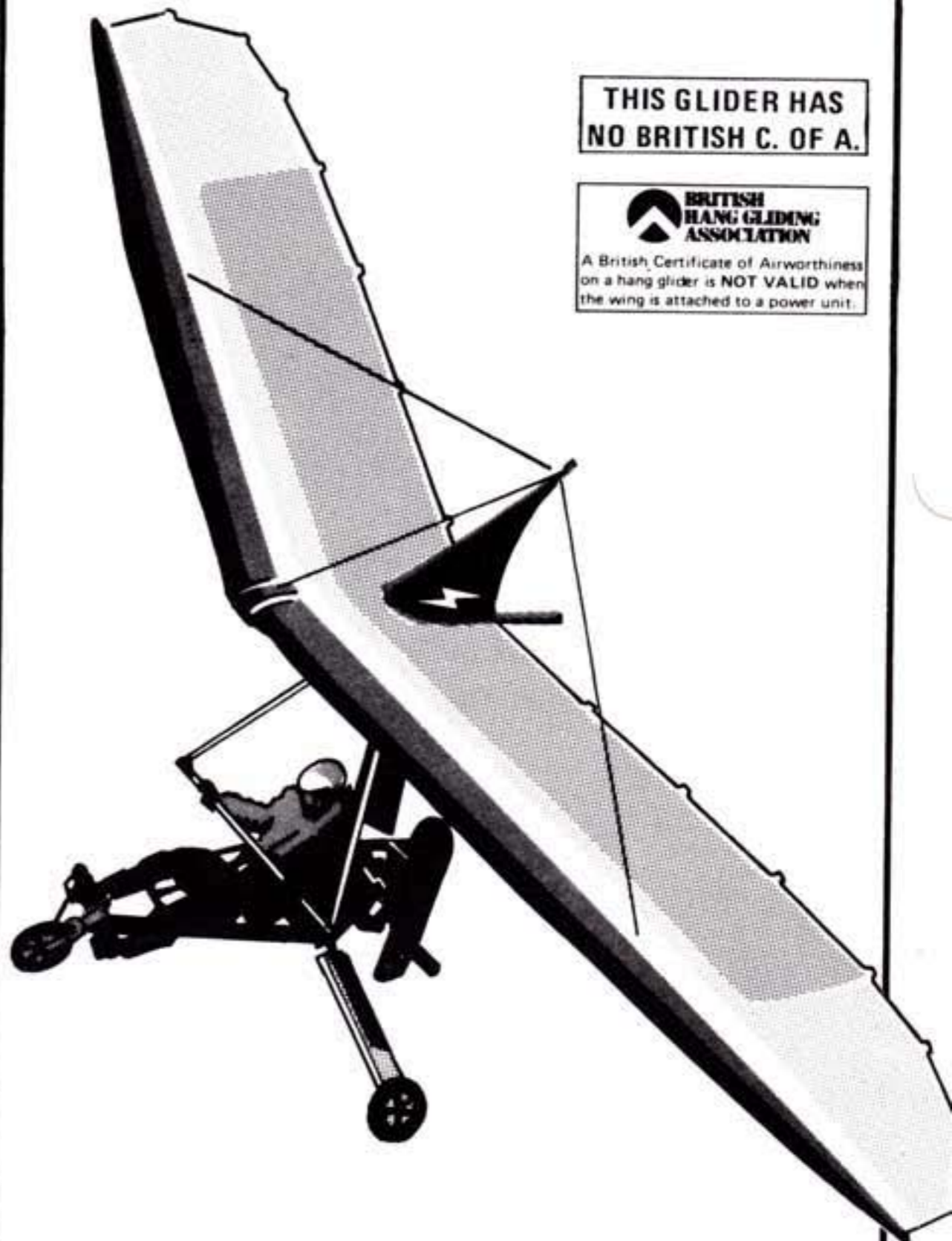
"I set off downwind west, parallel to the main Umtali to Salisbury road whilst overflying more fields with scrappy lift which I ignored.

"After a long final glide with no more lift about, I landed at 12-10pm. in a grassy field next to the main road 21km. from take off, as the crow flies, and 25km. by road."

A QUICK FLASH!

THIS GLIDER HAS
NO BRITISH C. OF A.

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HANG GLIDING
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the wing is attached to a power unit.



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Placings at May 20 All distances in miles

NAME	CLUB	1	2	3	TOT
1 Rob Bailey	Dales	51.9	42.3	44.6	138.8
2 Jim Brown	Dales	25.4	25.4	63.7	114.5
3 Michael Carnet	Southern	18.9	61.1	25.2	105.2
4 John Fennel	Thames	25.3	41.8	34.4	101.5
5 Pete Hargreaves	N.Yorks	15.3	42.8	41.4	99.5
6 Johnny Carr	Southern	60.9	9.9	16.4	87.2
7 Robin Rhodes	Northampton	37.3	16.6	32.9	86.8
8 Jack Rayne	Mercian	71.0	14.4	—	85.4
9 Simon Ogston	Angus	9.3	23.8	50.0	83.1
10 Brian Godden	N.Yorks	21.3	19.4	35.0	75.5
11 Jes Flynn	RAF Moray Eagles	35.5	14.3	18.1	67.9
12 John Stirk	Dales	14.0	20.3	29.5	63.8
13 John Meredith	Thames	18.2	40.9	—	59.1
14 Marc Asquith	Mercian	11.6	24.5	22.2	58.3
15 Digby Rolf	G.Cayley	23.0	6.7	26.1	55.8
16 Darren Arkwright	Pennine	51.8	—	—	51.8
17 John Rankin	Lomond	13.2	38.1	—	51.3
18 Steve Hudson	Sheffield	10.3	24.2	16.8	50.3
19 Phil Huddleston	IoW	49.8	—	—	49.8
20 John Hudson	Pennine	18.5	28.1	—	46.6
21 = Noel Whittall	Dales	8.6	7.6	29.5	45.7
21 = Allan Smith	Wessex	19.4	26.3	—	45.7
23 Richard Newton	S.E.Wales	14.4	11.2	19.4	45.0
24 Bill Newton	Southern	19.6	12.9	12.0	44.5
25 Bob Harrison	Dales	14.6	14.7	17.9	44.2
26 Marc Southall	S.E.Wales	31.0	12.3	10.2	43.5
27 Sandy Nicol	Peak	18.7	24.1	—	42.8
28 Malcolm Hurst	—	22.9	19.3	—	42.2
29 Pete Waterworth	Avon	29.1	12.0	—	41.1
30 Donny Carson	Highland	20.9	20.1	—	41.0
31 B.J. Harrison	Southern	13.2	27.4	—	40.6
32 Peter Robinson	Wessex	23.4	16.8	—	40.2
33 Richard Iddon	Pennine	21.0	18.6	—	39.6
34 Martin Pingel	S.E.Wales	11.9	11.2	—	16.3
35 Mike Tomlinson	S.W.Wales	26.0	12.5	—	38.5
36 Robert Hooker	Northumbria	37.4	—	—	37.4
37 Mike Hibbit	Thames	23.2	13.8	—	37.0
38 Tony Fillingham	Dales	11.1	9.0	16.4	36.5
39 Neil Clark	Loughborough	7.5	17.9	10.4	35.8
40 Len Hull	Sheffield	8.2	7.1	20.1	35.4
41 Richard Sheppard	Peak	13.5	10.6	11.2	35.3
42 Malcolm Clee	Sky Surf	7.2	11.7	15.9	34.8
43 John Hunt	Avon	33.9	—	—	33.9
44 Martin Hann	S.E.Wales	17.1	16.7	—	33.8
45 Chris Taylor	Cumbria	18.3	15.1	—	33.4
46 Graham Deegan	IoW	32.0	—	—	32.0
47 David Walter	Sheffield	31.9	—	—	31.9
48 Dave Cheeseman	Avon	29.8	—	—	29.8
49 Kevin (Sunspot) Winter	Avon	28.1	—	—	28.1
50 James McMenemy	Thames V	27.3	—	—	27.3
51 Andrew Fawcett	Lanark	26.1	—	—	26.1
52 David McRobert	Avon	9.0	16.8	—	25.8
53 = Colin Brunt	Pennine	24.7	—	—	24.7
53 = Simon Todd	Long Mynd	24.7	—	—	24.7
55 Philip Merton	S.E.Wales	24.4	—	—	24.4
56 Mike Heather	Avon	24.3	—	—	24.3
57 John Higham	Sheffield	23.5	—	—	23.5
58 = Jenny Ganderton	Dunstable	8.9	7.4	6.8	23.1
58 = D.J. Clayton	Southern	10.5	12.6	—	23.1
60 Richard Baughen	?	11.1	11.0	—	22.1
61 Nigel Moor	S.E.Wales	20.7	—	—	20.7
62 Les Pallent	Peak	13.7	7.0	—	20.7
63 Marguerite Winton	Sky Surf	7.2	11.8	—	19.0
64 = Nick Collins	?	18.0	—	—	18.0
64 = Steve Morris	?	18.0	—	—	18.0
66 Marc Dale	G. Cayley	7.3	10.6	—	17.9
67 = John Pendry	Southern	16.8	—	—	16.8
67 = Tony Williams	Avon	16.8	—	—	16.8
69 Kev Turner	Sand Diver	16.6	—	—	16.6
70 Gordon Holmes	G.Cayley	6.7	9.6	—	16.3
71 John Turner	Dales	16.2	—	—	16.2
72 Tom Warren	S.W.Wales	7.2	8.8	—	16.0
73 John Bowman	N.Yorks	15.0	—	—	15.0
74 H.K. Rattray	?	14.0	—	—	14.0
75 John Hewitt	Southern	13.5	—	—	13.5

• Pictured above, left, is Jack Rayne (Mercian Club) on a Flexi Hilander. He did 71 miles from the Malverns on a Demon — report next month.

Right, is Noel Whittall, one of the sport's "elder statesmen" in the XC League for the first time with his new Typhoon S.

A long winter!

THIS month's credit must go to Kevin Winter from the Avon club, who flew an incredible 28.1 miles on, would you believe, a Sunspot!

Watch out Bob Bailey — you'd better not sell him a Magic!

Jenny Ganderton remains the highest-placed lady but is closely followed by a welcome newcomer Marguerite Winton.

I've been bombed out! an impressive 94 entries and it's only May. Breakfast will never be the same again without an average of six letters a day. Thank God for Sundays.

As the workload is now excessive, I must insist on clearly written and tabulated entries. I must have clear 6-fig map refs. WITH the prefix letters identifying the 100km square. I also need the approx. distance to check my answer.

OR, better still, if you can calculate it, do so, giving details in km and miles. Use 1km = 0.6214 miles. NOT 5/8.

Finally, my apologies for errors. I've even credited a witness with someone else's flight! Well, we all make mistakes, so please let me know if you have any queries or missing flights etc.

Happy Flying
Dave

• As last year, we are operating a "cut" at 75 names... sorry folks! — Ed

• Entries to Dave Harrison, 96 Sheffield Lane, Norden, Rochdale, Lancs.

CLASSIFIED*



ADVERTISING rates on the classified pages are as follows:

Members' small ads are 12p a word, minimum charge £2.40. Small business ads are 15p a word, minimum charge £3.50. Please specify required classification.

Small boxed ads, £1 extra. Full display ads are £1.40 per column centimetre on these pages or elsewhere in the magazine.

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Spot colour — just 20 per cent extra on any ad.

All small ads should be sent to Sylvia Howard, Commercial Editor Wings!, 4 Somerwood, Rodington, near Shrewsbury, Salop.

For your own safety, if you are purchasing a secondhand glider, see it test flown, test fly it, and inspect it thoroughly for damage or wear to critical parts. If in doubt, seek advice from the Club Safety Officer.

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FRENCH CONNECTIONS. For those seeking extra performance. Tested up to 3,500lbs. Nylon brushed. Anodised. Aircraft bolts. Universal fitting. £36.50 + £2.00 p&p. 12 York St. Cowes, Isle of Wight. Tel: (0983) 296042.

TRIKING, cross-country or ridge soaring? You need an **ALTIMETER.** Buy the best. The **THOMMEN 1,000** and 2,000 or the **DIPLEX.** Phone Huntingdon 72225.

THE WELSH HANG GLIDING CENTRE PRONE & COCOON HARNESSES are just what you've been looking for. Streamlined, easy to use, light compact — and well priced. Send for spec. sheet to W.H.G.C., Crickhowell, S. Wales. 0873 810019.

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SKYDECK without altimeter. Ball VARIO and casing and mounting bracket. £110. Ring Brian Godden on 01 636 5121, day only.

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WORRIED about your chances with your present parachute? If so, you can get it off your chest — and stick it on the keel, where you know it will work.

SKYMASTER



Drogue deployed, keel mounted chute system — the low altitude, reliable lifesave. £345.00

Ⓢ **SPHERICAL COMPASS.** Works at any angle; essential when you're swallowed by the cloud, or on XC. Superb value for £7.75

DIPLEX ALTIMETER. 0—8,000 ft. Easy to read £23.00

LANDING DROGUE CHUTES. Made from the same unique material as Skymaster. It's either an 'A' frame, a wall, or £12.50 for a drogue!

ALLOY KARABINERS. Top quality, rated stamped, screw gated. £2.99 each or 5 for £12.50

THUNDERBIRD VARIOMETER. The BEST there is. £198.00
ELECTRONIC VARIOS from £110.00

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A.S.I. 5 to 55 mph with settable stall warning indicator. Can be supplied fitted to either of the above instruments or for direct fitting — £87.

All prices include P&P. SAE for further information. Arbee Developments, 18 Stephens Crescent Horndon on the Hill, Standord le Hope, Essex.

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Miscellaneous

V.W. CARAVANETTE, 1970. R.H.D. 1600cc. Good condition, year's MOT, spacious interior design, cooker, heater, sink etc. Must be seen. £1200 ono. Wokingham (0734) 792423.

WINGS! Complete set of back numbers, Jan 75 — Dec 79. Many issues now out of print. Real "collector" items! Must sell. Offers or hagglers write, giving phone number: Dave Duncan, 8 All Saints Road, St. Annes-on-Sea, Lytham St. Annes, Lancs. FY8 1SZ.

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Rick Masters, The Chief Timer, driver and Emergency Medical Technician for the Owens Valley Hang Gliding Center filmed every day of the XC-Open, XC-Qualifier and the XC-Classical using one of the world's finest lightweight colour/sound motion picture cameras. Now Rick is offering you sixty minutes of the very best footage selected from over a mile of film, and available on VHS or BETA VIDEO CASSETTE from a professional lab master.

1981: Flights of 266 km! Altitudes of 6705 m! Please send cheque or money order. Add \$5.00 for postage, tax and handling (\$10.00 for shipment outside U.S.)

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Rick Masters
P.O. Box 3094
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USA

Annual Draw

IT has come to my notice that some members did not receive a book of Annual Draw tickets with their April issue of Wings!

We still have a few books left. If you did not receive one and want one, First Prize £1,000, ring or write to the Taunton office immediately. The draw closes on June 25.

Barry Blore.

Glider market

MOONRAKER 77. Medium. Good condition. Ideal P1. Flies beautifully seated or prone. £200. Ivor, 37, St. Lukes Rd., Cheltenham, Glos.

WASP 229 B3. Immaculate condition, red, white, blue, seated harness, only flown a few times, never crashed or bent. Suit club for beginners. (see picture in Wings! Nov. 81 page 25) £150. Phone 0702 204029 (Southend, Essex).

SUPERSCORPION C Plus.

Fair condition, new rigging throughout. Hiway seated harness. £300 the lot. Phone Harlow 419873, evenings only.

FLEXIFORM SPIRIT, large. Good condition. Complete new lower rigging. With seated harness. £220 ono. Phone Halifax (West Yorks) 245570.

FLEDGE III. Modified for easier rigging. £535 ono. Phone Paul (0482) 225672.

EVERYONE who knows me, knows I've looked after my **VORTEX 120**, and I've enjoyed flying it. Attractive colours, good condition. £300 ono. Ian Butcher, 01 943 2756 (home).

CYCLONE 185 MkII. Excellent condition, superb thermal machine. £410. **MIDAS E.** Suit P1. £185. Phone Al MacNeish, Elgin (0343) 44865.

VORTEX 120. Large A-frame. Brand new lower rigging. Two spare up-rights. Ideal P1. Never pranged. £320 Dave, 01 427 3068.

SUPER SCORPION rigged for seated or prone. Excellent for P1. Including prone harness. £265. 1 Fountains Walk, Lowton, St. Marys, Nr. Leigh, Lancs. Leigh 675365.

Medium **STORM** hardly used. **WINDHAVEN** parachute with ultra light sports harness also seated harness. Offers around £650. Telephone (0527) 71626 daytime or (0684) 310322 evenings.

TYPHOON large. Two months old. Excellent condition — few flights only. Prone harness, flying suit, helmet, windsock, car support — all for £650.00 Unbeatable bargain. Tel: 01 723 4867 (London).

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GIFT MIDAS SUPER E excellent condition, very low air time, seated or prone, £150. Kidderminster 515884 5-8pm.

ATLAS 16 in good condition, white with orange underside and tips. £450 Tel: Darren 02575 3423.

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BIRDMAN MOONRAKER 77 V.g.c. recently re-rigged and overhauled. Gain safe flying experience on this ideal P1/intermediate glider. I did. £200. Lossiemouth 2660.

DEMON 175. Latest model. 15 hours air time. Blue/white custom sail. Recently tuned and overhauled. £700 ono. 0277 451406 eves.

GYR Mk I, medium. Flies seated or prone. Combines good handling with high performance. Good condition. £375. Tel: Easingwold 810696.

MIDAS SUPER E, beautiful colours, immaculate condition, good performance, complete with seated harness flying suit. £175. Surrey. Tel: 01 393 0764.

VORTEX 120 2 years old. Flies impeccably. Rigged for prone. Plus seated harness and rigging. Gift at £265. Wickford (03744) 4542.

A **VORTEX 120** large and small A frame. Can be flown seated or prone. Suitable for beginners. Price £300 ono. Telephone: 01-427-1056.

SKYHOOK SILHOUETTE (medium), excellent condition. Yellow and blue sail. Easy rigged seated or prone. Spare upright included (unused). £325. Bob Dunthorn, Aberdeen (0224) 877899.

Small STORM. Lightweight. Suit pilot under 11½ stone. Excellent condition. Low airtime. £390 ono. Phone Kay Simpson (0462) 52103 evenings.

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 Vortex 120 £350, Cyclone
 sometimes available,
 £925, Harness chutes
 pacer 250 just run-in
 Nimrod 165 £825, Tri-
 2/165 available August,
 Used stock includes Magic
 altimeters from only £23
 value at £107, and DIPLEX
 ARBEE varios — great
 on parachute systems,
SKYMASTER'S marvel-
 Graham Slater,
TRI-PACER trikes from
 gliders for August delivery),
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THE B.M.A.A. is the Association for all seriously minded **MICROLIGHT AVIATORS.** Our magazine **FLIGHT LINE** is full of the latest information. For further details, please send s.a.e. to Secretary, B.M.A.A., 20 Church Hill, Ironbridge, Telford, Shropshire.

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Schools

SUSSEX COLLEGE OF HANG GLIDING, 18b Queens Rd., Brighton. Teaching. Prone and top landing. Power too (on proper airfields). Spares, repairs and sales. F.L.A.C. Hiway. Lightning, Sigma 12 metres, £350. Lightweight Mini Floater, £575. GYR Marauder Super Scorps (2 virtually new at £600) etc. SSC wanted part-ex.

WELSH HANG GLIDING CENTRE FLYING CLUB. Beginner to advanced courses. 1 day introduction, £11.50. Colour brochure from W.H.G.C., Dept. W., Crickhowell, S. Wales. 0873 810019.

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pre-p.1 to p.2 standard. Learn, to soar on the Island's easy coastal sites with the club's instructor.

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Isle of Wight
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PARACHUTE WANTED. Good price paid for a parachute in perfect condition, preferably 24'. Contact Robert, 01-300-7542 evenings.

Slippery Sam slides home

THE Lakes league saw only cross-country tasks — and the main competition in XC these days seems to be to get the best tea and bickies on landing.

Never mind distance, pilots are becoming more and more selective when it comes to choosing a landing field — which may just account for Bob Calvert's poor showing this weekend...

On the first day's flight he landed close to a large mansion. Minutes later he was whooshed back to the house by the farmer returning from honeymoon in his Rolls. The remnants of the previous week's reception lay all around... it took several seasoned pilots to extract Calvert from this one.

Saturday

Site — Binsey. Wind SW 15-25kts, light thermals

The first day belonged to the underdogs and the cows. A hefty SW wind happily spent the day chewing on thermals and gliders, while a poor lapse rate kept most of the field chopping it up on the ridge.

It was a difficult day to work out conditions and no-one seemed eager to launch. Most stayed huddled in groups discussing the



Pipped at the post — third-placed Mark Silvester who did the weekend's best distance.

latest innovations from manufacturers.

by Mike McMillan,
reporting from Keswick on
the Second League

13.30. Found myself close to cloudbase at 1,500' A.T.O. with Andy Wilson and Keith Reynolds circling close by. Behind the hill, a clear blue sky indicated little thermal activity, but with a warm and diminishing wind I decided to run for it over the back. "Should stir up a bit of activity on the ground," thought I (It did, the minimum distance to score had been set at 5km, and one pilot flying that distance would mean the task was on).

There was no thermal activity for five miles but the air was buoyant and the glide angle good.

Thereafter, heat from the ground burst up against a thin inversion at 500' A.G.L. It was then a matter of circling in the lumps and bumps as long as the arms held out. I managed to add 12 miles to my glide, most of it around 200' above the ground, landing on the outskirts of Carlisle an hour after take-off.

Driving back two hours later to retrieve my glider I had the frustrating experience of following Mark Southall's pea green Typhoon all the way back past my landing field! He too was circling mile after mile little above the height of the church spire in Carlisle. Mark Silvester showed the start of a

Pictures by
Steve Thompson and
Tony Rathbone

promising return to form on his new mylar Azur, slipping by unnoticed to make 38.7 km.

For most of the others it was a tale of woe — Steve Goad fled for his life from marauding cows, fighting a rear-guard action with a bottom batten against a steamed-up "heiffer/bull", only to find Andrew Wilson in the next field pinned down by a farmer with a large stick.

He had confused Wilson for Goad, landing in his field of cows. All ended happily in the farmer's kitchen munching cakes and sipping tea.

The farmer's ire was roused by an earlier invasion by a sail-plane crew recovering a downed glider and leaving the stock gate open. One sees how easy it is to lose friends.

Meanwhile, less than a mile away, Peter Harvey left his rigged glider in a field of cows while temped away for the inevitable beverages. This error cost him dearly, he returned later to a modified glider; circular battens, preformed keel, camouflaged sail and an interesting array of vortex slots on the tips. Beware of cows — they are big, heavy and curious.

Day results: Silvester 200 pts, 38.7km; Southall 160, 27.6km; McMillan 154pts, 23.5km.

Sunday

Jenkins Mountain — light SE wind. Hot and stable!

The day was dominated by the prospect of climbing 1,500' up the mountain to get as close as possible to the fickle SE breeze. The forecast had predicted ultra-stable conditions and broiling sun. The sun broiled all right but the mass of mountain behind us accelerated the thermals up through the inversion layer, creating a strong convection flow over the Skiddaw range. With the window opening at 13.00 for open cross country, nobody was over anxious to be the first to test conditions. Andy Wilson showed his true colours and lobbed off first, followed swiftly by myself, Bailey, Calvert and then a flurry of activity as we wound upwards towards the distant clouds, 6,200' A.S.L.

The air was thick with gliders seeking escape from the mountains, but headwinds met every attempt. A veil of cirrus slowed thermal activity and all made a dash for the sea-breeze front now discernable towards the coast. John Stirk made the most of the front, and headed off to the coast, landing 25.2km from take-off. Silvester flew another good one with 22.6km. Ron Freeman showed considerable resources with a late flight from the mountain resulting in the second best of the day — 22.7km.

Overall positions were now; Silvester 291, McMillan 214, Southall 191.

Monday

Wind SE veering W, very light. Upper level instability. Overcast at times. Souther Fell.

"Only a short climb, 1100' up Souther Fell today. Of course it's steeper." So spoke our director, Trevor Birkbeck.



Second-placed Andy Wilson — "brilliant".

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Tony "Slippery Sam" Hughes

At the top, the wind blew 30° off to the south, well within the league norm. The briefing explained the task — A race to Aspatria, 45km following the ridges, 22km direct over the back.

Well, the wind now blew 90° of the slope, so we hauled our gliders a mile to the end of the ridge. Andy Wilson, fired up for the task, showed no hesitation in lobbing straight off the end.

Dick Brown followed suit. It didn't look to hopeful, with both pilots scratching around for lift, but Wilson slowly worked his way our towards Scats Fell, suddenly disappearing behind the bluff. The task had been altered to a timed event to prevent overcrowding on the ridge. Hughes was next to go, followed by Slater and myself. "Slippery Sam" lived up to his name, easing himself round the corner some 50' higher than Slater

and myself. We encountered the lemming's dilemma as glider after glider rounded the corner only to find a headwind making any further progress impossible.

Meanwhile, Hughes and Wilson had joined forces on Skiddaw looking for thermals to ride them on their way. The day had turned hot and sullen, preventing any real lift, and leaving a glide out towards goal. A navigational error had Hughes flying Bassenthwaite Lake, leaving Wilson to take first place with a distance of 20.5km. Hughes picked up 184 points with his 18.6km. Equal third were Chris Taylor and John North, taking 69 points for their 3.5 km! Their brilliant flights hoisted Hughes to first place with Wilson ten points behind. Mark Silvester could feel a little disappointed with third place but had the consolation of moving up to second in the league.

LATEST

Observer course

The SHGF is arranging a weekend course for Observers (or P2s hoping to be Observers soon). It is hoped to cover such ground as picking out faults, asking the right questions to make pilots think, tips on giving advice (without actually training), and maybe a little meteorology and site analysis (for strange, i.e. unknown sites).

The course will run on July 3-4 and is likely to be held around Glenshee. Anyone who wants to attend is asked to contact me in advance on Aberdeen 0224 322173 (early evening best chance) or 882262 (work). Or drop me a line at 60 Hammersmith Road, Aberdeen AB1 6ND.

Robin R. Smith
(SHGF Secretary)

Mill Hill appeal

Adur council's appeal against a magistrates decision in favour of hang gliding at Mill Hill will be heard in the High Court on June 22 and the BHGA has taken on counsel to fight its case. A major fundraising appeal is planned to boost the association's fighting fund as the case could establish precedents with a bearing on flying at a number of other sites.

Ann out

BHGA and BMAA President Ann Welch has been ousted as Vice President of the FAI following a vote at the Royal Aero Club, it was learned as Wings! went to press.



Positions

				Overall
1	HUGHES	Magic*	350	877 (2)
2	WILSON	Magic	340	705 (6)
3	SILVESTER	Azur*	333	761 (4)
4	McMILLAN	Magic	256	837 (3)
5	CARR	Magic*	233	449 (25)
6	BROWN D.	Typhoon	225	701 (7)
7	SOUTHALL	Typhoon	217	593 (15)
8	CALVERT	Magic*	213	923 (1)
9	FREEMAN	Typhoon	210	434 (26)
10	LEASON	Typhoon	202	699 (8)
11	WATERWORTH	Typhoon	196	564 (19)
12	STIRK	Typhoon	194	611 (=12)
13	HARRISON	Magic	184	470 (24)
14	HOBSON	Azur*	178	755 (5)
15	RICHARDS	Typhoon	169	251 (38)
16	HULL	Magic	168	600 (14)
17	CARNET	Magic*	163	589 (16)
18	MAHER	Typhoon	157	432 (27)
19=	BAILEY	Magic	156	691 (9)
	TAYLOR	Demon	156	329 (34)
21	GOAD	Magic	154	367 (31)
22	GODDEN	Comet	153	287 (36)
23	BLUETT	Magic	152	365 (32)
24	HUDDLESTON	Magic	150	567 (18)
25	CARSON	Comet	145	320 (35)
26=	BROWN J.	Magic	141	552 (20)
	BELL	Demon	141	489 (22)
28	BIRKBECK	Typhoon	132	538 (21)
29	HARVEY	Typhoon	126	370 (30)
30	IDDON	Typhoon	124	393 (28)
31	NORTH	Typhoon	108	244 (41)
32	FENNELL	Typhoon	103	349 (33)
33	SMITH	Comet	100	650 (=10)
34	HARGREAVES	Comet	91	476 (23)
35=	ASQUITH	Demon	86	249 (=39)
	HIGGINS	Demon	86	149 (43)
	ELLISON	Comet	86	581 (17)
38	JOHNSON	Demon	78	387 (29)
39	ATKINSON	Typhoon	73	257 (37)
40	REYNOLDS	Lightning	66	611 (=12)
41	HUDSON	Typhoon	59	233 (42)
42	SLATER	Magic	58	650 (=10)
43	WALKER	Demon	42	249 (=39)
44	MILTON	Typhoon	0	48 (44)

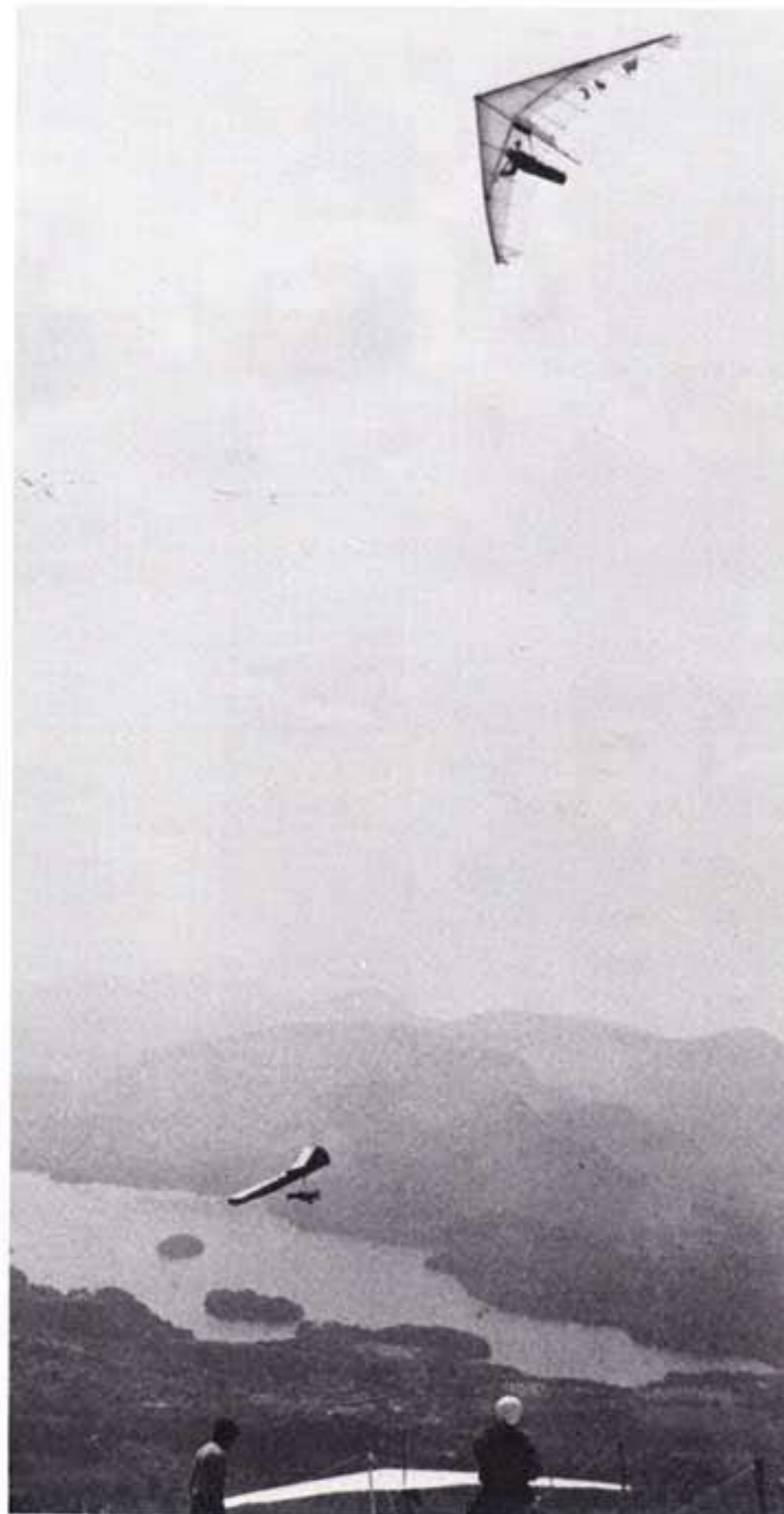
Guest

Beer	Meteor	43	414
------	--------	----	-----

Women

1	GANDERTON	Magic	200	580 (1)
2	WINTON	Comet	147	284 (2)
3	HUXTABLE	Demon	147	258 (3)
4	SIMPSON	Demon	100	229 (4)

* Denotes Mylar glider



The ridge at Binsey

TOWING DEATH

BRIAN Wooltorton, Pilot Two and BHGA Observer, from Felxstowe, was killed in a tow launch accident at a BHGA tow meet at Worming Hall airfield in Oxfordshire on June 6.

BHGA Chairman Roy Hill has asked for all towing activity to be suspended pending the results of inquiries into the accident being conducted by John Hunter and Mike Watson on behalf of the Board of Trade.

A full BHGA board of inquiry is likely to be set up to look into tow launching.

"There are a number of unanswered questions attached to tow launching that require further investigation," said Mr. Hill.

Mr. Wooltorton was flying a Flexiform Vector using a static winch and a bridle system similar to that developed by Bill Brooks.

Witnesses saw the glider climb very steeply from take-off before the system's inbuilt weak link gave. It was then seen to enter a near vertical climb before it dived with the pilot ostensibly weightless, tucked, broke a leading edge outboard of the cross tube, tumbled and spiralled into the runway.

The pilot died almost instantaneously. The winch was operated by his brother, Bob. The meeting had been called to co-ordinate towing developments up and down the country.

PRIZE CROSSStubeWORD

No 9 by Ray

SOLUTIONS to Stan Abbott, 72 Hartley Avenue, Leeds LS6 2LP by July 12. Sender of the first correct entry opened wins £10 from Mainair Sports. You can photocopy the grid or write your solution clearly if you don't want to cut your Wings!

CLUES

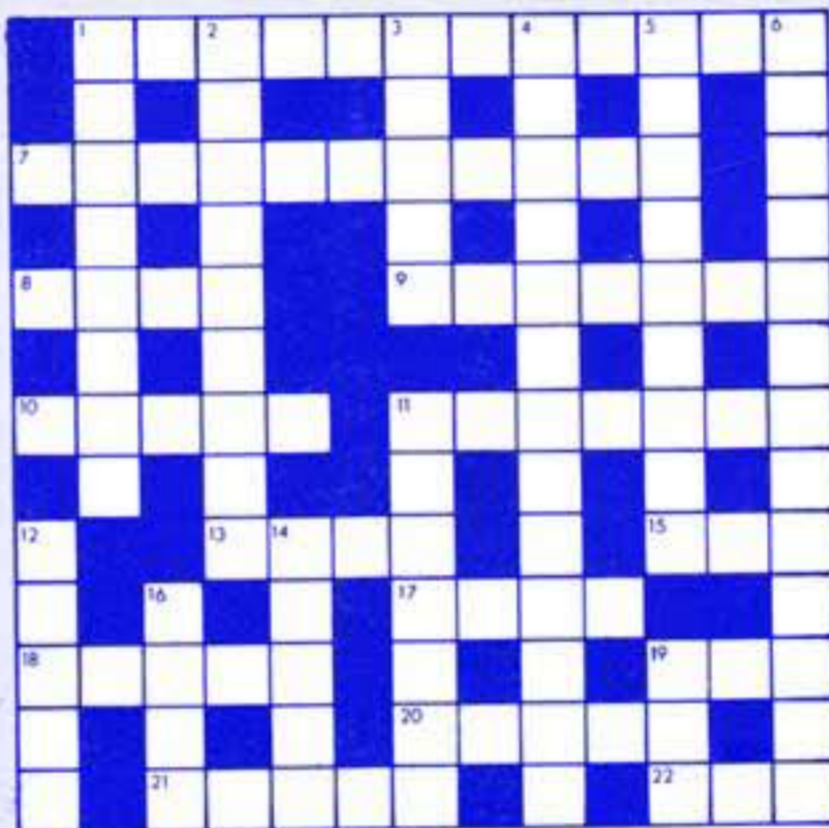
Min Sink

- 1) High-flying moisture carriers (6,6)
- 7) "Peturb thing", result of hard landing (4,7)
- 8&9) Very rough template or drab colourscheme (4,7)
- 10) A dusty one could give rise to trouble (5)
- 11) Definitely not flexible (7)
- 13) Rabbit, roulette or rugby (4)
- 15) Morning moisture to marry backwards (3)
- 17) Whose law we sometimes adhere to reluctantly. (4)
- 18) Prone fibbing (5)
- 19) Essential for our upkeep (3)
- 20) "Bassy", what depth. (5)
- 21) Wish I could do this in turbulence (5)
- 22) Natural housewarmer(3)

Luffing

- 1) Popular West country Indian flyer (8)
- 2) A second coming, perhaps, out and back? (9)
- 3) You need to hang on to this (5)

- 4) High pressure scratching periods (5,4,4)
- 5) Wasn't taken to fly-in. Raw (9)
- 6) Marooned rigging materials, maybe (8,5)
- 11) Furniture polish. What a buzz! (7)
- 12) "Slade". Northern fly-spot (5)
- 14) Celestial Pilot (5)
- 16) Practising 18 across (4)
- 19) Initially an American kite. (3)



Winner of the April puzzle was B.F. Jones of Jeddah, Saudi Arabia.

May winner will be announced next month.

Thanks to all those who answered the plea for more puzzles — very encouraging!

Because of the delay to May Wings! and the extended deadline for puzzle entries, May's solution will now appear next month.



Chris gets a medal

RETIRING BHGA secretary Chris Corston will receive the Royal Aero Club's Bronze Medal for his services to hang gliding.

His nomination — accepted by the RAC at a recent meeting — reads: "Chris impresses everyone who meets him with his enthusiasm and integrity."

"His interest in hang gliding began in 1973 when there was but a handful of pioneers teaching themselves to master this brand new sport."

"Chris could be seen at all the popular sites packing in more air time than anyone else and generally enthusing about the joys of free flight."

"It was only natural that he should be made the secretary of the BHGA at its inaugural meeting. It's also typical of Chris that he should give up a successful electrical business and hang gliding agency to devote his time fully to his duties for what can only be described as a pittance for a salary."

"The success of hang gliding and the BHGA can be attributed largely to Chris's efforts and energies in those early days."

"Tragically in 1979, while on a hang gliding business trip to Ireland, Chris suffered an accident which broke his back and left him a paraplegic. Many would have given up at this point but, in spite of many difficulties and setbacks, he resumed his duties as secretary of the association and has continued to give loyal service to the members."

- Chris got another surprise at the May meeting of BHGA council (his last) when Diane Hanlon presented him with a cup on behalf of the Welsh Hang Gliding Federation as a mark of gratitude for his dedication.



Fédération
Internationale
Aéronautique



BHGA



Member of the
Royal Aero Club
of the UK

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Commercial Editor — Sylvia Howard, 4 Somerwood, Rodington, nr. Shrewsbury, Shropshire (Upton Magna (074 377) 365).

You can get Wings! every month by joining the BHGA or on subscription of £12 a year. For overseas subscriptions, send Sterling International Money Orders — £12 surface mail or £24 airmail — for your annual subscription. Membership details will be sent on request. Address ALL QUERIES to the Taunton Office.

The views expressed in Wings! are not necessarily those of the association, its council, officers or the editor.

All contributions to the magazine are welcome. Articles should be typewritten (double-spaced), one side of the paper only where possible. If not typewritten, they should be CLEARLY written, with plenty of space between the lines.

Photographs should bear full captions and any material to be returned should be accompanied by a stamped addressed envelope. Any other material will be kept and filed for future use.

The Editor reserves the right to edit contributions.

If your Wings! does not arrive, or if you change your address, please contact the member-

ship secretary at the Taunton headquarters. Please give FIVE WEEKS notice of change of address and in all correspondence quote your full name, address and MEMBERSHIP NUMBER (where applicable).

If you, your club or any hang gliding activity gets written up in a local or national paper, please send a cutting to the Taunton office for our cuttings collection (this applies to the UK only).

The BHGA Council

President, Ann Welch OBE; **Chairman**, Roy Hill (Longworth (0865) 821129; **Treasurer**, Percy Moss (0926-59924).

Members: David Bedding, (0844-7186); Diane Hanlon (051-652-5918); John Ievers (049-525-4521) Mike Watson (0895-833176); Terry Prendergast (029673-8033); Jim Taggart (0874-4046); James McMenemy (09804-6147).

Officers and staff: Principal Executive Officer; Barry Blore (0235-834033); Secretary; Chris Corston (0823-88140); Training Officer, Bob Harrison (0706-53755); Medical Adviser, Dr. Dunstan Hadley; BHGA Solicitor, Anthony McLaren, Membership Secretary, Janet Hayes; Record and FAI Award Claims, Rick Wilson; Radio Communications Officer, Dave Smith.

Record and FAI Award claims, Rick Wilson (0734) 21099; Radio Communications Officer, Dave Smith; Airspace Co-ordinator, Ted Frater.

Advance Airspace Notam

The Army Air Corps celebrates its 25th Anniversary on July 20 when it will hold a timed helicopter triangle task between 6.30am and 9pm, starting and finishing from R.A.F. Middle Wallop, Hants. VMC conditions apply — minimum height AGL 500ft. Helicopters will leave at 15 minute intervals. Up to 50 will participate.

The following hang gliding sites are likely to be overflown.

1. Combe Gibbett Inkpen Ridge.
2. Bell Hill. — Blandford.
3. Berwick North. Shaftesbury.
4. Mere — White Sheet Hill.
5. Westbury. White Horse.
6. Milk Hill. Plursey.

If you fly any of these sites on this day, please keep a good lookout. In the FIR the principle is "SEE AND AVOID"

Ted Frater, BHGA Airspace.