

# wings!

The Official Magazine of the BHGA

Feb. 1980

*Approval  
Symbols*





**CANOLFAN BARCUTA CYMRU**  
**WELSH HANG-GLIDING CENTRE**



Hiway's new advanced Competition Glider,

**THE VULCAN**

is available from stock at the Welsh Hang Gliding Centre.

FULL DETAILS ON THE VULCAN AND OUR OTHER HANG GLIDING ACCESSORIES CONTACT:  
THE WELSH HANG GLIDING CENTRE, NEW ROAD, CRICKHOWELL, SOUTH WALES. TEL. 0873-810019  
BARCLAYCARD, ACCESS AND PART EXCHANGE WELCOME



*Cover: Steve Pionk TV GC on his Gryphon captured through the lens of Ken Barker.*

# WINGS!

**Editor:** Brian Milton, 31 Westbury Rd, Bristol BS9 3AK. Bristol 621412  
**Layout Artist:** Mike Hibbit, 2 Mitford Close, Whitley Wood, Reading. (0734) 864543  
**Commercial Editor:** Sylvie Howard, 4 Somerwood, Rodington, Nr. Shrewsbury, Salop.  
**Area Reporters:** Scotland: Ian Trotter, North: John Hudson, Eire: Roy Hammond  
 South West: Steve Moss, Wales: Rob Symberlist. Printed in Great Britain by Blackburn Print Ltd. Hove, East Sussex.  
**BHGA Council:** President of Association: Ann Welch, OBE., Chairman: Reggie Spooner (Coves 292305), Treasurer: Derek Evans (Sevenoaks 59995)  
 Brian Milton, Jeannie Knight (Ashington 892770),  
 John Hunter (Hatfield 71027) Ashley Dcubfire (Marlborough 52909) Roy Hill (0865 735204),  
 David Squires (041 943 0322)  
 Northern Ireland: Chris Simmons, **Council Officers:** Technical Officer: Alan Barnard (Crewkerne 72478)  
 Training Officer: Keith Cockcroft (Halifax 882883), Registration Officer: Terry Dibden  
 (Wimborne 886464), Medical Advisor: Dr. Dunstan Hadley, BHGA Solicitor: Anthony McLaren (Halnaker 457)  
 Development Officer: Barry Blore (0235 834033)  
 Secretary: Chris Corston (Taunton 88140)  
 British Hang Gliding Association, 167a Cheddon Road, Taunton, Somerset, TA2 7AH.  
**Letters Editor:** Stanley Pottinger, 31 Westbury Rd, Bristol BS9 3AX

4. Editorial
5. Parachute Seminar by Jim Taggart
8. Citations for Royal Aero Club Awards by Reggie Spooner
10. Turning — Use Your Head by Tony Fuell
12. Airworthiness by Barry Blore
14. Flying into the Eighties by Dave Weeks
15. Sea Thermals by Rob Bailey
16. Clouds to Cause Concern by Ivor John
18. Best of Club Magazines
20. News
23. Airmail
25. Talking of Safety by Harry Unsworth
25. Loser takes Nothing by Dave Brewer
26. Small Ads

*WINGS!* may be obtained regularly by joining the BHGA or on a subscription. For full details and information about the sport send a s.a.e. to BHGA, 167A Cheddon Road, Taunton, Somerset. Membership of BHGA includes Public Liability Insurance cover.

If members or subscribers change address or copies of *Wings!* do not arrive please contact the Membership Secretary at the Taunton Office. In all correspondence give your full name, address and membership number (if applicable).

If you, your club or any local hang gliding activity gets written up in a local paper, national paper or magazine please send a copy to the Taunton Office for the BHGA press cuttings collection. This applies to the UK only.

# EDITORIAL

There's a considerable difference of opinion within BHGA Council over the means used to enforce airworthiness standards on hang gliders sold in Britain. Following a resolution at the 1979 AGM, no hang glider may be advertised in *Wings!* unless it has been awarded a British Certificate of Airworthiness. At the moment, only one new glider so conforms, the Hiway Vulcan, although the Hiway Superscorpions, Skyhook's Safari and Sunspot, and the presently defunct Vulturelite Emu have been awarded C of A's. It will be apparent that most of the gliders flying in Britain — probably the glider you fly — doesn't have a C of A.

## History

Airworthiness has been with us since the formation of BHGA in 1974. The key to the CAA's decision to leave us to govern our own sport is the assurance we made, nearly six years ago, to bring in an airworthiness scheme. Time and again, one such scheme has arrived on BHGA Council's table. After much impatient discussion, the scheme has gone off again — I don't really know where, as I suspect most other Council members don't know where — until the initiative by three men last year.

John Ievers, one of the directors of Hiway, is chairman of the BHGMF, an astute and honourable negotiator. Barry Blore is the BHGA's Development Officer, a man of some determination. With the backing of Chairman Reggie Spooner, John and Barry made us face up to responsibilities we had agreed were ours, but which, for some reason, never hardened into enforcement.

## Case for Keeping Restrictions

No manufacturer wants to enter an airworthiness scheme which will cost him money, time and hassle, if there's a possibility that his competitor will not enter. The competitor ends up with a commercial advantage, as it costs about £15 per kite to go through the scheme for product liability insurance alone to indemnify the BHGA. If I'm forced to go through the scheme, a manufacturer naturally says, then so should everyone else.

One part of the scheme, the most expensive, is indemnification. If BHGA gives a kite approval, and then there's an accident and someone decides to get the manufacturer legally, they'll also go after BHGA Council — that's your representatives — want protection against that happening. A traditional way, in a free market economy, is to limit liability, and in other circumstances, suing a limited company might put it out of business, but doesn't totally ruin the principals. No airworthiness scheme would be worth a candle if companies who had been given approval disappeared at the first sign of trouble, to re-appear in another guise.

The only weapon the BHGA has is *Wings!* and space available for advertising. If manufacturers are denied that space, every manufacturer, domestic or foreign, until the gliders they advertise have received the BHGA CofA, that way the airworthiness system will be enforced without having to go into rigid inflexible bureaucratic systems to make things work . . . which BHGA hasn't the capacity to enforce anyway.

If we want airworthiness, we must have teeth to make it work. Advertising restrictions in *Wings!* are teeth. The alternative is to go to the CAA and say, sorry, we can't enforce these regulations, can you do it instead?

## Case against Restrictions

They are overkill. Pilots won't buy gliders that haven't got approval, so there's no need for crippling restrictions. Market forces and common sense will

The problem, which isn't always apparent to members, is that much of what we do has to be done *by consent*. We have no authority to demand a fine, as one pilot has urged us to do. We have to get agreement, and if we ask for something of manufacturers, they in turn can ask us for something back. To enforce airworthiness, BHGA Council, in line with the AGM decision, agreed that we would not accept advertisements without the BHGA C of A.

*Wings!*, as you know, has shown the effects of this decision. The November and December issues, for which Jeannie Knight drew criticism, were only 16 pages thick. That was all we could afford. My first issue, 28 pages, wasn't justified on the amount of advertising we attracted, less than 4 pages. This issue doesn't help BHGA's finances either. Both are meant to show what we might achieve if we break out of the strait jacket we have put ourselves into. But no one wants to risk losing the airworthiness scheme after so much blood and sweat putting it together.

Brian Milton

decide the issue.

*Wings!* costs, gross, about £25,000 a year to produce, and accounts for more than half the money contributed by the membership. It's too delicate to use as a weapon. Before the restrictions, 6 months income from advertising was £4,891 . . . after the restrictions, it was £2,454 for 6 months . . . so far, enforcing the system in the way we do has cost us £2,400, and will keep bleeding away money, even if BHGA subs — which haven't risen in two years — go up to £12.

The *Wings!* restrictions don't mean manufacturers can't advertise . . . they mean advertisers can't advertise in *Wings!*. Many of them have now gone to club magazines, which are healthy and growing, to talk to flyers. The result, as a cold look at the last six *Wings!* issues will confirm, is that our national magazine is being crippled.

At the moment, there's no real incentive for schools to advertise, because *Wings!* is read by people who are already pilots. Manufacturers want to advertise what's new, which the restrictions stop them doing. No foreign manufacturer can let you know what he's got without going through a real song-and-dance in Britain to earn the right to talk to you, even if he's passed the toughest of all approval schemes abroad. We are strangling ourselves with our own restrictions.

## Summary

This subject is coming up for debate at the AGM. It's central to where the BHGA and British hang gliding go in the next decade. The arguments for both sides could be better put. I myself am a protagonist who felt one way six months ago and now feel another way. At the AGM both sides will be put with conviction.

**The debate is not about whether we have an airworthiness scheme. We all believe in that. It's about how we enforce such a scheme, and whether the way we have chosen is bleeding us to death.**

## Fatal Accident, 19th January 1980

The first fatal hang gliding accident in Britain for 7 months occurred on Saturday 19th January, just before 1 o'clock in the afternoon, at Nont Sarah in the Pennines. 53 year old Alfred Williamson, from Widnes in Cheshire, flying a Skyhook Sunspot, died after being blown back into cloud and then diving into the ground. It was the first-ever fatal, in 7 years, on a Skyhook hang glider.

The BHGA Accident Investigation Officer, John Hunter, will be writing a full report on Mr. Williamson's death. What follows is journalistically correct, but by no means the whole picture. It should not be taken as the full report.

At least four pilots were flying on Nont Sarah that day. The wind, 14/18 mph, appeared pretty smooth on the ground. Cloudbase was at about 800ft. Len Gabriels, who manufacturers Skyhooks, had been told by his firm's pilot, Mark Sylvester, that it was pretty turbulent, but decided to fly anyway. He took off just before Mr. Williamson (although another account says Mr. Williamson had been flying for half an hour). Len says he quickly reached 500ft. above the top, didn't like it at all, and came down, having difficulty in placing his landing back on the top in the position he wanted. He remembers saying to Alfred Williamson's brother "bloody hell, that was terrible up there." It was thought later it may have been 'convergence' lift.

In the air, just before 1 o'clock, was another local pilot, Fred Stogdale, who also came down quickly after Len, and the British champion, Bob Calvert.

Len says he saw Calvert go through the cloud with bags of height, making rebel yells, and as Calvert is wont to do, off he went cross-country. He made 16 miles before landing, brilliant for anyone else, normal for Calvert.

Meanwhile Alfred Williamson, who had only recently converted to prone, was seen by Len, still facing into wind, going backwards, gradually disappearing into cloud at about 800ft. The next thing Len saw — he's the principal witness — was Mr. Williamson coming out of the cloud in a steep dive, his sail apparently luffed. Another witness says he saw Mr. Williamson do a 360 before going into the steep dive. The kite crashed about 500ft. back from the ridge, having struck at an angle of about 70°. From the position of the body, there's a possibility he may have fallen through the A-frame.

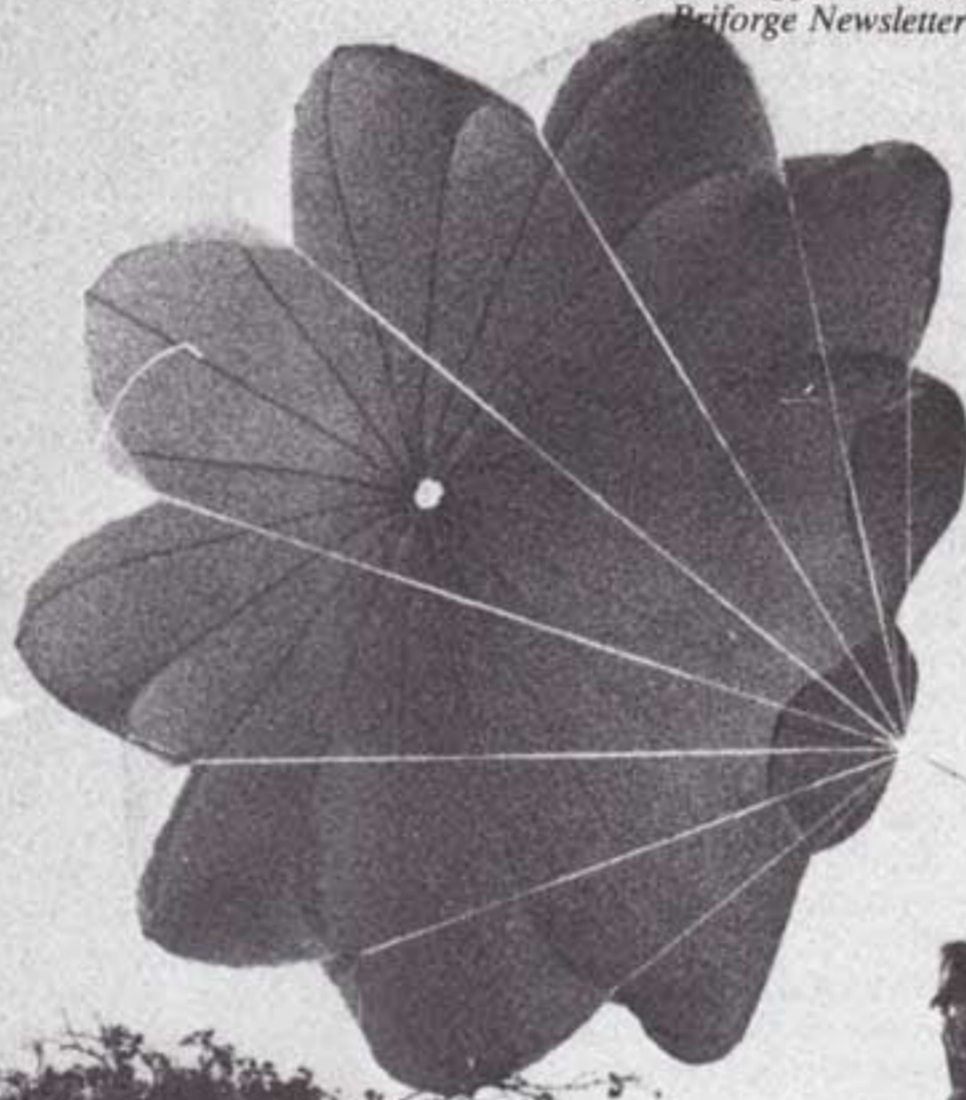
The Sunspot was partially destroyed, but examination of the wreckage showed the over-centre lever — which gives tension to the rigging — to be hanging free. One point the investigation will look at is whether this occurred because of the crash, or was loose at take-off. The kite was one of 10 types to get a BHGA Certificate of Approval, and passed its drop test easily.

One comment pilots on the scene have made, and experienced pilots elsewhere said when they heard the circumstances of the crash . . . "If ever I saw a case where a parachute would have saved a life, that was it."

# Parachute Seminar

held at Stoneleigh, Coventry,  
December 15th, 1979

Article by Jim Taggart — taken from the  
Briforge Newsletter



The meeting, organised by John Hudson of MAIN-AIR SPORTS, following a long series of letters in *Wings!* was a very profitable one. Judging by the questions, people were confused about what they wanted.

The opening speaker was Charles Shea-Simmonds, a former British Parachute Champion, National Coach of the BPA, and the author of the standard reference book on 'Sport of Parachuting'. He made several points, including:

- ★ He thought that a 'lines-first' deployment would be better than a 'canopy-first' system, such as ours is, because there would be less chance of it and the lines falling away and billowing into the glider sail and wires.

- ★ We must develop our own systems of reserve 'chutes. Once done, we shouldn't then get sport parachutists to re-pack or 'interfere' with them, as they may have different reasons for particular features incorporated in them, our sport to theirs.

- ★ We must start training our pilots to pack their own 'chutes.

- ★ We should insist that everyone deploys his own 'chute, until he can do it without thinking. Whether it's done on his glider or on a training A-frame is immaterial.

- ★ Light is NOT best. There was a tendency for sport paras to go for lightness and the result has been reserve systems being sold that were not strong enough for the stresses involved. He thought a 7-9lb 'chute better than a 4-5lb one.

- ★ He recommended that the 'chutes have the same strengthening features as found on military reserves.

- ★ He saw no reason why drogue deployment should not be used.

John Hunter, the BHGA's Accident Investigator, made the following points:

- ★ In no crash had any hang glider exceeded 70mph terminal velocity.

- ★ On some parachutes he had seen the legend 'THIS IS NOT A PARACHUTE' and 'DO NOT OPEN ABOVE 50MPH'. He thought this was scandalous.

- ★ During some crashes, the pilot had been forced away from the A-frame so that he could not deploy an A-frame mounted rip-cord. Thus, rip-cords should always be mounted on the harness.

- ★ In the majority of cases, the glider landed with the pilot hanging beneath it, i.e. in the 'normal' position.

- ★ Space capsule 60ft. canopies pack into the same size as ours do.

- ★ Training was a most important part of *effectively* deploying your 'chute.

- ★ A lot of deployment systems took too long to inflate the canopy.

- ★ Some required a throw of 30ft. before the deployment sequence could start, the bridle needing to be at full stretch before the lines came free and the canopy then started to deploy.

- ★ He thought that the 'chute should be connected to the harness carabiner.

- ★ With the improvement in the pitch stability and strength of gliders, most deployments were now as a result of mid-air collisions and turbulence.

I spoke next, and felt there were three types of hang gliding pilot:

1. The free fall experts who have done cutaways and unstable exits, who KNOW where they are in the air, and who have practised emergency drills IN THE AIR.

2. Ex-military paras and hang gliding pilots with many hours flying. They have a fair idea of their capabilities and are more aware of where they are in the air than many.

3. The Rest. They could have just come from the kitchen sink or an office and have little awareness or experience of potential dangers.

Consider how each of these types would react to a situation where the parachute has to be deployed and which group would react best.

Type	No panic	Not dazed	Pull in good time	Correct deployment	Tries a 2nd time
Expert free faller	8/10	6/10	8/10	9/10	9/10
Military para etc.	5/10	4/10	4/10	6/10	5/10
The Rest	2/10	3/10	2/10	4/10	2/10

I pointed out that the Germans HAD to wear 'chutes in law and that this must have stimulated development. Thus, there was not merely the harness-mounted pack but other types too. I showed the 'HELP' Kingpost-mounted rig obtained for the occasion by Mick Appleby from Norbert Schwarze, and described the pack mounted in the crook of the kingpost and flung out by a bungee fastened to it and the rear of the keel. I included sprung drogue 'chutes, saying that the spring was taking the place of your requirement to do three things, not just one:

1. Pull out the pack having decided you need it.
2. Think where you are going to throw it.
3. Throw it with sufficient force to deploy it.

I also mentioned unsprung drogues, as employed by the GO 'chutes and thought 'chutes should perhaps

*continued on next page*

be part and parcel of the glider, nestling in a plastic box inside the keel-pocket perhaps and deployed by bungee or pyrotechnics, again, perhaps.

Additional points to think of include:

Seated pilots have different requirements, perhaps, from prone ones.

The system that gets most 'ticks' should be the best buy for you.

No system will save you in EVERY attitude.

You must decide which limitations you are prepared to accept.

Possible Attitudes	Throw away pack	Sprung drogue	Unsprung drogue	'Help' system	Bungee keel pack	Etc.
Normal, but descending fast						
One wing broken — spinning						
Luffing dive						
Tailslide						
Inverted						
Broken F-R flying wires/ A-frame						
Not clipped in/ broken harness						
Broken keel						
Etc.						

I summarised as follows:

Do we need 3 different systems to suit each type of pilot?

Everyone MUST think through the emergency action they may need to take and PRACTISE them too, so that the responses become automatic.

Pulling one's 'chute should be part of the Pilot 2 Certificate.

We ought not to concentrate on just one system, but should develop others too.

The next to speak was JOHN HUDSON. He explained what he had done immediately after Paul Maratos' death. He had taken each system that he sold to a rigger and asked his opinion on the deployment systems and the packs as a whole. Some answers had been reassuring, others not. John then made seven test deployments with each system. He admitted to having been "Frankly horrified by one of the systems". Based on what he found he had incorporated improvements in them where possible and the WINDHAVEN was now satisfactory to him in its ease of deployment, speed of deployment and in its assurance that it would work only as intended. He demonstrated the way it was deployed and said that the only modification that might yet be tried was an alternative way of stowing the lines so they could not catch on any part of the glider. He said that on trials on a simulator, the bag had been thrown 30ft. and everything had deployed as it should. He indicated that this distance was an unusual one.

There followed an open forum, questions being answered by the four speakers:

#### How do you TEST deploy a 'chute?

By holding the end of the strop in your hand at the bottom bar, then releasing it when the 'chute has fully deployed and the drag is too much to hold. IT IS NOT RECOMMENDED to fasten it to the glider by a 'break tie' because it might not break; similarly, deploying it properly fixed to the glider will probably result in a wrecked glider.

#### When should I deploy my 'chute?

There was a stunned silence from the panel! Cross-questioning the questioner on when HE thought he should, the answer tended to be "when I'm no longer in control" which the speakers and everyone else thought about right. John Hunter then said that there is a series of photos in Drachenfliegermagasin showing a mid-air collision. It could be seen that one

pilot had his hand on his 'chute rip-cord BEFORE impact and it was deploying as they touched. However, early deployment in very strong upcurrents below cu-nim (cumulus-nimbus cloud) just because of the turbulence and hectic rise, gave the pilot concerned a ride even higher and faster! Tony Fuell said that to deploy whilst your glider was controllable was folly because if the deployment was slow or faulty and you had to cut it free, you had nothing left for the emergency you had foreseen! It was generally agreed that the point of deployment should be as control is lost or the glider breaks up.

#### 'Chutes have 28, 24, 20 or even 12 lines. Why the difference?

It is to save bulk that fewer lines are used. Standard reserves have built-in redundancy, so lines are cut short and sewn together to reduce the bulk and fit in smaller packs. Also, the more lines there are over the canopy, the 'nicer' the shape of it.

#### Is a big canopy better than a small one?

In general, the rate of descent is in proportion to its size, though fabrics can be porous or non-porous making a small difference.

#### In a test deployment of my 'chute, it streamed behind full length, but the canopy never inflated. Why?

The packing method calls for the peripheral band to be folded through 90°, to lie alongside the lines through the canopy. (The WINDHAVEN method, I see, omits this step, the band being folded in thirds, on top of each other). The Skyhook 'chute calls for a large 'mouth' to be formed at the band at this step. Is quartering the band the reason for the failure to inflate? The method of folding the band has no influence on the inflation of the canopy, only on the bulk of the final pack. Should there be ANY hesitation in the canopy's deployment, a quick jerk on the bridle or lines should end it.

#### I bought a WINDHAVEN six months ago. This is the first I've heard or seen of the modifications you've described. Would you circulate them to all buyers?

Yes. And will do so with future ones. Bring your 'chute in and I'll modify it for you.

#### Is it possible to pull the BRIDLE in mistake for the handle?

If left, the slipstream gradually pulls it further and further out and presumably the lines and maybe the canopy could accidentally deploy. Even so, the bridle flaps about and could easily wrap around the pilot's body. This HAS been noted and another mod is being looked at. The latest BENNETT can be deployed from any side of the flap. The BPA Schools all teach their students to look for their handle BEFORE they pull anything; it's been proved that the most experienced parachutists can tug at the wrong area, if they don't look. This is, of course, yet another reason why you ought to test deploy your own 'chute.

#### Will the harnesses stand the stress of the emergency and subsequent deployment?

John Hunter recommended to one manufacturer that he put a 200lb weight in his harness and drop it from a certain height. The harness survived, the carabiner straightened out. . .!

#### What do we do if the 'chute catches in the glider?

If the situation allows, try to free it. If that fails or isn't possible and only rigging lines are caught, don't be afraid to cut them free. There is a degree of redundancy, remember. (The fellow with the 12 line rig interjected here; wondering about the degree of redundancy of 1/12 as against 1/24. His 'predicament' was well appreciated by the audience, who hooted with laughter!). A 'Blown periphery' was described by Chas as a line over the canopy, making it look like a figure eight. It is a fairly common occurrence and probably not worth bothering with, unduly. However, that line could be cut free if necessary. He said that most paras now carry hook knives for emergency use and that perhaps we ought too, also. Don't forget that the most awful looking damage can be repaired by good riggers.

## OTHER POINTS ARISING DURING THE DISCUSSIONS

During Paul Maratos' accident, when he pulled the bag flap, the lines and canopy fell out, loose, and he was left holding an empty bag. Everything else floated up into his rigging.

The BRIFORGE 'chute will fall free but it will be pulled out by the drogue. The lines are held in the pack by rubber bands until pulled out by the deploying 'chute.

In Brian Milton's televised accident, he couldn't get back to the A-frame, so great were the forces on him. (*But I did pull my 'chute — Ed*).

When the WINDHAVEN bag is thrown, a pin is automatically pulled when the bridle reaches full stretch. The lines then deploy and the canopy inflates.

Canopies inflate from the APEX down to the PERIPHERAL BAND, not the other way round as you might expect. Thus, the way the band is packed doesn't prevent inflation.

However, the CARE with which the band is packed affects the speed of the deployment. A level peripheral band speeds opening by seconds, so good packing training is essential.

One person said that no DIY instructions were included and this applied to some manufacturers and their gliders.

Because the speeds and forces involved are lower than those obtained in free-falling, break ties used by them could be too strong for us. In fact, break ties should be avoided were possible.

Some said that there was so much VELCRO on their packs that when pulled only the harnesses moved! This must apply especially to knee-hangers. During the practice afterwards, there were comments on the surprising amount of force required to pull the bag free. Try yours.

In almost all cases, those who test deployed their 'chutes on the test A-frame, on the command of "GO", flung the bag behind them — some without thinking, either.

John Hunter said "Just you try flinging the bag when you're flat on your back. . ."

Maintenance next: Re-pack every 6 months MINIMUM or as per instructions. Keep away from heat, oil or damp (re-pack if it gets wet). Treat as a LIFESAVER, not as a pillow, seat or infernal nuisance.

During the whole of the Seminar, only prone rigs were discussed. Seated reserves were only mentioned by me.

## COMMENT

by BHGA Chairman — Reggie Spooner

John Hudson has given us a lead in knowing about parachutes in hang gliding. None of us will be happy until parachutes are developed, live tests are conducted, and we know we are able to use them no matter what circumstances we find ourselves in. Who, or what sort of organisation, is going to take over from here?

The dominant conclusions I reached from the Seminar were:

(a) A parachute is not a panacea — it is a tool correctly selected for you, for your type of flying, your aircraft which gives you a reasonable chance of recovering safely — in the event of catastrophe — provided you have foreseen every emergency that might occur — and to have practised for it.

(b) Hang gliding — and hang glider pilots — give a greater range of variables for parachute requirements than any other form of flying I have come across. There is still not a lot of difference between a parachute used in a Tiger Moth and one used in a Phantom — except for the ejection seat.

(c) There is a requirement for a Body of expert knowledge and advice who would provide standards of airworthiness.

(d) There is a need for a training manual and for procedures to be defined.



# Announcement

We have recently negotiated financial facilities for  
**Hang Gliders, Equipment and Parachutes**

Typical Rates:  
**£70** Deposit  
 Under £3.00 weekly

Please contact us for further details:  
**MAINAIR SPORTS,**  
 Shawclough, Rochdale, Lancashire.  
 Telephone: Rochdale (0706) 55131

# mainair moneystretcher



A bonanza of gifts with every new glider under our unbeatable

## WINTER OFFERS

★ If you need new wings, copy or clip the coupon

- ★ FREE VARIOMETERS    ★ FREE THERMAL WEAR
- ★ FREE SPARES    ★ FREE INSTRUMENTS
- ★ FREE SKI SUITS    ★ FREE ALTIMETERS
- ★ FREE GLOVES



**mainair sports**

Mainair are agents for all top UK and USA manufacturers

To: Mainair Sports, Shawclough Road, Rochdale, Lancashire  
 Yes I am interested in buying a new glider under your  
 WINTER OFFERS scheme

Name \_\_\_\_\_  
 Address \_\_\_\_\_



Prince Charles and BHGA Accident Investigations Officer, John Hunter

In November, 1977 at the end of their first year's competitive flying, the British Team issued a challenge to the Americans that the British Team would fly against them, in America (there was a greater selection of sites there), on British Gliders — and win. The America's Cup, open to all Hang Gliding nations, was the result.

In October, 1978 the British team together with teams from Canada and Japan went to Chattanooga, Tennessee to compete with the Americans, in the first international team competition, for the America's Cup. The occasion was graced throughout by the presence of Dr. Francis Rogallo, who gave his name to the first successful class of Hang Gliders.

The competition proper was conducted over six days. There were seventy-two individual fly-offs. Each fly-off being flown by a pilot from each of the four competing nations. At the end of seventy-two fly-offs, Great Britain had forty wins (including one dead heat); the United States, twenty-one wins (including one dead heat), and Canada thirteen wins. The British Team had won the America's Cup.

The win astounded everyone. Some of us (older and wiser men?) were bearing in mind the close to ten years' lead that the Americans had — the lead they showed in individual competition in Europe in 1975 and had privately — and publicly — thought that our team might have gone there to lose gracefully — to gain the knowledge to go back and win next time. The British win can perhaps best be summarised by a short extract from one of the several articles by George Worthington, a 58-year-old aviator of great experience and the holder of four World Hang Gliding records. He writes widely in various American and British publications and in the American national publication *Hang Gliding* he wrote of the British team:

'They came to our country. They flew at our site. They used our rules and scoring system. They have one tenth of our pilots. They took up Hang Gliding years after us. They flew British Hang Gliders exclusively. . . . and they beat us, fair and square.'

Victory in the America's Cup has put British Hang Gliding at the pinnacle of international recognition. That recognition is the result of the work of a team, far larger than that which flew in the competition itself — although that is not in any way to take away their glory on the day — for they will be the first to underline that it is the result of the work of others, the reserve pilots, of all of the League pilots, against whom they honed their flying skills, the work of the tireless band of helpers who made the League the force that it has become, all those who assisted in the competitions and who were there on the day; the work of the manufacturers, the work of hundreds who sublimated everything to put an unbeatable team into the air on the day.

By the drive, initiative, ability and work of a dedicated group; above all by team work in pursuit of a clearly defined aim — for they were determined to win long before they left — British Hang Gliding has won international recognition.

For the record, there was not a single accident or incident, not one bent control frame from any member of our team. Aircraft are infinitely better — but for the average pilot — safer to fly too.

It was a signal success — one contributing to the sport as a whole.

**Reggie Spooner Chairman — BHGA**

# Citations For Royal Aero Club Awards

## THE ROYAL AERO CLUB NOMINATION FOR AWARD OF A TISSANDIER DIPLOMA OF THE FEDERATION AERONAUTIQUE INTERNATIONALE

**AWARDED FOR:** Outstanding service, initiative and dedication in the investigation and prevention of hang gliding accidents

**NOMINATION OF:** John Hunter, British Hang Gliding Association

**POST HELD:** Accident Investigation Officer, BHGA

### CITATION:

John Hunter, a founder member of the BHGA and very able pilot, began hang gliding in 1975, having previously flown in the Royal Air Force, having qualified as a Glider Pilot.

Aware of the problem of defining the root cause of Hang Gliding accidents — so as the better to prevent them — John accepted responsibility as BHGA Accident Investigation Officer in February, 1976.

Since that time John Hunter has investigated, on behalf of the BHGA — and with the full authority of the Accident Investigation Branch of the Board of Trade — seventeen fatal accidents and a large number of serious accidents.

He has produced Accident Reports of a standard that bear comparison with those of any full-time Inspector of the A.I.B. or of the Service departments. He has written, preached, cajoled, photographed, run courses in accident investigation — and their prevention.

He has researched deeply in minute detail the very complex, technical and human constituents of Hang Glider flight.

He has devoted himself to the exclusion of all else, for more time each week than most of us spend at work, to the investigation of accidents — to determine precisely the cause — that that cause can be eliminated and lives

directly saved.

He has on his own initiative involved the Chief Pathologist to the Royal Air Force, Group Captain A. Balfour — and anyone else whom he thought might remotely help in his work. All have contributed greatly to the work of Accident Prevention and all speak very highly of him.

The Chief Inspector of Accidents will say that his work and his reports are of the highest standard and invaluable in the promotion of Flight Safety.

In his own flying he sets the highest standard of proficiency and safety and does not shrink from the painful duty, when circumstances demand, of exercising control of others, less well informed of the dangers, obvious to him, but perhaps not to them.

John Hunter enjoys the support of his employer, to whom the whole of the BHGA must be grateful but above all he has the tremendous support of his wife and family in his work. Each of them individually has contributed in measure far beyond most of us who fly and, collectively, have contributed more than any to the direct saving of life — in the Hang Gliding community — and the safety of generations yet to fly.

**Reggie Spooner —  
Chairman BHGA**



# THE ROYAL AERO CLUB NOMINATION FOR AWARD OF THE PRINCE OF WALES CUP

**THE BRITISH HANG GLIDING TEAM 1978**

**FOR:** Their Winning of the  
America's Cup

**PLACE AND TIME:** Chattanooga, Tennessee,  
U.S.A., October, 1978

**COMPETING NATIONS:** United States of America —  
Japan — Canada —  
Gt. Britain

## CITATION:

Heavier than air aviation, stemmed from the early pioneers, Lillienthal, Pilcher and Chanute, who were all Hang Glider pilots — until the Wright brothers diverted development into the main stream of aviation as we know it today. However, a small band of enthusiasts maintained interest in foot-launched flying. In 1964, Richard Miller of California, using a National Aeronautics Space Administration design, developed by Francis Rogallo, began flying 'Bamboo Butterflies' on Californian beaches.

From Miller's wings, and the control bars introduced by Australians Bill Bennett and Bill Moyes, Hang Gliding in the United States of America developed rapidly so that in 1972, the United States had some thousands of Hang Glider pilots and a thriving manufacturing industry. In 1978 there

were approximately 50,000 Hang Glider pilots in the United States, including 40 or more professional pilots.

In Great Britain, Hang Gliding was first recorded in 1972, and in 1978 there were less than 5,000 pilots. There was a small industry and no professional pilots, but there was a British competition system, the League.

The League, composed solely of amateurs, had consistently funded itself, and by disciplined, rigorous and regular competition, had developed pilot ability beyond all recognition. Manufacturers, spurred on by the pressures of competitive flying, concurrently developed better and safer aircraft.

Reggie Spooner



HRH Prince Charles presents Royal Aero Club Bronze Medal to David Cook

HRH presents the Prince of Wales Cup to Brian Milton, who collected on behalf of the 1979 AMERICAN CUP TEAM which won the highest award in Sporting Aviation (Prince Charles is saying "Hang Gliding's the only air sport I haven't done yet, and I'd like to do it" . . . Milton was at a loss for words!)



# THE ROYAL AERO CLUB AWARD OF BRONZE MEDAL

**AWARDED FOR:** Outstanding achievement in aviation

**NOMINATION TO:** David Cook

**FOR:** The first powered hang glider  
crossing of the English Channel,  
9th May, 1978

## CITATION:

David Cook built his Volmer Jensen 23 (by no means the first very light aircraft he had built), powered it with a McCulloch 101B engine, generating 9 hp during 1977. The propeller he built entirely by hand from the bare wood.

During 1977 he prepared with a team for the crossing of the English Channel, which he planned to fly over Christmas. On the advice of Channel experts he deferred his attempt until April and then, after four weeks wait, during which time extensive tests and control flights were completed, he took off on the 9th May, 1978 from a point near Walmer Castle, Deal with ten litres of fuel and a safe running time of seventy-seven minutes. The wind was approximately 20 knots.

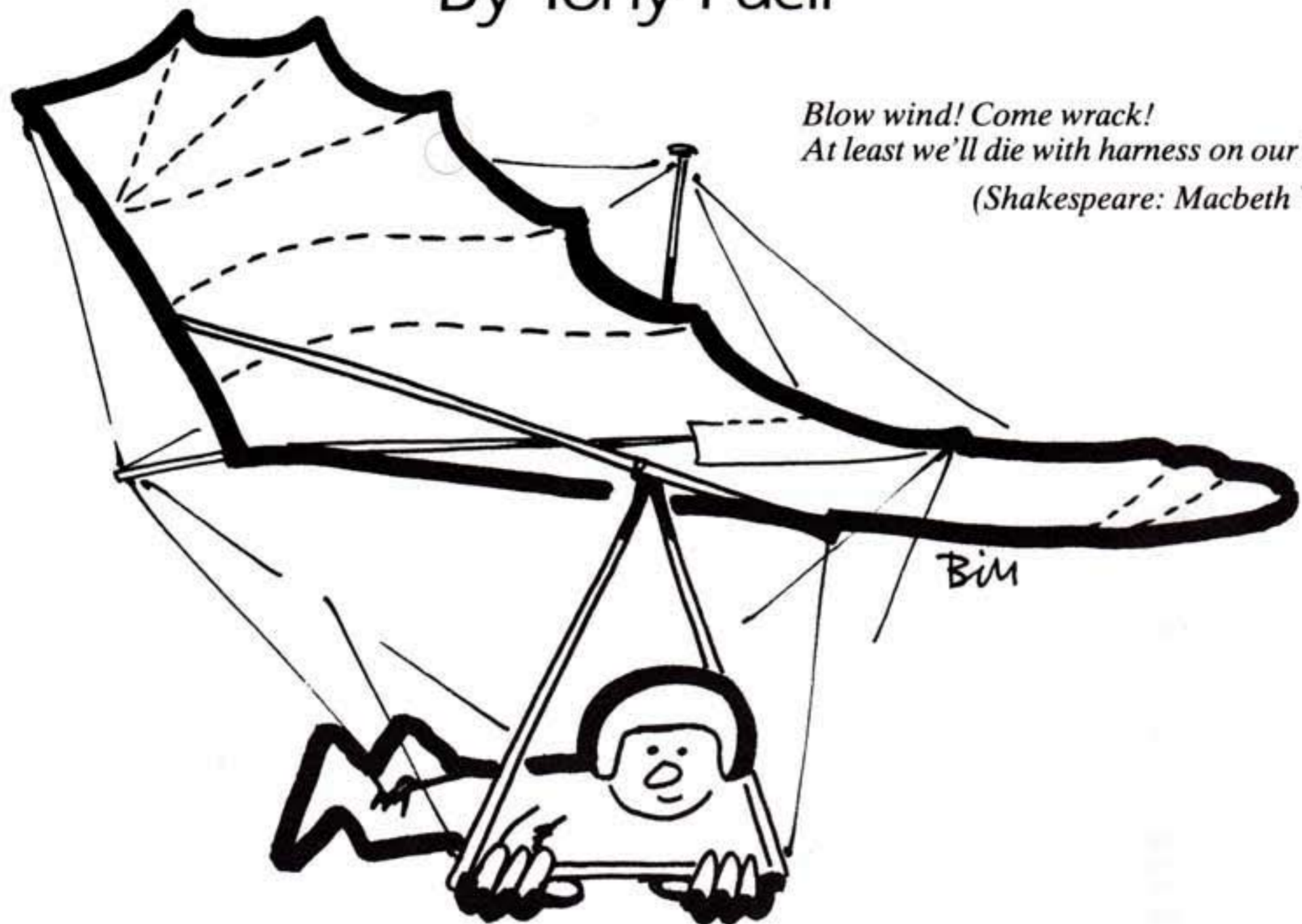
One hour, fifteen minutes later he landed within one kilometre of the point from which Bleriot took off on his first epic cross-Channel flight.

Dave Cook is not an individualist, is one of a team, but the drive and the energy are his. He built his own aircraft, gathered around him a team and, with them, he succeeded against the fierce competition — of many others — including two Pilots, there that day, heavily sponsored by Commercial/Industrial concerns. He beat them all — in an aircraft he built himself — with a quarter of the horsepower used in that epic first Channel flight.

Reggie Spooner

# Turning - Use Your Head!

By Tony Fuell



... learning to fly prone can be confusing ...

## BEGINNER'S BLUES

The accident report was beautifully eloquent . . .

"I had been sufficiently distracted by the novelty of going prone that four year's experience of learning to recognise a stall was momentarily forgotten . . . the glider stalled and turned into the hill, dropping about 20 feet to break both uprights and give me a stiff neck for three days . . ."

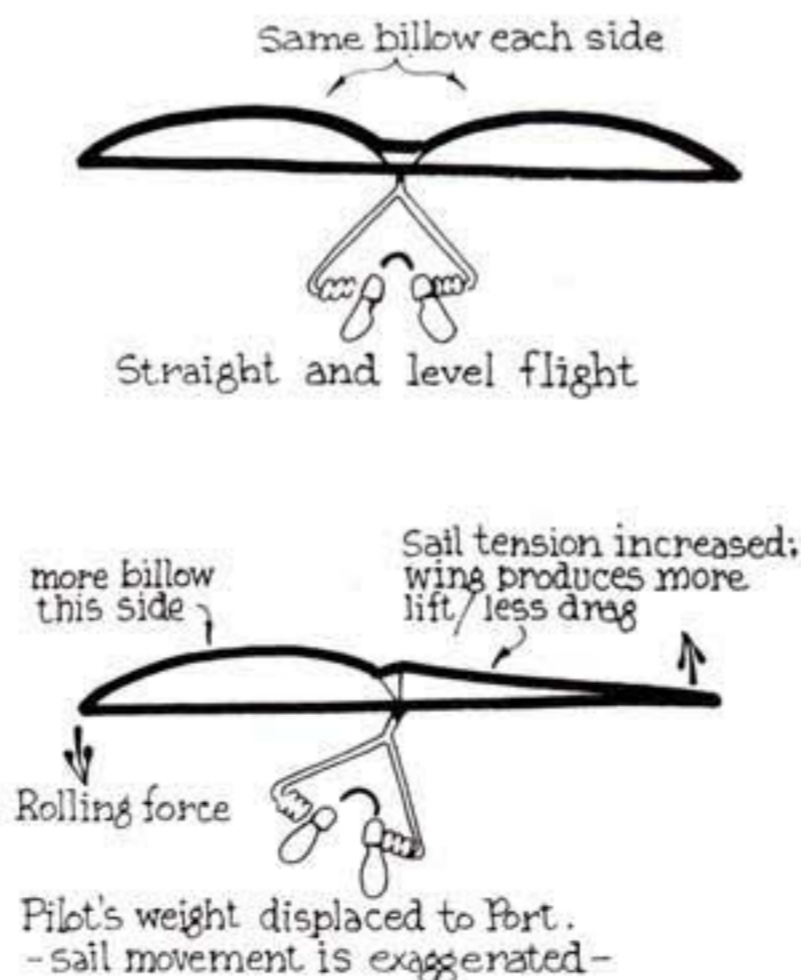
Like others before him, this pilot had found out the hard way that learning to fly prone can be confusing, despite the fact that he had obviously studied things quite carefully. He writes:

"HOW CAN YOU TREAT THE CONTROL BAR LIKE 'BICYCLE HANDLEBARS' WHILE KEEPING YOUR BODY ALWAYS PARALLEL TO THE KEEL? ALSO, I HAVE NEVER SEEN ANYONE KEEPING THEIR BODY PARALLEL (IN THE VERTICAL PLANE) TO THE KEEL."

Nobody these days disputes that prone is the best way to fly. Some schools are even starting students in this mode, and are thereby cutting out some of the 'conversion trauma'. But there are still many people who will have to make the change sooner or later, if they are to get the best from the superships now on the market.

Most modern gliders are pigs to handle in the seated mode, and performance suffers considerably. Taking off is much more difficult with a high-aspect ratio, wide span, keel-pocket glider, since you have to hold it up too high to exercise proper control.

Much good advice about going prone techniques of take-off, and so on. But this plaintive cry from a



pilot who thought he'd done everything right, but obviously hadn't, set me to thinking a bit more about the difficulties faced by a newcomer. His question about *turns* for example. How do you keep your body parallel to the keel while initiating a turn, or correcting during it? A very good question and the answer is not immediately obvious.

## Turning

First, let's consider what you're trying to do. And for the purposes of this article, I will assume that the pilot is going prone on a glider which has either a raised keel pocket or a pulley deflexor system. There is no point in going prone on anything else — if you haven't got a reasonably modern glider, don't bother going prone, is my advice.

All right then, what effects are you having on your glider when you initiate a turn? A glider flying straight and level has both wings producing exactly the same amount of lift (stands to reason doesn't it, or you'd be turning!). When the pilot's weight is displaced to one side it loads the sail up on that side, and because the wing is flexible, the increased load increases the billow (see diagrams). The other wing is, therefore, flattened out and the angle of incidence

is reduced at the tip. The amounts of sail movement involved are, of course, very small. But since the tips are something between ten and fifteen feet away from the centre line, a small increase in the lift (or reduction in the induced drag) on one side will generate a rolling force. A fuller explanation is given in Denis Pagen's excellent book 'Hang Gliding for Advance Pilots', which I do urge you to read.

From the pilot's point of view then, what you need to do — the reason for displacing your body — is to load up the sail on the side towards which you wish to turn. And you need to do it in such a way that you present the minimum drag to the airflow, and interfere as little as possible with the pitch of the glider.

### Heady Stuff

Consider the human body, as dressed in a prone harness. It's centre of gravity occurs somewhere between the solar plexus — that's the part of the chest just below the ribs — and the spine. Suspend the body in a prone harness and the centre of gravity will occur at about one-third of its total length. The reason for this is simply that at one end of the body is located a heavy, solid lump of flesh and bone — the head; while at the other end are only a couple of outrigger structures of fairly light construction — the feet.

The displacement of the body relative to the control bar, which is necessary to initiate a turn in a hang glider, can essentially only be done in one of two ways — either by rotating the legs and thighs first, as we were originally taught, or alternatively, by using the head. For a number of reasons which will become apparent as you read on, I favour a technique which involves using movement of the head and neck to initiate such turns.

### How to do it

Before describing the technique I use, a word of warning: Anyone who instructs others in flying techniques carries a heavy responsibility — whether it's done in person, or through the medium of an article such as this. While I am quite convinced that it works for me, and will work under most conditions, with most pilots, on most gliders, I can't be absolutely certain of that. So if you have been using other methods, and have had success with them, stick to what you know, and **ONLY MAKE CHANGES UNDER IDEAL CONDITIONS, AND WITH PLENTY OF ROOM TO GET YOURSELF OUT OF TROUBLE.**

### The Method

All right then, you have taken off, got into your stirrup, gone prone and are flying straight and level. Relax your legs and thighs as much as possible. They will play no further part in your activities, and you won't need them again until you come to land.

Now, let's suppose you want to make a medium-rate 180° turn to port (i.e. to your left). You are flying relaxed, and at minimum-sink speed. To read about what follows takes a lot longer than it would take in the air, so I'll summarise it.

#### Entry: Head Movement

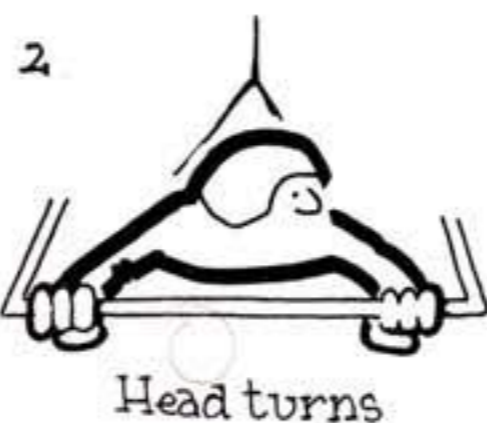
The entry to the turn is the key — if you can get this right. The rest will follow automatically and the key to getting the entry is the head movement. **START** your turn by looking over your shoulder in the way you want to go. This has several affects:

(i) It displaces approximately 8 — 10 pounds of weight approximately 3ins. off the centre line — in some gliders this movement alone will give you all the weight shift you need. The main mass of the body stays aligned with the keel, and with the airflow.

(ii) It ensures that you are looking at where you will be in a few seconds — this might be of little concern to you, but on the other hand, it might just save your life. We fly in crowded skies. It also ensures that the wing-tip is within your field of vision: This is useful to check on your bank angle.



Level flight



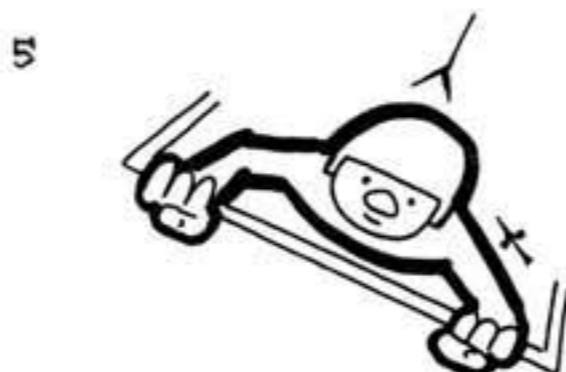
Head turns



Push with outside arm in direction of turn; push inside shoulder towards upright.



Control rate of turn by pitch movement on bar: both arms NOTE: pilot now almost central on bar; but still looking into turn.



Return to level flight by using inside arm to reduce bank.

(iii) Turning the head increases the aerodynamic drag very slightly on the inside of the turn and this eases the job of the arms at the next stage.

### Arm Movement

With the neck twisted and extended, it is almost instinctive to extend the outside (right) arm, and all that is necessary to displace the upper body by the approximate amount is to gently push the inside (left) shoulder in the direction of the turn. At this stage, the inside (left) arm should be fairly relaxed. Keep looking in the direction of the turn. Assuming you've got all this together, the glider will now roll gently to a moderate bank angle, and the nose will start to you into the turn. At this point, and not before, you start to ease the bar forward to prevent a sideslip and keep the nose level with the horizon. The inside arm will be in use now to maintain you in the correct attitude and to apply any necessary corrections.

### Exit From The Turn

As the turn progresses, keep your head turned towards where you want to be. You will find that as the nose of the glider comes around, you will automatically be returning your neck to the straight-ahead position, and easing the bar back to return to level flight in 360° turns, or Thermals. The idea is to keep the neck twisted until you've been round as many times as you need.

### Natural Flight

The beauty of the method is that, once you get used to 'leading' the glider into a turn with your head and shoulders, the whole movement becomes instinctive and natural. As you are always looking where you are going, you will be able to take avoiding action if another glider gets in your way, and because the turn is initiated before any major movements of the body occur, you are much less likely to stall it on the way round.

### And, Finally:

In the old days, we were taught to swing the legs and hips into a turn and this, of course, is necessary when flying seated. But I believe that this is wrong and dangerous on modern gliders flown prone, and it may be that it is trying to execute this type of action which causes so many novice prone flyers to mess up their turns and stall into the hill. The best advice that can be given to a novice is that he should spend a lot of time studying the experts before trying a manoeuvre. Maybe some instructors need to re-think their methods too — the one who told our friend to treat his hang glider like a bicycle very nearly had a 'fatal' or a paraplegic to show for it. Hang gliders aren't bicycles — they are flying machines, and demand a nice, smooth, relaxed technique. So don't forget to **USE YOUR HEAD!**



**Note: hands do not change position on the bar at any time.**

# Air-Worthiness

## by Barry Blore

Brian Milton said recently, "Airworthiness is here but it's a pain in the ass".

I endorse his comments wholeheartedly and now realise why it did not happen two or three years ago. It is difficult to enforce what is a voluntary obligation by manufacturers to comply with standards of manufacture and service to the benefit of BHGA members. I must take this opportunity to publicly thank those manufacturers responsible enough to have complied with all the requirements of the airworthiness scheme, at an initial financial and time loss to themselves and had their gliders tested and scrutinised by independent assessors. I suspect that they will be justifiably rewarded by increased sales, especially from overseas, by being able to advertise airworthy hang gliders.

Now that a scheme exists purchasers have the choice of buying a proven and tested model against the unknown quality of its competitors and some countries insist on approved gliders.

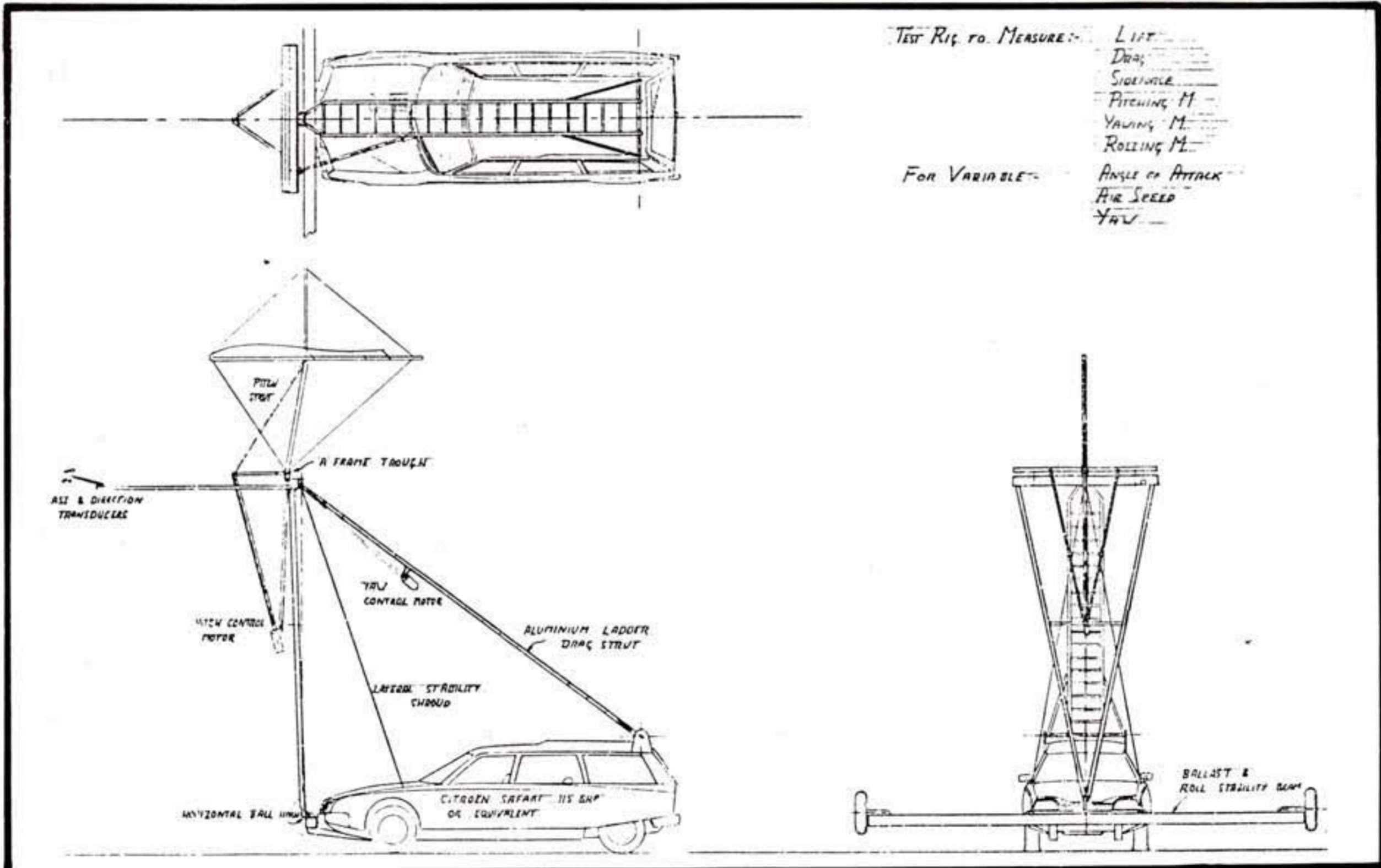
As can be seen by the updated table of Applications for Certificates of Airworthiness, four current production models have obtained a C. of A. That means that 10 C. of A's for Type have been issued when the various sizes are taken into consideration, i.e. Super Scorpion B, C, and C+. Two more were issued for the Emu but they are no longer in production.

The League Table has been altered slightly to show 'C. of A. not awarded' with date, as well as 'C. of A. awarded'. The *not awarded* column depicts gliders that did not reach the required standards, or alternatively where manufacturers are unwilling to comply with all the requirements of the scheme.

A logo has been adopted by the BHGA that can be used by manufacturers to advertise hang gliders that have been approved. BHGA APPROVED has been incorporated in the design mainly to assist overseas customers in recognising approved hang gliders. An example of the logo is demonstrated at the head of this article.



APPLICATIONS FOR CERTIFICATES OF AIRWORTHINESS								
MANUFACTURER	MODEL	NOT YET SUBMITTED	PARTIALLY SUBMITTED	SUBMITTED	BEING PROCESSED	PROCESSED	C of A NOT AWARDED	C of A AWARDED
BIRDMAN SPORTS LTD	CHEROKEE	✓	✓	✓	✓	✓	✓	
	MOONRAKER	✓	✓					
CHARGUS GLIDING COMPANY	CYCLONE	✓						
	VORTEX	✓						
ECLIPSE	EAGLE II	✓						
	SUPER EAGLE	✓						
FLEXIFORM SKYSAILS	SKLINE	✓						
	POLARIS	✓	✓					
HIWAY HANG GLIDERS LTD	SUPER SCORPION	✓	✓	✓	✓	✓		✓ 31/8/79
	SPECTRUM	✓						
	VULCAN	✓	✓	✓	✓	✓		✓ 3/1/80
NORTHERN GLIDER SALES	ATLAS	✓						
	DOVE	✓						
	CIRRUS V	✓						
	OLYMPUS	✓						
	FLOATER	✓						
SKYHOOKS	SAFARI	✓	✓	✓	✓	✓		✓ 27/11/79
SAILWINGS LTD	SUNSPOT	✓	✓	✓	✓	✓		✓ 27/11/79
SOLAR WINGS LTD	STORM	✓						
SOUTHDOWN SAILWINGS	SIGMA	✓						
VULTURELITE	EMU	✓	✓	✓	✓	✓		✓ 5/9/79



I believe the future of airworthiness in this country lies in establishing:

- (a) A National Testing Research and Development Centre, and I submitted a report to that effect to Council in May 1979. The Centre needs to be superior to, or equal to, anything similar that is presently in operation overseas.
- (b) Airworthiness standards in this country to match whatever realistic standards exist overseas. Reciprocal agreements on airworthiness between countries should be part of our aim.

Our pilots and hang gliders are recognised as some of the best in the world, but we need an airworthiness system to support the sport at the international level. Even the average club flyer needs an approved glider in order to fly in parts of Europe, whether on holiday or permanently resident there.

For such a central organisation to exist we require the following resources:

- (a) A permanent operational base.
- (b) Manpower with the expertise to organise and administer such a centre.
- (c) Test Rig.
- (d) Drop test facilities.
- (e) Authorised test pilots.

Some inroads have been made into (a) (b) and (c) above; in fact, the Test Rig has almost completed its trials at R.S.R.E. Pershore. The Test Rig was financed by the Civil Aviation Authority and Accident Investigation Branch, designed and built by Rory Carter with Ken Shail providing and fitting the computerised electronic package. Both are BHGA members, Rory is based on the Isle of Wight and runs his own business — Naval Architecture. Ken lives in Malvern and also has his own business 'Packaging Control Systems Ltd'. The Rig has been designed to measure: (a) LIFT (b) DRAG (c) SIDEFORCE (d) PITCHING M (e) YAWING M and (f) ROLLING M., all at variable angles of attack, air speed and yaw.

The photographs and drawings illustrate the Test

Rig.

With regard to reciprocal agreements between countries on airworthiness, negotiations are in progress but there are many problems to be solved. A contract between Austria, Germany and Switzerland was signed in September 1978 after a year of negotiation between those countries. The BHGA was invited to a meeting in Stuttgart, W. Germany on 1st-12th October 1979 to see if our standards and procedures were compatible with their now established standards. The ultimate objective being that we join with them and agree to:

- (a) reach common European standards for hang gliders, parachutes and harnesses.
- (b) standardise testing procedures to ensure comparability of results.
- (c) achieve a common European Seal of Approval for hang gliders, harnesses and parachutes.
- (d) acceptance of test results between participating nations.
- (e) exchange information on power, towing, legislation and other related activities.

John Ievers, representing the manufacturers, and myself, representing the BHGA., attended that meeting and have to return at the end of February 1980 to confirm that either we are willing and able to sign the contract or not. It is not until all the implications of signing the contract are considered that the problems manifest themselves. Just one problem is that of Law. In Austria the Central Government have taken direct control of hang gliding, and airworthiness standards have been incorporated into the laws of the land. The Germans actually police some of their sites and pilots are not allowed to fly unless they have approved hang gliders. In the UK responsibility has been delegated by the C.A.A. to the BHGA., therefore relying on the responsibility of the governing body to regulate the sport. Although this gives us greater freedom, which could be lost, we can only implement changes by

education, common sense and persuasion. Imagine the consequence of me being able to say, "by the 1st April 1980 any hang glider without a C. of A. is illegal and pilots flying them will be fined". We need to protect our freedom and we can only do this by showing that we have an airworthiness scheme that works and is equally as good as any other. I believe we must have a National Testing Research and Development Centre that is self-financing, and we must join with Germany, Austria and Switzerland in reciprocal agreements between countries in spite of the initial difficulties. We should join with them as soon as possible in order to protect our interests, otherwise they could make laws, without considering our needs, that could affect us in later years especially in:

- (a) International and World Championships.
- (b) Flying British gliders overseas.
- (c) The development of hang gliders.
- (d) The export and import of hang gliders.

The work load on airworthiness has been tremendous during the past few months and as there are now many facets to the airworthiness programme we require:

- (a) A Council Member with the ability and energy to take charge of the basic airworthiness scheme — Chief Airworthiness and Technical Officer.
- (b) More aerodynamicists to vet the applications of manufacturers seeking C. of A's. for their hang gliders and for research and development.
- (c) A team of test pilots.
- (d) Members willing to assist in the organisation and administration of the above.

Airworthiness is here to stay and assistance is required. If you feel you have the determination, initiative and technical or flying experience to help lead us into the 80's on this new venture, contact me direct on Abingdon (0235) 834033.

**Barry Blore**  
Development Officer



Rory Carter — in the boat. Ken Shail — in the foreground.



Rory Carter — up the rig. Ken Shail and Derek Ruben — looking on. Derek Ruben from the CAA extreme left.



Barry Blore — photo Tony Fuell

# Flying Into The Eighties

by Dave Weeks

The end of 1979 promised to be rather special, for not only was it the end of a decade, but there was also a full moon. To back this up, a few days beforehand, it snowed in the Lake District, giving a cover down to 1000ft. ASL.

I had discussed the idea of flying from one decade to the next with several people, but when it came to the crunch everybody seemed to wish to stick to their usual New Year revelry. That is, except Roy Richards and Bob Wannacott, who said they would join me. I also asked Dave Simpson and Nigel Huxtable, who were up on holiday, and they said "yes".

By lunchtime on December 31st it looked on. The sky was clear and the forecast good. The plan was to walk up Jenkin Hill, 2000ft. ASL, the south flank of Skiddaw, to give a 1750ft. flight to the valley floor. We would take off just before midnight and then fly from one decade to the next.

I rang around and arranged for everybody to meet at my house at 9.30pm. I obtained some ground and signal flares and a 'strobolite' for each hang glider. The police were informed of our intentions, should they receive any reports of flares or flashing lights. Hot flasks were filled and cold weather gear checked.

When we all met up, Dave Simpson and Nigel decided they did not wish to walk all the way (not as fit as the locals, Dave said), so instead they would fly off Latrigg giving a 750ft. flight down at the same time, and into the same field. Their girlfriends would

remain in the field at the bottom. Our party was joined by Chris Francis and Steve Barringer who opted not to fly but would come to help and photograph.

On the way we checked the landing field, picked for its size and open aspect; there were trees only on two sides. Although there was no snow at this level there was a white hoar frost and visibility was good. A red flashing beacon would be set in the middle of the field and if it would help, ground flares would be set off by Kay and Sally. We then all went our separate ways.

We drove to the car park between Latrigg and Skiddaw, which left us about 1000ft. to walk up. There was a halo around the large moon, and only a little cloud to the East. Not long after we set off we noticed a light breeze blowing down the hill. Was it a catabatic wind and would we have to suffer a downwind take-off? When we reached the top of the ridge we found that the wind was in fact blowing down the hill at a steady 10+mph, that it was NW and here to stay.

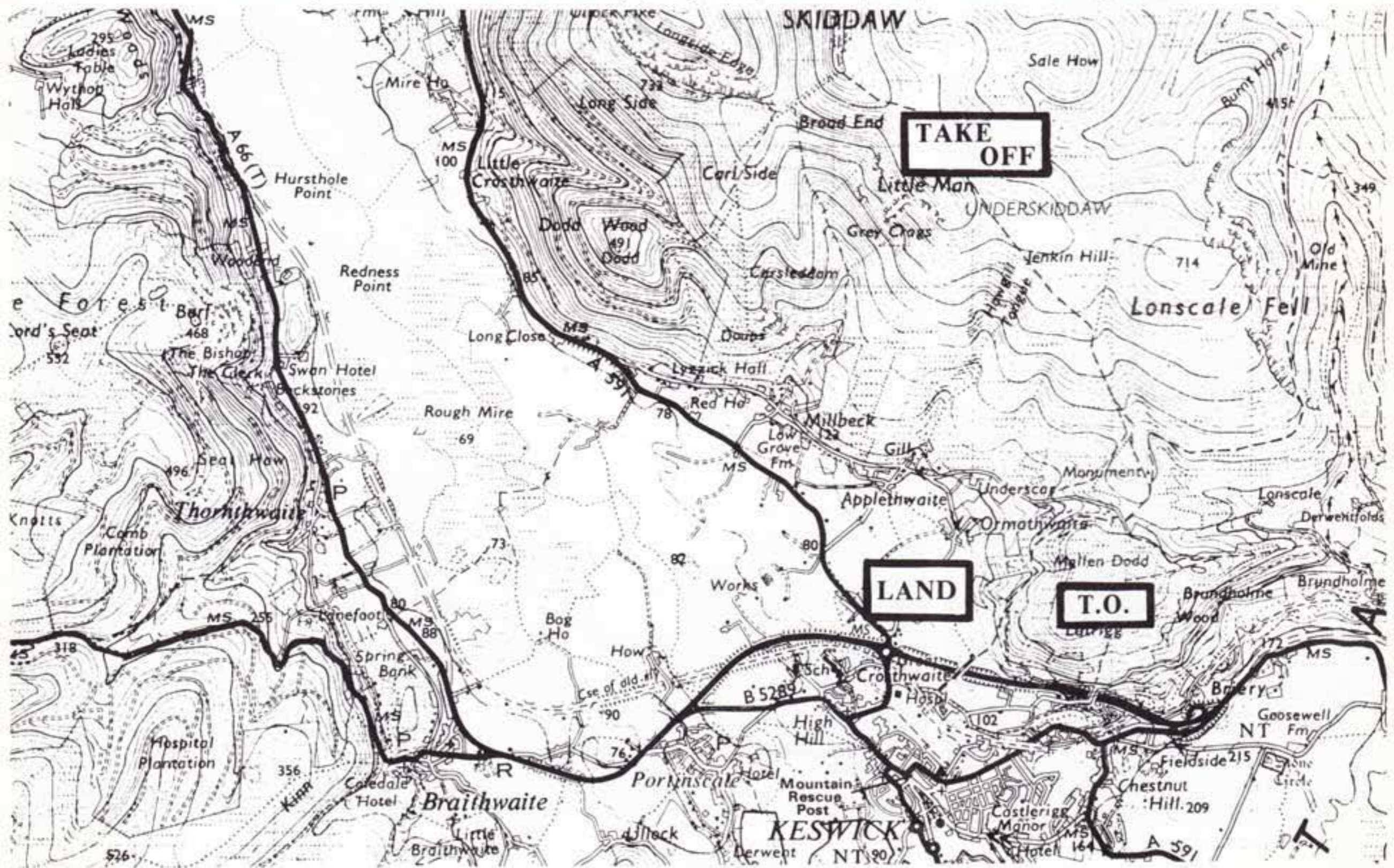
This left us with three alternatives: a downwind take-off which was impossible in those conditions; abandon the flight; or go on up another (phew!)



800ft. to the detached summit of Little Man (2837ft. ASL). . . We have taken off from here in light winds in just about all directions in the past, flying downwind over the edge.

We decided on the latter course, although we could not make the top and rig safely before midnight, but at least we would see the New Year in at the summit.

We toiled off once more. Chris went ahead to see if my fears of ice on the top were founded. He shouted down that the wind was 12mph and north westerly, a bit removed from our hope of a light southerly or nil wind. We staggered on up and I 'conned' Chris into giving me a lift up the final rise to the top, which was clear of ice.



# BRITISH HANG GLIDING ASSOCIATION



## DETAILS AND VOTING SLIPS

### Saturday 1st March

12.00 pm BAR and a chance to view the *Display of Gliders and Equipment*. The Mercian Club will lay on a delivery service to bring in hot pizza lunches to those wanting to eat.

2.00 pm AGM OPENS  
Candidates standing for election will introduce themselves.

3.00 pm DISCUSSIONS TO ESTABLISH POLICY GUIDELINES.

This is an opportunity for all to have their say, to review progress made and to influence decisions that will be made by the Council on behalf of all in UK Hang Gliding, over the next year. Subjects so far scheduled are:-

The Future: The Government and Organisation of Hang Gliding in the UK.

Airworthiness: The Test Rig. The Airworthiness System. Aircraft and Equipment.

Traiping and the Pilot Rating System

Sites & Airspace

Power/BMAA

"Wings!"

Competitions

Accidents

6.00 pm BAR & FILM EVENING

During the evening we will again hold a competition to find the best 10 minutes (or less) amateur hang gliding film. During the evening members will have adequate opportunity to talk and renew old acquaintances.

At 8.00 pm the Draw will take place for the New Year Raffle.

### Sunday 2nd March

10.00 am AGM RESUMES and Nominations for the Council close.

10.15 am CHAIRMAN'S REPORT, TREASURER'S REPORT, REPORTS ON DISCUSSIONS AND CONCLUSIONS REACHED.  
CANDIDATES FOR ELECTION TO COUNCIL will be able to introduce themselves and explain their ideas and policies.

12.30 pm LUNCH AND BAR

A further opportunity for members to talk informally and to see displays of gliders and equipment.

LUNCH WILL BE AVAILABLE AT NOMINAL COST.

2.00 pm VOTING to Elect new Council Members and on Proposals.

The New Chairman will take the chair once elected. When he knows what proposals are carried he will talk about the coming year.

6.00 pm FINISH

## Annual General Meeting and Conference

Saturday 1st March and Sunday 2nd March 1980  
(or in case of emergency on the fall back dates given below)

Warwick University, Nr. Coventry  
Hosts — The Mercian Club

### Fall Back Dates

If the Country is brought to a standstill by heavy snow, a petrol strike or something similar the AGM could not be held. If we can't hold it on the 1st and 2nd March we will fall back to the 15th and 16th March, same venue, same programme. If you think there is a likelihood that the AGM cannot be held on the 1st and 2nd please ring the Taunton Office (0823) 88140 on Friday 29th before 5.00 pm to check (we will tell you what is happening. Unless of course the snow is so bad that we can't get into the office!)

### Council Vacancies

The Chairman, Reggie Spooner is standing down after two very demanding years in the post. The Treasurer, Derek Evans has worked very hard for the Association over the last four years and is not seeking re-election. Jeannie Knight has come to the end of her three years on Council. Council Member Roy Hill is standing for the Chair and co-opted Members Diane Hanlon, Percy Moss and David Squires are standing for election to Council. David Bedding who recently accepted responsibility for Sites, as Sites Officer, is also a candidate. Clive Smith BSc, of the Dunstable Club, and a Professional Aeronautical Engineer has announced that he is a candidate for Council and that he will accept responsibility for Technical and Airworthiness matters. At the time of writing no other nominations had been notified to the Secretary. WE NEED MORE ABLE MEMBERS TO COME FORWARD TO HELP RUN THE BHGA, ESPECIALLY A TREASURER WHO CAN COMPETENTLY HANDLE OUR FINANCES. The full time staff cannot do it all and must be directed by the Council.

### A Council Member's Duties

To be responsible for one or more of the Association's fields of activity and have time to devote to this as well as the necessary energy, ability and enthusiasm. We need members on Council who can provide leadership to co-ordinate the efforts of members to run and advance hang gliding for all rather than those who wish to represent a specialist or local interest.

In particular we need Council members who will accept responsibility for Training, Technical Standards and Airworthiness and Sites. Remember the BHGA Council is as good as we deserve it to be.

### How to stand or nominate a candidate for election




Members wishing to stand for election or to nominate a candidate must send, or hand, written nominations to the Secretary before 10.00 am on Sunday 2nd March. It will be in candidates' interests to get nominations to the Secretary, as soon as possible. The proposed candidate must agree, in writing, to serve if elected, and the nomination must be seconded, in writing by another member. Every candidate and his/her proposer will be able to address the meeting prior to the elections.

### Voting

We will again be using the Single Transferable Vote system. This means you can list candidates in your order of choice and your preferences are all taken into consideration. All other proposals to be


VOTING PAPERS FOR B.H.G.A. 1980 A.G.M. Single transferable votes in elections for Council Members and Treasurer. You have ONE vote. Use your vote by entering the name of your first preference, and if desired, the name of your second preference and so on until you are indifferent. The sequence of your preference is crucial. You should continue to express preferences only as long as you are able to place successive candidates in order. A later preference is considered only if an earlier preference has a surplus above the quota required for election, or is excluded because of insufficient support. Under no circumstances can a later preference count against an earlier preference. Votes on proposals — write "YES" if you agree with the proposal, write "NO" if you disagree.


USE BLOCK CAPITALS, TEAR OR CUT ALONG DOTTED LINES. SCISSORS MAY BE USEFUL!


Order of Preference	Voting Paper for the Election of COUNCIL MEMBERS		Order of Preference	Voting Paper for the Election of TREASURER	
1			1		
2			2		
3			3		
4			4		
5			5		
6			6		
7			7		
8			8		
9			Order of Preference	Voting Paper for the Election of CHAIRMAN	
10					
11			1		
12			2		
13			3		
14			4		
15			5		
16			6		
17			7		
18			8		





 PROPOSAL 1


 PROPOSAL 2


 PROPOSAL 3

 PROPOSAL 4


 PROPOSAL 5


 PROPOSAL 6


 PROPOSAL 7


 PROPOSAL 8


 PROPOSAL 9


 PROPOSAL 10


 PROPOSAL 11


 PROPOSAL 12


 PROPOSAL 13

 PROPOSAL 14

 PROPOSAL 15

 PROPOSAL 16

 PROPOSAL 17

 PROPOSAL 18

put to the vote will require a simple yes/no decision. Yes, if you agree with a proposal; No, if you disagree.

#### HOW TO GET YOUR VOTE AT THE AGM

1. Be there.
2. If you cannot attend and belong to a Member club, entrust your votes to the representative your club will be sending to the AGM. **IN WHICH CASE HAND THIS INSERT CONTAINING VOTING SLIPS TO YOUR CLUB SECRETARY OR REPRESENTATIVE BEFORE THE AGM. IF YOU LEAVE THE VOTING SLIPS BLANK YOUR REPRESENTATIVE WILL BE ABLE TO FILL THEM IN AT THE AGM FOR VOTING. THE MORE SLIPS HE/SHE HAS THE GREATER WILL BE YOUR CLUB'S INFLUENCE ON THE DECISIONS TAKEN.**
3. By post, post your completed voting slip to:  
The Secretary,  
167A, Cheddon Road,  
Taunton,  
Somerset.

To arrive by the 29th February.

Those of you voting by post and those wishing to have an up-to-date list of candidates prior to the AGM should ring BHGA Offices Taunton (0823) 88140 between 19th and 27th February during office hours, preferably in the afternoons. Family members and Affiliate members will be sent voting slips by post during February.

#### Topics for Discussion

Should be notified to the BHGA Secretary by Monday 25th February. So that they can be sorted easily please send a SEPARATE SHEET OF PAPER FOR EACH with a brief outline of your views and ideas. The person leading the discussion can then make known these submitted views.

#### Proposals

None had been submitted at the time this was written. All formal proposals that members want to submit should be sent to the Secretary at the Taunton Office preferably by Monday 25th February. One proposal will be to increase Membership Fees but to date we do not know by how much as the Treasurer is still working out next year's budget.

#### Overnight Accommodation

For a list of Guest Houses and Hotels send an SAE with 8p or 10p stamp (or appropriate amounts if postal charges rise) to:  
The Coventry Information Centre,  
36 Broadgate,  
Coventry.

The phone number in case you forget to write is Coventry (0203) 20084 or 51717. Those wishing to camp or stay overnight in camper vans or caravans should contact Percy Moss, 40, Moseley Road, Kenilworth, Warwickshire. Tel: Kenilworth (0926) 59924. He will give details of facilities available. **THERE ARE NO FACILITIES FOR STAYING OVERNIGHT ON UNIVERSITY PREMISES INDOORS OR OUTDOORS.**

#### Film Competition

To find the best 10 minute (or less) amateur hang gliding film. Standard 8 or Super 8 projectors and Screens are available at the University. If you are entering or want any other information on the competition please contact Rod Bird, 5, Station Avenue, Warwick. Tel: Warwick (0926) 496314.

#### Crèche

This will be organised to look after small children members bring to the AGM but no food can be provided.

#### Trade Display

Hang glider manufacturers, Registered Schools and Equipment supplies will again provide a major feature of the week-end.

#### Second-hand Glider Mart

Members wishing to sell their second-hand gliders (or equipment) are welcome to display their gliders in the extensive grounds close to the Conference Centre. There is no need to book just report to the Mercian member responsible when you arrive.

#### The BHGA Test Rig

The Test Rig and vehicle will be on display so that members can see what progress has been made in this important area.

#### The Mercian Club

Council wish to thank the Mercian Club for hosting the meeting and for their help with its organisation, especially Chris Freeman. If you have any queries on the locality or the venue please contact Chris at 53, Jacklin Drive, Coventry. Tel: Coventry (0203) 416841.

#### Information for Member Club Representatives

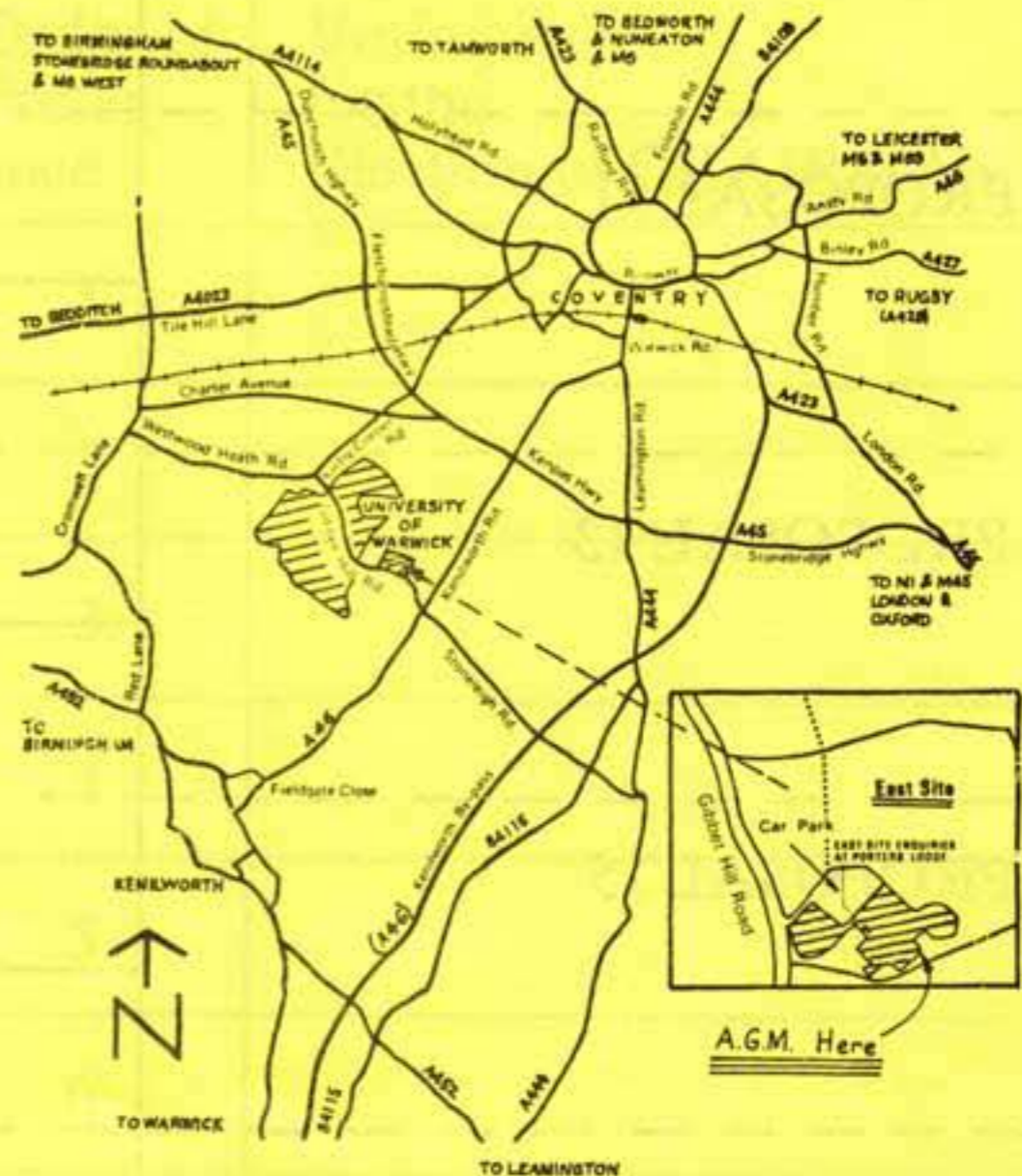
Will Member Club representatives please contact the Secretary at Warwick before 2.00 pm on Sunday 2nd March to obtain Validation Slips to allow them to present more than one vote. This precaution is to ensure that only Member Clubs get a block vote.

#### Balloting

Pat King and Simon Dudfield, Members of S.W. Wales and Mercian Clubs respectively, have agreed to act as Scrutineers and Returning Officers.

#### Note to all Members

Members are reminded that they cannot vote at the AGM without a voting slip. Do not ask for voting slips to be issued at the Hall because you have lost yours. You will only be able to obtain a voting slip at the meeting in exchange for a membership application form with fee and before 2.00 pm on Sunday 2nd March.



The University is situated three miles south of Coventry and 1 1/2 miles north of Kenilworth, in Gibbet Hill Road off the Kenilworth — Coventry section of the A46.

Once on the summit we could see the flight was on, so after a pause until midnight we all wished each other a happy and flyable new decade, and I let off a green parachute flare to let those below know that we had gone on up to the top. Hopefully they would still be waiting for us when we got down. We could see the flares on the landing field and a strobolite making its way down from Latrigg (it was Dave Simpson).

The temperature was very low, minus 10°C, and in the 12-15mph wind, the chill factor was excruciating. Thank God for my three vests, fibre pile suit, silk gloves and balaclava and my flying suit and moon boots!. We had to get rigged and off before we got too cold.

The moonlight was good enough to see everything to rig except to find the hole for the safety pins. Bare fingers were sticking to the alloy, and when I came to put on my truncated tips (I was flying a Vector), there was ice inside. I had bought a small tin of de-icer, but managed to clear them by the warmth of my hands. Roy was having problems with the balls in his A-frame pip pins, which had frozen up; he had to keep them in his mouth. Bob's Hi-Line went together without problems. We were soon ready, although all the sails were frozen, and we joked about flying rigid-wing hang gliders. Bob produced a mug of rich oxtail soup which was most warming but which was to repeat all the way down!

A cloud bank had formed on the ridge just to the north, but it was not moving or increasing in size. We could see Carlisle 30 miles to the east, and Cocker-mouth and the Solway beyond to the west. Keswick, our goal, was spot-lighted to the south, with the lake glinting in the moonlight. It was incredible.

Roy asked to go first, because he had spent almost fifteen minutes without gloves and was somewhat cold. He took off into wind and drifted off to the left. As he turned his Super Scorpion downwind, he sank off into the moonlight with his strobolite winking in the gloom.

I switched on my strobolite, clipped in and had a

harness check. Steve held my wires, then off I went, skimming over the snow down the col towards Broadend, and then left downwind and out. After a minute I eased the bar out and relaxed as the ground dropped away, giving me 2000ft. of freedom. I could see the altimeter slowly unwinding, but the vario next to it was not visible. I have had poorer visibility in daylight flights. Below were all the houses with their windows showing, and the car lights beamed along the roads.

All of a sudden, it was bumpy, as I had expected, there must be a rollover effect. But it went as I flew away from the mountain. We had planned to fly straight out and over as much of Keswick as we felt fit to do. We would work off our last 500ft. above the landing area. Looking ahead, I could see Roy's strobolite out and further below, but I couldn't see his glider. Next I spotted the red flashing light in the field, much further over than I had imagined. The moon was casting shadows from all the trees and I had to pinch myself to make sure I wasn't really in bed dreaming it all.

I used the summit of Latrigg to gauge my height about the town. As long as I could see the flat top I must be 800ft. above ground level. I flew over the A66 and towards the town. It was so quiet and silky smooth. The orange lights of the side streets contrasted with the white of those on the main streets. Back I came over the roundabout, which looked like a large compass, with the four road signs shining out of each road junction. I now had a visible shadow which darted across the fields and in and out of the trees. Obviously, in this light, it was going to be difficult to judge the height for the landing.

We had agreed to use a left hand landing circuit, and although I had seen Roy land and Bob was not in sight, I stuck to this. There was no wind, so I decided to circle the field until I was down to tree-top level, and then drop into the field with speed and land. This proved easy and I came in over the beacon, dropped out of prone and pushed out to flare out for the

landing. As I did my knees hit the frozen field. I was 2ft. lower than I had estimated. Still, I was down, and all in one piece. Roy came over grinning and said "I see you had the same problem I had".

We now looked out for Bob, and it was surprising to find that the kite was not visible until it was down to about 700ft. AGL. We had put the strobolites on the kingposts, and they were obviously masked from beneath by the sails. All of a sudden, Bob passed in front of the moon like some great bat. . . what an

We wondered if he had sprouted two long vampire teeth. After circling around he came in for a landing and did the same as we had, but he walked over with a slight bend on one A-frame side and a grin from ear to ear.

Dave and Nigel had made an enjoyable if less lengthy flight, but we all agreed it was an experience we will never forget. Even if we missed flying from one decade to the next, we must have been among the first to fly in the 1980's.

**Footnote:** The flight may have looked foolhardy, but we had flown this take-off area dozens of times in the past six years, and the flight was considered and planned at great length. All kites were fitted with strobolites, and the biggest problem was rigging in the cold and judging the landing. I don't remember ever having seen such a bright moon and clear sky.

*Editor's note: If anyone is inclined to write outraged protestations about such a brilliant flight, superbly described, take heed. I will consign the letter to the smallest room in the house where a suitable use will no doubt be found for it.*

---

*Dave Weeks, 41 years old, married with two children, is a sports shop manager. He has lived in Keswick all his life and started hang gliding in 1973 when he made an Arion Standard from plans. He was the instigator of the Cumbria Hang Gliding Club and is the Secretary.*

# Sea Thermals

by Robert Bailey

Flying the east coast is usually a pleasant smooth experience, 200 or 300ft. above the cliff-top and out over the grey North Sea. This was until I noticed the seagulls — one cold November day — working the thermals, circling back behind the cliffs up to 2000ft. where small cumuli clouds were forming. The wind on this particular day was a very light N. easterly 8mph and the air temperature 2 or 3 degrees above freezing. The site was Gristhorpe Cliffs, place for many an epic flight 'six hours before breakfast' etc. We, Steve, Rick and myself rigged slowly, all the time I was watching the seagulls work the lift back inland from the cliff edge, and from time to time mentioned that it looked like a day for a possible cross-country flight back to Rick's cottage eight miles inland. Steve laughed and reminded me that we were on the coast — where cross-countries end — not start! I'll change all that I thought to myself, if the seagulls can do it, and it had to be thermals carrying them inland at what appeared to be regular intervals, why shouldn't it work for us? Up to cloud base and away! Think positive.

Rigging and pre-flight checks complete I made a take-off on the smooth grassy slope, and headed straight out 10yds. before making a right turn to head across to the sheer 280ft. Gristhorpe cliffs. The air was distinctly buoyant and slightly lumpy as I worked to 100ft. above cliff top in two or three minutes. This was definitely not the usual stable and smooth sea breeze, but there were holes in the air and rising bubbles of lift! — THERMALS. As I entered the

stronger lift I turned out from the cliff, straightened up and zig-zagged, gaining 200ft. before the thermal drifted back over the cliff top. After a while using this technique I decided to experiment and follow the seagulls' circles back over the cliff edge in the thermal where there is normally the most horrific rotor. I took this stage by stage, first dropping back 100yds. behind the edge and gaining 500ft. before pulling forward, then 200yds. and up to 800ft. and so on until finally gaining confidence and realising that in such light wind conditions there was virtually no rotor at all. I was able to relax, completely forgetting the 90° cliff edge existed, and drift around 1000ft. above and behind the cliff, using the thermal-lifting technique I had been using all summer long. Behind the cliff edge there was very little drift in the light conditions and so after, at best, climbing to 2500ft. I was only 300-400yds. back inland and with this height had the most fantastic view all the way down the coast to Flamboro' and well past Scarborough to the north, putting a whole new horizon on coastal flying.

This is actually a flight report which I first made in 1977, since then I have had many more North Sea thermally flights, the highest being to 3500ft. on a day when the air was very unstable and the relatively warm North Sea was triggering off huge areas of lift that became self-stoking cumuli-nimbus clouds — definitely not for hang gliding near, as I have had several very scary moments when the cloud has become over developed and the lift is no longer an

asset, but something to find the edge of to avoid being sucked to 12000ft. with temperatures of 50° below zero to contend with.

The ideal conditions for thermalling off the sea, and all the coast around England will work in this way, is for an unstable air stream at around 40° or below at sea level with the sea being anything above that temperature. The days I have had my best flying over the North Sea the air has been N. easterly 8-12mph, 35°F the sea being 45°F. The sun has no effect on the formation or state of the thermals — the warmth of the sea produces thermals on even a completely grey, overcast day.



# Clouds To Cause Concern

by Ivor John - part 1

Despite the very good weather forecasts available these days, one of the best ways we have of assessing flying conditions is simply to look at the sky for a while and watch the clouds. By observing what clouds are present, how high they are, how deep they are, even what shape they are — all these figures can give subtle clues as to what is going on in the atmosphere around them.

The clouds which signify good conditions are soon recognised by the ambitious pilot, and he quickly develops an eye for a good cumulus, or the characteristic lenticular lee 'wave' cloud! But clouds which might indicate more dangerous conditions are not so familiar. Such clouds may be telling the pilot a whole new story about the atmospheric motions which may be present — motions which perhaps he wouldn't care to tangle with if he only knew!

But what are clouds? And how are they formed? Well... clouds are water droplets which become visible when moist air is cooled and becomes saturated. The cooling is generally brought about by *lifting*, and as air ascends cloud forms at the condensation level, Fig. 1. The lifting can occur in a number of ways and being so interested in lift for our flying, many of us will be aware of the various forms which exist. Here is a summary:

- (a) orographic (ridge) lift
- (b) slow widespread ascent (near low pressure centres)
- (c) turbulent mixing (the eddies in the air do create a form of lift)
- (d) convection (thermals)
- (e) low-level convergence (e.g. sea breeze fronts) and
- (f) lee wave systems.

All can lead to cloud formation, and all except (b) and (c) are well-known sources of lift for hang gliding. Often two or more forms occur simultaneously, so there is scope for a wide variety of cloud types. Once a cloud has formed by lifting, its subsequent development depends on how stable or unstable the atmosphere is, and how much moisture there is in the air at different levels. There is a detailed classification of cloud types available, but as far as hang gliding is concerned it is more important to appreciate how significant clouds *form* rather than to remember any exact classification.

So, what are the menacing clouds, the evil ones which we should avoid? Where do they form, and what do they do to make the environment so unpleasant for hang gliding?

## Dangerous clouds

Flying in *any* cloud in a hang glider is dangerous! Visibility in all clouds is reduced to about 10m, so there are disorientation problems which can be fatal. Once he's in the cloud the pilot loses sight of the

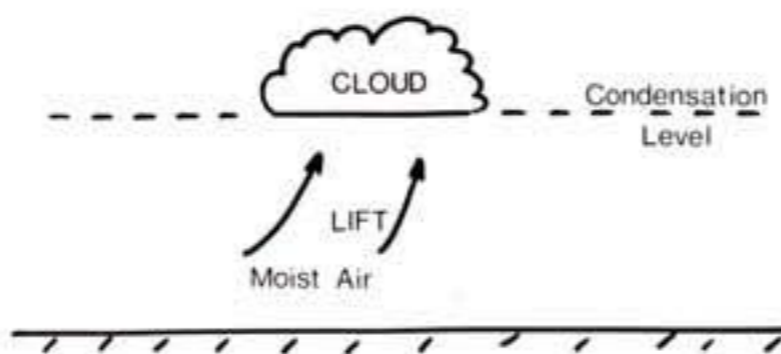


Fig. 1 Clouds form at the Condensation Level when moist air is lifted.

ground and the sun, his two primary reference points. This restriction may not be a real hazard when you have plenty of height, say 5000ft. under a cumulus, but it is a **POTENTIAL KILLER** if you are scraping around in ridge lift when the cloud envelopes you.

Cloud which forms an even layer at low levels is invariably *stratiform* cloud. It is not unduly turbulent, but that's no let off — you'd have enough problems with orientation without having to worry about turbulence! Where turbulence IS a real problem is around well-developed *cumuliform* clouds. Large cumulus, and particularly cumulonimbus clouds can conjure up some lethal turbulence capable of tearing a hang glider to pieces! Such turbulence can also exist near 'rotor clouds' which form in association with lee wave systems. So the main dangers related to clouds may be summarised as:

- (1) loss of visibility and disorientation problems in low-level stratiform clouds, and
- (2) unmanageable turbulence around large cumuliform clouds and near lee wave rotor clouds.

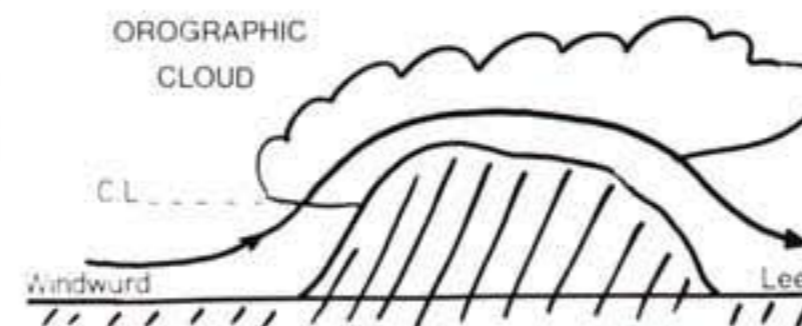


Fig. 2 Orographic Cloud forms in moist air which is forced to rise over hills and mountains.

Table 1 gives some useful information about stratiform and cumuliform clouds.

Cloud Type	Appearance	Base Ht. (ft)	Vertical Extent (ft)	Turbulence
Stratus	Continuous or broken	surface - 2000ft	200-1000ft	slight
Stratiform				
Strato-cumulus	Continuous (in 'rolls')	1500-4000ft	500-3000ft	moderate
Cumulus	Isolated	1500-5000ft	Up to 15000ft	moderate-severe
Cumuliform				
Cumulo-nimbus	Isolated, but each one may be 10mi in diameter	1500-5000ft	15000-30000ft	very severe

## Low-level Stratiform Clouds

These are formed by (a), (b), and (c) as listed in the introduction.

(a) In the case of *orographic cloud*, moist air near the ground is cooled by forced ascent over a hill. The condensation level is reached before the air reaches the top of the hill, and cloud forms, Fig. 2.

The more moist the air is the lower the cloudbase is on the side of the hill. So air which is very moist can form orographic cloud on the smallest of hills (say 200ft.), and high mountains will clearly have cloud over their tops more frequently. Orographic cloud is a stratus layer, and is not usually very thick, but it will obviously affect our flying since it occurs in the best area of lift. If any rain or drizzle falls on the windward side, the cloudbase on the lee side will be higher than on the windward side.

Coastal hills are particularly prone to orographic cloud, e.g. when SW'ly winds bring moist air to SW Britain, or E-NE'lies on the East Coast.

This is undoubtedly the most troublesome form of low cloud because it is so unpredictable. There are two situations when it affects flying: (i) when it is already present on the crest of the hill at the start of the day. It can be very tantalizing because there is often a great temptation to take-off, in confidence that you will easily fly through it and above it. But it is a desperate person who needs to fly when cloud like this is already on the hill, especially if he knows

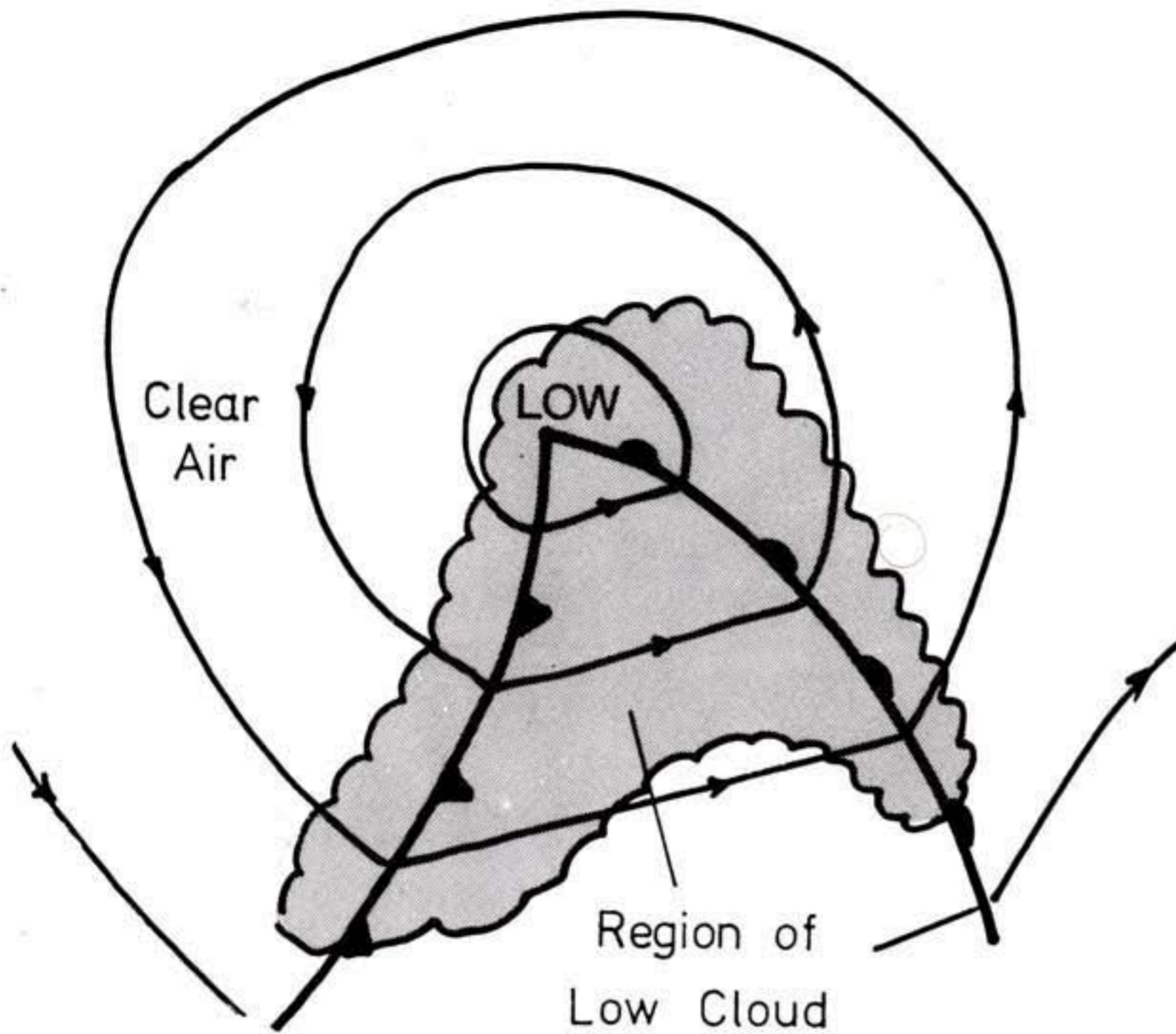


Fig. 3 An area of low cloud is formed in the warm sector of a low pressure area.

### Layer of Stratocumulus

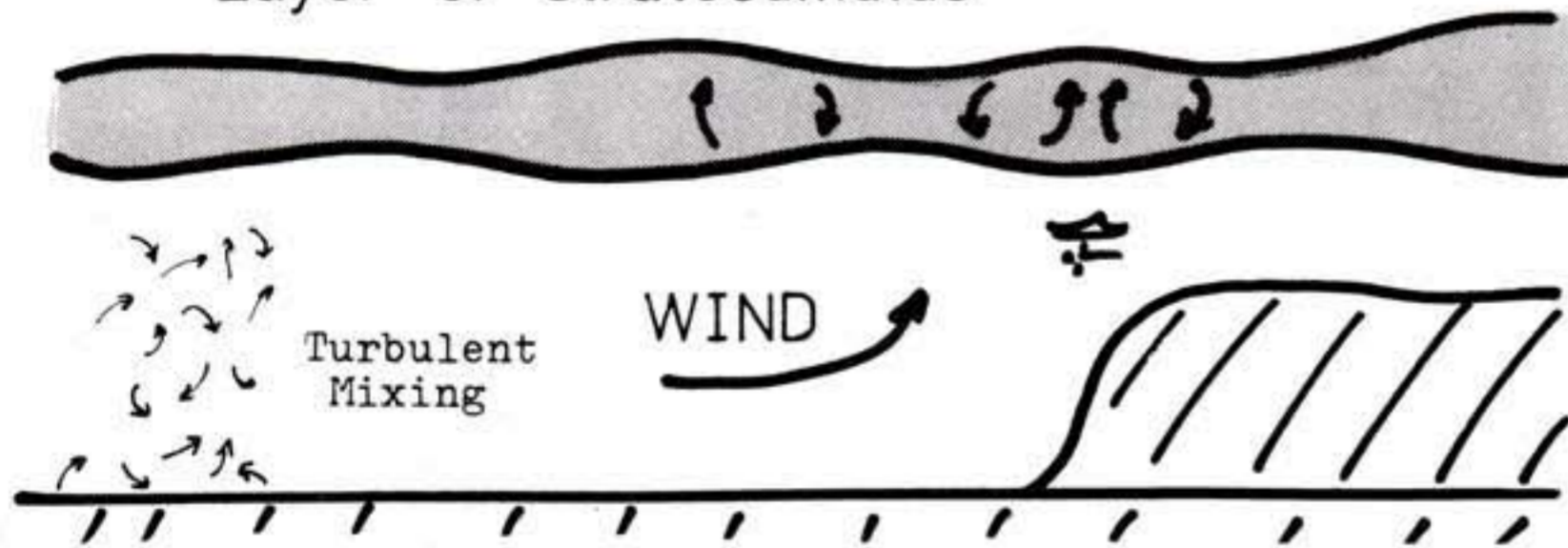


Fig. 4 Stratocumulus formed by Turbulent Mixing.

### CLOUDBASE DIPS OVER HILLS

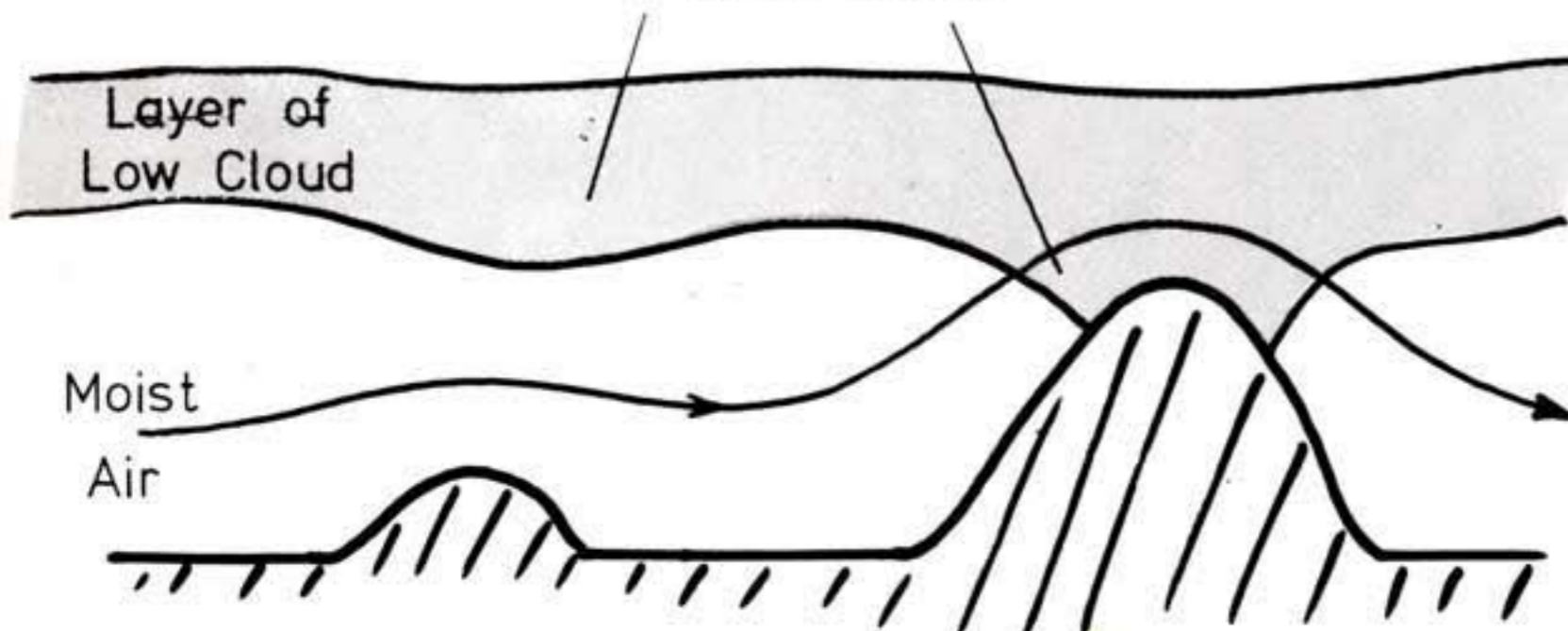


Fig. 5 The cloudbase of low-level cloud tends to 'dip down' over hills.

the dangers involved — and there's no excuse for not knowing them! (See Dave Tait's editorial in *Wings!* May 1975). (ii) when the pilot is already flying on a moist, humid sort of day, cloud may begin to form on the hill behind him. It shows up initially as curiously attractive wisps here and there, but it can close in very quickly indeed soon after. The pilot is unlucky, and in this case he should endeavour to land as quickly as possible to see if the cloud is likely to persist or clear with time. If you are stubbornly flying on when the hill becomes clothed in cloud then stay well out in front of it (upwind) and land at the bottom. **DO NOT BE TEMPTED TO TOP LAND THROUGH THE CLOUD.** (See Dave Beddings, *Wings!* Sept. 1979). It seems we need 'other people' to make mistakes before many of us learn.

(b) *Widespread ascent* occurs within the area covered by a low pressure area on a weather chart, and rising air in the 'warm sector' is usually very moist, so low cloud can be expected in this region, Fig. 3. This cloud is not such a problem as (a) because the low cloud can usually be seen approaching well in advance. High cirrus clouds are usually seen first, then lower altostratus, and eventually the low-level stratus. This is usually accompanied by rain, too, so it is less likely that anyone would be flying when the really low cloud descends onto the hill.

(c) *Turbulence* as a lifting mechanism sounds unusual, but the eddies associated with turbulence are always moving small amounts of air up and down, and if the air is moist they can sometimes lead to cloud formation. With a wind of over 10kt there is usually enough friction at the surface to stir up the air through quite a deep layer, and with sufficient moisture the mixing may be capable of forming clouds within the friction layer (below 4000ft.), Fig. 4. Although this type of cloud is a nuisance when it is down on the hill it is usually cleared quite quickly by morning sunshine if there is no upper cloud.

Just because 'turbulence' is needed to form the cloud it doesn't mean to say that the wind is too bumpy to fly in — even the smoothest of air has some turbulence, so you might find turbulence cloud around when conditions are more suitable for flying.

### 'Magic Lift'

To digress from the dangers of this cloud for a moment, it is worth mentioning that this cloud sometimes has a rather unusual effect on flying conditions! It forms as an even layer of stratus to start with, but 'convective overturning' can develop within the cloud later, so that it gets a 'rolled' appearance. The cloud has a tendency to thin out where the air is sinking, and to thicken where the air is rising. The cloud has become *stratocumulus* and as the upcurrents in the cloud pass overhead they can produce spells of unexpected buoyancy which can be fun to fly in. You may have heard of this effect referred to as 'Magic Lift'!

Finally in this section, there is one other point worth mentioning. When an extensive layer of cloud is formed by (b) or (c) then any cooling of the moist air beneath the cloud may lead to condensation, so the cloudbase gets lowered. This cooling can be caused by the hills, since the air near the ground has to rise to get over them, so it cools and condenses and the cloudbase above tends to 'dip' down over the hills. Sometimes it is sufficient to lower the cloud right down onto the hill, so the hill appears to be pulling the cloud down over it! Fig. 5. This is worth remembering when you have been given a forecast of stratiform cloud, because although cloudbase is expected to be above the hill it may in fact reach down to the hill for this reason. Cloudbase will also be lowered if rain starts to fall from the cloud.

**Next month** — Cumulonimbus, Nasties and Lee Wave Rotors.

## The Plight of the Intermediate Pilot

by Mike Lingard  
(from SHGC's *Windsock*)

Joe Soap read with interest the advertisement in the aviation magazine spread before him. It offered an introductory course of Hang Gliding at a local school at very reasonable rates. He had always been interested in aeroplanes and sailplanes, the urge to fly was strong but he could never afford the fees required. He had toyed with the idea of Hang Gliding before but somehow had never got around to it. Now he decided he would take the plunge.

Joe Soap enjoyed his course with the school, made a lot of new friends and after a number of disappointing days due to adverse weather conditions finally obtained his Pilot One certificate. After making enquiries at the school about a new glider he soon became the proud owner of a Hi Fly Zoombird MkII. On returning to the school slopes with his new rainbow coloured kite, Joe received a lot of helpful advice from his old Instructors and some further training, including converting to prone flight. He progressed steadily to what the school informed him was an intermediate standard.

Joe felt that he was now poised at a crossroads in his flying career. He felt he had come to the end of one hard and, at times, a little painful apprenticeship, only to be entering a second one. A new world of the so-called experienced flyer. A new world with new peaks and new goals. A whole new scene where he will be expected to get it all together, first time, every time. No hairy take-offs or heavy undignified landings now. Everything must be one hundred per cent. He felt he was poised tentatively on the first step of that elusive ladder to the skies, on the first step towards more enjoyable flying, the kind of flying he had trained so hard for. He wanted to catch the wind and turn his dream into reality.

Feeling that the school training slopes had little more to offer him, Joe Soap — now of intermediate standard — decided it would be a good idea to book up with an advanced course of soaring in the Wiltshire area where there was an abundance of soarable sites. Joe spent a week's holiday standing around various Wiltshire hills listening to his new instructor telling him why it was not possible to soar. Joe learned a lot more about the wind and its effect on hills that week, he also learned a lot about Wiltshire, but he didn't learn to soar. Still, he thought, "plenty of time, shouldn't rush things".

Finding the wind too strong or in the wrong direction at the weekends, when he could make it to his local soaring site, Joe took a second week's holiday and attended his local sites and some a little further afield looking for soaring experience that still eluded him. On one or two days the conditions were perfect, but there was too

# BEST OF THE CLUB MAGAZINES



much traffic in the air. The kites in the air looked to Joe like flies around a jam pot. It left no room for error. Joe stayed on the ground. He did a lot of standing about talking that week, a lot of the Hang Glider pilots' favourite pastimes, grass throwing, and much looking up at the sky — but that was about all.

Then one day Joe Soap thought his luck had changed, his patience had at last been rewarded. Arriving one day at a good safe site, he found the wind was just right for his first soaring flight. It was smack on the hill, as steady as it could be at soarable strength and only one other kite in the air, and plenty of room to land at the bottom of the hill. Joe rigged quickly but carefully and prepared for flight.

Having mentally prepared himself

for take-off and given thought to what was required, he was about to commit himself to flight when Charlie Ace walked over and advised him that as farmer Barley Mow had just planted this year's crop of corn, Joe could not bottom land and he showed him the top landing area which looked to Joe to be about twelve foot square. This was a crushing blow for the young intermediate pilot, but he was a sensible and understanding kind of guy who appreciated the need for such rules. He also knew it would be unwise to attempt two new situations on one flight. Joe packed up his glider, drowned his sorrows in a pint of ale and listened to Charlie Ace telling Johnny Wizkid how many multiple three sixties he had performed the day before. Later Joe watched Charlie Ace



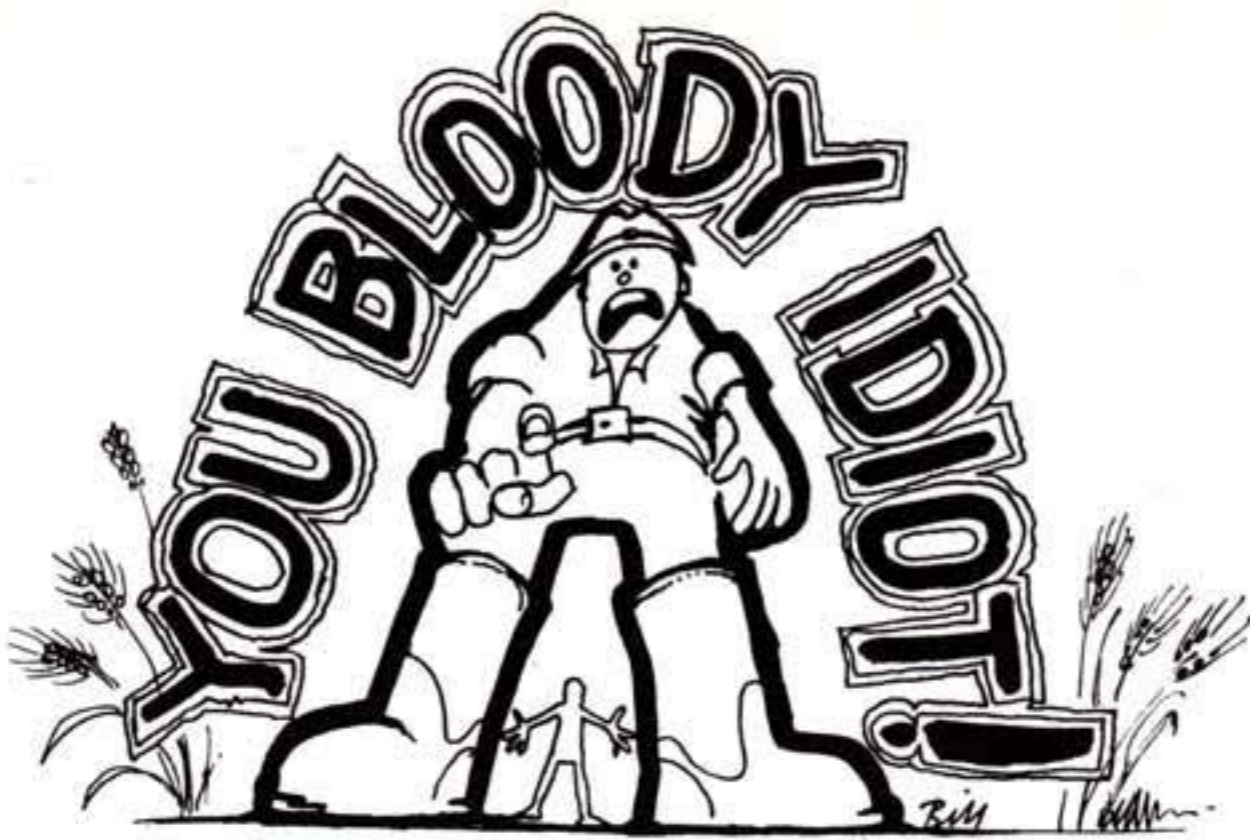
.. and listened to Charlie Ace ...

and friends soaring and tried to take a mental note of everything Charlie did as he still hoped soon to have the chance of emulating him. The weeks dragged on and Joe tried in vain to find a soaring site with a bottom landing. He lived only thirty miles from most of the sites and he knew other pilots travelled over a hundred to reach them but his patience was wearing thin. Joe did not want to disregard club rules and fly where he should not, but he felt the more experienced pilots could show a little more understanding about his predicament and try and remember how they must have felt when they were at his stage in the game. He sometimes thought they must have very short memories.

Joe made enquiries about the possibility of dual instruction for soaring flight but his enquiries proved fruitless. The local training officer was very helpful but even he could not control the weather or when the spring corn is planted. Conscious of the fact that he was at a very crucial stage in his flying career, Joe knew that many Hang Gliding accidents happen during this dangerous time due to pilots attempting more than they are capable of. On the other hand, some pilots had advised him that top landings were a 'piece of cake', 'no trouble'. They told him he should be able to soar and top land first time with no problems. Joe believed them because he wanted to believe them. Becoming more and more tempted now Joe realised he was building himself up to attempt it. He knew he could not become a Charlie Ace overnight but he knew he must try it alone sometime. He knew now he had reached the point of no return. He must try it now; top landing or no top landing. Advice he had been given by the sackload, his head was crammed with theory, now he would attempt the task before he lost his confidence.

One sunny morning Joe arrived at his favourite site, the sky was blue, conditions were good and he felt good too. He would try to soar and top land. He had gone over the procedure in his mind a hundred times, now he would do it for real. His take-off was good, he cautiously tacked along the ridge, he felt elated, he is actually going up. He turns, a little slowly, and heads back to reverse his track, at the end of this beat he makes a slow, wide turn and falls out of the lift. Joe swears under his breath and notices the lush green grass on the hill getting closer. What a nonk, he thought to himself. Just two short beats and I've blown it. He considered the idea of trying to land on the side of the hill but, being a sensible pilot, he rejected the idea and decided to go down, land in the bottom field and face the consequences. Better safe than sorry, he mused. As Joe dropped out of prone above the landing field, he noticed farmer Barley Mow beating a track towards him through the yellow corn. This unsettled Joe a little and in his anxiety to land quickly he stalled out too high, hit the ground hard, tumbled through the A frame and badly bent both uprights. A little shaken, Joe scrambled to his feet,

unclipped and surveyed the damage as Barley Mow arrived on the scene. The farmer moaned and complained at Joe for ten minutes solid about his ruined crop and made the shaken pilot feel about as small as his now scratched crash helmet lying in the corn beside him. He could understand the way the farmer felt and he did appreciate the damage he had done — but Joe worked on a farm part-time himself and knew that one night of high wind and heavy rain would ruin more of Barley Mow's corn than a hundred Hang Glider pilots could do if they bottom landed every day for a month. He also thought that the farmer had caused as much damage tramping over to see him as Joe had on landing. He tried to apologise and not feel too cynical about the situation — but he did get the impression that the only thing the farmer was worried about was the possibility that he may not be able to change his Jaguar for a new model next year!



... about as small as his crash helmet...

Joe paid the farmer the two pounds requested and — feeling rather dejected — dragged his broken glider back up the hill, trying to remember the cost of two new uprights. His dream of flying like the birds was now shattered.

On reaching the top of the hill, Joe Soap was pounced upon by two club officials, who read him the riot act, his second rolocking of the day. "You must be patient, Joe Soap", "only fly if you can top land, Joe Soap", "you are a nonk, Joe Soap", "do you realise the damage you can do to the club, Joe Soap". Joe packed his glider into its carrying bag for the last time that day.

Two weeks later, in *Wings!*, an advertisement reads: For Sale - Hi Fly Zoombird MkII, little used. Acute frustration forces sale.

Joe Soap sent his membership card back to the BHGA headquarters. He later toyed with the idea of writing a letter explaining his reasons for withdrawing his support but, in the end, he did not bother. He took up sailing instead.

Poor Joe, he never did catch the wind. His dream of flying like the birds remains a dream.

Poor Joe Soap.



# sailboarding



Send SAE for board, tuition and accessory details

Mainair Sports, Shawclough Road, Rochdale, Lancashire OL12 6LN  
Telephone Rochdale (0706) 55131/2/3 Telex 635091 MAIN

## ULTRA SPORTS

### HARNESS

Southern Hang Gliding Centre  
22 Albany Villas, Hove,  
East Sussex BN3 2RU  
Tel: (0273) 70261/25534



Designed by Graham Slater.  
The Ultra Sports Prone Harness. Features:-

- ★ Full adjustment using Self Locking Buckles
- ★ An Integral Seat for Full Leg Support
- ★ Padded Shoulder Straps & Apron for comfort
- ★ Fully Adjustable Main Strap to fit any control frame
- ★ Long Leg Loops for Low C of G on landings

£50 +V.A.T

*In November Wings! there was an editorial which commented on the sale of a kite by a prominent pilot to a man who — while flying it — broke his back and is, at present, paralysed. There were a number of letters on the subject, all of them saying there was only one side of the story put. The pilot involved, who wasn't named in the editorial, is Dave Thomas, from Northamptonshire, who came very close to making the top ten in the 1979 League, and in the two years I've known him, the last thing I would question is his integrity. Having just emerged from a legal cloud of a year's duration for dealing physically with a number of bully-boys who were in the process of destroying his kite, Dave was very upset about the editorial. One side of the story has already, without reference to him, been published. I have asked him for the other side*

The glider was sold on Dunstable the weekend prior to the League Final. That day I was, in fact, taking delivery of a new glider and naturally the unpacking and rigging of this attracted a small crowd. Amongst them was the pilot who purchased my Gryphon, who questioned me about the glider. From the type of questions he asked it was obvious that he knew about the sport. During the conversation I stated that my Gryphon was for sale. He said he was interested in it and asked to see the glider closer. I showed him the glider and explained in detail its flying characteristics and told him the price I was asking for it, £275. The reason for this low figure was:

- its age (approx. 18 months)
- it had been pranged by me and had two small patches on the sail
- financially I could not afford to have two gliders (I had been in touch with

Lesley Bridges and arranged for this to be advertised in *Wings!* at this price).

I stated quite clearly at the time that it was classed as a high performance glider and that it was recommended for experienced pilots only. I also stated that before he should attempt to fly a machine of that calibre he would need tuition at a school as he was that day flying seated and had never flown in the prone position. He said that he had attended a school at Brighton approx. 2 years previously and got his EPC certificate and that if he purchased the glider he would go back to the school before flying it.

At no time did I ever coerce him to buy the glider, in fact if anything tried to dissuade him.

After he had consulted with his friends on the hill, he said he wished to purchase the glider. I again explained the above to him and that I could not let the glider go until after the League Final. He agreed to this. I again emphasised that he must go to a school for lessons before attempting to fly. I also told him that I would be seeing Graham Slater of the Brighton school the following weekend and would explain the situation to him. He said that he knew Graham and would get in contact with him.

The following weekend I did, in fact, speak to Graham and told him the situation and he said that he would see that the purchaser was O.K. with the glider.

Two weeks later I arranged to meet the purchaser at Dunstable. I told him that I had spoken to Graham and that it was now up to him to contact him. I reiterated all the above points again to him and he assured me that he would go back to the school before flying. The sale was then completed.

The conversations above all happened in front of several people on Dunstable, whom I am sure will clarify any points.

**Dave Thomas**

## VARIOMETER COMPETITION

After much wallowing in Webster's, The Concise Oxford, Chamber's 20th Century and Collins New English dictionaries, the winner is Stuart Prosser of Spring Road, Abingdon. Stuart produced 57 acceptable words and receives the first, only and final prize of £5. To Kim Baddeley, my sympathies but I couldn't verify many of his 69 words.

My thanks to those who entered the competition which is now being dropped. A dozen entries from 3,500 readers is, regrettably, insufficient to justify its being continued:

## EUROPEAN CHAMPIONSHIPS 1980

The European Championships will take place in Kossen, Austria, from June 21st to June 29th, 1980. Like other Kossen competitions, they'll be organised by Sepp Humberger, (cheerfully christened 'Septic Hamburger' by our team), and like his last competition, it's being billed as a 'World Open'. Well, it isn't that. The only title at stake, recognised by the governing FAI, is that of European Champion, and the galling thing is that the number of competing flyers allowed from each nation has been cut from 10 to 6, so that non-Europeans can fly.

One consequence is that each European nation has great difficulty picking teams, for a competition which is supposed to test which is the best in Europe. If the team we had sent to the World Championships last year was only 6 instead of 10, it's highly likely our eventual silver medallist, Johnny Carr, wouldn't have gone. There's obviously nothing we can do about the number of competing pilots in the 1980 European Championships, but I hope next time CIVL gives its blessing to a European Championship, it makes sure there's no distorting of the competition just to bring in competitors from all over the world. Either that, or let's have World Championships every year.

## NEW HARNESS PRINCIPLE

David Bremner, from Manchester, claims to have developed a radically new prone harness called the VIKING. The straps on this harness are attached to rings which slide freely on rails set into the edges of the apron. David says that, while the straps on a trapeze harness have to be forced down the body with the stirrup, his harness allows this to happen spontaneously when the legs are raised into prone. The prone position, he says, is totally comfortable and stable, and when dropping out of prone, all you do is lower your legs and the straps return to the take-off position.

David's phone number is 061 764-3462.

## Note from BHGA Medical Adviser . . . Dr. Dunstan Hadley

One thing which is rapidly coming nearer is the use of oxygen. There is, at present, no adequate equipment for a hang glider pilot. I have tried to interest Farnborough, so far without success. I wonder whether it might be possible to arrange some form of altitude gain contest, and whether British Oxygen or ICI (or both) might sponsor it, or at least lend suitable oxygen equipment. Clothing firms might also be interested. Presumably sealed barographs would also be required. No doubt it would take the form of a cross-country competition, with height gain counting points and distance as a bonus.

The main object of the contest would be to stimulate the development of a suitable oxygen equipment. A fatality from hypoxia is already a possibility, though some may not think so.



**To: Official BHGA Observers**

**From: Keith Cockroft (Training Officer)  
Lynne Whitcombe (Administration)**

It has come to our notice during the past year that only a few of our 300-plus Observers' names are appearing on the task forms that we have processed.

It appears that there is still a considerable number of Observers who are NOT helping less experienced pilots through the Pilot Rating System.

The BHGA needs your energy and enthusiasm to help us operate our Pilot Rating System. We cannot afford to waste time or money by circularizing Observers who are not contributing.

If you feel that the job and responsibilities are too much for you — please relinquish your BHGA Observership and let your member club appoint other individuals who are prepared to get actively involved.

To those who are coping well and helping other club flyers — our thanks and support. If you have any problems with which Lynne or Keith can help you, or any constructive suggestions to make the job easier/more enjoyable, then please do contact us.

**Remember : OBSERVERS ARE THE KEY MEN WITHIN OUR PILOT RATING SYSTEM; WITHOUT YOU — IT CANNOT OPERATE.**



*Dave Thomas launching his Gryphon*

*photo: Mark Junak*



## LIMERICKS

This month's competition is for the best hang gliding limerick. For those who may have forgotten its construction, it goes as follows:

Our new editor to his task brings  
Divine knowledge of theological things  
He insists you concede  
If God wanted us to read  
He'd surely have given us *Wings!*

Entries to me, please, preferably of a higher standard. The winner will receive £5 and the limerick will be published with, hopefully, an accompanying cartoon. Rude limericks would be appreciated but are unlikely to be published.

Stan Pottinger

## DECEMBER "500 Club" Results

1st C.J. Hopkinson	£45.80
2nd M.J. Hanson	£22.90
3rd J. Boylan	£11.46
4th J. Whitney	£6.88
5th R.J.W. Dupre	£5.72
6th C.M. Young	£5.72
7th P. Cooper	£4.58
8th R. Moss	£4.58
9th J.H.V. Cross	£3.43
10th R.N. Whittall	£3.43

£114.50 was distributed in prizes and a like amount was transferred into BHGA reserves.

**DEREK EVANS**  
BHGA Treasurer

## THE CENTRAL FIGHTING FUND

Further donations have been received and the total in the Fund to the time of going to press (21.12.79) is £1,394.50. Many clubs have donated or collected £1 per member and some of the smaller clubs have sent in £50. We understand that quite a few are still fund raising including the large Avon Club, who are aiming to collect £1 per member. We acknowledge donations from the following:  
S.W. Brain, C. Twaites, S. Mitchell, R. Iddon, W. Niblett, P. Sutton, G. Rogers, H. Schmitt, Aberdeen H.G.C., B. Hebbes, South Essex H.G.C., Norfolk H.G.C., P.A. Meckiffe, Lanarkshire Soaring Club, Long Mynd Club, The Lothian Club, C.J. Hopkinson.

## DARTMOOR COMMONS BILL

The situation at 20.12.79. David Bedding was appointed to present the BHGA Petition against reference to hang gliding in the Bill which was passed from the House of Lords to the House of Commons on the 13th December. David took our Petition to the Private Bill Office within the 10 day period allowed and will represent us when the Commons Committee stage is reached. We are doing everything possible to have reference to hang gliding removed from the Bill at the Second Reading before this.

## HANG GLIDING SITES GUIDE TO THE UK & IRELAND

by  
**BARRY ANNETTE**

This was compiled with the co-operation of Clubs and is now stocked by the BHGA. We will only sell copies of the Guide to members of the BHGA so when ordering please quote your BHGA number. The price of the Guide is £2.90 including p. & p. Barrie plans to publish a new edition in 1981. When travelling to fly at sites run by other clubs possession of a Guide does not remove the necessity for making contact with the club first. Site use conditions change frequently. By June of each year from now on we plan to publish a list of several contacts with their 'phone numbers for each club with sites. This list will assist travelling flyers and can be used in conjunction with the Guide.

## 1980 A.G.M.

This will take place on 1st and 2nd of March at Warwick University, starting at 2.0pm on the Saturday. There will be an extensive display of hang gliders and equipment. Members will find full details and voting slips stapled into the centre of this issue. There will be at least six vacancies to be filled on the BHGA Council including the posts of Chairman and Treasurer.

## Candidates for BHGA Council

### Percy Moss

— 43, married to an excellent ground crew wife and is a professional transport engineer. He has been involved in Hang Gliding since 1974, has served as a committee member and Chairman of the Mercian H.G.C. and for the last 11 months has been a co-opted Member of Council with special responsibility for Clubs. He was the organiser of Clubmans Mere 1979.

His aims for the future if elected are:

1. Improve communications between Club and Council.
2. Increase Club and Members influence with Council.
3. To strengthen the government of the BHGA.
4. To help Clubs in all their activities and to encourage and assist them in their own development.
5. Help improve training potential at Club level.
6. To help Council to develop Hang Gliding in all its aspects and to direct it in the right direction for the future.

Everard Cunnion's view of a futuristic hang glider, with "forward sweep"



*Diane Hanlon —  
over 21, married, with  
a family.*

I first became interested in hang gliding in 1975 when Ray — my husband — and myself built our first kite. I flew first in 1976 after building my own and a club kite. I am now a Pilot 2 and an Observer, and I have completed a parachute course.

I was elected Secretary of the North Wales HGC in 1977, and my main interest since then has been to secure hang gliding sites as economically and with as few restrictions as possible, and to ensure the freedom of our sites to visiting pilots — something I would like to see throughout the country.

I would like to see the organisation of BHGA become much simpler, but more defined.

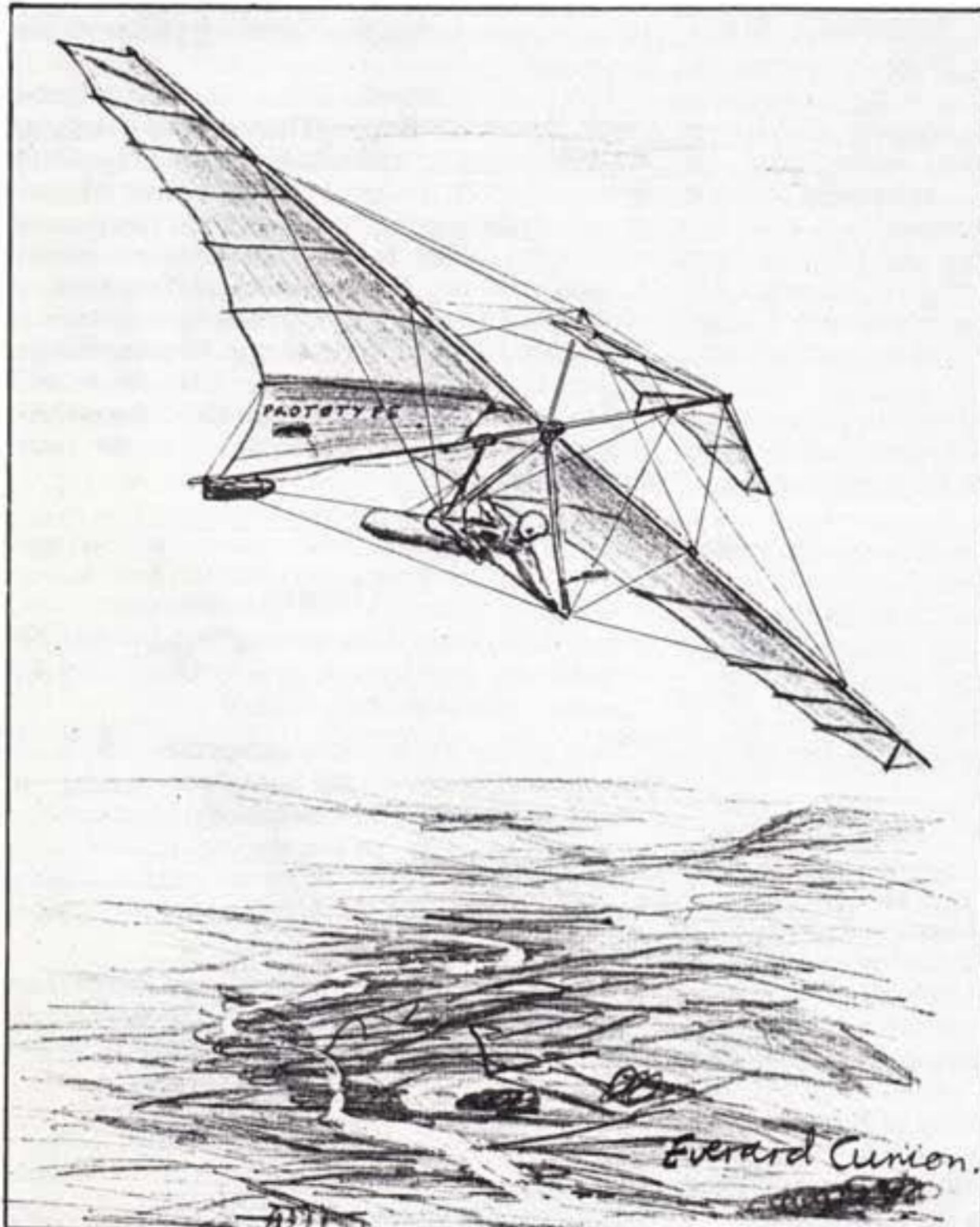
I am not an expert in any particular field, but I do have a love, enjoyment and a deep concern for hang gliding.

I wish to stand for election to Council at the 1980 BHGA A.G.M.



*David Bedding*

— flies a Safari or a Midas C when it's windy. He's a member of the South West Wales Club. Recently took over National Sites Negotiations for BHGA Council. David is 43, married, a government scientist (Building Research). He lives and works in Buckinghamshire.





# MORE NEWS

Photo: by Bettina Grey, taken at the Masters — Grandfather Mountain, U.S.A.

## SEAN DEVER FOUNDS AMERICAN LEAGUE

Bettina Gray tells me the boyos of Southern California have got together to found their own competition League. If you don't know the American hang gliding scene, the Southern California Club has about the same status the British Southern Club had around 1975. . . that is, it includes most of the best pilots in the country, it knows it, and other clubs tend to resent it. It's a bit like the mafia, but I'm saying that in an admiring way. . . I abhor offers I can't refuse.

Anyway, Sean has founded a competition league, which, in structure, is much like Ken Messenger's Birdman Competition in 1976. Manufacturers nominate teams of five, of which four will eventually fly, 1-on-1 with people from other teams. So far, there are teams from WILLS, BENNETT, SEAGULL, FLIGHT DESIGNS (this is Marty Alameda in disguise), SENSOR, UP and BRAND X (Chris Price with a commercial sponsor).

Sean won't be flying in the League himself, which is a shame, and his budget is around \$5,000, roughly similar to the British League. His aim, which caused me to laugh, is to make Southern California the ONLY place for competition in the world. . . It's reckoned they'll take three years.

Bettina says the pilots, a total of 35 so far, include Rich Grigsby, Joe Greblo, Jeff Scott, Sterling Stoll, Dick Boone, Marty Alameda, Roy Haggard, Larry Tudor, Gene Blyth, Mike Arrambide, Dean Tanji, and Rich Pfeiffer. One name not there which should be is Keith Nichols, who is the new chairman of the USHGA's Competitions Committee. . . apparently his company, ELECTRA FLYER, headed by Larry Newman, isn't interested in the idea.

The Southern California League will apparently end in May. Let's hope they all get rusty by the time the next American Cup comes around in October.

Incidentally, any pilot flying for a manufacturer may choose any of that manufacturer's gliders for any task, depending on conditions. Flying is every other weekend until May.



## AVON CLUB OPEN DAY

The AVON CLUB had a MEET THE PUBLIC Evening on November 29th, 1979, which was judged to be a tremendous success. So many of the public turned up that it was said to be difficult to move. Ken Turner, editor of the club's excellent magazine (which I'm plundering again this month), was asked to explain how they'd organised the evening. . .

The idea for an information evening cropped up at a committee meeting at the end of October, when the topic of falling membership was under discussion. As a committee, we set about allocating tasks to those present to test the viability of such an idea.

Some considerations were: advertising, mail slots, handbills, room booking, liaison with BHGA, Schools and manufacturers; TV and radio coverage; visual aids, hire of films, stage management, display boards, tapes, tables, chairs; projectors; PA system; lighting; electrics and music; raffles and prizes; information desk; *Wings!*; equipment displays; Master of Ceremonies; membership forms, both Avon and BHGA (we put out 60 altogether); clearing away, payment of bills, photographer; collection of money; liaison with Sports Council; drafting of adverts; security of equipment and cash; a bar; tickets; etc.

On reflection, I would advise a systematic allocation of tasks to definite committee members, otherwise too few people do too much work.

### Recommendations

(a) Get a very large room — ours was 66ft. x 43ft. and too small.

(b) Get prepared beforehand — i.e. any visual static display boards should be made as early as possible.

(c) Get into the room at least two hours before the public (and try to persuade the exhibitors to play ball and arrive early — our evening was nearly spoiled by late arrivals).

(d) Get someone other than the projectionist to work the lighting.

(e) Get those people in the club who, by profession, are connected with SALES occupations (i.e. Reps and even teachers) to be available to talk to the public about hang gliding. Most hang glider pilots are not outward going and it took a bloody age to get them asking the public if they could assist or help them. . .

Anyone interested in talking to Ken Turner, or inviting (with expenses) him or an Avon member to talk on the subject? Write to Ken at Flat 5, Hambleton House, Cotham Road, Bristol 6.

## FRANCE Main Target for 1980

Winning the AMERICAN CUP is very nice, especially to do it twice, but things have changed on the world scene since the original challenge to Tracy Knauss at the end of 1977. In Grenoble, at the World Championships last year, the French were undoubtedly the best team there. One can say, well, it was in their country, they knew the site, they had been practising there for ages. Nevertheless, they won handsomely, and proceeded to DEMOLISH all the arguments about being the home team by going out 4-handed to Columbia and positively slaughtering the opposition. Second in Columbia was Brazil, and third was a strong US team — Grigsby, Stoll, Scott and Greblo, three of whom would grace any hang gliding team in the world.

This year, 1980, looks like being a showdown between France and Britain. There are three occasions when we meet, as teams, to be able to judge who is better. In 1979, we lost to them at Grenoble, and drew with them in the XC Bleriot Cup. This year, we meet in the Bleriot, the European Championships in Kossen, and the American Cup in Tennessee. A sporting man would say we are favourites to win in Tennessee, they are favourites in Kossen, and the tie-breaker will be the Bleriot. . . let's make sure this year that there're no hassles about the marshal ling, and no team members lie out on the beach instead of flying.

### Quotes

From Ken Drew, when he was Deputy Director, Regulations, CAA, speaking to a Southern Sports Council Seminar on Hang Gliding. . .

"Hang gliding is no more dangerous than other sports happily accepted by the public. . . rock climbing, pot holing, motor racing for example. Based on numbers at risk, as far as we can see, the fatal accident rate is roughly similar to those in private aviation, gliding and parachuting, and the injury rate similar to that in parachuting".

The US Air Force has just 156 F111's in Britain. Last year, 1979, six of them crashed, killing more people than were killed hang gliding, with 3,600 pilots and kites. . .

### January Lottery Results

1st J.A. McCullagh	£46.00
2nd M.J. Hanson	£23.00
3rd T.W. Stewart	£11.50
4th D.A. Chippendale	£6.90
5th A.J. Delany	£5.75
6th R.A. Scott	£5.75
7th P.A. Harris	£4.60
8th A. Walsh	£4.60
9th G.P. Smith	£3.45
10th A.R. McRitchie	£3.45

The BHGA 'Profit' amounted to £115.00. HAPPY NEW YEAR!

Derek Evans,  
BHGA Treasurer

# LIBERTY, EQUALITY, FRATERNITY

Dear Editor,

Although I have just joined the BHGA, I have been interested in hang gliding for some time and this year have managed to fly, albeit spasmodically due to the weather, a Firebird S in the southern mainland of Shetland. For those interested in statistics, we have in our little club 20 members, 2 Super Scorpions, a Vortex 120, a Firebird S and a real, flying Wasp 229. Having spent 18 years in flying and Air Traffic Control and been introduced to the sport by Marty "Think up" Trichett, my enthusiasm for the sport and flying is unbounded so it is disturbing to read *Wings!* from the present back to July, 1977 and see how the elected leaders, the BHGA Council and other leading notables seem unable to agree on the direction in which the sport is going and more important how to get there. Sooner or later we are all going to have to stand up and fight. There will be no room for the conflicting interests of the Powered lobby, the Foot-launched lobby, the Winch-launched lobby, the League and Competition lobby or even the Nonk and post-Nonk lobby. The inexorable grind of bureaucracy, ill-informed public opinion and bad publicity will stifle our freedom.

*Wings!*, as I understand it, is the official publication of the BHGA, the official channel for passing on information and policy matters to all members and not an arena for what seem like personal vendettas. Other people do get to see it — yes, even the CAA and Devon C.C. and probably Dunstable Gliding Club — so if we appear as an argumentative rabble then that is how they will treat us. If people disagree with an Editor, they should write to him or her or better still speak to them and explain their position. If they still receive no satisfaction, then surely it is a matter for the whole Council.

So what or whom, you may say, is important to us as an Association? What do we need?

We need the Competition and League flyers because through them we have a chance to develop new gliders and techniques. They are the "flag carriers" because they gain the prestige and GOOD publicity that comes from winning national and international competitions but what will happen when our present top flyers are sitting in their bath-chairs watching? Will we have fostered the

Why don't you go and break some records



.. in their bathchairs watching...

# AIRMAIL



... if we appear as an argumentative rabble...

spirit of any newcomers to the League or will they be discouraged by the same people winning everything and then carving people up in print?

We need the Intermediate flyers because they are tomorrow's League pilots and, influenced by our current leaders, are the current largest purchasers of equipment thus keeping the manufacturers in business. They also have to pay full price having no sponsorship. They need glider reports, equipment reports, encouragement and a constant flow of relevant, useful information. I looked at a Thunderbird total energy vario the other day. It looked good but was it good? Is it better than the others considering the price? I'd like to find out. We need the experimenters, the motorised, the rigid wings and the winch launchers because they are constantly expanding the frontiers so that one day we may out-perform those all-plastic jobs.

Most of all, we *all* need ground from which to fly, air in which to fly and the tolerance if not the support of the general public and those in authority. There is no ideal solution but I think I have proved we all need each other and we need to demonstrate this to others through *Wings!* and exercises like that performed by the Thames Valley Club. So let's bring it all into the open at the next AGM in March, formulate a cohesive, positive policy and then go out and do it! Remember that the bulk of people you influence are non-flyers and the bulk of the people you recruit are learners.

**Dave Dawson**  
Sumburgh Airport  
Shetland

## ONE MAN'S POISON. . .

Dear Editor,

Peter Mawer knocks the Moonraker 78 in the last issue. I would like to see more flyers give their considered subjective opinions on their gliders in print. A typical hang glider advert runs something like ". . . outstanding sink rate maintained over an incredible speed range, superb handling, easy to fly. . ." At best, it's a run down of smooth air characteristics and showroom features. But what is the glider really like to fly?

Peter Mawer's letter would carry more weight, however, if he had told us more background:

- Other gliders flown.
- Flying air time, number of flights, type of sites.
- Explain more fully . . . repeatedly spun in at higher wind speeds or when the speed is pulled on.
- What glider, if any, does he now fly, and how does he find it.

Now let me give my opinion of my 165sq. ft. Moonraker 78. I have about 50 hours flying time, most of it on the Moonraker spread over 300 flights at a variety of inland, coastal, and thermal flying conditions. Other gliders flown have been a Scotkites Firefly, one flight on a Vortex, and some ground skimming on "bog standards". I bent an A frame upright once when lack of penetration forced me to land in wind shadow.

*Overall:* difficult to fly; smooth air characteristics fast and light — good.

*Static balance:* perfect.

*Construction:* simple; easy to checkout; nothing snags.

*Pitch Control:* O.K.; light.

*Roll:* light; immediately the turn begins it is necessary to start taking off bank — considerable input is required to do this.

*Penetration:* very poor; constant wariness is required to avoid getting trapped if the horizontal component gets strong.

*L/D:* O.K.

*Sink rate:* Equal to or better than all other gliders in marginal smooth air.

*Turbulence:* handles very badly; a wing can be snatched down very quickly; ridge soaring in rough conditions dangerous.

*Thermalling:* once away from the ridge, the glider can make use of very light lift; easy to sense lift gradient; turns O.K.; very pleasant to fly.

*Conclusions:* A glider for light winds but not in turbulence at ridge level. No problems once the limitations are recognised. Cannot be flown efficiently in turbulence.

Being thermal and light wind orientated, I have enjoyed owning and flying this glider. Alternative local gliders available at the time were Midas E, Scorpion, and Gryphon. I don't regret choosing the Moonraker 78. The Vortex I tried recently handled like a standard in comparison to the Moonraker.

Since the Moonraker 78 is no longer produced, this letter is mainly of historical interest, but I would like to read considered opinions on other current gliders. Briforge contributors save your ink.

What does the manufacturer (or designer) think in retrospect about this glider?

**Lindsay Ruddock**  
London NW8

## THE COIN'S OTHER SIDE

Dear Editor,

In the December *Wings!* Peter Mawer tells a very sad tale of neglect and overselling by an unscrupulous manufacturer. Every story has two sides, so where is the manufacturer's version?

Anyone who read Peter's advert in a previous issue can have no doubt as to whom he is referring. As one of the casual flyers Peter seeks to advise I should like to say that I have not the slightest hesitation in putting my complete trust in the manufacturer he so ferociously attacked.

Although I fly a totally out-of-date glider purchased second-hand from this manufacturer some years ago, I know that a 'phone call will produce nothing but effective advice and genuine help from him. On the rare occasions that I have required minor repairs or modifications to my glider I have received immediate and superb service from the whole of the staff.

As Peter clearly feels the glider is unsafe one wonders how it saved his conscience to sell it to another pilot!

**John Porter Warminster Wiltshire**



.. an amazing 2000 m.m. of altitude

### ONCE UPON A TIME...

Dear Editor,

This morning I had another of those rare nocturnal flights, but this time, because of late night working, it took place during daylight — in fact in occasional sunlight.

Take-off was on a very gentle grassy slope with little or no wind, yet I managed somehow to achieve and maintain an altitude of about 300 millimetres and this with no physical effort whatsoever. In fact my arms were by my side throughout, and I wondered afterwards what I might have achieved had my arms been outstretched with hands cupped into rough aerofoils!

The success of this venture I attributed to slight but sufficient thermal activity, a belief which was strengthened when during my second flight the sun briefly shone on the slope and I quickly achieved an amazing 2000 millimetres of altitude, which actually allowed me to make a stand-up landing instead of nose down as after my first flight to the bottom of the slope.

A friend who witnessed the second flight was himself tempted to launch himself horizontally but was foolish enough to do so over the stone steps which led to the stile at the end of the slope. I swear he struck every step on the way, which I attributed to the turbulence generated by each step rather than to any lack of flying skill.

I did not wait to see if he would try again over the grass as I was well satisfied with my two flights and wished to have them confirmed before I should wake up and find I had been dreaming.

I recalled my earlier flight (as reported in *Wings!* January 1977) which was certainly more spectacular, involving as it did both ridge lift and wave lift, nevertheless I am totally satisfied by that six-fold thermal height gain on only the second flight after a long period of inactivity.

I don't know when I shall be moved to repeat the experience, but I am sure that when I do I shall be able to report further advances in wingless flight.

**David A.G. Tait**  
Dorking  
Surrey



.. he struck every step on the way

### RAF HANG GLIDING PILOT REGISTER

Dear Editor,

To assist in getting hang gliding recognised as an official sport in the RAF I am compiling a register of all RAF hang gliding pilots. This should provide an accurate assessment of the number of RAF participants.

Could I possibly ask you to publicise the register in *Wings!* and ask pilots to

contact me? In addition the register would be of more assistance if pilots indicate their BHGA Pilot Rating.

It is important to stress that I am interested in any RAF personnel who has had any contact at all with the sport.

**R.E. Holden**  
Flight Lieutenant  
9 Regiment Army Air Corps  
British Forces Post Office 41

### FUTURE OF WINGS!

Dear Editor,

We realise that running a magazine is no joke but can we have a look at *Wings!*

*Wings!* used to be the same size as *Windsock*, a handy size and very creditable in appearance, if occasionally short of good, meaty contributions. Its purpose was to keep communication going between club and members and to promulgate information and act as a reference book on technical matters, safety, law, site state and so on. I believe it was budgeted at around £8,000 to £10,000. The size was increased. The article content was no more informative. Black and white pictures grew bigger. Advertisements grew bigger though in general they occupied the same proportion of space. The magazine became less handy to either pocket or store and, consequently, much less handy to refer to. The budget went up some 50%. What did we gain? Now it is proposed that *Wings!* go public with an *estimated* budget increase of 50% again "to bring our image before the public".

If it does go public, will the sales revenue cover the costs or even the increased costs? How many can we expect to sell? A few hundred at most, I should think. Wide distribution in penny packets will make it most unattractive to distributor and sales outlets. As it is now, the budget cost of the magazine is half, yes half, of our total BHGA subscription.

If we go public, how can we possibly afford to let the public read detailed and quasi-confidential accident reports and analyses? (Why not? What is there to hide? — S.P.) Such informative and thought-provoking items will have to disappear. What *real use* the magazine then?

BHGA finances are being juggled now. Costs are always increasing. Membership is not. We are encumbering ourselves with bigger organisation and more salaried staff. Is the new magazine policy really the direction we want to spend our money?

I am calling for an economy campaign. For a real study of cost and information effectiveness in particular I think the magazine should be produced to the same format and cost level as *Windsock*. It is quite adequate and respectable as a shop window for hang gliding if we insist on selling it. There are plenty of paperbacks that size which demonstrate ability to sell to the public. The same opinion was expressed in October 1977 in a letter to *Wings!*

*Wings!* has been reluctant to publish my items recently. Perhaps like this one they are of little interest. Still if you *are* interested why don't you write to the Editor of *Wings!* and say what you think about the new proposals which have been dropped on us. And about size and format. After all, it's *our* money that is being spent.

**Vince Hallam**  
Brighton

*Editor's comment: It's not proposed to increase the budget by half. It's pro-*

posed to make *Wings!* self-sufficient, i.e. to cost the membership nothing. All the rest can be argued at the AGM.

### FOOD FOR THOUGHT...

Dear Editor,

Now that cross-country flying is becoming more common, it is quite likely that a pilot may land in a remote place and may have to spend the night in the open if his landing has not been observed or if the landing has been made in an inaccessible place.

There are a number of factors important to survival, the most important being the will to survive. However I did notice an advertisement recently for a survival ration pack. This comes from Survival Aids Ltd., Low Holm, Cumwhitton, Cumbria CA4 9HE. It weighs 14ozs and contains a 24 hour ration of 1200 calories, costing £4.75.

I would recommend a cross-country pilot to take something of this sort with him.

**Dunstan Hadley (Dr)**  
Itchenor Green  
W. Sussex  
(BHGA Medical Adviser)



### CENTRAL FIGHTING FUND

Dear Editor,

After reading the article in December *Wings!* on the Central Fighting Fund, I was utterly taken aback to find that members of the BHGA had only contributed £747.

It amazes me to think that people can spend around a thousand pounds on a glider and associated equipment and yet, it seems, they cannot afford £1 towards making sure there is somewhere to fly the thing. Surely, beer and cigarettes or whatever could be done without for a week and the savings donated to the CFF.

It seems to me that the people who haven't contributed towards the CFF are prepared to sit back and let the rest of us finance their flying. Do their consciences not trouble them?

**J.A. Cunningham**  
Trimdon Village  
Co. Durham

# Talking of Safety

by Harry Unsworth

**Incident Report:** from Harry Unsworth, Bradford, Yorks.

**Pilot Experience:** Two years — Recent Pilot 2.

**Glider:** Cherokee Medium.

**Site:** Dales HGC. Local training slope. 50ft. Very gradual and grassy.

**Wind speed and direction:** 3mph straight on.

**Instruments:** Not carried this day — only Instramount Spigot-nut.

Following six weeks of non-flyable absolutely diabolical weather conditions, I found myself at our local training hill one afternoon just before Christmas. A few of our Dales Club members were enthusiastically running like the clappers and ground skimming for two or three hundred yards, with a ground clearance of 20-30ft. (I must point out that this particular site is a very gradual grassy slope, and in nil or very light wind conditions, requires athletes of almost Sebastian Coe standard to achieve airborne status).

After 'shakin' out the moths' from my trusty steed I carefully rigged and checked my kite thoroughly (it had never before been grounded for such an extended period of time). For such a short flight I felt that it would be pointless to fit my variometer to the A-frame, but I left the basic Instramount spigot fitting attached to the left upright as I always do, for convenience. After clipping in and before commencing my run, I held the secondary stirrup loop in my left hand whilst holding the left upright. I have always found that this mode of take-off enables a good run to be made without tripping, but this time could have been the last run of my life had the incident happened on a site with a less forgiving environment. Whilst trying to stamp myself prone (only 12-15ft. from the deck — looking where I am going — not down at the stirrup) the heel of my right

boot connected with the stirrup and I pushed back quite hard. It was then that I realised that the secondary stirrup loop had caught around the instramount spigot. At this point things were happening pretty fast (or so it seemed) and I was in a steep left hand side slip back towards the hill. I tried to achieve weight shift to the right but this only made the matter worse, as I could not extricate my right heel quickly enough from the stirrup bar and thus relieve the tension from the secondary loop, which, by this time had really jammed behind the spigot. The overall effect was like making a clean take-off (straight and fast) and then applying full left weight shift whilst only 12ft. from the ground! — and not being able to correct by opposite weight shift, the effort in fact only making things worse by pulling the left wing down! I impacted with the slope fully downwind with fortunately no physical damage (apart from the mental realisation that I was a bloody fool for getting myself into the situation). However, my glider required two new uprights, one deflexor, and five new battens. Cheap, when I think what might have been.

That same evening I watched some 8mm movies (very self-critically) which I have taken during the past twelve months, some of which were shot from the ground by friends and some from the wing tip/keel of my glider. I was most disturbed to note that I had

fallen into a bad habit of holding that damn stirrup loop close to the instrument mountings, even on vertical cliff take-offs! Am I going through the intermediate syndrome? A blasé phase? From here on I'm going to *think it out every time* before take-off.

Don't think it can't happen to you. Remember when mounting anything on your glider, instruments, cameras, etc., to check very carefully that you will not get fouled up, not only during take-off but also whilst in flight.

Incidentally, I have removed the secondary stirrup loop from my harness and changed to a *nonk* rubber. Quite appropriate, don't you think?!

*The posed photograph (by Noel Whittall) shows quite clearly how the loop can get jammed behind the spigot.*



# Loser takes Nothing

by Dave Brewer

**It may be possible, in the following story told by Dave Brewer, to identify the school he's talking about, and think to blame it. Don't. A careful reading of his article shows the instructor obeyed, in the spirit as well as the letter, all the BHGA asks of a school.**

(There's no doubt the weather has been bad for teaching. It's been bad for normal flying as well. If an instructor chooses not to take chances with his pupils, opting for the safe course instead, who can say he's to blame if — week after week — potential BHGA members never get to fly? It's been, as Tony Fuell says, seven months now since a hang gliding fatality. Injuries in training are only a fraction of what they were three years ago. Still, there must be a question mark against a system which allows only one real way for a punter to learn how to fly, through a commercial school. We get more than 3,000 queries a year, nearly 3,000 pupils in all a year, but membership is levelling off. *Think* before you start shooting off letters about Dave Brewer's experience. It's certainly a question — if we can locate other possible Dave Brewers and get them there — that must come up at the AGM . . .)

I had heard via an old friend that a school had been set up locally, so I got in touch and arranged a week's course in October, 1979. It seemed that I had selected my holiday dates wisely, since I discovered I was the only student booked on the course for the

week in question: I was delighted.

The first half of the first day was spent at base learning some background theory. The second half was spent scooting around a field full of cow-pats, like a large multi-coloured turkey that was too fat to get off the ground. This, I was told, was to build up my confidence in basic handling techniques.

Day 2 held more promise. The wind was right, I was full of confidence and raring to go. I arrived at the site with the feeling that I was going to the guillotine, but nevertheless, excited. But who were all those odd-bods sitting around on gates and chatting in little groups?

I approached one in an effort to 'buddy-up'. After a few minutes chat, I managed to slip in my question, cleverly. . . "So you're on some sort of course, are you?"

"Well, sort of", replied my new friend. "I'm finishing off my P.1".

"You're one of last week's lot then?" I continued. "Oh, no", he said, "My original course was in June. But, you know, I keep on coming, week after week. It's the weather, you know, but you've got to keep at

it."

"I see", I said, "and how many flights have you had so far?"

"Just the three", he said.

I continued my investigations until I discovered that all the guys assembled there were "finishing off" their P.1's. One fellow, who obviously had the patience of Job, actually managed to smile as he told me that he had been coming for three months, off and on, and had not yet made his first solo flight. My heart was sinking fast.

However, I did get my first solo in, on the 4th day.



*continued on next page*

It was the most exhilarating sixty seconds of my life. Quite pricey enjoyment, though, at £1.40 a second, since the course cost me £86, and that has been, so far, my only solo flight. Fair's fair, though, the wind simply wasn't in our favour, and you can't blame the instructor for that.

The final irony came when I learned that the

school had moved to another part of the country.

The instructor was a really nice guy, and I can, of course, get up to P.1. standard any time I like, even though I have to go to another part of the country to actually finish the course.

Anyway, I've decided instead to have a crack at parachuting next. The concept of controlled flight

which hang gliding offers is far more appealing, but there again, the chance of getting a couple of good parachuting jumps for your money is higher, in my mind, than the chances of gliding off a hill.

**David Brewer**  
Wiltshire.

## SMALL ADS.

All small ads should be sent to **Silvia Howard, Commercial Editor, Wings!, 4 Somerwood, Rodington, Nr. Shrewsbury, Salop.** Ads sent to any other address will be redirected and therefore delayed.

For your own safety, if you are purchasing a second-hand glider, check that it is a registered BHGA model, 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.

Wanted. **MCBROOM** seated harness. Tel: Shrewsbury 55016. Tony Slater.

**WASP GANNET 175** for the man who likes to look down on his friends without working too hard. Brand new, only test flown to confirm handling. £600. Please ring Bob England, Bristol 37246.

**SUPER SCORPION C.** Breakdown model. Sept. '78. £420 o.n.o. Also Skyhook prone harness with Skyhook parachute £150. (Will consider selling separately). Sheffield 332326, evenings and weekends only.

**ALTIMETER & VARIO** Ex RAF Altimeter for sale. Perfect working order. Clear, accurate read-out £20. Also Radair Variometer, Audio & Visual with Stalk £85. Also Wrist Altimeter (not Thommen) £40. Tel: Mike Hibbit, Reading (0734) 864543

**OWENS VALLEY '80** One Pilot needed to make a party of three for a three week flying holiday, end of June. You should have a lot of airtime and thermal experience. Shared cost should be around £600. Contact Mick Pollard, 16 Liddell Road, Liverpool L12 7HS. Tel: 051 226 7342

Large **SPIRIT**. Excellent condition. Hardly used. Dark blue, light blue, white. Bargain at £260 o.n.o. Tel: Don, Disley (Cheshire) 5316.

**CYCLONE**. Excellent condition. Not crashed. Buying house, must sell quickly hence £325. Droop tips, formed battens etc. Phone Dave at work, Mansfield 752609 or home 29650.

Beautiful **MOONRAKER** for sale. Excellent condition. One owner. Flown from new. Seated. Never pranged. Flies like a dream. Complete with bag. Sacrifice £300. Theoter Vario — visual and audio £50. Phone Wootton Bassett 2994. Bert Tyrell.

**PHOENIX** Jnr. 8. £165 o.n.o. RAF Alti. £25. Cosim. vario £30. Sunbird supine harness £30. (A really super U.S.A. job). Dick Scates, Abson 2144.

**SITES GUIDES** to most of U.K. and Ireland: £2.75. For 6 or more: £1.85 each. BHGA membership required for UK orders. For clearance of overseas cheque, add £1.10, plus 15p per copy for overseas postage. Barrie Annette, 116 Colne Road, Twickenham, Middlesex, TW2 6QN.

For **FREE LIFE ASSURANCE QUOTATIONS** with special consideration for BHGA members, contact Ariel Insurance Agency, 32 Torquay Gardens, Redbridge, Essex IG4 5PT.

**CHEROKEE** (small). Suit pilot under 11 stone. Reputation makes description unnecessary. £420 o.n.o.

**MOONRAKER '77**. Clean kite, multicoloured sail, good performance. Only £310. Also Irving 124 parachute. Ideal briforge system etc. £75. Tel: Penketh (0925-72) 8856.

**MEDIUM SPIRIT**. Good condition with seated harness. Ideal for Epc to Intermediate, 8-11 stone pilot £260. Phone 051-336 6895 after 6pm.

For sale. **SUPER SCORPION C+**. Four months old with B bar & seated harness. £500. Phone 01-764 7021.

**WORLD TOUR** starting Christmas 1980, lasting 9 months to 2 years. Details not yet finalised, transport preferably Land Rover. Group of 4-6 anticipated. Anyone interested in joining me, contact David Robinson, 29 Briar Close, Horndean, Hampshire, PO8 9ED.

**MIDAS E**. Blue & white, in good condition. Good performer. Cross tube and kingpost fairings. £200. Tel: Gloucester 421366.

**EMU**. Large. Very good condition. Own bag. Never been crashed. All red sail. Flies beautifully. Low air time. Must sell quickly. Genuine reason for sale. £495 o.n.o. Tel: Loughborough 63536. Ian Hoad.

**CHARGUS CYCLONE 180**. Flown twice by owner. £350. Wasp prone harness £35. Hiway seated harness £20. Elstead (Surrey) 702514 evenings.

**HIWAY SUPER SCORPION C**. Superb soaring, thermalling machine — can be seen flown. £450. Elstead (Surrey) 702514 evenings.

For sale. **ELECTRA FLYER OLYMPUS 160**. Prone harness also available. Must sell. Offers around £295. For further information 'phone Dunstable 601768.

**SIMPSON** prone harness for sale. £15. Please telephone 0752-65472 after 6pm.

**MOONRAKER '78**. Excellent performer. Blue with red flash. Quick sale. Only £295. Tel: 073477-2423 evenings. Graham.

**SUPER SCORPION C**. Beautiful multicoloured sail in dacron. Excellent condition, almost unused. £475 o.n.o. 'B' Bar, prone & seated harnesses. Must sell. Tel: Copthorne (Sussex) 712384 or Haywards Heath 58472.

**VORTEX 120**. Almost brand new. Colourful dacron wing. £350 o.n.o. Tel: Haywards Heath 58472 or Copthorne (Sussex) 712384.

**WASP** prone stirrup harness. Brand new. £45. Phone Brighton 554269.

**VORTEX 120**. 3 months old, as new. Flown once at Rhossilli only. Beautiful ripple free sail. Colours keel out white, dark blue, mid blue, light blue, white. Pushpin control frame. £400. Tel: Hitchin 53396.

**CYCLONE 180** in Immaculate condition with spares. Blue, white and gold. Fantastic flyer. Try it and you'll buy it. Genuine reason for sale £450. Ken Barker, 01-427 3014.

**SUN SWIFT 'B'**. American intermediate glider, up to 14 stone pilot. Smooth dacron sail, bolt-on battens, flies high and fast. Spare keel. Only £210. Andy Armstrong, 4 The Drive, Hartley, Plymouth, Devon/Plymouth 777568.

**CHEROKEE 200**. Modified at Hiway factory to rig like Super Scorpion. Gold and black. Almost new kite only flown 4 hours. Sale due to beer pot. Absolute bargain at £475. Ring Ray. 0792-812483.

**SPIRIT**. Medium. Excellent condition. Pulley system. Rigs prone or seated. Beautiful sail. £280 o.n.o. Tel: Poynton (09967) 3755.

**SUNSPOT**. Large. Excellent condition. Rigs prone or seated. Full spectrum colour scheme. Complete with Skyhook prone harness. £350 o.n.o. Will separate. Tel: Poynton (09967) 3755.

**WINDHAVEN** emergency parachute on Hiway prone harness. Excellent condition. £200 o.n.o. Tel: Poynton (09967) 3755.

**PELLET VARIO** and **ALTIMETER** on mounting stalk complete with flasks. £25. Tel: Poynton (09967) 3755.

**SCORPION 'B'** for sale. 3 years old but in good condition. £240. John Evans, Gable End, Mellock Lane, Neston, Cheshire. Tel: 051-336-2681.

**GRYPHON III** See George Worthington report *Wings!* No. 7. White asymmetrical tips. Price negotiable. Tel: Steve 01 969 2788

**FOUND** Mill Hill, 8 December. White helmet, blue gloves. Contact Sussex College of Hang Gliding, Brighton 24151, Ext. 171.

Large **MOONRAKER 78** in very good condition. Must sell. £350 o.n.o. Terry, Tel: Leiston 831027.

**CHEROKEE** Medium. 5 months old. Excellent condition. £465. **SKYLINE** Medium. Beautiful condition. £375 o.n.o. Ring Graham Hobson, 061-973 4085.

**NEW PARACHUTES**. Strong, compact, low sink rate, single handed 'throw away' deployment. Competitively priced. Phone or write for details. Skyhook Sailwings Ltd. Vale Mill, Chamber Road, Hollinwood, Oldham, Lancs. OL8 4PG. Telex: 667849. Tel: 061-624 8351, 061-681 5045, 061-681 5369.

**BOWLAND ALTIMETERS**. £17.50. 57mm diameter x 33mm. Black numbers on white face to 8000ft. Sussex College of Hang Gliding, Brighton 24151, Ext. 171.

**SECONDHAND GLIDERS, INSTRUMENTS, etc.** Mainair Exchange and Mart. Ring 0706 55131 with details of sales and wants. We will pass on to customers. **FREE SERVICE TO BHGA MEMBERS.**

The **SOUTH WALES HANG GLIDING SCHOOL** offers special courses to prospective instructors and training for Pilot One holders. Phone Ynysowen (0443) 690787.

Following a decision by Council on 13th January, beginning with the April issue of *Wings!* a charge will be made for *classified* and *business* adverts, which up to now have been free.

There will be three different types of small ads. *Personal* messages, such as "found on hill, one vario, etc", in which there is no profit for the person putting the message, will continue to be free. *Classified* advertisements, such as the sale of gliders, will be carried at 10p a word, including one word in bold type, and the minimum charge — *which must be pre-paid* — will be £2 an advertisement.

*Business* ads, like *Mainair*, will cost 12p a word, minimum £3, no maximum.

The reason? *Wings!* is running at a big deficit, and needs to introduce normal commonsense measures to cope. The restrictions on advertisements for gliders which have not gone through the British Airworthiness scheme remain in force, in line with last year's AGM decision. As of 13th January, the only new glider which may be advertised in *Wings!* is Hiway's **VULCAN**.

**WANT TO:—** Fly better on lovely hills?  
Learn more quickly and safely.  
Have nice friendly board.

**CONTACT:—** South Wales Hang-Gliding School,  
67 Cardiff Road,  
Troedyrhiw CF48 4JZ  
Phone Ynysowen (0443) 690787.

**WANTED.** Colour slides of all aspects of hang gliding. 50p each paid for those used. John Hudson, Mainair Sports, Shawclough, Rochdale, Lancs.

**INSTRUMENT —**  
Vario Mounting Stalk.  
Secure and instant  
Instrument fixing — £11.00.  
Makiki — Pellet  
Variometer — amazing at £35.00. Hang Gliding and Glider Rider —  
Subscription £14.38 each.  
Parachutes — Spares —  
Components —  
Windmeters — Harnesses.  
Who else stocks 8 types?  
Helmets — Boots —  
Thermal Wear — Ski Suits  
and over 500 lines. If you fly  
you need a Mainair 1980  
catalogue. Send large s.a.e.  
plus 50p (refundable  
against purchase). Mainair  
Sports Ltd., Shawclough,  
Rochdale, Lancs.

**WANTED.** Good small intermediate for 5ft., 7 stone pilot. Scorpion A, S. Scorpion B? Vince Hallam, Sussex College, Brighton 24151 ext. 171.

**THE HALF MOON HOTEL, LLANTHONY, ABERGAVENNY, GWENT.** Situated in the valley behind Hay Bluff and Pandy Run. Friendly atmosphere, good food. Free house, party bookings catered for. Phone Sonia on Crucorney 376 or write for further information.

**WASP FALCON III.**  
Excellent condition, no prangs or hard landings. Ideal kite for beginner. £175. 01-656-3108.

**FLY THE MOUNTAINS!**  
Free coaching. Snowdon view. Cosy converted barn. Sleeping loft, open fire. Electric mod-cons, beautiful surroundings. Sleeps 4+2. Also simple, comfortable 4-berth caravan. Llanberis 707. Susan or Jan. Madog Parc, Brynrefail, Caernarvon, Gwynedd.

**Small ads must be limited to 35 words. Personal ads are free to BHGA members. Non-BHGA members or commercial small ads will be accepted at a cost of 8p per word. Send to the Commercial Editor, Silvia Howard, with a crossed cheque or postal order for the correct amount (minimum charge £1) made payable to the British Hang Gliding Association.**

## IS THIS THE SAFEST HARNESS YET MADE?



IF YOU ARE THINKING OF GOING PRONE,  
OR HAVE DIFFICULTY WITH A TRAPEZE  
HARNESS, YOU SHOULD CONTACT

**VIKING HARNESSES,**  
4 Rowlands Road, Bury, Lancs. BL9 5LJ  
Telephone: 061 764 3462 (evenings)

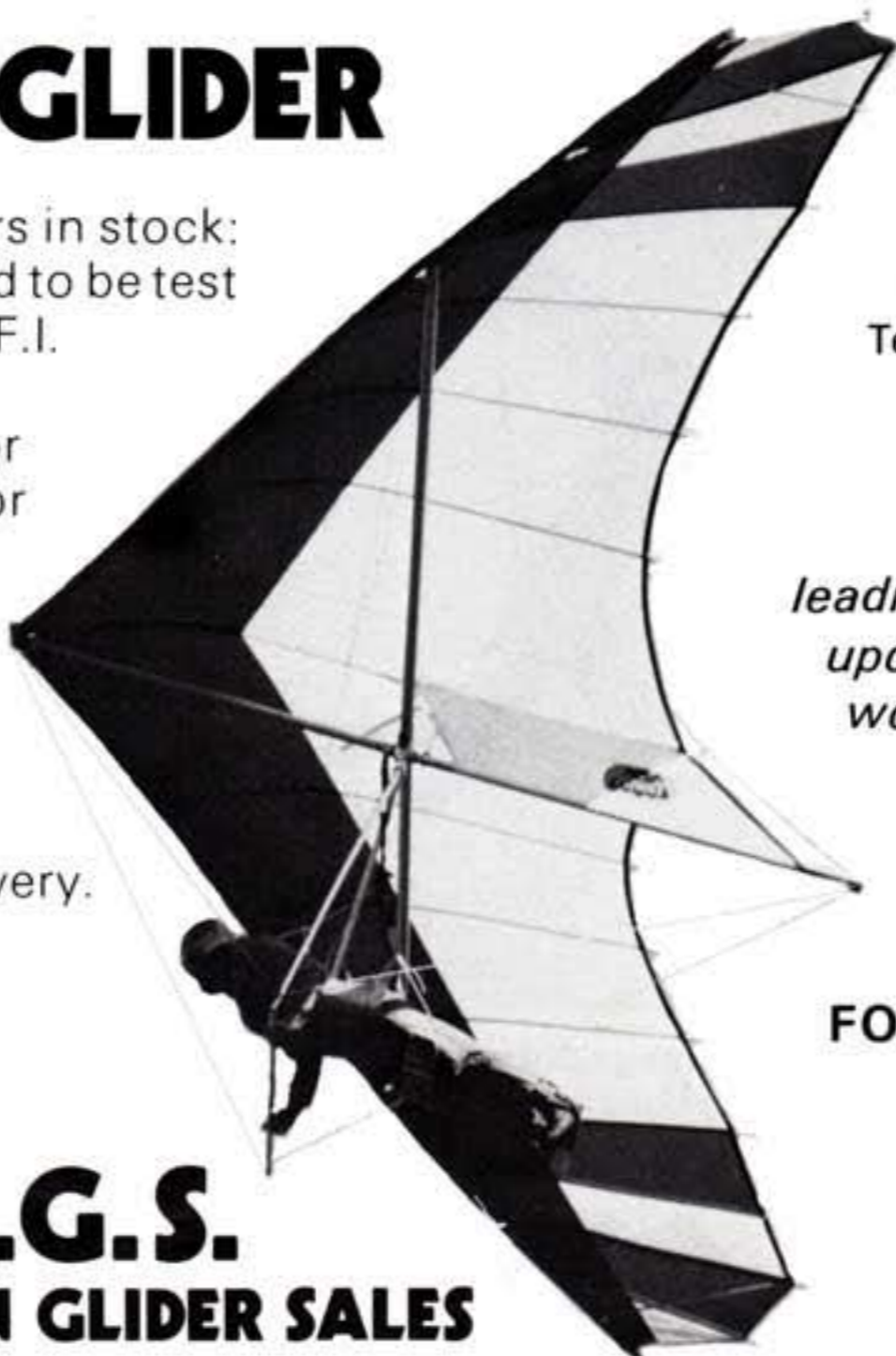
## NORTHERN GLIDER

New and second-hand gliders in stock:  
All our gliders are guaranteed to be test  
flow and tuned to suit by C.F.I.  
and British Team Member  
Graham Hobson, whether for  
the beginner, intermediate or  
advanced customer.

**N.G.S.** also undertake to  
repair, at cost of parts only,  
and test fly any new glider  
purchased from us, for  
the first 4 months after delivery.

Inquiries for new and  
second-hand gliders  
are welcomed and  
demonstration  
flights are invited.

**N.G.S.**  
**NORTHERN GLIDER SALES**



## SALES

8 BRENCON AVENUE  
BROOKLANDS  
MANCHESTER 23 9HL  
Telephone: 061 973 4085  
061 434 3364

*"Sole importers for  
leading continental glider  
upon which Bob Calvert  
won the League final."*



**MAIN DEALER  
FOR HIWAY** (Stocking  
the **NEW VULCAN**  
in numbers and a  
comprehensive  
selection of spares)

# Vulcan

The ultimate glider  
for competition and  
cross-country  
work..

Hiway introduce the first glider ever to have gained its C of A before being released to the flying public.

Vulcan is the top performer in the Hiway range of hang gliders. High aspect ratio wedded to a low twist wing gives the penetration that the serious competition and cross-country pilot has always dreamed of. The cross boom is moved into the slower moving air closer to the sail and the leading edges are thus freed from this drag inducing structure. The absence of deflexors makes this the cleanest wing yet.

The hardware of the glider has been totally rethought in line with the demands of tomorrows pilot. Vulcan is even quicker to rig than previous Hiway models. A sliding centre box leaves the cross booms permanently attached to the leading edges and the nose catch has been re-designed to give quicker and surer attachment. A removable king post boss prevents tangled top wires and a re-designed 'A' frame with straight uprights means they can be easily and cheaply replaced.

A whole new barrage of safety devices is incorporated including, improved tip strut mounting, anti-luffing wires and a fool-proof hang strap system.

Vulcan is not only streets ahead in performance but retains the legendary handling that Hiway is known and trusted for.



**Hiway Hang Gliders Limited**  
Sirhowy Hill, Tredegar, Gwent NP2 4XP  
telephone : Tredegar (049 525) 4521

