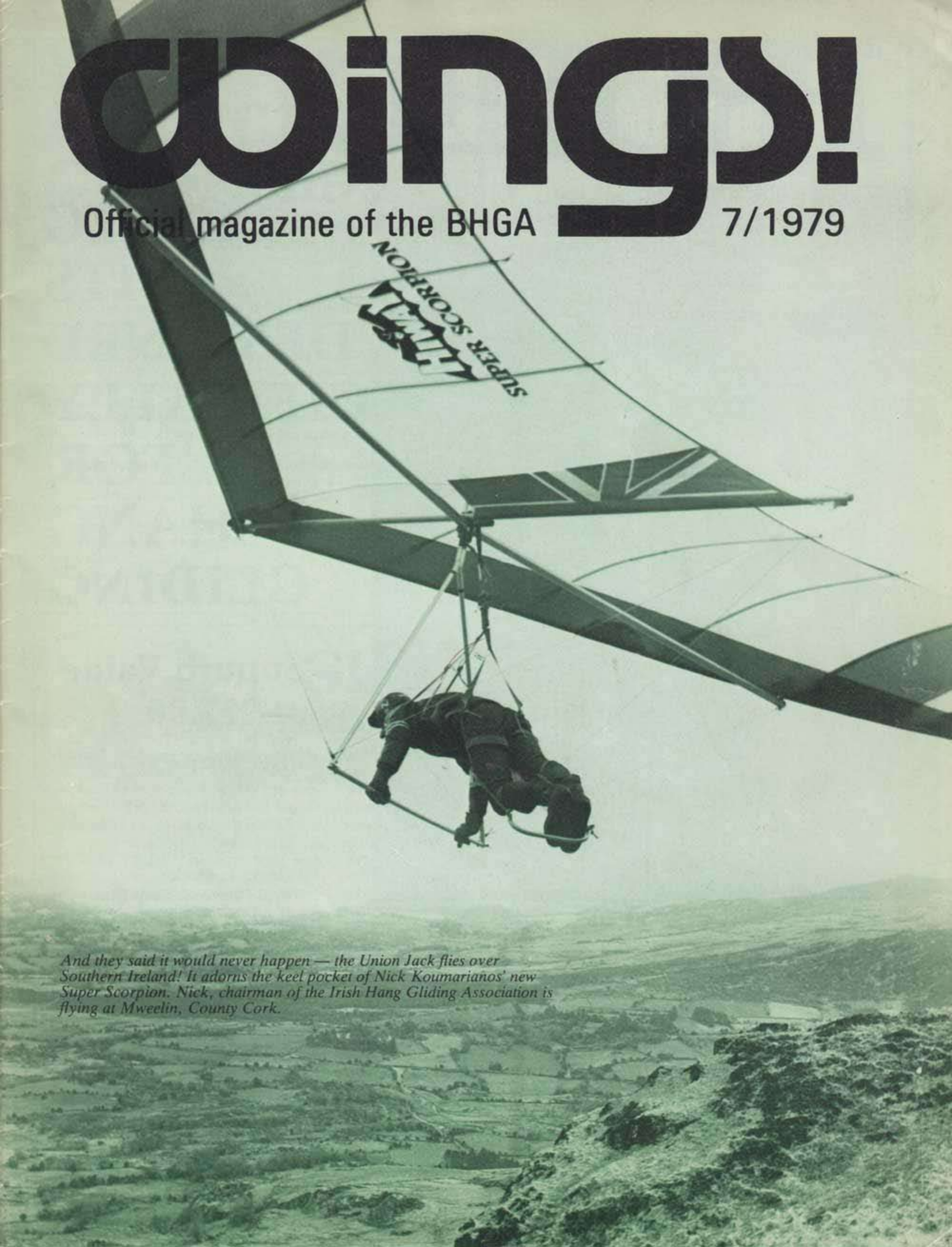


# wings!

Official magazine of the BHGA

7/1979



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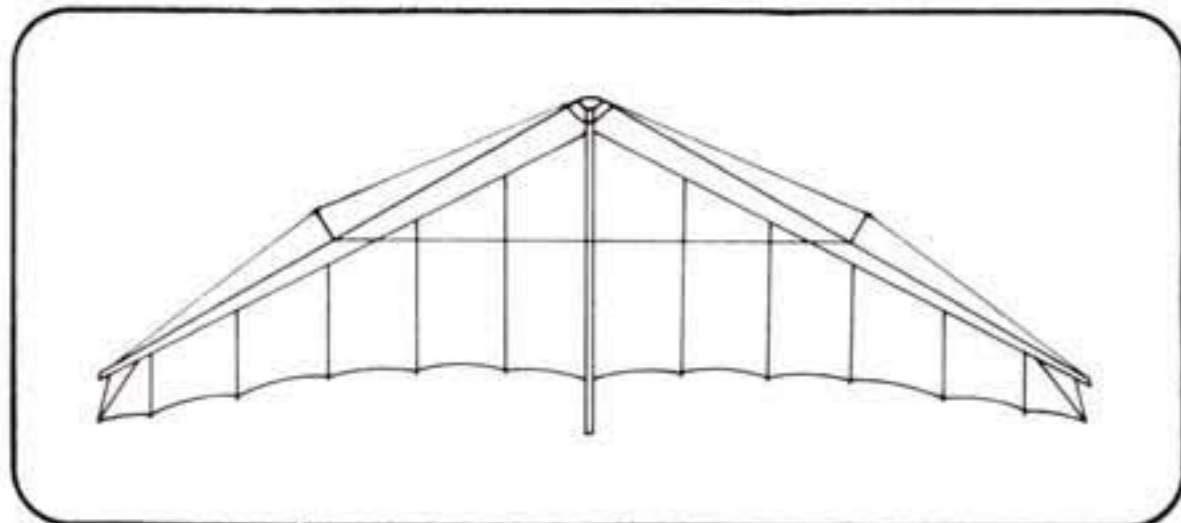
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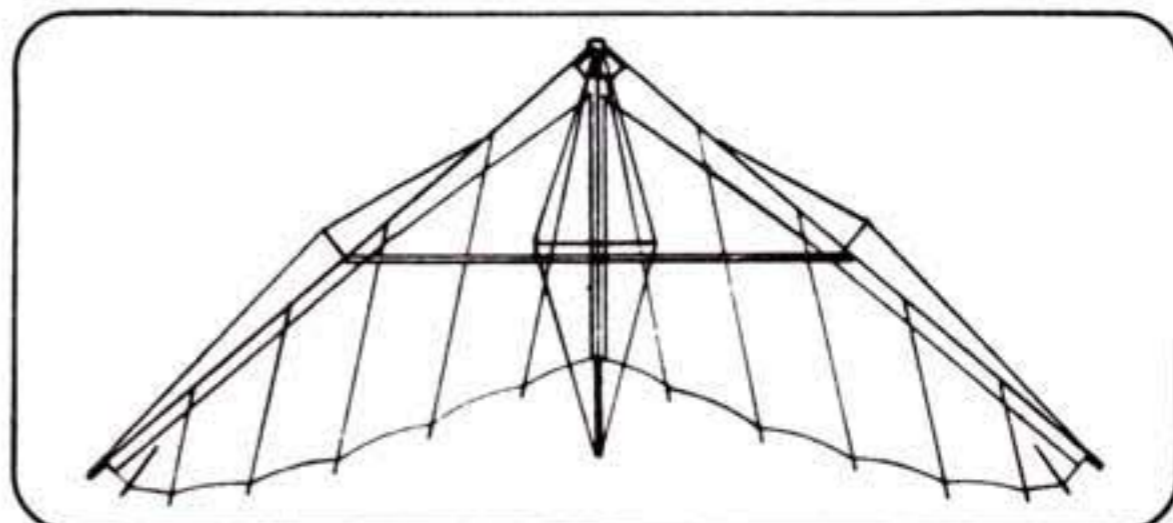
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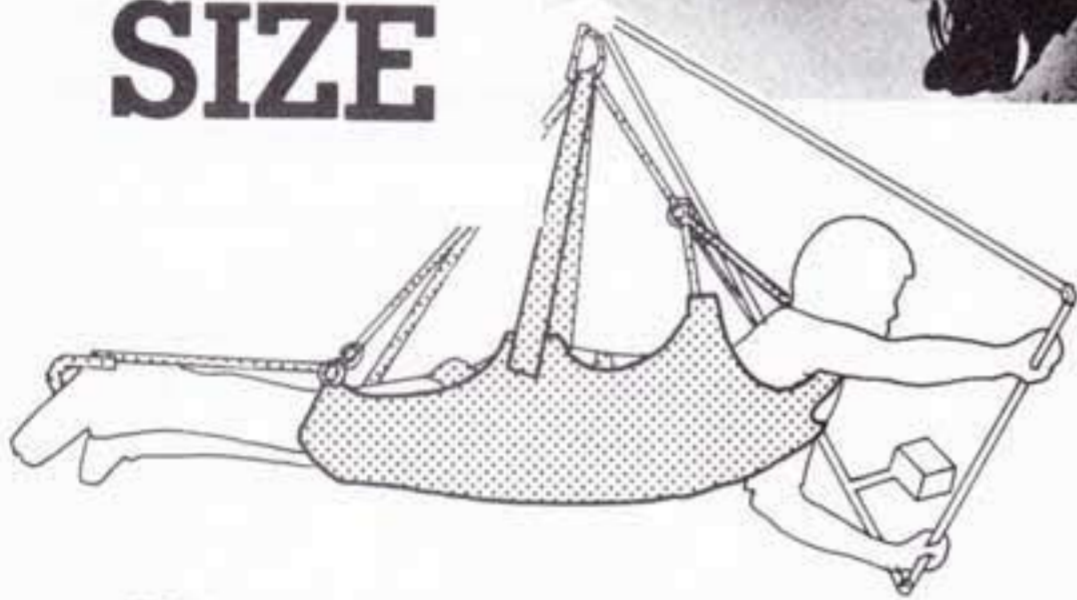


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# WINGS!

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6 Editorial

8 Thunderstorms by Garth Thomas and Phil Tinker

10 George Worthington Column

12 Certificate of Good Intention by Roy Venton Walters

13 How Not to Cross a Gap by Barrie Annette

14 Parachute Session at Windcraft by John Fack

17 Training Column/An Offer You Can't Refuse by John Hudson

18 Scottish Open by Ian Trotter

19 Headlines/Accidents

20 Irish Channel Crossing by Jim Potts

21 Information

22 Airmail

27 Small Ads

# EDITORIAL

The recent spate of hang gliding fatalities has shown us that the relatively quiet start to the year was simply a lull. Our statistics for 1979 could turn out to be the worst ever. Why?

We can't even use the excuse that more people are flying hang gliders this year. There has been no significantly substantial increase in BHGA membership. In fact we can probably thank the bad weather during the first three months of the year for the fact that the figures are not higher. Nor can we blame inadequate training systems — schools provide a very safe and thorough training to Pilot One level.

So far we have seen five fatalities in this country in 1979, and another of our members was killed whilst flying abroad. Two of the British fatalities involved experienced pilots flying crossboomless machines which broke up during the course of the accidents.

The remaining three all had one thing in common — relatively little prone flying experience (indeed two were virtual newcomers to that mode of flight). The outcome in each case was a fatal stall.

The trouble with hang gliding today is that it is too easy, deceptively easy, for the eager pilot. Modern machines have eliminated the necessity for hard-earned, hard-learned experience.

On standard gliders, which were ultimately very forgiving, it took months to acquire the art of soaring. Every achievement was the result of slow and steady progress, careful thought and understanding of techniques.

Today the downfall lies in the rapid progress that a pilot can make without acquiring the basic foundation of experience that is so vital to survival. Personality is another relevant factor. There are pilots who savour the words of caution given to them during tuition. They progress carefully, slowly and well. They ask for advice and they listen to it. There are others who are impatient to join the realms of the advanced and respected pilots. Before they have barely learned to soar they are clamouring for prone harnesses because they find the whole thing so easy and so obviously think they are infallible.

I am not suggesting that any of the three fatalities in question come into this particular category — but I do feel that many others could do. In any event prone conversion should be treated with as much caution and respect as learning to fly in the first place. It is one of the greatest danger zones in our sport.

I have seen too many appallingly near-accidents involving relatively inexperienced pilots. Dizzy on the delights of an easy soaring flight, they immediately demonstrate their lack of overall experience by attempting downwind, stalled, top landings. Then, because they emerge unscathed, it is very, very difficult to show them the errors of their ways.

Bob Fisher touches on some relevant points in his letter in this month's *Airmail*. He emphasises the need for the budding flyer to be given the help he needs — which may be difficult in larger clubs where many regular flyers do not know each other, and a newcomer is hard to detect.

The new pilot rating scheme is a step in the right direction. The emphasis on numbers of flights, rather than on time in the air, is crucial if the progressing pilot is to build up the necessary buffer of experience.

Coaching schemes within clubs are the other step. Club coaches who are out on the hills at weekends, able and willing to help and advise new flyers, will be invaluable. Clubs who have not yet got a coach should appoint one as soon as possible. Make sure it is someone who will be on the slopes regularly. A club coach who appears only five or six times a year is no help at all.

Remember, the next fatality could be on your site. Make sure you have done all that you can to prevent it.

JEANNIE KNIGHT

## INTERNATIONAL DRAW

Final reminder for the International Draw No.2 which takes place on September 8th. There are 10 fabulous prizes, worth over £800, to be won. Have you filled in your tickets and sent your money to Chris Corston yet? The proceeds go towards financing our International competitions this year and in keeping British Hang Gliding on top of the world. Send a pound or two and give yourself a chance to win one of the magnificent prizes. All ticket money should be in by September 6th.

## Really Mr. Torney.....

On July 2nd a Bradford MP, Tom Torney, called for a ban on hang gliding. He said: "There may well be a case for banning it altogether. It is a danger not only to the exponents, but puts others at grave risk as well. It may only be a matter of time before a hang glider plunges into a motorway, causing untold havoc, not only to himself, but others as well."

On July 5th Chris Corston wrote to Mr. Torney. One paragraph of his letter said: "Consider aircraft crashes, civil and military, and the forth-

coming demise of 'Skylab'. A hang glider weighs 50-60lbs. In the unlikely event of being hit by anything from the sky, which would you rather be exposed to?"

On July 7th an unpowered RAF Hunter crashed into houses at Tintagel in Cornwall.

On July 8th an A10 military jet crashed in Bedfordshire.

On July 11th Skylab crashed into part of Western Australia.

Need we say more Mr. Torney?

## CURRENT BHGA MEMBERSHIP INSURANCE TERMS

Under the renewal policy cover is as follows for individual members:

Included in the membership fee is Public Liability Insurance currently in the sum of £500,000 which undertakes to indemnify a member for his/her "Legal Liability at Law" in accordance with policy conditions, a copy of which is held by the Secretary of the BHGA. The insurance is in force whilst a member is flying throughout Europe. The current terms of insurance include the following requirements:

- (1) that the hang glider being flown is acceptable to or "approved" by the BHGA.
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- (3) that the member bears the first £25 of each and every claim.
- (4) that the member is ordinarily resident in the UK (Overseas Members are covered while flying in the UK only).

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*Photo: Mark Junak*



# THUNDERSTORMS — and the danger of lightning

By Garth Thomas and Phil Tinker

A thunderstorm is produced by static electricity caused by friction between the atmosphere and the earth. The sort of currents developed are of a 10,000 to 200,000 Amps spread (a good British thunderstorm could develop 200,000 Amps at 1 million to 100 million volts!) Being on the receiving end of a direct stroke of such magnitude is total annihilation. Those who are "hit" by lightning and survive have in fact suffered from a side flash or electromagnetic effects. The static electricity is looking for somewhere to discharge to — something "spikey" like a parked, rigged hang-glider is just what it is looking for. So, if you're caught in a thunderstorm here are a few hints to ensure you survive:

- (1) As the storm approaches land, derig & flatten the glider — get the kingpost down.
- (2) Get away from the glider, at least 100 yards. Get away from any isolated tree, any group of people, any large metal object.
- (3) If you are in your car as the storm approaches stay in the car — this provides good protection. If your car is actually struck by lightning stay in the car. If your car tyres are wet the electrical charge will discharge almost immediately. If your tyres are dry it may take a considerable time for the charge to discharge — if you step out of the car while it (and you) are "charged" you will be zapped as soon as your foot touches the ground.
- (4) Don't stand out in the open with your legs apart. Stand with your legs together, or crouch down, or better still lie down on the ground curled up in a ball, or lie down in a ditch.

**Someday, somewhere, a flyer or spectator will be zapped by lightning — standing on a ridge waiting for a thunderstorm to pass is an ideal circumstance for a zapping.**

**Also flyers in this country have already hit power cables — Roger Ashton, a flyer from Dudley, West Midlands, hit a power cable and the sparks parted his flying wires like a hot knife through butter.**

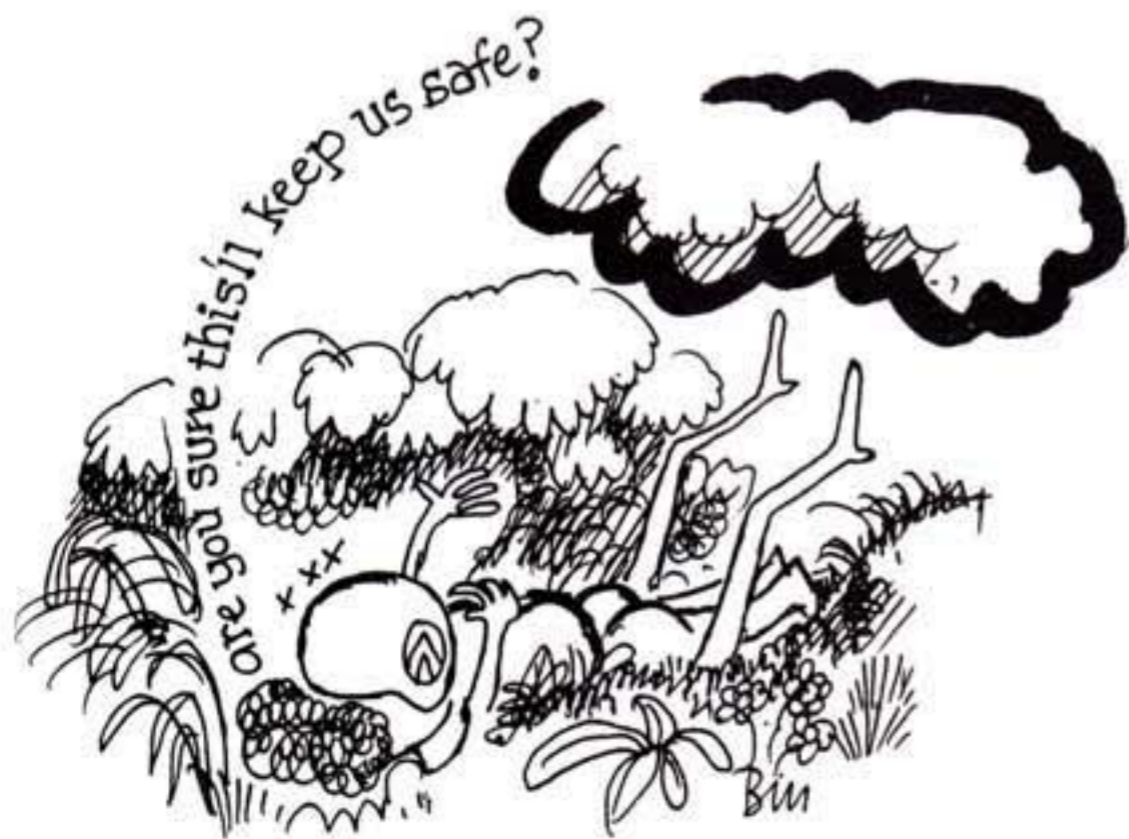
## Power cable dangers

Supergrid power cables carry 440,000 volts: ordinary pylons can carry 330,000 volts: mini-grid pylons carry 33,000 volts. With a supergrid cable coming within metres of it with a hang-glider may produce a lethal spark. Actually hitting cables (i.e. bridging 2 cables) will almost certainly kill you. If you were "lucky" enough to hit (say) the bottom cable of three you could expect to receive a nasty burn on impact but this wouldn't kill you (unless your reaction to the burn was to let go and fall 70-80ft. to the ground). If you hit-and-hang-on be prepared to continue to hang on for a very long time — it may take an hour for the power to be cut off and the CEBG engineer to arrive and earth the cable. If you hit a power cable and bounce off, alive, remember you will be carrying a considerable charge from the cable so the best advice is to land by putting a wingtip in first, i.e. let the kite discharge the charge rather than you. Remember the enormous voltages of these cables. If a flying friend hits a cable and brings it down don't even attempt to rescue him. An area 60ft. radius around the cable will be live and lethal to you.

In the very unlikely but possible circumstance where a lightning strike brings down a power cable remember there will be a lethal area around the cable. One final warning — in no circumstances ever climb a pylon.



- (5) One final warning — heavily ionised air, just prior to the lightning strike, will make your hair stand on end and your skin tingle. If you feel this happening get on the ground curled in a ball immediately.



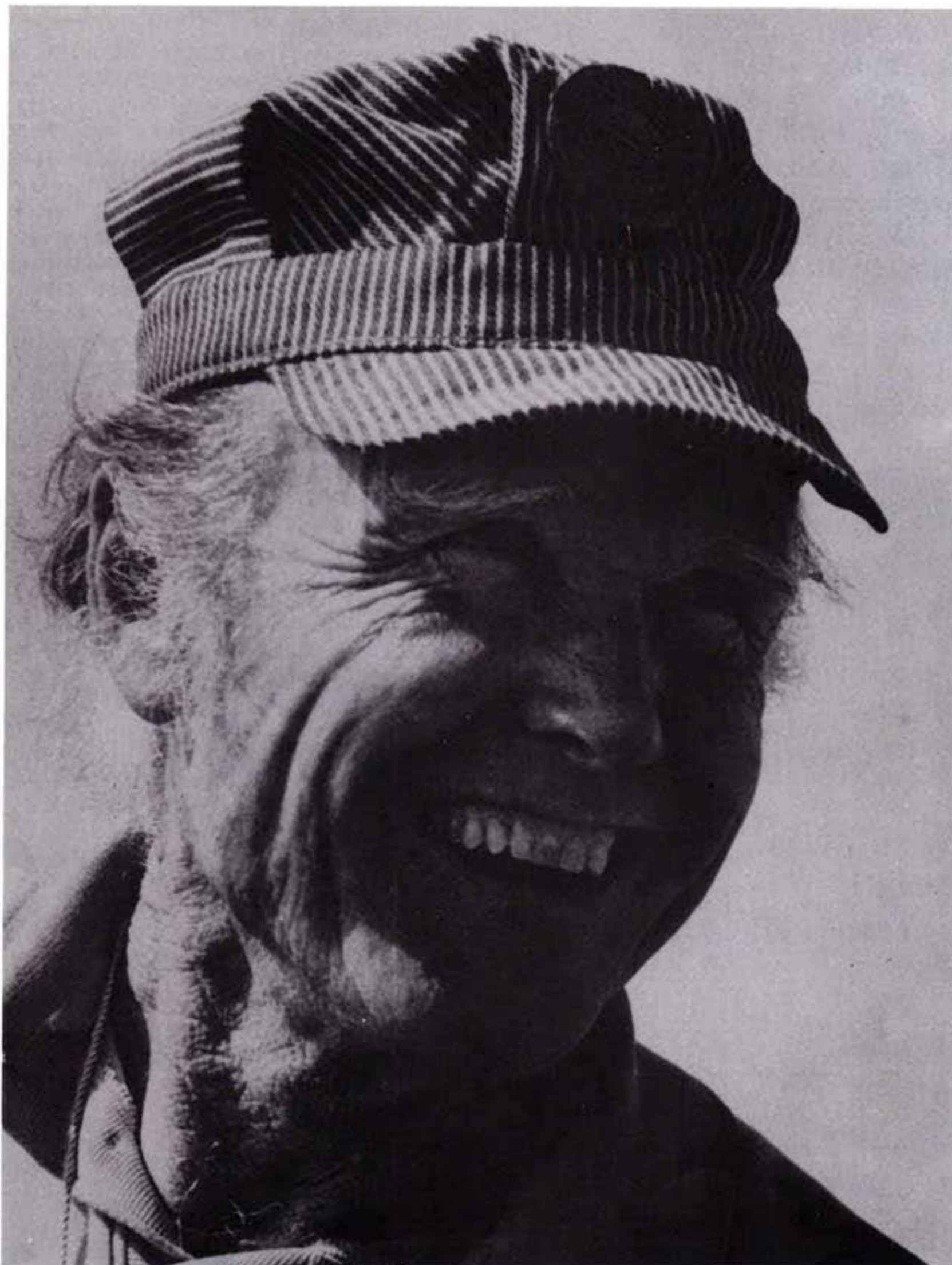
... or lie down in a ditch.



Don't stand with your legs apart!

# THE GEORGE WORTHINGTON COLUMN

AT LAST, SOME USEABLE PERFORMANCE COMPARISONS



George Worthington  
Photo © Bettina Gray

First, let me emphasize rather strongly that the two key ingredients of cross country "performance - potential" are **PENETRATION** and **SINK RATE**. Of the two, penetration is more important. Anyone who has ever flown low performance and high performance sailplanes has gained a positive and lasting appreciation of that quality of performance called Penetration.

Penetration is defined as the ability of a glider to have a lower rate of sink, at *all* the *useable* flying speeds, than a glider with which it is being compared.

As a practical matter, penetration is a key safety factor when flying at places like Cerro Gordo. For example, on a calm day, even a 4 to 1 standard glider could probably reach the "landable" area in the valley, out in front of Cerro Gordo. But when the wind is blowing up the mountain towards the take off area, the L/D of the glider deteriorates. The normal condition at Cerro Gordo is that the wind blows toward the take off area with a component (effective head wind when flying straight out to the valley at its nearest point) averaging about 10 MPH. A component of this magnitude would, I believe, prevent a "standard" from reaching "landable" terrain, although most modern rogallos, including the intermediates, could probably reach the valley quite comfortably, unless the wing loading was abnormally *low*. As the wind component exceeds 10, and approaches 20, penetration for Rogallos becomes more and more important. We don't know precisely at what point the wind velocity reaches the speed where it becomes impossible for the average high performance Rogallos glider to reach the Valley. I've talked with at least 4 pilots who did not have the penetration to reach the valley from Cerro Gordo. I feel that they were very lucky to avoid serious injury, because the area of the foothills and mountain is nearly all made up of steep rocky ravines filled on those windy days with severe rotor turbulence by the wind which caused the lack of penetration. The cause of any failure to reach landable terrain from Cerro Gordo can be (1) a wind component which is too high for the "penetration" quality of a particular glider and/or (2) from the fact that a pilot unwittingly gets too low or too deep into the mountains while trying to thermal.

I can think readily of two excellent examples of how penetration affected flights on two different days. In July 1977 there were 11 gliders at Cerro Gordo. The wind at about 12:00 was approximately 18. Two rogallos launched and had sled rides, but they did reach the valley. At about 1:00 the wind had increased to about 25. The remaining rogallo pilots wisely decided not to launch. A Mitchell Wing launched and flew 95 miles. The difference was the quality of performance we call penetration. The other example is of Don Partridge flying his ASG-21 from Cerro Gordo in 1978 in winds that were believed to be about 22. Don is extremely experienced in Cerro Gordo flying. Many were the times when we took off in rogallos with the wind about 18 to 21 and really "sweated" the problem of making it out to the valley. Often we didn't dare circle in anything less than about 5 or 6 hundred feet per minute lift, because otherwise we would have drifted deeper into the mountain, without a commensurate gain in altitude. On the day in question in 1978, the Mitchell Wing took off and flew 55 miles. Don took off 20 minutes later and couldn't penetrate out to the valley. This was the first and only time he

didn't reach the valley. The result was a very painful bruise on Don's thigh and some bent tubes on the ASG, in spite of a very skillful landing on a dirt road in the foothills.

Hopefully, I've now given you a reasonable degree of appreciation of penetration. But in my opinion this knowledge isn't worth much in a practical sense unless we can identify which gliders have superior penetration. But before I go ahead and name some specifics, let me state some generalities. Wing loading is very important to penetration (and it is equally important to "controlability" in turbulence). I therefore urge you to try to have a wing loading of about 1.5 when you fly Cerro Gordo. I had a wing loading of 1.51 when I flew 95 miles in a ASG, and a wing loading of 1.45 when I flew 1978's longest flight (86 miles) in a 10 Meter.

The Mitchell Wing has such excellent comparative penetration that I believe it could safely accept a wind component of 30 MPH at Cerro Gordo. The new Fledgling II has such good penetration that I believe it could accept wind components up to 25 MPH at Cerro Gordo. The Owl has such poor penetration that I would advise it not to be flown in winds over 10 MPH at Cerro Gordo.

Basically my heart lies in the area of high-performance rogallas. I am extremely interested in the X-C Classic and in Rogallo World Records. And since this is the case, I need to learn about differences between the Rogallos, in the areas of the penetration and sink rate. There won't be any Mitchell Wings or Fledglings in the Classic or in the competition for "weight shift" world records.

With the above goal in mind, I have been searching for a way to make some meaningful measurements of penetration and sink rate. After a few false starts, (at first I believed that it would be more fun and more meaningful to use the good winds for racing) I finally zeroed in on what I now consider the best practical and available method of obtaining this information.

Torrey Pines and similar coastal cliff areas are, I believe, the best practical areas for conducting these tests. When the wind blows hard enough, (about 20 to 25) to give us altitudes of 3 or 4 hundred feet above the cliff top, we can use such conditions to test gliders, one on one to obtain comparative penetration and sink rate data.

I was able to launch a 'pilot project' recently (no pun intended) to test the feasibility of this plan. The rules were as follows: at a very careful and detailed briefing, both pilots were told to take off and climb as high as possible over a particular 100 yard stretch of cliff. They were to take plenty of time to see which glider could get the highest. They would then measure the approximate degree to which one glider could remain higher than the other. This would amount to a test of comparative sink rates. Then the top glider would descend to the other's altitude, they would join up abreast, and the lead glider would fly a *straight* course, slightly out to sea, at a specific speed. The other glider would try to stay at exactly the *same altitude* as the lead glider and the difference in speed would be measured. The speeds to be used for this type of test were 30 and 42. At these speeds the gliders would descend from the altitude they had gained at minimum sink, but they would have about 1/2 of a mile to measure speed differences at 30 and about 400 yards to measure speeds at 42 MPH. When the lead glider descended to cliff-top level, both gliders would fly to another nearby 100 yard section of the cliff, and again climb as high as possible. This gave a second chance in a different cliff area, to measure sink rate comparisons. After about 10 minutes each glider would again obviously be at its maximum height for that wind condition. The gliders would again join up and a test speed of 42 MPH would be used. Again the second glider would endeavor to maintain the same altitude as the lead glider.

In order to gain continuity in the tests, all the gliders were tested against the British Wasp Gryphon. By using that system the gliders could then be compared with each other by comparing their particular test results achieved against the Gryphon.

The Gryphon which was used in these tests was manufactured in England in February 1979. It has 157 square feet, pre-formed battens, a very tight & taught sail, a boom nose, and no crossbar.

We are all so familiar with the stories we hear so often from pilots about how so and so got higher than someone else, and how the lower kite just could never get up to the other glider's altitude.

Unfortunately, these happenings are accepted as *proof* of sink rate capability. They are not proof. They are not close to proof. Most often there is no way of knowing the motivation and goals of the other pilot at any given moment. Very often these "comparative results" are due to the luck of one pilot being in better lift than the other. The basic result is that the average pilot has no reliable information on which to base an assessment of comparative sink rate and penetration. There have been too many variables to make observed results meaningful.

Now, hopefully all of that will change. I feel that we have found a way to prove that such and such a kite has a better sink rate or better penetration than brand X. I feel that this is a significant break through in identifying performance qualities.

Now, for heavens sake, don't assume that *my* brief tests give any kind of positive proof. However, I believe that the *method* I have used, can lead to positive proof. But my tests were, I think, at least better than anything yet published in the area of comparative sink-rates and penetration.

Now let's examine the probable areas of error in my tests - (1) we didn't exchange pilots as we should have done in order to eliminate the factor of pilot skill. (2) we were only able to test one example of each model (with one exception). There are bound to be differences in the same model. (3) we were unable to obtain identical wing loadings in all the gliders (with one exception). If sufficient effort and time are employed at some future time these areas of error could be eliminated.

I feel that certain valid conclusions can be drawn from my tests and that these conclusions are very unlikely to be invalidated by future tests. These conclusions are as follows:

(1) The Gryphon has a remarkably good sink rate. It may possibly be better than any other rogallo at identical wing loadings.

(2) The Gryphon has remarkably good penetration but there are other rogallas with equal penetrating capabilities.

(3) The differences between most rogallas in sink-rate and penetration are relatively quite small-maybe in the order of a maximum of 10 to 20%. And yet such differences on 100 mile flights can be of major significance.

And now, the test results.

(1) **Brand new Mosquite.** 162 sq. ft. Pilot weight 165 lbs. Glider weight 55 lbs. Wing loading 1.36 (the same as the Gryphon). **Results:** Gryphon was 20 to 30 feet higher with both gliders being about 300 feet above the cliff. At 30 MPH - speeds were identical. At 42 MPH - speeds were identical. (The Mosquite has a boom nose, flexible battens, and high aspect ratio)

(2) **Brand new Mosquite.** 162 sq. ft. Pilot weight 205 lbs. Glider weight 55 lbs. Wing loading 1.60. **Results:** Gryphon was about 60 feet higher with the Gryphon being about 300 feet above cliff level. At 30 MPH Mosquite was about 2 MPH faster. At 42 MPH Mosquite was about 1 MPH faster.

(3) **Electra Floater.** 205 sq. ft. Pilot weight 140. Glider weight 57 lbs. Wing loading .96. **Results:** The Gryphon was about 25 feet higher about 90% of the time. The floater was at the same altitude or 10 feet higher about 10% of the time. The Gryphon was about 110 ft. above the cliff. At 30 MPH the Gryphon was about 4 MPH faster (we could not get high enough to try a 42 MPH run)

(4) **Electra Floater** (a different glider and different pilot) 205 sq. ft. Pilot weight 155. Glider weight 57 lbs. Wing loading 1.03.

**Results:** The Gryphon averaged 60 ft. higher. The Gryphon was about 300 ft. above cliff level. At 30 MPH, the Gryphon was 2 MPH faster.

(communication difficulties precluded attempt at 42 MPH run)

(5) **U.P. Condor.** 224 sq. ft. Pilot weight 230 lbs. Glider weight 58 lbs. Wing loading 1.20. **Results:** Gryphon was 20 ft. higher 90% of the time.

Gryphon was about 90 ft. above the cliff. (gliders couldn't get high enough to make any speed runs)

(6) **Seagull 10 Meter.** 174 sq. ft. Pilot weight 170. Glider weight 157 lbs. Wing loading 1.30. **Results:** Gryphon was 40 to 60 ft. higher. Gryphon was about 300 ft. above cliff top. At 30 MPH both gliders had some speed. At 40 MPH the Gryphon was gaining by about 6 to 8 MPH.

(7) **Antares.** 190 sq. ft. Pilot weight 170. Glider weight 55 lbs. Wing loading 1.18. **Results:** Gryphon was slightly higher on two separate areas of the cliff. Gliders were about 300 ft. above cliff. At 30 MPH Gryphon gained 1 MPH. At 42 MPH Gliders had same speed.

(8) **Alpine.** 176 sq. ft. Pilot weight 170. Glider weight 55 lbs. Wing loading 1.28. **Results:** Gryphon was 40 to 60 ft. higher. Gryphon was about 300 ft. above cliff. At 30 MPH Gryphon gained 1 MPH. At 42 MPH Gryphon gained 1 MPH.

(9) **Gal Glider Mark V.** 185 sq. ft. Pilot weight 174. Glider weight 55 lbs. Wing loading 1.24. **Results:** Gryphon was slightly higher (5 or 10 feet). Gryphon was 300 ft. above cliff. At 30 MPH Gryphon gained 2 MPH. At 40 MPH Gryphon gained 1 MPH. The Gryphon sail area is 157. The pilot weight 165. The glider weight 50. The wing loading 1.36.

I bent over backwards to make my tests as fair and honest as possible. For example in the case of the first Electra Floater, the pilot just couldn't accept that his large new glider with its very low wing loading could have a higher sink rate than the small speedy Gryphon. So, during one of the sink contests, while the Floater maintained maximum altitude, I landed the Gryphon, took off again and climbed up higher than the Floater to the same relative position as before.

As time and wind conditions permit we will try to have more test results which we will publish here in Wings! Magazine when available.

# CERTIFICATE OF GOOD INTENTION?

BY ROY VENTON-WALTERS

If the aim of the BHGA is to achieve the very maximum of bureaucratic involvement with the minimum of effect, then it must be congratulated upon the Airworthiness Standards and Requirements for Hang Gliders which were published recently in *Wings!*

It is no fun to be critical of hard work and worthwhile aims, but honestly, just stop to consider what is perhaps the least important of the points I wish to make — the matter of who decides the rules.

Does anyone seriously believe that an airworthiness standard can hold credibility in the eyes of the ruling authority, overseas buyers or even our own pilots if the manufacturers, who have a positive financial interest, are any more than passively involved in their formulation. Little wonder then that these rules amount to no more than our manufacturers are doing currently in the interests of safety. In fact our top rate manufacturers are already in advance of these standards.

Far more important is the question of the definition of airworthiness. It is simply not valid, either scientifically or from a common sense viewpoint, to devise a series of loadings to which a glider must be tested by virtue of its proposed 'flight envelope'.

It matters not whether a given glider can stand +5 -2g, +8 -8. pr +9 -10g. if by lack of aerodynamic integrity it may, perhaps only momentarily, exceed 20 or 40g or be stressed in an odd manner such as to cause breakage. It matters even less whether pseudo science was used to determine these values.

So please, let's stop kidding ourselves and trying to mislead others. A hang glider should not necessarily be condemned merely because it can only take, say, 4½g positive and 2g negative; such a glider with first class aerodynamic integrity may well be safer than its 9g counterpart. For this reason the only valid test for certification has to be in the air with the machine flying properly, or better still, improperly. Nothing less will do. Nothing less can be guaranteed to hunt and find the aerodynamic and structural quirks which may turn a design into a soul-less metal and fabric executioner at various times during its production life. These are facts. Let us recognise them and determine to reach a solution to this very real problem.

**Is the present Airworthiness Standards and Requirements for Hang Gliders system satisfactory? A critical view of the scheme is written here by Roy Venton-Walters, who feels that a more realistic and effective procedure could be adopted.**

One line of attack would be to divide certification into two distinct phases: control and handling in normal flight modes, and recovery and structural integrity in radical attitudes and conditions.

The former could then be a series of flight tests by independent and unbiased pilots of a high level of skill and experience. These would be chosen at random from a pool of suitable volunteer pilots and their views would be made known directly to the BHGA. These separate unelaborated reports would preclude any unreasonable 'badge following', 'ganging up' or other pre-formal opinions on the glider to be certified. This is important because views on glider handling and control are both personal and highly subjective.

Aerodynamic and structural integrity at high

loads and radical position could also be conducted in full flight, but not by any normal pilot. Instead an elementary robot, comprising perhaps a compressed air cylinder and several proportional pneumatic rams would control the glider in exactly the same way as the more normal human pilot, but by a radio control system as used in models. Proof loading rings at the hang point, streamers for whatever flow visualisation may be deemed useful and a high definition cine camera would probably complete the test equipment.

With the facility to load well above the weight range and apply control both more violently and in excess of human movement, primary structural strength and aerodynamic design could be evaluated (if need be to destruction) in the course of several progressive flights in one afternoon. This would be far more civilised than arguing what may have happened at an inquest or AIB investigation. The resultant films would be worth their weight in gold as far as future design work and the world-wide advancement of British hang gliding is concerned.

What then are the problems? Firstly, no such robot exists at present as far as I know. To produce one might be fairly costly, probably outside the worthwhile cost and time involvement of any single hang glider manufacturer, and not quite as easy as it might seem at first glance.

Nevertheless, its development represents an assembly of "off the shelf" components of known performance. There would be need to acquire official permission as the weight would obviously be grossly in excess of model flight rules and, if an air cylinder was used, potentially quite dangerous. I do believe, though, that permission would be forthcoming for responsible and scientific use in controlled conditions at remote and cleared sites.

In the end it must lie with the BHGA to take a decisive line and officially recognise the importance of testing a glider absolutely fully in the element for which it was designed. There are certainly people within the BHGA capable of co-ordinating the rapid production of a 'bionic-pilot' if it was thought necessary. Above all we must come up with something more to the point and far less bureaucratic on airworthiness in the very near future.



## Peachy by HARDMAN.



For a while, I sat on the front of my sail, glad to be alive, but sorry. Somehow, the bottom bar had broken through. That meant no more flying that weekend, and I had not even got to Gallt-y-Wenallt. The danger would come later, I had thought, when I worked up to Llewedd, or Snowdon, if I got that far. God, so soon! I could see my error now.

And I had thought that I was wise to gaps. If you are flying up a valley, downwind, the temptation is to go in close for the lift at the end, because the impossibility of getting back and the rocks below give you a feeling of commitment. That is a big mistake if there is a small gap there. The air flow all around it is horizontal, and the

kite turns unpleasantly parallel to the cliffs. It is coming round that spur in front of you, not going up it. You turn to the lip of the gap, because it looks safer there. The flow is still horizontal, because two thirds of the air has come from either side. Where is all the lift that the valley should generate? It is further out, of course. But trying to get back you go down like a brick. Once bitten, twice shy!

But this was a gap in a straight ridge, and the good height I had gained from my take-off near the Pen-y-Pass car park had made me blasé. I would make Gallt-y-Wenallt easily on my glide angle, I had thought, then absolutely sky out.

Above the bottom of Cwm

Dyli, however, the funnelling increased, even at 1600ft, and I sank almost too fast to think. Foolish man!

Because of the regular line of the valley side that I was soaring — a good site in E—NE, in fact, if the landing problem could be solved — I had not realised just how far the lip of the gap was further upwind. From height, the distance had seemed negligible.

Now there was just rotor beneath me, and it must have been fierce, because even on my little Spectrum I could not get anywhere.

As I turned downwind, rocks flashed past below, till I saw a nice black piece of bog, which I favoured for its softness. I forgot about the cliffs beyond, causing a

wind shear.

Oh, God! an upright also snapped in two. And the other upright bent. How? Why? All the bog-shock had been taken by the king post and nose, buried out of sight. My body must have gone through the A frame! That should have given me a bruise somewhere. I unclipped to look for it. The keel was bent as well. That proved it anyway: there would have been no damage if I had not just got out of prone.

My only consolation was the sail beneath me, warm with the bog beneath it. It had saved me getting plastered. And even that pleasure had to be short-lived. There would be a panic about me if I did not move.

# INSURANCE

## NEW INSURANCE RATES

THE FOLLOWING INSURANCES ARE THE NEW RATES, EFFECTIVE 1st MAY 1979, ALL PLACED AT LLOYD'S AND APPLICABLE TO UNITED KINGDOM BASED BHGA MEMBERS — AND ARE EFFECTIVE THROUGHOUT EUROPE

### PERSONAL ACCIDENT BENEFITS IN THE EVENT OF A HANG GLIDING ACCIDENT

#### CAPITAL SUM

IN EVENT OF DEATH, LOSS OF EYE/LIMB (OR USE THEREOF) OR PERMANENT TOTAL DISABLEMENT

Code	Capital Sum Benefit	Premium
A2	£ 2,000	£ 4.00
A3	£ 3,000	£ 6.00
A4	£ 4,000	£ 8.00
A5	£ 5,000	£10.00
A6	£ 6,000	£12.00
A10	£10,000	£30.00
A15	£15,000	£60.00
A20	£20,000	£80.00

#### WEEKLY BENEFIT

PAID UP TO 104 WEEKS (EXCLUDING FIRST 14 DAYS) FOR SO LONG AS DOCTOR CERTIFIES YOU TOTALLY UNABLE TO FOLLOW NORMAL OCCUPATION

Code	Weekly Benefit	Premium
D20	£20 per week	£12.00
D30	£30 per week	£18.00
D40	£40 per week	£24.00
D50	£50 per week	£30.00
D60	£60 per week	£36.00

**FOR COMPETITION PILOTS i.e. THOSE WHO TAKE PART IN NATIONAL OR INTERNATIONAL COMPETITIONS OR IN THE LEAGUE —, OR IN ANY COMPETITIONS ABOVE CLUB LEVEL, UNDERWRITERS HAVE INSISTED ON THE ABOVE RATES PLUS 25%**

### FOR MANUFACTURERS, THEIR EMPLOYEES AND INSTRUCTORS PLEASE ADD 50% TO THE ABOVE PREMIUMS

No Proposal Form required, provided you are between 16 and 65, warrant you are fit and declare any serious accidents or illnesses during past five years, we can normally give cover immediately we receive your NAME, ADDRESS, AGE, OCCUPATION, GLIDER DETAILS, BHGA OR CLUB MEMBERSHIP NUMBER AND CHEQUE.

#### GLIDER ALL RISKS (GROUND) COVER

Policy excludes Flight Accidents but covers every accidental ground risk that we have yet thought of, e.g. Theft, Damage resulting from Car Accident, etc. (Excluding first £5.00 each claim). Includes 30 days in Europe each year.

GLIDER VALUE	£300	PREMIUM	£8.00	GLIDER VALUE	£400	PREMIUM	£10.00
GLIDER VALUE	£350	PREMIUM	£9.00	GLIDER VALUE	£450	PREMIUM	£11.00

EACH ADDITIONAL £50 VALUE — ADD £1.00 PREMIUM

RATES FOR CLUBS, MANUFACTURERS, SYNDICATES AND WORLDWIDE COVER ON APPLICATION

#### LIFE & ENDOWMENT & HOUSE PURCHASE ASSURANCE

There need be no Premium loading to cover the Hang Gliding Risk. We have arranged Special terms for BHGA Members. Please outline your requirements.

#### CLUB LIABILITY POLICY

The BHGA Master Policy provides £500,000 Public Liability Cover for all Clubs, their Officers, Committee Members, Members, Wives, Girl-friends, Associate Members — and does meet all notified National Trust, Landowner and Local Authority requirements. That cover is valid throughout Europe.

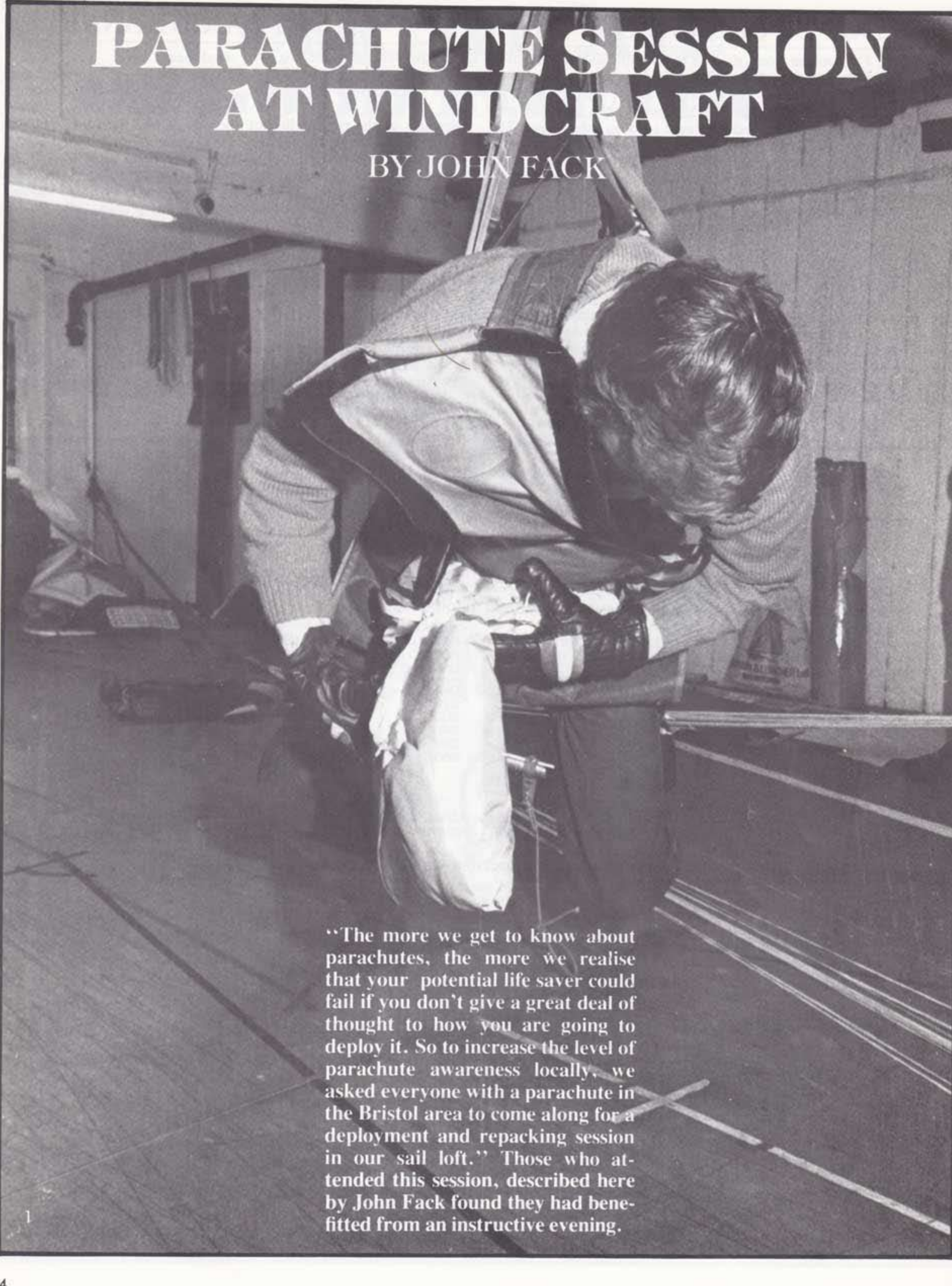
**NOTE NONE OF THE ABOVE COVERS THE TOWING OR MOTORISED HANG GLIDER RISK. QUOTATIONS FOR THOSE RISKS WILL HOWEVER BE GIVEN IF YOU WILL SEND DETAILS.**

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# PARACHUTE SESSION AT WINDCRAFT

BY JOHN FACK



“The more we get to know about parachutes, the more we realise that your potential life saver could fail if you don’t give a great deal of thought to how you are going to deploy it. So to increase the level of parachute awareness locally, we asked everyone with a parachute in the Bristol area to come along for a deployment and repacking session in our sail loft.” Those who attended this session, described here by John Fack found they had benefited from an instructive evening.



1. Pete Sutton drops his parachute.

2. Derek Target manages a good deployment with the one-step system.

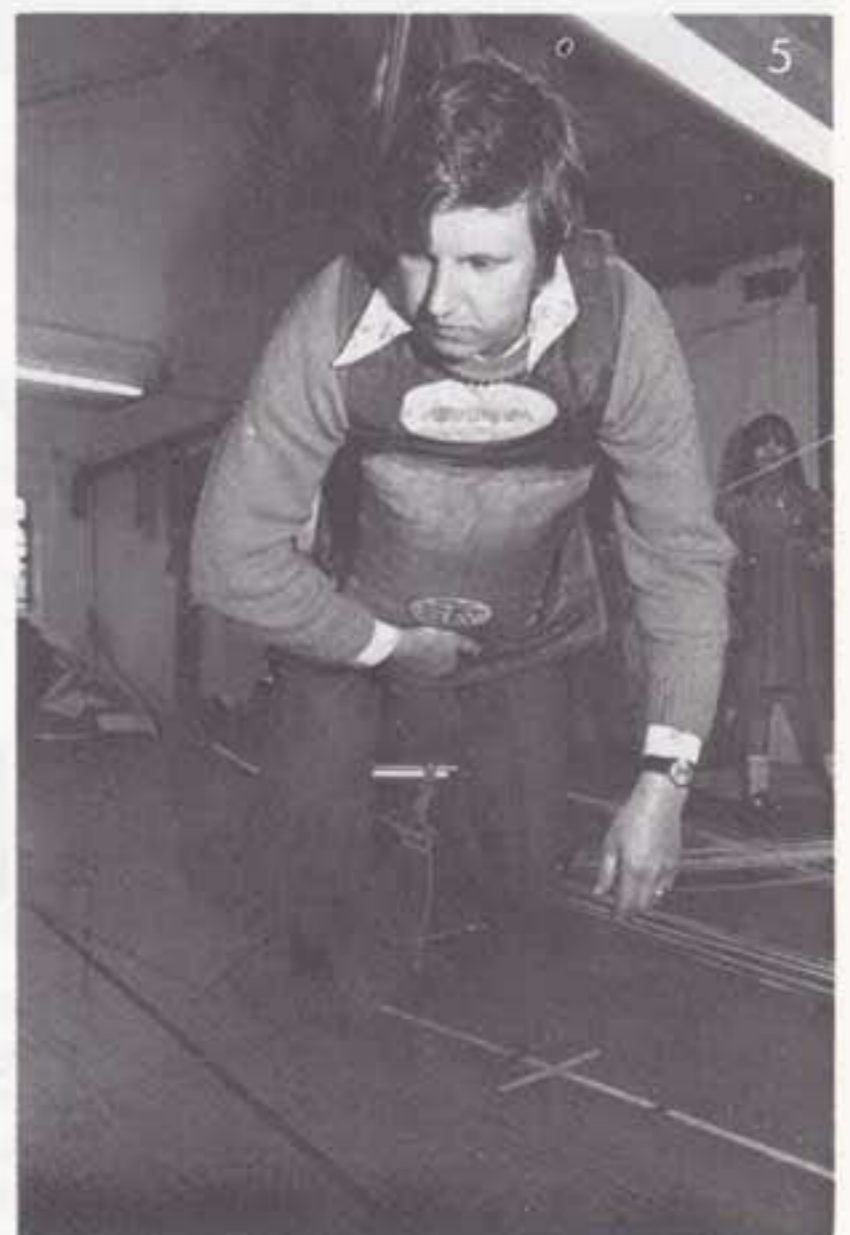
3. John Fack in mid-deployment showing the lines still attached to the envelope.

4. John Lythgoe's lines have dropped out as he aims his throw.

5. Pete Sutton in the seated position. It is much harder to deploy the older type container.

6. Jeremy Fack times Dick Scate's deployment in his Sunbird supine harness. Much trickier than a prone deployment.

7. Repacking.



### **There is a problem with parachutes.**

Once you have one, and have finished moaning about the price, you tend to forget about it — and perhaps get a little bit smug into the bargain.

At Windcraft we have been aware of this problem for some time — simply because we have had parachutes since June 1977 and have been as lax as anyone else about repacking on schedule, getting to know deployment procedures and generally cultivating the sort of familiarity that would minimise the chances of things going wrong in the event of an emergency.

There have been several detail developments in parachute design over the last couple of years, particularly in deployment systems, and it was interesting to see how various problems came to light with the older parachutes. Everyone with the old type Bennett or Windhaven container dropped the contents straight on to the floor (Picture One) at the first deployment attempt. Those with the one step deployment system all managed to throw the container close to the end of the bridle chord (Picture Two). This would have meant much quicker development.

The later one step systems also have the lines attached to the deployment envelope (Pictures Three and Four), while the lines of the older parachutes are simply stowed next to the bridle.

The latest Windhaven has the lines inside the envelope, which is another answer to the problem. John Hunter maintains this is a significant advance in parachute safety. We would recommend, in a near free-fall or steep dive situation, that the pilot throw the container clear as soon as possible.

A couple of other points came to light. We recently stress tested a well-used 2 year-old Air-

stream 2 harness by dropping it from 6ft with a 100kg load. The 10mm steel carrabiner snapped, with no visible damage to the harness. So it is worth knotting the bridle through the top loop of the harness, then on to the carrabiner. We also found that it is harder to get the parachute out and throw it clear if you happen to fall into seated (Picture Five). Lastly, it is well worth fitting a back strap to the harness, just in case you get completely inverted. We will fit any harness with a backstrap and buckle for a nominal charge.

We timed various deployments, just for interest's sake (Picture Six). Remember that everyone was ready for the 'disaster' and it took between 1.5 and 3 seconds to throw the container well clear. Most people were surprised by the amount of force it required to part the velcro. We then deployed Jeremy Fack's ancient BUS Mk I in flight, and once it reached the end of its bridle, it took a further 1.5 seconds to deploy fully. It is worth noting that if your parachute is slow to deploy for some reason, a quick tug on the bridle will speed things up.

Our other recommendations are as follows:

1. That each and every parachute owner follows the deployment and repacking instructions to the letter.
2. That you re-read the deployment instructions every 120 days, when you repack your parachute.
3. That older parachutes should be updated with the new deployment system. (We have a stock of new Bennett containers that we are selling at cost).
4. That, on the new Bennett parachute, you put the deployment tab on the top left-hand corner if you are right handed.
5. That you practise deployment when it is time to repack, either inside or by flying over the landing area, holding the bridle cord on the bottom bar, and release as soon as deployment occurs.

Lastly, I feel it is a shame that Mr. Bill Cowell should have taken it upon himself to write about parachutes as he did in *Wings! 4*. His level of research is clearly very low and his statistics are so superficial as to be totally meaningless. He even failed to mention how many documented deployments have taken place and under what circumstances deployment failures occurred — which is surely very relevant.

I would suggest that if Mr. Cowell is so confident about his system, he inverts his glider at 200ft, gets all tangled up in the rigging and broken tubes and then sees if it will work. What I am saying is that he has completely missed the point. All the reputable hang gliding parachutes deploy instantly under ideal circumstances (see above) and most have been tested for strength. They are also designed to be deployed under very tricky circumstances, rather than being randomly fired by a spring. I would suggest Mr. Cowell's system is excellent for free falling, but needs extensive testing and modification for hang glider use.

Furthermore no reputable British parachute manufacturer is able to produce parachutes of a similar quality to the Americans at a competitive price, let alone £95, so I would suggest the Army's "profit" could be heavily subsidised by the taxpayer.

No, the important point is: You, the pilots, must know precisely how to maintain, repack and deploy your parachute so that should the occasion to use it arise, the chance of a failure is minimised. It could just save your life.

## **SAFETY & PROGRESS**



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# TRAINING COLUMN

## FLYING NEW TYPES

Before flying any hang glider with which you are unfamiliar, discuss its characteristics with its usual pilot and others who have flown it. Observe the glider in the air to get some idea of control response, twitchiness and any undesirable tendencies. **AVOID** prototypes and non BHGA registered gliders.

Take an objective look at your flying capabilities. Rate the glider in the light of your own experience. Consider the weather and then make a decision whether or not to fly.

Fly only in one new situation at a time: type of glider, or site, or position, or conditions. If any of these are different from what you are used to, think hard about it and use extreme caution. If more than one are different, don't fly.

Any changes, however minor, can distract you to such an extent that it could badly affect your flying.

Any one of the four on its own may be difficult

Any two is asking for trouble

Any three is downright dangerous

All four and it could be your last problem.

Pick a good day, with easy soaring conditions, but without strong winds or turbulence for your first few flights involving anything new. Keep plenty

of airspeed. Some hang gliders may stall quite sharply.

Try gentle turns when clear of the hill. Go easy on pitch and roll, ease it around gently. Some gliders need little or no pitch input for co-ordinated moderate turns. Excessive corrections in pitch and roll during the turn can be alarming. Take it easy.

Even if you find a new glider simple to fly, and you are full of confidence, do not be tempted into trying more manoeuvres than you planned before take off. Get to know the aircraft really well before you start exploring its potential.

## FAULTS IN CONVERTING TO PRONE

1. Looking down whilst trying to locate stirrup. Do not do it as you will become disorientated and may lose airspeed because your concentration is elsewhere.

2. Failing to gain or maintain airspeed. Remember that even though you are learning a new method of roll control, pitch must always have priority. Keep the glider flying.

3. Trying to enter the stirrup too soon, too near the ground, concentrate on flying until you have some height.

4. Trying to learn to fly prone with a new glider on an unfamiliar site. This is a recipe for a disaster.

Phil Matthewson teaching near Sevilla.



Photo A James

## AN OFFER YOU CAN'T REFUSE

By J.A. Hudson

I spent a recent holiday in the South of Spain — a relaxing non-hang gliding family holiday. Whilst there I met up with an enthusiastic Spaniard who is desperate for help.

His name is Ramon Martinez and he runs a bar on the outskirts of Torremolinos. He spent nine years in England and just before he went home he bought a Wasp Stinger glider.

Unfortunately, although a trained aircraft engineer, he was unable to stay long enough to learn sufficient skills in flying to allow him to exploit the area in which he lives. The nearest club is about 500 miles away and the national organisation in Spain is very fragmented.

He doesn't know what he is missing because the potential for good flying there is fantastic.

The whole coastline boasts sandy beaches and about two miles inland is an almost continuous range of mountains up to 6,000ft. There are a few places where you can drive up perfect roads to the tops, assured of at least 5,000ft. of altitude to play with.

All round the bases of the mountains are villages, towns and resorts such as Marbella and Torremolinos and the thermal activity is enormous.

Ramon has very little experience, sensibly staying on small hills for safety's sake. It's very hard when your knowledge is so limited and your flying buddy knows less

than you do. Here in England we don't appreciate how easy it is to take up flying. There are schools, clubs and always someone around to give you a helping hand.

Ramon wants to start a club and there are about 20 people who want to take up flying. I suggested the best way to get things moving would be for Ramon to invite a couple of instructors over for a holiday.

He was enthusiastic about this and asked me to pass on the invitation on the following basis:

He will provide accommodation and swimming pool etc., for two or three experienced pilots. He wants at least one fully rated instructor. The best time is for at least six weeks around October and November and the trip should be made overland so that a good few gliders can be taken over. He is sure the gliders can be easily sold at the end of the holiday.

Whoever goes will have to spend three or four days per week training from complete novice upwards, but the rest of the time can be spent flying the mountains. Naturally the training will be paid for by the people on the courses. There are a lot of things to be sorted out but it is a good opportunity for a couple of people. If you are interested, write to: **Ramon Martinez, Urbanizacion Los Alamos, Bloque XI Apartment 25, Torremolinos, Malaga, Spain.**



Photo A James

# SCOTTISH OPEN

The Scottish Open Championship was billed as a four-day competition at Glenshee in June. A combination of weather, inexperienced organisers and pilots keener on flying than winning turned it into a two and a half day fly-in.

Thursday's strong winds subsided sufficiently in the evening for Trevor Birkbeck to soar Mount Blair. The following day was similar and the 1100ft walk up was tolerable in the cool of the evening, more than justifying the height gains of up to 2500ft in wave lift.

Climbing Mount Blair in the heat of Saturday was a struggle and many pilots limited their ascent to an into-wind spur some 500ft below the main take-off area. A 360-spot task was set up and some of these pilots managed to soar up to join in.

There were some reasonable cross-country flights, but nothing spectacular. It was a day for having fun at height. Later in the evening an L/D task was set up, attended by about 20 of the 60 competitors.

Sunday found us on Cairnwell, with a XC window open until 1.00pm, resulting in a lemming-like rush from 12.45pm. Only one that I remember managed to gain enough height to go downwind, and he didn't get as far as those who went upwind.

The non-participating competitors were back on top waiting for blobs, which when they came, served more to confuse the ridge lift than to give good height.

The competition was won by Bob Harrison on his Cyclone with Jim McDougal flying a Gryphon a deserved second, becoming the new Scottish Champion.

**IAN TROTTER**



*Photo by Mark Junak*

# HEADLINES

## FLEXIFORM TO CONTINUE

Following the tragic death of Paul Maratos, the future of his firm — Flexiform — has hung in the balance. Now, in many ways because of the determination of Paul's mother and his wife Sue, it is assured that Flexiform will continue along the lines that Paul pioneered over the last two years.

Flexiform, via Paul, was making new inroads into the international glider market and now, as a tribute to Paul, Flexiform will be carried on by Hughie McGovern.

The firm will continue to help in a small way with British exports and to supply gliders for the home market.

## NEW DALES CLUB POLICY

The Dales Hang Gliding Club have adopted a new club policy, which other clubs might like to follow. Their observers will, in future, informally discuss progress of individual pilots. This will enable them to know how well pilots are progressing, what their weak points are and to offer advice even when it has not been sought.

The club held a coaching evening recently at which the requirements for Pilot Two were outlined to members. The areas covered by the written exam were discussed.

# FATAL ACCIDENTS

## LORRAINE EVANS

The pilot, a member of the Malvern club, was flying at Montand, near Grenoble in late June. Reports suggest that she had been soaring when she encountered turbulence, and subsequently flew into the hill. The glider is thought to have been a Midas C. The accident is being dealt with by the French authorities.

## JIM PAYNE

This accident, reported in a previous edition of *Wings!* is still the subject of an AIB enquiry and findings are not yet available. When fuller details of all accidents are known they will be published in *Wings!*

## PETER LOSTERMANN

The accident occurred on 25th June at Rhossili. A non-BHGA member, the pilot took off on a home-built hang glider on his first prone flight. He was seen to be in difficulties and impacted on the sand 50 yards from the wreck.

## LES OSBALDSTONE

The pilot, a member of the Thames Valley Hang Gliding Club, took off at Coombe Gibbet, Wilts. on 1st July. The flight was one of his first few prone flights. After take-off he did not appear to have sufficient flying speed and the glider turned back into the hill. He was flying a Firebird S.

## APPLICATIONS FOR CERTIFICATES OF AIRWORTHINESS

MANUFACTURER	MODEL	NOT YET SUBMITTED	PARTIALLY SUBMITTED	SUBMITTED	BEING PROCESSED	PROCESSED	C OF A
BERDMAN SPORTS LTD	CHEROKEE S	✓	✓				
	CHEROKEE M	✓	✓				
	CHEROKEE L	✓	✓				
	MOONRAKER 75	✓					
CHARGUS GLIDING COMPANY	CYCLONE 180	✓					
	CYCLONE 165	✓					
	VORTEX 120	✓					
ECLIPSE	EAGLE II S	✓					
	EAGLE II L	✓					
	SUPER EAGLE	✓					
HIWAY HANG GLIDERS LTD	SUPER SCORPION B C C+	✓	✓	✓	✓		
	SPECTRUM	✓					
		✓					
SCOT-KITES	DOVE	✓					
	CIRRUS V	✓					
	OLYMPUS	✓					
	FLOATER	✓					
SKYHOOKS SAILWINGS LTD	SAFARI	✓	✓				
	SUNSPOT	✓	✓				
VULTURELITE	EMU S	✓	✓	✓	✓		
	EMU L	✓	✓	✓	✓		
WASPAIR LTD	LASER	✓					
	FALCON	✓					
	GRYPHON	✓					



*This homebuilt glider, nicknamed the Spargon, was designed by Roger Garland of Stockwood, Bristol. It is a crossboomless type with floating truncations, inflated leading edge and it also has a 38ft. span.*

## Near Accident Report

**Glider — Vortex 120**

**Harness — Prone**

**Pilot Experience —**

**14 months (weekends only)**

**Prone Experience — 6 flights**

**totalling 2½ hours airtime**

The wind was blowing 14mph, gusting occasionally to 18mph, slightly off to the west of the hill. I had already flown once that day, soaring for about 5-6 minutes, but the wind died briefly, forcing me to land at the bottom.

The day was fairly warm with several cumulus clouds forming. To the left from the take off area there was a line of high trees, going from the top of the hill down to the bottom. Beyond these trees was a bowl covered in thick woodland.

I took off, getting some lift and so I broke left, clearing the trees easily. I flew into the bowl. It felt bumpier than the previous flight. Suddenly my outside wing lifted violently. I applied full right weight shift, but the glider turned into the hill, losing height fast. Tip stall!

Flying downwind, with the hill rushing towards me, I pulled on the bar, picked up flying speed, applied left weight shift and the glider began to bank. I pushed out a little and round she went. I adjusted flying speed and went down to land, having completed an unintentional 360 turn with just 6ft clearance from the hilltop.

Thank God I had enough height to start with.

**Conclusions.** Looking back on it now, and after talking to other pilots who saw the incident, I concluded that I was flying with insufficient airspeed to cope with a

change in conditions. When my outside wing lifted, I should have applied speed first before shifting my weight into the lifted wing. As it happened I didn't, and stalled.

One thing this taught me was that when you are in doubt or in trouble, first apply speed. Also make sure you are flying with adequate airspeed at all times.

**Paul Bennett**

## Record as the birdman flies

**BIRDMAN** Johnnie Carr flew from Brighton to Bexhill yesterday and set up a new Sussex record.

His Devil's Dyke to Cooden flight covered 27 miles in 1½ hours. The previous best for a Sussex hang glider was 19 miles.

Mr Carr, 29, is a member of the Southern Hang Gliding club. "There is no prize for the record — just prestige," he said at his London Road, Burgess Hill, home today.

"I flew at over 3,000ft. most of the time, although I was as low as 800ft. at one point and thought I was going to come down on Hollingdean."

TV aerial contractor Mr Carr used a new design of hang glider, a Cyclone, for the big flight.

*Reprint from Evening Argus,*

# IRISH CHANNEL CROSSING

**The Channel has been crossed by a Cirrus V Soarmaster engine combination. This time it was not the English Channel, but the 29 mile crossing from Ballygally Point, Northern Ireland to Portpatrick, Scotland. James Potts of Kilmarnock fulfilled a six month long ambition in June when he completed the trip with the help of a dedicated back-up crew.**

**He had made an attempt at the crossing two months previously, but had to abandon it before reaching the channel because of a fuel flow problem. Since that time he had made several 30 mile powered flights and was confident he could complete the attempt. He relates the flight here.**

The start of the trip seemed bent on disaster. At first only a 14ft Dory was available as escort boat and it was only at the last minute that David Guthrie managed to find a cabin cruiser capable of doing 30 knots.

A last minute fitting of a towing bracket by Alan Marsh solved another problem — having a vehicle that could take the boat over to Ireland on the ferry.

The met office had predicted a light-moderate west/north westerly with good visibility — ideal conditions for the intended flight. When we reached Ireland and the take-off point, 'Piggy' Penman (my ground crew) and myself found the wind was easterly. Disaster! A call to the met office brought the news that large

clouds off the coast held little hope of things clearing. We told the boat crew to come ashore because there was little chance of doing the crossing.

No sooner were they ashore than the weather began to clear! By lunchtime it was a beautiful day, but still with an easterly wind. Some hard thinking brought the decision that the easterly wind was probably a sea breeze that only stretched out for four or five miles. I hoped this was the case because I didn't like the idea of flying against a headwind. We decided that if conditions were not good, I could always turn back and abandon the attempt.

We rigged the Cirrus V on the golf course at Ballygally Point. The bright orange sail would be easy to spot floating in the sea! I had decided that 1½ gallons would be the maximum I could safely use in the kingpost fitted fuel tank.

So at 5.04p.m. with about 10 miles visibility, I took off from the 300ft. cliff, with the escort boat waiting half a mile out. About two miles out I radioed for the boat to slow down as I couldn't keep up with it. I was not going to make it at my present height, so I dropped down to 100ft., with the boat still pulling away. After 15 minutes I was roughly five miles out and could still see the Irish coast. No good. I would have to get lower.

As the sea was calm, I dropped down to about 20ft. Success. I was actually holding my own with her. I realised the danger of flying at this height, but it was the only way I was going to do it. Occasionally I climbed to over 50ft., but my speed really slowed down, so I dropped back down to 20ft.

I was amazed at the amount of rubbish and debris floating about. Every few minutes I came across plastic bags, bottles and other niceties. Forty minutes after take-off, I saw

the Scottish coast through the haze and estimated it to be about 12 miles away. My heart started pounding. The amazing thing flying so low was the amount of throttle I was using. I was roughly on half throttle — with any more the glider started to climb.

About four miles from the coast came the first real incident. A large oil tanker was in front and to my right. I wondered whether to go in front or astern. I remembered Dave Cook's article on the English Channel crossing and the turbulence such vessels created, so I pulled on speed and shot in front of it.

The Soarmaster unit had performed beautifully and never missed a stroke. I was really worried about fuel though as by this time, with only half a mile left, surely nothing would go wrong. Suddenly the revs started to drop — but I needn't have worried. I had unknowingly released the pressure on the mouth throttle!

I climbed to about 200ft. as I crossed the Scottish coast. It was an incredible sensation. I couldn't believe I had actually made it. I circled Portpatrick and the golf course a few times and then landed on the first tee as arranged. People appeared from everywhere, congratulating me and thrusting pints into my hand. I felt a great sense of achievement, but at the same time a little sad it was all over. For the last six months I had thought of nothing else.

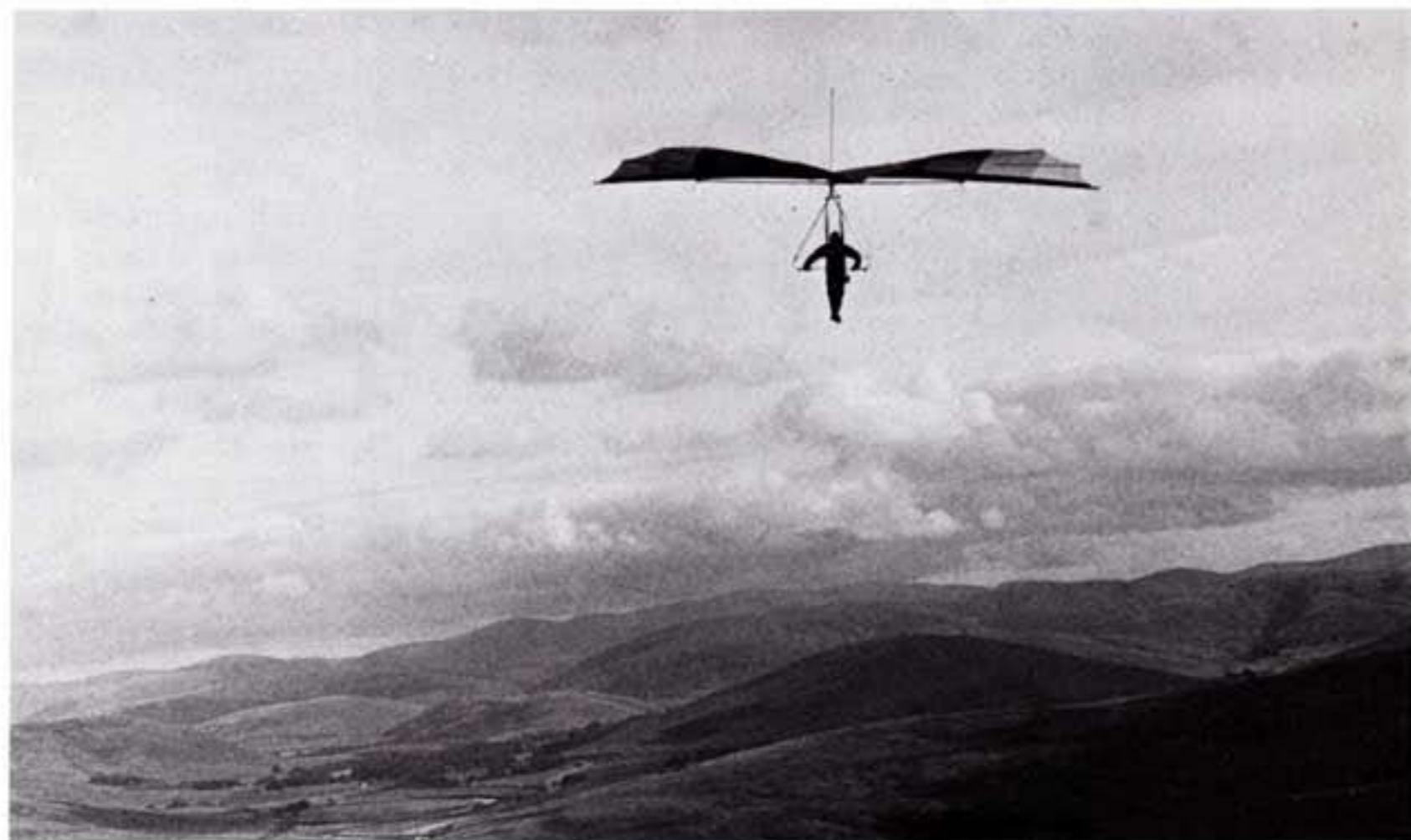
I could not have made the crossing without the help of Piggy Penman, David Guthrie and I. Beaumont, my sponsors, Kilmarnock and Lowdown District Council, Alan Marsh and also Brian Milton for giving me the will to keep going!

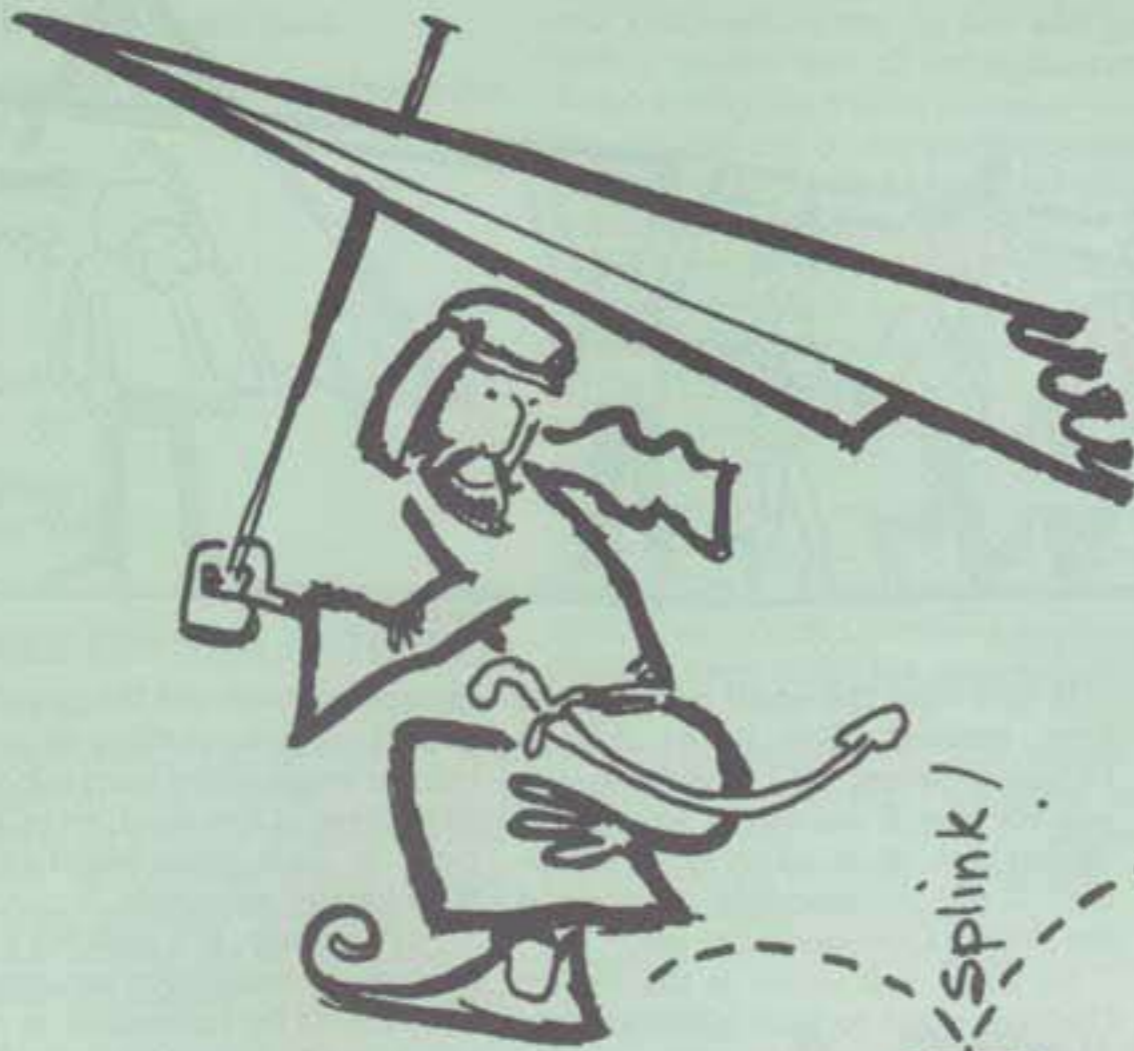
When I checked the fuel consumption I found I still had three pints left and had only used 1.2 gallons — very seldom on the flight had I used more than half throttle.

## HIGH FLIGHT

By John Gillespie Magee, Jr.

Oh, I have slipped the surly bonds of earth  
And danced the skies on laughter-silvered  
wings.  
Sunward I've climbed, and joined the rum-  
bling mirth  
Of sun-split clouds—and done a hundred  
things  
You have not dreamed of—wheeled and  
soared and swung  
High in the sunlit silence. Hov'ring there.  
I've chased the shouting wind along, and flung  
My eager craft through footless halls of air.  
Up, up the long, delirious, burning blue  
I've topped the windswept heights with  
easy grace  
Where never lark, or even eagle flew.  
And, while with silent, lifting mind I've trod  
The high untrespassed sanctity of space,  
Put out my hand, and touched the face of  
God.





Elegant, your Grace,  
but hardly cross-  
country!



## ANYONE IN JEDDAH?

We often hear of isolated hang gliding enthusiasts in foreign parts wishing they had a fellow enthusiast nearby. Often it transpires too late that they had someone in close proximity. Write and tell us if you are in this situation.

Roger Willbourne writes: "...should you ever hear of any more frustrated hang glider pilots who have been exiled in Jeddah, I would be grateful if you could put them in touch with me. So far I haven't met anyone even vaguely interested in the subject, let alone someone who actually owns a kite".

We know there are plenty of hang glider pilots exiled in Saudi Arabia. Anyone remotely near to Roger please contact him at Alatas Agencies, Ben Ocean Representative, PO Box 4, Jeddah, Saudi Arabia.

## WESTERN COUNTIES HANG GLIDING CLUB

Peter Johnson has passed his duties as secretary to Colin Graham of 61 Sheridan Road, Manadon, Plymouth, Devon.

## CLUBMAN'S MERE '79

Come to Mere September 8th and 9th and beat the BHGA Council Team who challenge all comers. We will have the best fun fly-in yet, with manufacturers' exhibits, kite mart and demos of power and towing.

## FLYERS WELCOME

Christian Therville, a BHGA and FFVL member from the "early days", living in Brittany would welcome British flyers visiting his area to fly or otherwise. He speaks and writes perfect English and has close contacts with Ireland and Irish flyers. His address is 9 Rue Fournier, 29200 Brest, France.

## TRUTH ABOUT SPAIN

Flying in Spain is even better than it originally seemed! You don't have to pay for flying a site, nor do you have to pay a couple of pounds if you go down, as was suggested in the introduction to Alan James' article on flying in Spain. It should have read that you might have had to pay for sites plus a couple of pounds if you go down (i.e. in England) but in Spain the farmer is more likely to rush out and offer food and wine than to brandish a shotgun. In other words, their magnificent sites are usually free.

## MEMBERSHIP RENEWALS

Memberships numbered 11,708 to 12,035 are due for renewal on 1st September 1979.

## NORFOLK HANG GLIDING CLUB

New secretary of the Norfolk Hang Gliding Club is Graham Ives of 30, Ashby Street, Norwich, NR1 3PU, telephone Norwich 613654 and new chairman is Ray Watering, Barn Cottage, Ostend, Walcott, Norfolk, telephone Walcott 701.

## WATERGATE NR. NEWQUAY

The agreement between Kernow and RAF St. Mawgan is that only hang gliders under the control of Kernow will be permitted to fly.

Owing to visiting flyers flying without prior permission from RAF St. Mawgan and violation of controlled air space, permission to fly this site has now been withdrawn.

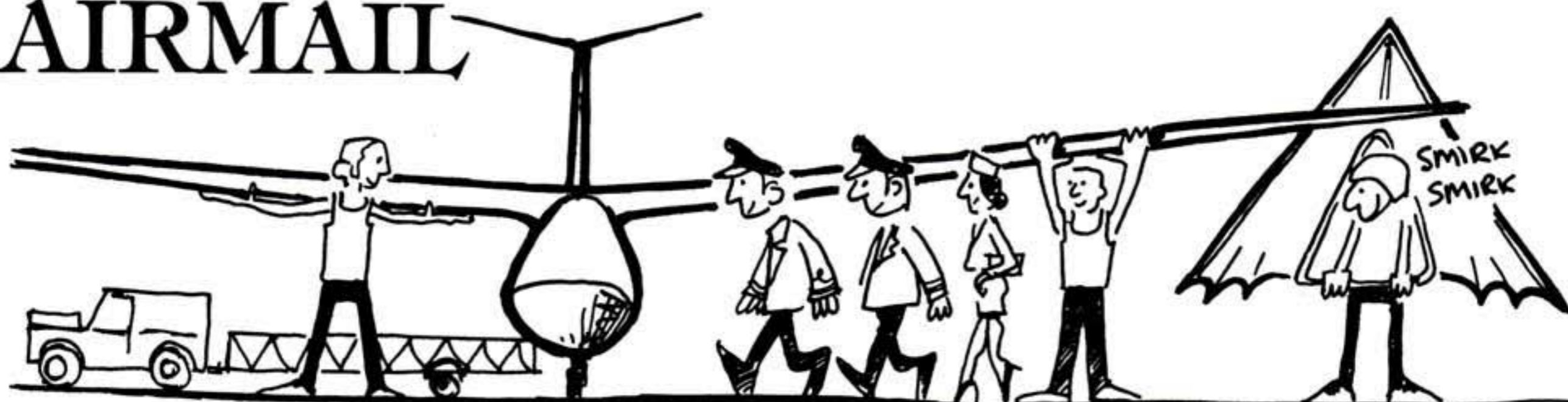
## EMERGENCY PROCEDURE IN GERMANY

A recent accident in Garmish-Partenkirchen to a British Flyer highlighted a gap in communications and emergency procedures.

In emergency phone the British Forces Broadcasting Service. Their number is 0221-384001. They will contact one or other of the two officers — Bill Cowell or Jim Taggart. The number is to be used only for emergencies. If anyone wishes to make a social call, write to Jim or Bill before starting a holiday and they will supply a list of British resident flyers in Germany.

Write to: Capt. Jim Taggart, 16 Signals Regt. Lad, BFPO 35. Telephone Krefeld Mil 310, working hours only. or: WO2 Bill Cowell RAOC, Ord. Depot Viersen, BFPO 40. Telephone Viersen 354-office, Viersen 219-mess.

# AIRMAIL



## HANG GLIDING FREEDOM

Dear Editor,  
It would appear from Bob Bailey's recent record-breaking flight of 50 miles, that hang gliding is progressing along the same path of development as gliding did many years ago. There is much that we can learn from the gliding fraternity where the art of thermalling, ridge and wave lift, has been established for years.

We can enjoy the same in-flight thrills as our brothers in their high performance (and expensive) gliders — but think how much more freedom we have — to choose where and when we fly — no trailers, airstrip launch crews are needed for a hang glider pilot!

I think this simplicity is the attraction of this totally unique form of aviation, which will always keep it separate and apart from other forms of ultralight flying, powered or unpowered.

**Bill Allen**  
Cheltenham

## THIRD LEAGUE THANKS

As one of the owners of the Caravan and Camping Site, I would like, on behalf of us all here at Bryn Gloch Farm, to thank your members and all their friends and relatives who attended the third League meet for the excellent manner in which they conducted themselves whilst staying on our site and in the Guest House. Throughout the three days of the event they showed a genuine respect for other residents on the site not connected with the gliding, and a genuine concern for safeguarding the interests of the countryside as a whole.

I think I can speak for us all when I say it was a great pleasure to have been connected with the event. Thanks must also be extended to Jan Ketelaar and his team of marshalls for the smooth and efficient planning that was obviously so important at a meeting of this type.

Once again many, many thanks to all concerned.

**Ronald Hampshire**  
Betws Garmon  
Near Caernarfon.

## VENTIMETER READINGS

In the letter from Syd Fisher in Airmail No. 5, the chart of meter readings obtained under test contained a typographical error. The readings on the high scale should have read: Wind tunnel speed, 15mph, Meter A reading: 24; Meter B reading: 24; Wind tunnel 20mph, Meter A: 33mph; Meter B: 33mph; Wind tunnel reading 25mph, Meter A: 45mph; Meter B: 45mph. The remaining readings quoted were in the correct order.

## BEWARE THE FRENCH CUSTOMS

Dear Jeannie,  
I landed by ferry at Cherbourg on route to the South of France late one afternoon last month. I finally cleared the French Customs over 24 hours later and £200 poorer!

I had failed to declare my Hang Glider. But it must have been on top of your car, you are saying. It was, and it was in a bright red bag, and 16ft long, as I pointed out to the French Customs!

I argued for about 2½ hours, during which time my whole car was searched three times with no result, the French Customs Official lost his temper (when I asked for his name and details, to complain to a higher authority) and I began to become ever so slightly annoyed myself.

There was no way that I was going to be allowed to leave the customs without paying a £100 fine for failing to declare the glider and a further £100 temporary import duty.

I decided to pay and contact the British Consulate afterwards. Next problem, the French Customs wanted the money in cash (about 1600 francs) or a French Cheque — I had neither!

After a night's kip in a hotel in Cherbourg I persuaded a French Bank to give me 1600 francs. The French Customs was not manned until late afternoon when a ship was due in, so I kicked my heels around Cherbourg for the day, it was beautiful flying weather of course.

Eventually the Customs Official turned up and I was almost glad to pay 1600 francs (£200) to get my car and glider back and escape from Cherbourg!

If you read the small print on the form entitled 'How to go through French Customs' as I have now, you will see that I was in the wrong — I should have declared my glider. However it was unbelievably officious of the French Customs to fine me.

So when you arrive at the French Customs point to your glider and say 'Un Deltaplan' — they will probably just wave you through, although it is possible they will charge you the temporary import duty (£100), which you will get back on leaving France.

Or, if you feel like gambling, the stakes are an overnight stay and £100 fine, don't bother and see if you drive through!

**David Taylor**  
Secretary,  
British Forces Germany  
Hang Gliding Club

## DANGEROUS IDEAS

Dear Sir,  
I wait with bated breath for the results of Mr. Ted Frater's intended experiments involving drawing down aluminium tubes into aerofoil cross section (Airmail, No. 5, 1979). Apart from the huge amount of force needed to change the shape of the tube, the resultant item should not seriously be considered as an improved cross-boom.

Torsion and bending in the thin walled tubing is a very involved subject, if the shape of cross section of a load bearing members is changed in any way then its dimensions of application must be totally reassessed. Suffice it to say that for hang gliders, any deviation from round tubing should be subjected to deep theoretical considerations before any other work, such as pushing it through oiled hardwood (or softwood) dies.

To sum up, if you push your cross-boom through a die and change its cross section you will almost certainly kill yourself when it fails on its first flight.

**Chris Coleman**  
Yeovil, Somerset

## TALKING OF SAFETY

Dear Editor,  
In respect of instrument mounting techniques, I thought it might be of

interest to point out the possible dangers of snagging clothing or parachute release loops whilst carrying out standard turns at low level, or more especially in final turns whilst preparing for a landing approach.

For instance, it is easy for a loop to snag on an instrument mounting stalk and it must be recognised as a potential hazard. Naturally it is simply a matter of placing the loop on the opposite side to prevent this happening. There are also pilots who wear duffle type jackets with a toggle and loop type of fastening, which can also achieve similar results.

**Harry Unsworth**  
Bradford

## NO FAITH IN PARACHUTES

Dear Sir,  
I am writing this letter to express my lack of faith in the current fashion for wearing parachutes.

As an ex-parachutist I know that to achieve a proper deployment of the canopy, it is necessary for it to be deployed from a stable falling object.

Surely, it is reasonable to expect a broken hang glider to be falling in an unstable manner, i.e. spiralling, tumbling, etc. This would severely handicap the chances of a successful opening.

Also, there is a good chance that the unopened canopy could tangle with the wreckage, thus preventing opening, as was seen in the case of Paul Maratos.

Several manufacturers have taken to fitting deployment bags. If a glider was in an unstable mode there is the possibility of the canopy 'twisting' in the bag and causing the 'roman candle' effect upon deployment.

I would like to point out that in all the tests I have seen or heard. The parachute has been dropped from a stable flying glider. This is not really a true test, as in actual use, the chute will be deployed under difficult conditions i.e. falling at speed, rather than flying.

Finally, I would like to stress that a canopy takes time to open and that below 400ft. may not have sufficient height for it to do so, and, slow the pilot and kite's descent. The following table, which I have prepared, shows the amount of height, in feet, a free

falling object will lose, related to time. It will make you *think*.

#### Height loss of falling object in feet per second.

Seconds	Feet
1	16
2	62
3	138
4	242
5	366
6	504

Dave Forty,  
Thames Valley

## MORE ON PARACHUTES

Dear Editor,

As a parachutist and kiteflyer, I had to giggle at Bill Cowell's . . . "If I ever have to pull the handle, I know that the 36" conical spring drogue under the "pop-top" will blast out of the pack towing the main canopy in fractions of a second" . . . *Wings! No.*

4.

Were I in a broken glider at 400ft, I would accept the longest of odds in exchange for a parachute, even Bill Cowell's set up. His statistics on parachutes and fatalities tell me more about gliders and pilots than parachutes. The fact that it took him four years to 'get round' to parachutes (not that they have been around that long) tells me a lot about Bill Cowell — coming from jumping to hang gliding, it was one of the first things I asked about.

The origins of the "special hang gliding jobs", I would suggest to Bill Cowell, are a result of the growing number of Californian skydivers taking up hang gliding a few years back, and clearly seeing the need for a parachute. I believe all the major brands are made by top sport parachuting manufacturers.

Bill Cowell's set up:

The parachute used, probably an Irvin 124, though heavy and bulky, is certainly strong — as proved when a light plane and four people landed under one in reasonable condition. But the parachute is not the problem with glider rigs. It is the deployment — and Bill Cowell's deployment sequence is a non-starter!!!

Military jumpers *do* use 124 reserves, *do not* use 36" drogues, *do not* use "pop-top" containers. Why? Because military jumpers do not "cut away" — (a sporting procedure where the jumper liberates his malfunctioned main parachute, falls back into freefall, going back to square one, with a drogue on his reserve — perhaps in a "pop-top" as I do). The military operate at 800ft or less, and do not have the altitude to cut away. (1000ft is the minimum recommended). The reason they don't have drogues is that they *do not* blast out of the pack towing the main canopy in fractions of a second, well clear . . . They pop out, (unless you suffer spring lock or pack closure) and then it's up to the strength and direction of the relative wind. Under a broken glider, probably rotating, the relative

wind would be moderate and upward and that's where the drogue will go, with a greater risk of entanglement, which is why the military jumper who has not got rid of his malfunctioned main parachute, or hang glider pilot his broken glider, *hand deploys*.

Bill Cowell would almost certainly have a "drogue in tow" malfunction followed by an entanglement, because of the lack of relative wind to create enough poundage on the drogue to extract the parachute from the pop-top container, which is a tight container designed for a good staged deployment in freefall relative wind conditions, which far exceed anything possible even under the most mangled of gliders.

Hang glider specials are a compromise — any other flight discipline requires the pilot to bale out before parachute operation, allowing a straightforward deployment.

Much of hang gliding flight and malfunction occurs at less than 1000 AGL. Therefore the pilot stays with the glider and hand deploys — not giving the parachute the ideal situation, but this is still better than nothing.

One day there may be a hang glider special with a drogue assisted by a pyrotechnic device (not a spring) and a super lightweight canopy and lines vacuum-packed into a tube that the pilot just attaches to the keel tube, tucked into the keel pocket with a clear view of clear air — for £95.

Until then:

- \* Select and maintain a good airframe
- \* Fly within your limits
- \* Hand deploy your 'State of the Art' hang gliding special.

V. Cotano  
Southampton

## A REMARKABLE ESCAPE

On Saturday 18th October at Ashbourne occurred a truly incredible incident — incredible because no one was fatally injured. On the third lift of the day Cessna 182 G-ARWL took off with a student lift to be dispatched by potential instructor Derek Scofield. The first student jumped without incident. The aircraft made a second pass over the D.Z. at 2,500 feet, and the second student, Stuart Avent, was given the exit command. Whilst moving to the exit position he slipped between the strut and the starboard oleo leg. He hung vertically from the strut before letting go. The main parachute deployed at this stage and entangled around the starboard oleo leg. Derek Schofield initiated the "hang-up" procedure, ordering the pilot, Ken Miller, to climb before starting to chop the canopy away with a knife. Some 15 seconds later the student parachutist activated his reserve parachute, which deployed normally. This deployment stalled the aircraft, pulling it into an inverted nose-down position. The engine stopped and the aircraft, with the instructor, pilot and third student still aboard, descended, rotating slowly, suspended beneath the second student and his inflated reserve canopy. The aircraft struck the ground on the edge of the airfield in this position. Ken received a broken jaw in two places, Derek two broken femurs, whilst the third student, Miss Francis Ives broke both her ankles. Happily all are well on the road to recovery.

G. C. P. S-S.



How the 182 withstood its PLF.

## POTENTIAL FATALITIES

This year four people have killed themselves already. It sickens me to the core. It's so frustrating. How *does* one penetrate the thick skulls of the potential crash victims and who are they? Well maybe you're the next. We may all be hearing about *you* next week. But of course you're saying to yourself "Not *me* my friend." Oh Yeah! Look at some of the causes of crashes. You're probably the right fit for one of them.

(1) You've got your Pilot 1 (how admirable) and you're completely free to buy any kite you like. So you do. But have you sought advice from the Cockcrofts and Hills of the world or just asked your flying companion down the road? Or maybe your instructor? Don't forget he'll be getting commission if he sells you a kite. (I know that'll raise a few screams).

(2) You're on the hill and mingling. You see the confidence of the experienced. You want to be as impressive and feel you're "one of the lads". You make sure the spectators watch you in awe as you talk and laugh with the other flyers whilst you remain aloof to them. After all, *you've* got a kite whilst they've only got their ice lollies, sandals and mothers-in-law.

(3) You rig and half-do the SWANK SHOW business, one eye on the crowd, the other on the flyers. Sorry, shouldn't have said that. No-one, not even you, skimps the checks.

(4) You launch because others do. Should you? Have you the know-how to fly in these conditions? Should you really be on the hill? You can only know by trying. **RUBBISH!** Ask. Watch the others for an hour or so. Lose time in the air and maybe save your life. After all, the longer you live the more flying time you'll get in.

(5) You're flying now. Top to bottom. The most incompetent and unco-ordinated can fly top to bottom. We all know that. So you want to soar like all the others. Forget it! Top to bottom my friend. Fly the kite with as much ease as you ride a bike. **Then** think of soaring. Why are the Woods, the Hills, the Carrs and the Calverts still around? You can answer that yourselves. If you've never heard of them, do a little less flying and a little more reading until you've soaked up so much information about all aspects of hang gliding that you, in spite of yourself, become more competent. Practise, practise, practise, practise top to bottom.

(6) You're soaring now. Want to be top of the stack don't you? Want to stay up when all the others are down. Go ahead and scratch for lift. But remember that it only takes a slight gust or a moment's indecision and you've dropped a tip, and that's that. Learn from the mistakes of others. If you're pretty low and can't gain height, if the hill remains at eye level on each beat; swallow your enthusiasm and go down. For Christ's sake! **every** crash affects us all. Initially one

Continued on next page

feels shock, then anger, then frustration. It is inconsiderate to crash and absolutely unnecessary, and it's entirely due to the efforts of those who've gone before that hang gliding has now got its very own Edith Summerskill in the form of M.P. T. Torney.

(7) You're used to soaring, (or perhaps you're not) so dispense with the seated harness and go for the prone. From the top of the hill or half-way down? Wait a minute. How many hours have you spent practising in the garage or swinging from the apple tree? Oh, you don't think that's necessary. OK go ahead, launch, feel the unfamiliarity of it. The bar seems a bit far back. Push it forward and . . . Oh Oh Oh . . . she's going round . . . lost control. We know and, unfortunately, have seen what can happen next.

(8) You're getting to look a useful pilot now. Done lots of soaring. It's getting to be a bit of a yawn. Just look at all those inexperienced nonks down there flying top to bottom in seated. Better show them how it's done. Make sure there are plenty watching. Put it into a steep dive. Good. Now whack the bar out and up goes the nose, up, up, up . . . Oh, Oh, Oh. You're sliding back on your tail. Down drops the nose. Jesus, it's going on under. Something's gone — and so are you.

Enough of all that. Now I've come this far I suddenly know what a waste of time it is for people to write letters of this sort. Whether they are instructive, condescending, sarcastic, appealing or whatever, the competent flyers will have no need to read them, and the kamikaze bods won't recognize themselves as the real targets. We all think we're competent. None of us likes to admit to nagging doubts in the face of the "opposition" on the hill and therefore many will refuse to lose face in front of the better flyers. They will take to the air, and *literally* lose their faces.

And who am I with such authority to write in this manner? Me? I don't even have Pilot 1 yet, and what I've written may be very wide off the mark. So I'll sign off anonymously to avoid the shame of people knowing, I'm a mere fledgling.

Yours, very frustrated,  
R.S.

P.S. May I offer very sincere condolences for the many to be bereaved in the coming months.

*Editor's Comment. This letter was originally sent to the Thames Valley Club Magazine, Volplane and is used here at the Editor's request.*

## ACCIDENT PREVENTION

Dear Editor,  
Following Mark Hammond's tragic accident (which I saw), I have been doing some hard thinking about the reasons and what could have been done to prevent it.

The south of England *appears* to have a worse accident record for stalling back into the hill than the rest of the country and *if* this is the case, I think there are two reasons:

1. We fly from small hills and in general are never far from the hill. In areas where the hills are higher, you stay up and out more easily for the same wind strength and, if a little less experienced, are more likely to settle for a flight down as this will still give you a reasonable amount of airtime and the opportunity to 360 or stall (and too few novices practice stalls) in safety. We can do nothing about our local topography — we must travel to the good sites for good safe flying in light winds.

2. We have a higher density of pilots and there is a maximum group size above which people do not socialise. The larger the group, the fewer people an individual will know. We can do nothing about this fact of human nature, but recognition of the problem is a good start to finding a solution. When I have flown at other sites, especially in the North, I have been recognised as a stranger and approached, chatted to, perhaps gently quizzed as to my experience and it has been very obvious that here was a group of friends flying together, protecting their site.

If we accept that all the members of a large club will not get to know each other, I think that at least an effort should be made to encourage pilots to indicate their level of experience so that 'potential trouble' can be recognised. The simplest way of doing this is to fly a coloured ribbon from the top of the kingpost. A full grading system (as opposed to the current three grades) based on logged airtime would encourage pilots to keep logs and accumulate airtime, but more important *to compare their experience with that of those around them and recognise their limitations.*

A potential scheme might be: white, red, orange, yellow, green, blue, violet and black for Pilot One, 1 hour, 5 hours, 10 hours, 25 hours, 25 hours plus 500ft thermal height gain, 50 hours, 100 hours. I think the number of grades is about right, but the experience criteria are open to discussion.

I am *not* suggesting that this is a mandatory display as I am basically against controls unless absolutely necessary and a voluntary system has a lot to offer as it gives information about the personality. Someone with five hours of experience under his belt who has taken the trouble to indicate this to the world when flying on a hill full of yellow and green flyers will probably appreciate a word of advice

on how to improve his turns or tune the flutter from his sail. Also, a seasoned purple flyer who needs to prove nothing but who flies a streamer is probably very approachable if you are looking for advice. Unknown kites without a streamer would be carefully watched.

So long as this scheme were not used to discriminate against pilots flying at particular sites, there is little to gain by pretending to be more experienced than you are and you have your pride to lose when your lack of experience shows up — after all if you are telling the world that you are experienced, and then fly badly, it can only mean that you are slow on the uptake!

If the response of clubs to this is favourable, I suggest the training committee draw up realistic experience levels for publication in *Wings!* so that those who wish to participate can do so.

Bob Fisher  
Reading

## WARNING — METRIC MIS-EQUIVALENTS

Although the wire-rope of the following dimensions is not likely to be found on the flying wires or landing wires of hang-gliders, it may well figure in the control systems of aerodynamically controlled hang-gliders, in which case this warning may not go amiss.

It is virtually impossible nowadays to find (in this country) Imperial size wire-rope, and if one is looking for Sixteenth (.0625"), one is usually offered 1½mm (.059"). Not much difference, you might say, except that the breaking-point of the thinner wire would be that much less.

Now, the smallest Nico sleeves generally available in this country, are 2mm, and in fact a comparison shows that these are exactly the same as the old Sixteenth sleeves, and in fact are advertised as being quite suitable on Sixteenth wire-rope. Quite true. I carried out some tests on a piece of "real" Sixteenth wire which I had lying around, and the swage carried the full rated load of the wire-rope, time after time.

But using these sleeves on the 1½mm wire (only .004" less), the swage slipped at something between 50 lbs and 100 lbs, for quite a number of tests. In each case, not only had the sleeve compressed to the recommended .190", but even down to .187", as the jaws of the tool contacted metal-to-metal. It was necessary to form some shims into the shapette of miniature shell-bearings, and with these in position, the finished sleeve compressed to .180", and this set-up held the full rated load of the wire-rope, time after time.

Until everything goes fully metric, both here and in the States, by which time no doubt the tool head will be altered from a Sixteenth to 1½mm, or alternative sleeves are available, the

moral seems to be to carry out load tests on anything which is not the EXACT equivalent of that specified. I do not know how the larger sizes fare; perhaps the experts could give some guidance.

Tommy Thomson  
West Drayton  
Middx.

## JOHN OGDEN

Hang gliding has lost one of its most professional and skilful pilots with the tragic death of John Ogden in a flying accident at Orduna, Spain, on 12th June.

There were no witnesses to the accident, but the other pilot at Orduna as well as myself believe that John may have caught a wingtip while turning close to one of the faces of the ridge.

It was not a particularly unusual day insofar as the cloudbase was about 500ft. above the top of the 2100ft. ridge, the wind was 18-20mph and slightly off to the left. There was low thermal activity and convergence higher up.

We watched John take-off from a lower site, penetrate away from the ridge and turn to the left in some minor turbulence. He disappeared from view occasionally around a spur to the left. Five minutes later he was about 300ft. above us, about level with the top of the ridge. We drove to the top as the cloudbase was going up and the wind moderating. When we arrived at the take-off we could not see John flying. After five minutes we saw his glider on the side of the ridge about 350ft. down. It took 20 minutes to climb down to him but it was obvious he died instantly.

John knew Orduna better than anyone and often enjoyed flying over the road to the top when there was good lift.

Most pilots will know of John's long and successful flying career. He had been flying for 12 years, and started by towing flat kites with Bill Moyes in Australia. He was always very close to Bill, and Steve, and our sympathies go to them as well as John's family of course, John was a great ambassador of the sport, safety conscious, and one of the most consistently superb pilots we have seen. It is hard to believe that John will not be flying with us any more, and we can only hope that this tragic loss can in some way prevent another.

ALAN JAMES, 13th June, 1979

JUAN IRIARTE,  
Official National  
Observer Offenda,  
National Federation  
of Aerial Sports.



## HILL ASPIRATIONS



*Oddly enough, that desire which we all have at times for wings, or at all events for the power of flight, and which, like other vague and idle promptings, is capable of cultivation and of being made a real source of pleasure, most often comes to me on these great green hills. Here are no inviting woods and mysterious green shades that ask to be explored: they stand naked to the sky, and on them the mind becomes aerial, less conscious of gravity and a too-solid body. Standing on one great green hill, and looking across vast intervening hollows to other round heights and hills beyond and far away, the wish is more than a wish, and I can almost realise the sensation of being other than I am — a creature with the instinct of flight and the correlated faculty; that in a little while, when I have gazed my fill and am ready to change my place, I shall lift great heron-like wings and fly with little effort to other points of view.*

*W.H. Hudson  
(1841-1922)*

*(Submitted by Mr. B.J. Snook)*

# LIST OF OFFICIAL BHGA OBSERVERS

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2 Ashton Roger L.  
 7 Bridges Paul  
 9 Breen Gerry  
 11 Bailey Robert E.  
 13 Cranfield Andrew D.  
 14 Collis Mike N.  
 16 Clarke Glenn E.  
 19 Clarke Derek  
 21 Calvert Robert G.  
 25 Day Peter John  
 26 Doubtfire Ashley  
 28 Ellison David H.  
 32 Fortune M.B.  
 33 Fuell Anthony R.  
 34 Fischnaller Gustav  
 37 Fowler Gordon  
 39 Foster Michael  
 41 Gibbs Keith  
 42 Garland Roger D.  
 44 Green Roger D.  
 47 Hawkes Colin  
 49 Hawksworth Malcolm  
 52 Hill Roy  
 53 Hampton Stewart  
 54 Hanlon R.F.  
 55 Hodgson Harry  
 57 Hobson Graham C.  
 59 Harrison Brian K.  
 60 Jordan Kevin  
 61 Jenkins John M.  
 63 Jackson Peter  
 64 Knowles Alan G.  
 66 Knowles Hugh D.  
 67 King Pat J.  
 69 Lamdin R. (Misty)  
 71 Leason Graham  
 72 Mills W.C.P.  
 73 Munn Dennis  
 74 Milton Brian  
 81 Pattinson Robert J.  
 84 Rowley E.  
 86 Ramsey Michael  
 89 Scott Pete  
 90 Scates R.A.  
 91 Shaw Michael G.  
 92 Squires Douglas J.  
 93 Smith John H.  
 94 Shine Geoffrey A.  
 96 Stainer Mike  
 97 Slater Graham  
 98 Squire Anthony E.  
 99 Simpson Derek W.  
 100 Slipper Barrie W.  
 101 Salisbury Edward C.  
 103 Tait Dave  
 105 Thomson Gregory I.  
 106 Taggart David J.  
 107 Thomas Ian  
 108 Trapp Arthur H.  
 110 Taft Tim  
 113 Wilkins David  
 115 Wilson Richard J.  
 116 Weeks David A.  
 117 Woods Eric M.  
 118 Ware John R.  
 120 Yule David F.  
 121 Lake Michael  
 124 Cranfield Andy L.  
 125 Arscott Rodney  
 127 Black R.W.  
 128 Bradley Bob  
 129 Battersea Edward  
 130 Belloe Iain  
 131 Flower Terence J.

132 Green D.P.  
 134 Knight Tom  
 135 Knight Jeannie  
 136 Messenger Ken  
 137 Maclaren Anthony J.S.  
 138 Muggridge Malcolm  
 139 Raymond Dave  
 141 Southall Mark S.  
 143 Westcott Anthony J.  
 144 Balchin Robert L.  
 145 Bullock Paul  
 147 Fellows R.E.  
 150 Adam Michael V.  
 156 Hunter John  
 165 Wishart Bob  
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 175 Donald Paul  
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 212 Weed G.  
 213 Fack John  
 214 Baker Paul  
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 221 Fathers Peter  
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 264 Murphy Simon G.  
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266 Peto Tibor  
 269 Barclay Mich  
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 278 Murphy Terence  
 279 Dixon John E.  
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 281 Freeman Ron  
 282 Birkbeck Trevor  
 283 Snape Geoffrey  
 284 Mees Gary  
 285 Bond Steve  
 287 Huyton W. (Bill)  
 288 Cowell W.C.A. (Bill)  
 289 Cameron Victor  
 290 Carson Donald  
 291 Catanach David J.  
 292 Aspinall Terry  
 293 Batchelor M.J.  
 294 Brown Richard  
 295 Sharpe A.J.  
 299 Oram Ken  
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 302 Rathbone Tony  
 305 Wiseley Robert  
 306 Anderson William  
 307 Ball David  
 309 Benn Alistair S.  
 310 Bevan John  
 311 Brigstock Philip A.  
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 313 Davies R.A.  
 314 Dickson Jonathan  
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 318 James Allan  
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 331 Prydderch Ken  
 332 Ryder Thomas K.

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 334 Hunt John  
 335 Jones Dave  
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 337 Tate Tony  
 338 Harthman John P.  
 339 Layfield Dave T.  
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 345 Ogston Simon A.  
 346 Cowan Keith  
 347 Hibbit Mike  
 348 Parker Allen  
 349 Stevens Pete  
 350 Anthony Christopher  
 351 Goulstone Peter Brian  
 352 Nickells D.  
 353 Pirie Ian  
 354 Johnson Peter  
 355 Clark John A.  
 356 Croll John F.  
 357 Lark Colin W.  
 358 Marlow David  
 (see Ob.No.238)  
 359 Moss Stephen C.  
 360 Pavey Derek G.  
 361 Richards Tony  
 362 Waterworth Peter R.  
 363 Knowles A.W.  
 364 Rockcliffe Howard  
 365 Laidlaw R.D.  
 366 Brewitt Clive  
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All small ads should be sent to Lesley Bridges, Commercial Editor, *Wings!*, Yard House, Wentnor, Nr. Bishops Castle, Shropshire.

Ads sent to any other address will be redirected and therefore delayed.

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