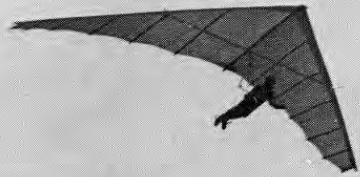
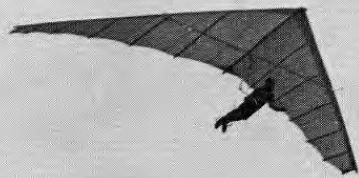


*Martin Farnham's Midas at Mill Hill (Now
being manufactured under licence by
Chargus).*



WINDSOCK

*Martin Farnham's Midas at Mill Hill (Now
being manufactured under licence by
Chargus).*

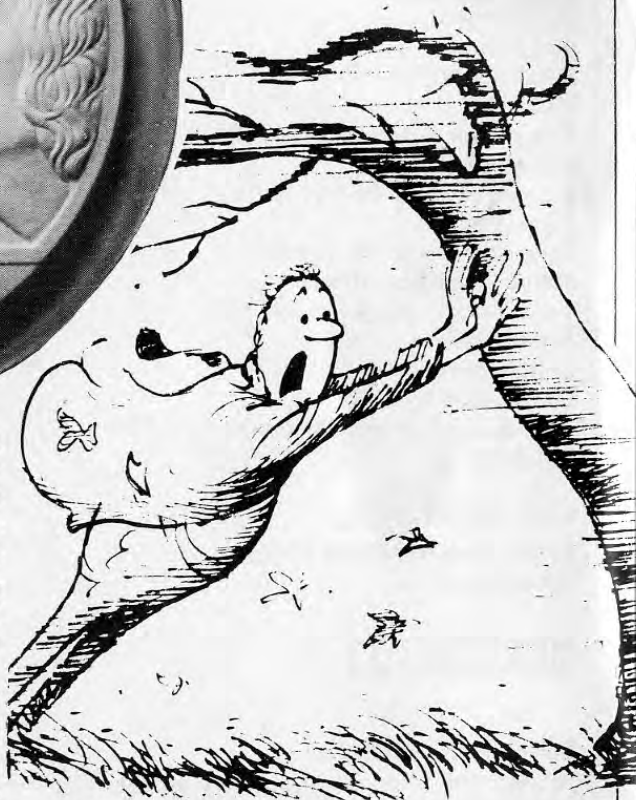


WINDSOCK

HANG GLIDING MEDAL



Mike Hibbitt, when he doesn't go Hang Gliding, designs and models commemorative medallions and coins. When given a chance to design a medal commemorating the Bernoullis, Mike decided that a Hang Glider was an appropriate way of symbolising their combined talents. The Bernoulli family spanned five generations of Swiss mathematicians, eight members of which were distinguished in ability. Three of them, Jacob I, Johan I and Johan's son David I rank among leaders in the history of pure and applied maths. Daniel developed the principle of fluid dynamics which we all know explains the 'lift' theory of an aerofoil. Johan made important contributions to the theory of sails. Therefore a rogallo was an ideal subject to represent the two. This is the first time a hang glider has been represented on a coin or medal.



Site News

DEVILS DYKE is now open to flying. Please observe the site rules very carefully, this is our last remaining site that is not yet being threatened with closure.

Just as a reminder, here is a list of sites lost in the last 3 years.

- Wrotham Hill
- Truleigh Hill
- Long Man of Wilmington
- Firle
- Mill Hill (???)



The latest craze is to soar the cliffs in 60 mph winds. The lift created off a sheer cliff face is sufficient to support the pilot without a glider. It is great fun to use these strong winds to fly dual. Above, John Ievers can be seen test flying Ian Grayland off Beachy Head.

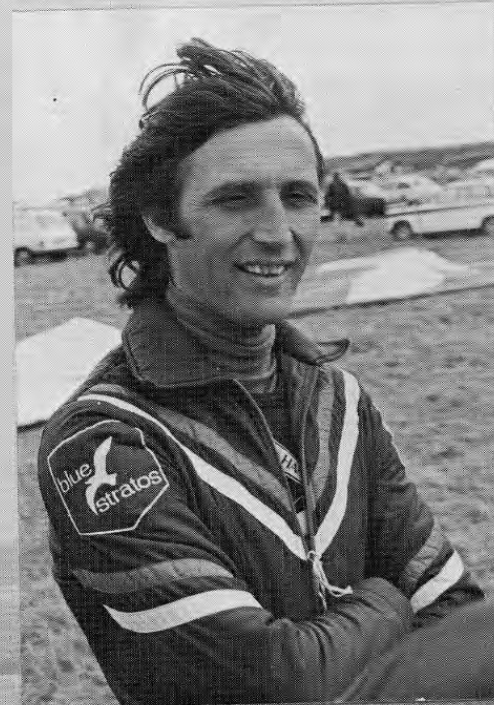
ever mind the mud, just say
e've been flying'



Alvin Russell, looking more like a cross country runner caught up by a giant eagle, gets his Phoenix VIB off the ground.

PHOTOREFLECTIONS OF MERE by **ROGER WATES**

Steve Powyter winds up a tight 360 on his Blue Stratos SKII. The diamond shape on the nose end of the keel is where camber has been shaped into the pocket obviating the need to camber the keel boom.





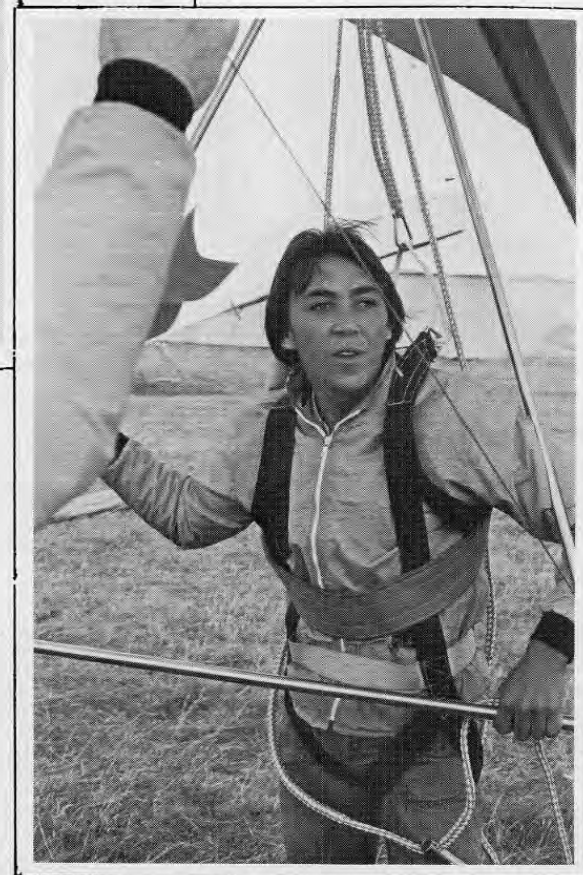
Tom Knight parachutes in his Dragon.



Ian Grayland holds on for dear life moments before ground looping the Hiway SuperGroundBase



Ricky Duncan, flying a Moyes Stinger, showing the slack string which was supposedly putting his glider in class III. Ricky, another Aussie, was overall winner and class I winner.



Australian Stevie Moyes, star of Man from Hong Kong, prepares for a ground tow with the unusual two-part harness. The pilot starts flying in what is basically a seated harness but then lies into a separate chest strap to fly prone.

Beetles from outer space?



When there aint no wind you want one of these. Len Gabriel's kite power pack.



As I won't be editor for much longer I just thought I would put my picture in while I had the chance.



Very interesting . . .



Not quite aerial ballet but almost. Mike Evans pirouettes round a pylon in a desperate attempt to score maximum points.



Ray's unmistakable style as he throws his 201 round the sky . . . or is it throwing him round the sky.





Dale Clothier
3rd Class II



Stevie Moyes
2nd Class II



Steve Powyter
2nd Class I



Henry Heggie
3rd Class I



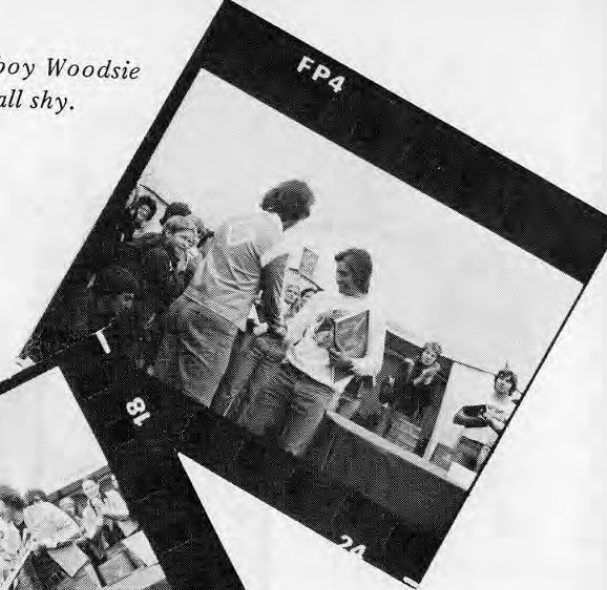
Mike Evans



First and second prize in the
dog leg class goes to



Wonderboy Woodsie
going all shy.

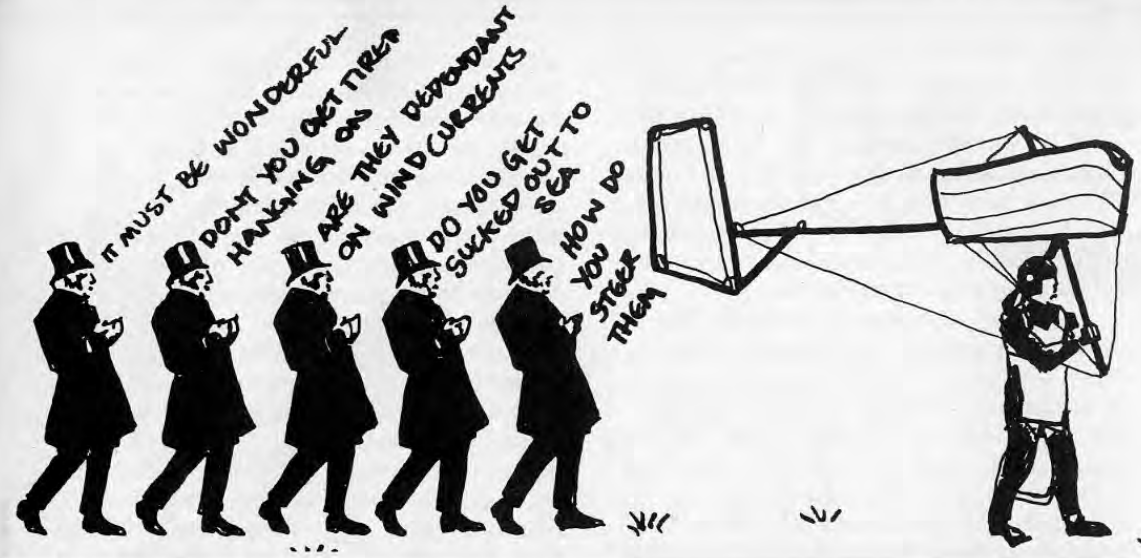
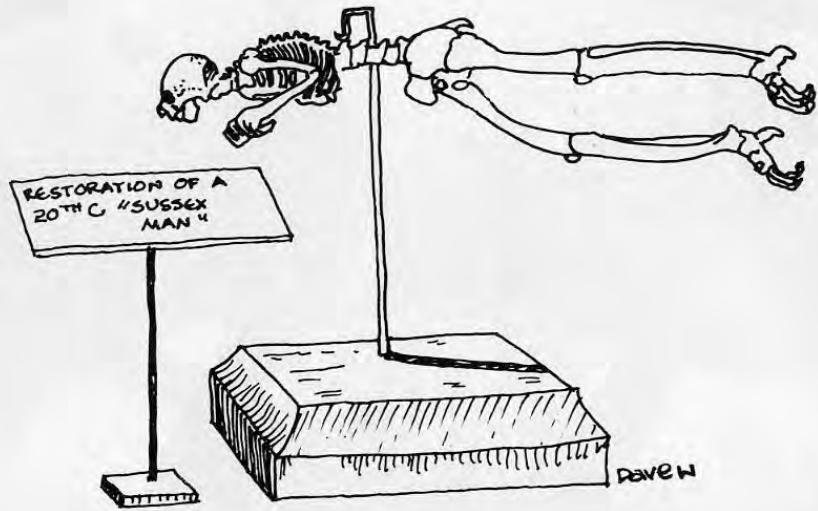


Stevie Moyes.



Time to go home. Frankie makes nuisance
of himself right up until the last minute.





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Find me on the South Downs or at home -
6, Magpie Close, Coulsdon, Surrey. Tel: Downland 54322.

ONE MAN'S VIEW

By Barrie Annette

WHEN FIRST I STARTED TO FLY AT THE END OF LAST YEAR, I WAS IMPRESSED BY THE ATMOSPHERE ON THE HILLTOP. IF I WAS DOING SOMETHING WRONG, SOMEBODY USED TO WALK OVER AND IN A VERY HUSHED VOICE POINT IT OUT TO ME, THEN GO AWAY AGAIN TO LEAVE ME TO THINK ABOUT IT, MANAGING TO PUT ME RIGHT WITHOUT SPOILING MY MOOD.



It is still very similar, everyone tries to be careful with other people's feelings, but it is impossible to feel so relaxed as previously, considering all the threats our sport has come under, and the discussion what to do about it. How can you feel relaxed when most of the ideas being out forward will be counter-productive? When I used to climb, if I wanted to steel myself up for something that had not been done before, I used to feed off anyone who would react to me, and from their remarks, You'll kill yourself, etc., which they hoped would have exactly the opposite effect, I gained all the commitment I needed if any crisis arose not to bother myself doing the wrong thing, but there was only one thing for me to do—go straight ahead. This went on until people got wise to me and I also grew up a bit more, and became bored with showing off. In other words, I was a show-off just

so long as that was what the people around me were asking for. When they eventually decided that the best way to deal with me was to let me see they were unimpressed, I sobered up. Of course, that is the way things happen, most people would agree. Still, you would not think so from many of the murmurs that you hear. I do not think that I lose anything by speaking for the lunatics, because all those who do not agree with what I am saying will think I am one anyway, and it cannot do any harm for somebody to confess what they become like if approached insensitively. One day, a ski instructor tried to stop me going down the piste at Chamonix, because he could see that I was not sufficiently skilled to get very far without falling the rest of the way. I fought him with ski sticks like Errol Flynn until it was dark, when with a smirk he pointed out that you could

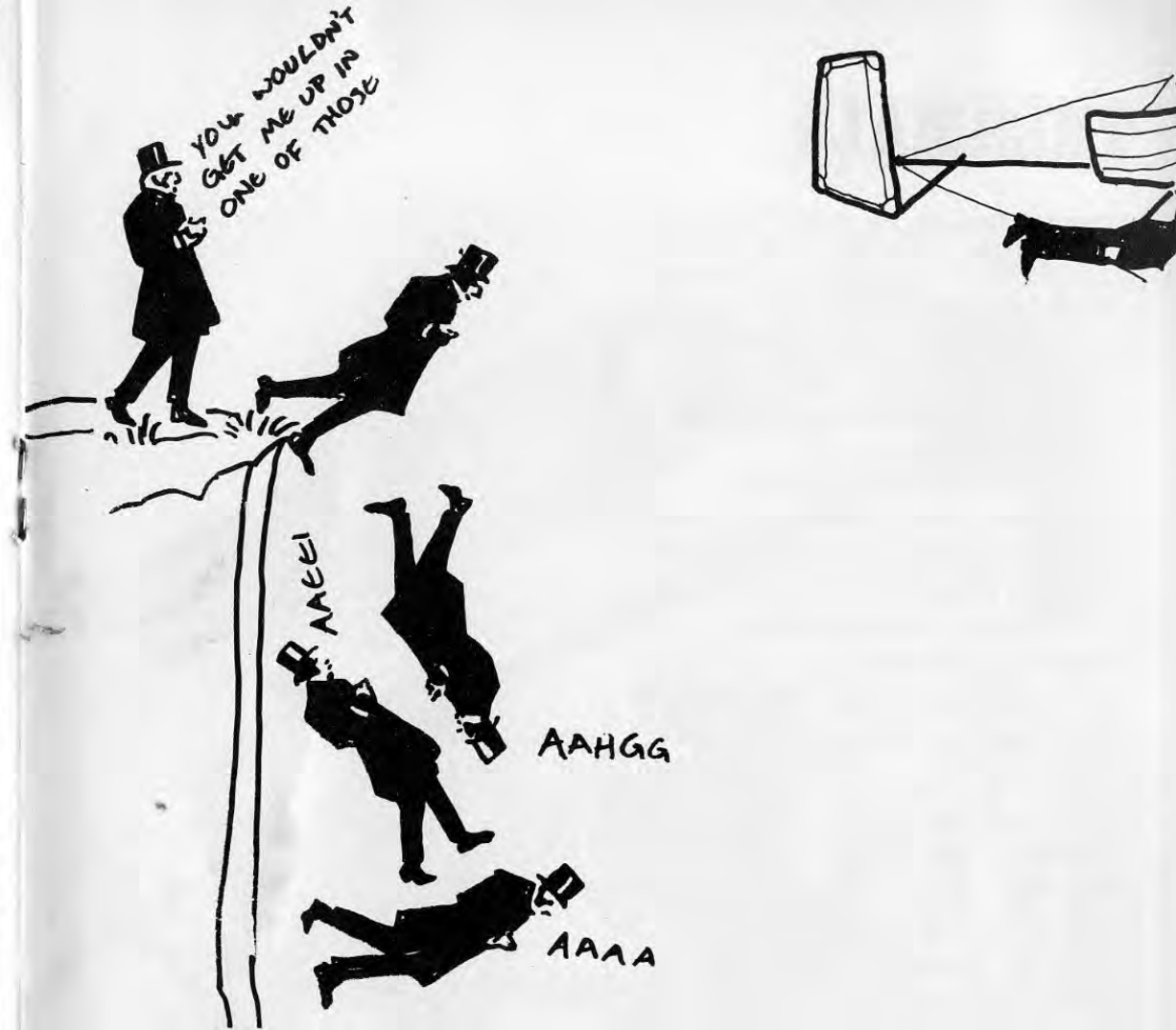
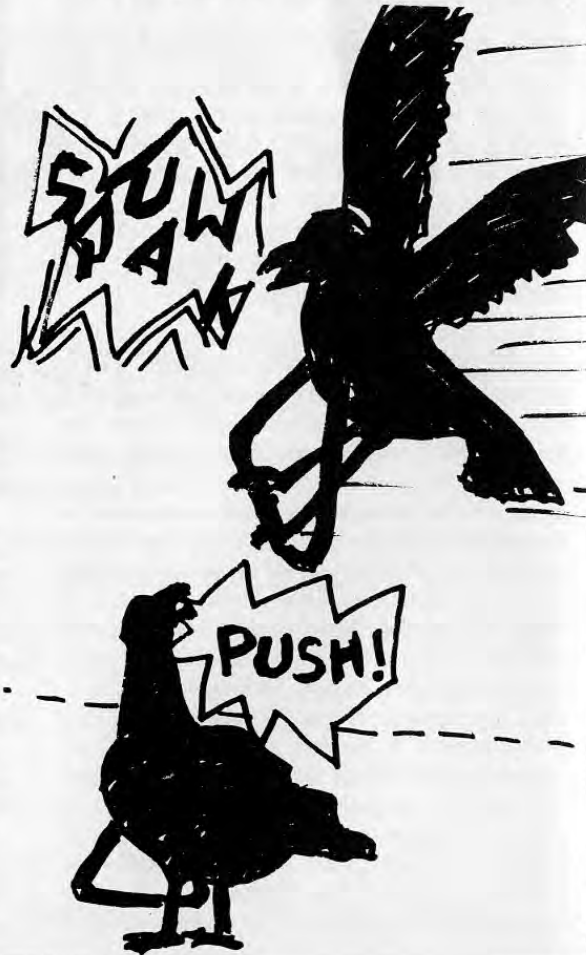
no longer see the bottom. I picked up my gear and went off down the mountainside alone, where he had no spirit to follow me—and I waved goodbye to him, doing something more dangerous still. I could not allow him to win with his principles. And I think that there are a lot of people like that really. The only thing you can do with them is make them worse.

All our thoughts concerning safety should be in entirely the opposite direction. When I climbed, I used to prepare myself in advance by reading and thinking about the situations and living them in my imagination, until I could just close my eyes and see it all happening. I never accepted the limitations of being bird-brained, as John Woods does in his recent article in *Wings!* Soar like a bird—land like a turkey. I accepted that a rigorous programme of conditioning myself had to be gone through, yes, and that I would not necessarily recognise situations if they were presented to me in unfamiliar form. But he does not say anything about the homework that it is possible to do. He landed inelegantly, and he has to justify himself. That's how his article, which is supposed to be so good, strikes me.

Also, I think it is a dangerous article, because it just isn't good enough in a risk sport to learn by making the same mistake over and over again until it is gradually eliminated. Assuming that there is no better way than this, he is seriously underplaying the value of written information. One day, I tried to slope land in a 20 mph cross wind at Firle. The wind shear nearly turned me over, because I was thrown up at such an angle that my arms alone were no longer good enough to hold out my weight. However, by hooking my foot in the frame, I managed to throw my weight over the side, and bring the kite down leaning out as if it were a yacht. If I could do that in a split second, I certainly would have wit enough not to have got into the situation in the first place, if somebody had written something to have alerted me. Another time, because warm air did not feel so strong to me as cold air, and I did not appreciate the importance of a ventimeter, I nearly got pushed back over the cliffs at Beachy Head. All the things that have happened to me have been stupid things

like that, which experienced people, or people with information, can complacently be sure would not happen to them. Meanwhile, we do not see much in *Wings!* of the accident reports that were once asked for and should still be pouring in. Obviously, somebody is sitting on them in order to produce a masterpiece out of them under his own name. Also, you never see anything written anywhere about the individual tricks that the different hills are apt to play. I can only think it is because the people who know these things actually want outsiders to be caught out. They always cheer when it happens, in evident relief that there goes another one who is not going to overtake them yet. Then they say that their soaring sites must be protected from such people giving them a bad reputation.

Let us, therefore, get our priorities in order, because all these problems are quite new and the fact that they have not been sorted out yet does not mean they will not



be soon, and presently the situation may not look at all so desperate. In any case, the general level of responsibility among fliers (so far as they do their level best in the circumstances) is so high that I cannot see how it can really be improved. And as everybody keeps saying, the accident rate is far worse in other sports. Perhaps it is not that at all which encourages politicians to kick us around like children. I think it is because our spokesmen agree to such rabbit-minded ideas, because they are so desperate to appear responsible, that they make it look as if we really deserve to be held up for examination as we are, so these politicians get away with it, and even come off well by getting under our spotlight, having no fear of going ahead in total ignorance. Such is the defence that we put up. If we remembered that the spirit of the

thing is the whole point of it, and we stuck to that resolutely, making it clear to everybody that that comes first and without it our hills would not be worth fighting for, this would give people something to think about and respect, and these twits would stop thinking that they were doing us a favour by attacking us.

Or is this what the majority of us actually wants, to run around like rabbits saying to each other, Did you see me do that? Will you sign for me, please? To my amazement, I see that it actually excites some people. I can see them planning that one day their grandchildren are going to find this *pilot's* certificate in a drawer, to prove to them that the grand old man once wore a pair of testicles, or grandmother, to be fair to the ladies, once wore I don't know what.

THERMALS

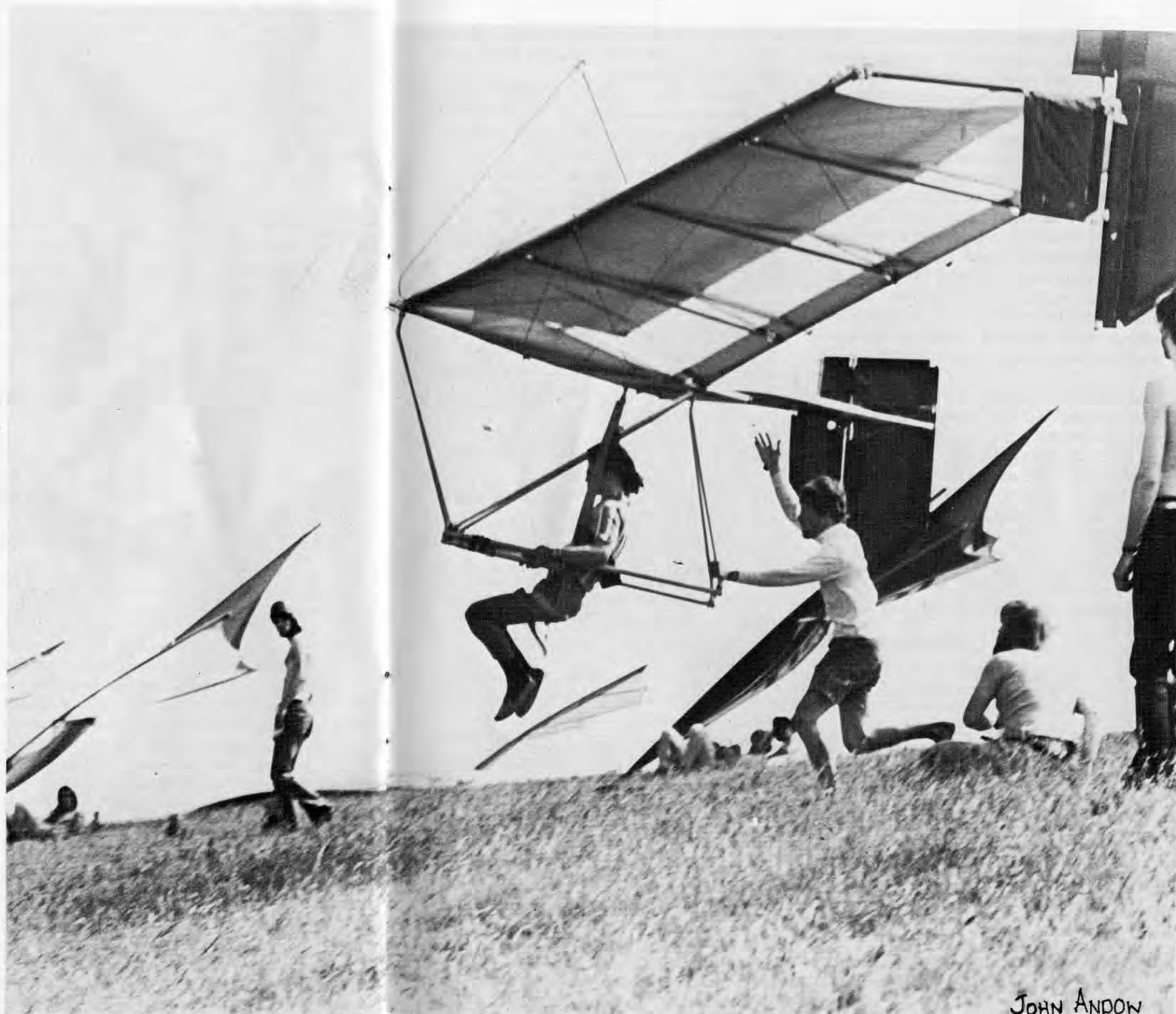
Although Summer is nearly over and thermals seem to be dying away, there is thermal activity at all times of the year although stronger when the sun heats the earth quicker, i.e. in the Summer. This article is intended as a beginner's guide to the nature of thermals, how to use them and the future possibilities in using them for gaining altitude.

The Nature of Thermals

Air is 'stable' when it remains stratified or in layers. Air normally decreases in temperature at higher altitudes. The stability of an air mass is determined by how its temperature varies at different altitudes. If you measured the temperature of stable air at various altitudes, you would find a slow rate of temperature drop. In extremely stable conditions, a layer of warm air will overlie cooler air. This is called an 'inversion'. Unstable air always has cooler air overlying warmer air. The cooler the overlying air is in relation to that below, the more unstable it is.

In unstable air the sun's energy will warm an area of ground which in turn warms the adjoining air. When this air becomes warmer and less dense it will tend to drift upward like a bubble. It is cooling as it rises and the bubble will continue to drift upward as long as it remains warmer than the air through which it is passing. Eventually an altitude is reached where the bubble is no longer warmer than the surrounding air, that is where the upward motion stops. The trip from ground to inversion layer may be only a few hundred feet, or it may ascend to 20,000 ft. Thermals are sometimes topped with a cumulous cloud. The ascending bubble is cooling as it rises and since cooler air will hold less moisture there is a good chance of the thermal reaching condensation level before reaching the inversion layer. When this happens a cumulous cloud will develop. If the inversion layer is reached first no cumulous will form. This is called a 'dry thermal'.

The puffy white cumulous which often pattern a spring or summer sky, are strong



JOHN ANDOW

indications of where upcurrents lie. When the moisture condenses in a thermal, the latent heat of vapourisation (i.e. the extra heat required to vapourise water) is released to the air giving further buoyancy to the thermal. This may give rise to well-developed cumulous clouds. Under these clouds powerful upcurrents can develop which could make short shrift of any hang glider pilot who unwittingly got caught up in them. If thermal condensation occurs so much that clouds completely obscure the sky, 'overdevelopment' has occurred. The source of heat to the ground has been cut off, thermals cease to develop. Sometimes when cloud gradually disperses the cycle repeats itself many times over.

Under ideal thermal conditions the convection, or heat transfer from ground to air, occurs rapidly enough to form a continuous column of rising air instead of a bubble periodically thrown up. In dry or dusty areas the upcurrent may be strong enough to form a tiny tornado called a 'dust devil'. Insects and seeds may also be caught in the rising air and a good indication of these are swallows, or other air-feeding birds, circling in the thermal having a good

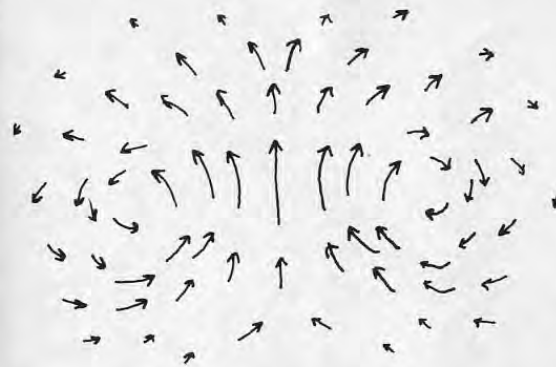
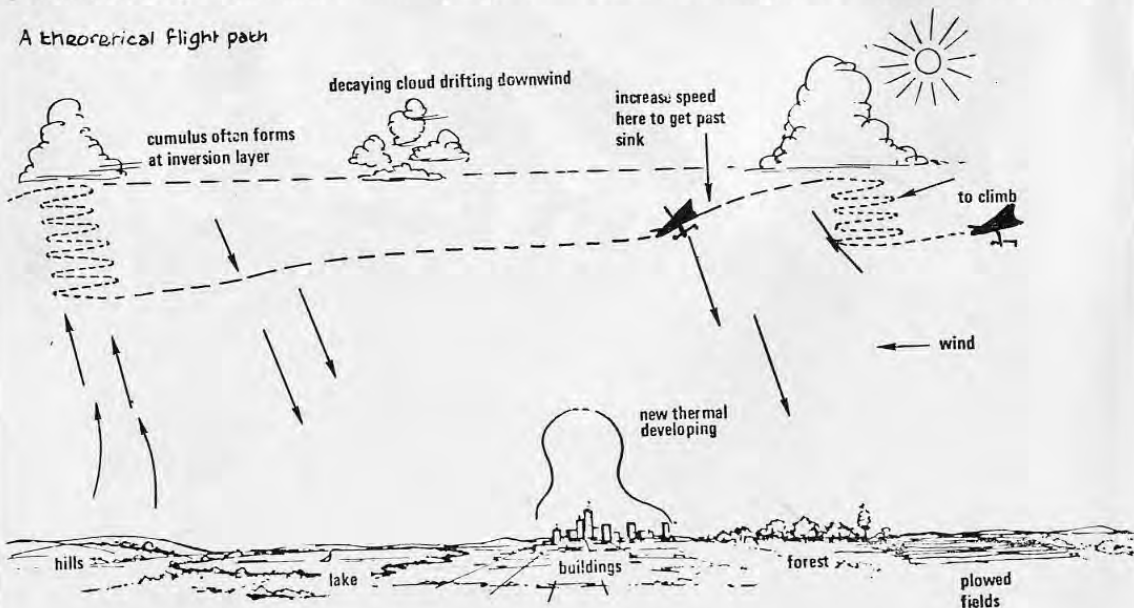
meal. Disturbed wind patterns on a field and a lull in the wind can also herald the approach of a thermal.

Some types of ground are more likely to spawn thermals than others. Ploughed ground, bare sand or dirt, rocky ground, rooftops of buildings and streets are all good thermal generators. Lakes, ponds, green fields, forest and shadowed wet areas are unlikely to produce thermals. Basically, anything which absorbs the sun's rays and quickly radiates the heat is likely to be a good thermal generator.

The structure of thermals is not entirely known but it is thought that at an altitude clear of ground effects, the thermal takes the form of a vortex ring similar to a doughnut shape. The air circulates through the hole upwards and down on the outside. It is also thought that the whole thermal may rotate about its vertical axis in the same way that bath water spirals down the plug-hole, the direction, of course, depending on which hemisphere of the earth you happen to be in.

On arriving at the flying site, the first indication you may notice of possible thermal activity is the difference in temp-

A theoretical flight path



THE SHAPE OF A THERMAL

erature from ground level to the altitude from which you will be flying. If the air feels distinctly cool at the top of the hill (or mountain) compared with at ground level, there is a good lapse rate and thermalling will be a possibility. Secondly, one would look for the thermalling clouds, studying where they were building up or decaying. Thermals usually come up from the same source so that as they are released, like a stream of bubbles, the clouds will form in lines downwind of the source. Wind shear keeps the cumulous in line, giving rise to the term 'Cloud Streets'. By observing for a few minutes it should be possible to determine where the cumulous are forming and, remembering that lift will be upwind of them, where the best thermal lift is to be found. Sometimes on a mountain the air rising up the mountainside will assist the thermals and their presence can be betrayed by periodic appearance of cloud in front of or just above the mountain top. Apart from the indications mentioned earlier, you should keep a watchful eye on other flyers who may gain height rapidly, or even circling birds. Thermals also tend to detach from the ground where there is something to precipitate their formation, such as a sharp hillock or a clump of trees or some buildings. This is comparable with bubbles forming on a scratch or piece of grit in a glass of beer. The way in which one utilises the thermals is very much dependent on the flying site. A small ridge would not be a suitable starting point for circling in the thermal as one would soon find oneself behind the ridge or, without sufficient height, in great danger of hitting it. In these circumstances the most

beneficial approach would be to wait for signs of a thermal and take off. From the smaller ridge it is quite practical to encounter a thermal. fly straight out from the ridge at minimum sink until leaving the other side of the thermal, turn down wind and fly at max glide back to the ridge to await the next thermal. One may even catch up the same thermal on the way back. Once in the air, the thermal can be felt as turbulence followed by a smooth lift of air. The turbulence will depend very much on the strength of the thermal; a small, strong thermal could dramatically lift one wing of the kite giving one the impression of being spat out of it. By elbowing into it, turning the glider strongly into the thermal, the turbulence can be penetrated and a smoother lift from the centre of the thermal will follow. Exit from a thermal will be heralded by further turbulence, which may momentarily kick the rear of the kite up, and sink. Having gained perhaps a thousand feet above the ridge, one is more at liberty to search around for the next thermal before being dumped back in the ridge lift. By flying at max glide a greater area can be covered to search out the next thermal, and one will also more efficiently quit the area of sink which surrounds the thermal you have just risen in. Given good altitude, one may want to circle in the thermal. This kind of manoeuvre is practised easier where there is a large amount of airspace and little wind to carry you rapidly away from your flying area.

Mountain flying often provides such a set of conditions. giving one plenty of time to seek out a thermal, and lots of room to try and stay in it. On feeling the presence of a thermal, you should turn sharply into it and, once in, fly at minimum sink, turning slowly in the same direction. As soon as the lift drops off or turbulence is felt, indicating the edge of the thermal, the turn should be tightened to get back into the thermal. By continuing this slow-turn-fast-turn, you should be able to visualise the limits of the thermal and work towards the core of stronger lift.



Wings

If you want to see more of the you'll have to be quick!

With a rigging time of approx. 70secs. and soaring capability in winds as low as 10-12mph, owners will not be spending much time on the ground this summer!

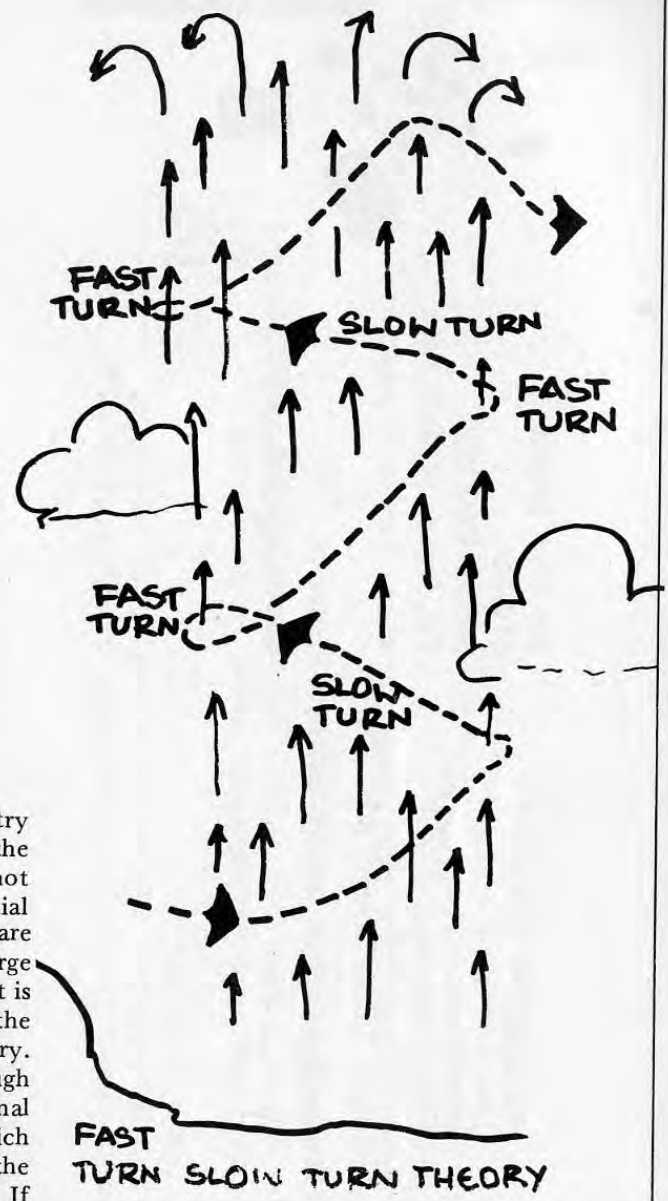
Full details from: BIRDMAN SPORTS LTD,
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ELBOWING INTO A THERMAL

Cross country flights in this country are very much a matter of luck at the moment. Our problem is that we do not have sites which allow us to have the initial altitude to enter thermals where they are larger and stronger. Given a freak large thermal, or a lucky series of thermals, it is possible for a good pilot to utilise the height he has gained to cross country. The difficult part of staying high enough long enough is not circling in the thermal but negotiating the areas of sink which occur between thermals. The stronger the thermals, the stronger the sink will be. If one is flying from a takeoff point 4000 ft above ground level, 1000 ft of sink can be tolerated, but off Mill Hill when you have only just gained the 1000 ft, it takes a lot to hang around until the next thermal comes through. The better your glide angle and maintaining max glide speed, the better your chances.

In conclusion, when in thermals, fly at minimum sink to buy maximum time in lift, when in sink surrounding a thermal, fly fast to get out of it, and when in calm air fly at your best L/D to maintain height.



Good reading:
Pathways to Altitude Gains and Cross Country Flights—Trip Mellinger. *Ground Skimmer* February 1976.
Thermal Soaring and the Rogallo Sailing: A Practical Technique—Ian Grayland
Thermals—Higher Up — Ann Welch *Wings!* No 12
Best Flight Speeds to the Next Thermal—Paul B. McCready. *Ground Skimmer* May 1976.

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RJW/CLC

21st September 1976

Dear Mr. Hawksworth,

Firle Estate
Hang Gliding at Bo Peep

We have recently reviewed the arrangements under which members of the Southern Hang Gliding Club have been flying at Bo Peep. We have concluded that there is really no alternative but to bring these to an end which means that flying should not recommence after 30th September.

There are three special reasons for this decision:-

- (i) Experience has shown that, in practice, the Club is unable to stop flying by unauthorised people and it may be difficult for it to control flying by members of the Club.
 - (ii) It follows that the use of the site by unauthorised people is likely to intensify as will the obstruction, etc., caused by spectators and their vehicles.
 - (iii) The sport is undoubtedly dangerous. One is naturally concerned about the fatality and other accidents to your members. But you may argue that they should be allowed to take their own risks and any accidents need not concern the landowners and farmers. What the latter must be concerned about is the potential danger to non-participating members of the public and others authorised to be on the land. The recent collision between a glider and the Farm Manager's landrover exemplifies what can so easily happen. That accident could have been much more serious.
- On balance our view is that in the Bo Peep area Hang Gliding is incompatible with the existing public and private use which are both likely to intensify further as time goes by.
- We are all very sorry that the experiment seems to have been unsuccessful but I hope you and your colleagues may agree that a fair trial period (of nearly two years) has been given.
- Lord Gage who originally saw your representative was anxious not to discourage sports of this kind and did accordingly agree with the proposals but regretfully concurs with this letter.

Yours sincerely,

R. J. Wainwright

AIRMAIL





Eastbourne Borough Council
Borough Secretary's Department

Town Hall, Grove Road, Eastbourne, Sussex, BN21 4UG.

For the attention of
Mr. A. J. S. Maclaren

Dear Sir,

Hang Gliding in Eastbourne

Further to my letter dated 26th May, I am now writing to advise you that my Council, at their meeting on Monday, 21st June, confirmed the recommendation of the Council's Tourism and Leisure Services Committee that permission to hang glide in the Downland area be not granted.

Yours faithfully

J. Dartnell

Borough Secretary

Messrs Thomas Eggar and Son,
East Pallant,
Chichester,
Sussex.

J. DARTNELL, B.Sc. (Econ.) D.P.A.
Borough Secretary

A.J. SMITH, LL.B., A.K.C., Solicitor
Deputy Borough Secretary and
Solicitor to the Council

This matter is being dealt with by
Mrs. Bailey
Telephone Eastbourne 21333
Ext. 222

Your Ref.

My Ref. KB/CO/6001

8th July, 1975

Pr
12 JUL 1976

Civil Aviation Authority

The Adelphi
John Adam Street
London WC2N 6BQ
Telephone 01 836 1207 217 3408



your ref:

our ref: 10U/6/04

date: 16 August 1976

Mr D Worth
The Editor
Windsock
90 London Road
Mitcham
Surrey

Dear Sir

The May/June issue of 'Windsock' carried an article 'Blue is the Colour' describing how one of your members flew from the roof of Chelsea Football Club Stadium before a crowd of about 10,000 people on November 5th last year.

2 The author ended saying "Don't" to anyone thinking about carrying out a similar stunt. Bearing in mind the near miss at the rehearsal, the flight should have led to charges under Articles 43 & 44 of the Air Navigation Order 1974 and was certainly in contravention of Rule 5(1)(d)(i) of the Rules of the Air and Air Traffic Control Regulations 1974.

3 You may know that there are people who want to ban or severely restrict hang gliding in the UK. They would have very strong arguments in their favour had the flight ended in tragedy. Even its success could have unfortunate results because among the crowd there must have been many who left with the idea that hang gliding is thrilling, easy and can be done anywhere.

4 The sport has great spectator appeal which means that if it is to thrive every participant has an unavoidable responsibility to set a good example on every flight. Foolhardy and dangerous behaviour can lead to adverse publicity; worse still it may encourage others to emulate it with tragic results.

5 Please drive home to your readers, and ask them to pass on to other enthusiasts, how important it is to:-

- a operate within the law;
- b follow the BHGA Safety Code;
- c conduct all operations in an intelligently responsible manner.

Yours faithfully

F J L de Frias

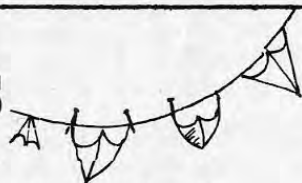
F J L de Frias
Directorate of General Aviation (E)

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Smalls



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WASP 241 C4 Terylene sail (quiet)
complete with carry bag AND knee hanger
prone harness. Can be rigged prone or
seated. Ideal for 11st+ person. Excellent
condition but I need the money hence any
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Phone Dave Worth

01-734 3941 (work hours)

FOR SALE

RIDGE RIDER (Pinter) with harness.
Good condition. £190 o.n.o.

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WASP 221 C4. Prone or seated. Prone
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V.g. condition. Nylon sail, stainless rigging,
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Brighton 503783

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Phone Ian Partington

Brighton 419469

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WASP 241 C4 complete with bag and
seated harness. Good condition, only 10
months old. Red and black Terylene sail.
Will deliver reasonable distance. £200 ono.

Phone Graham Jones (Kingston)

01-549 4038



Ray Sigrist putting on a tight turn



Oh dear! A very rare and valuable record of
a Sigrist ground loop

FOR SALE

SKYHOOK III A, homebuilt, complete
with seated harness, spare tube and carrying
bag. Will gladly demo if requested. £110 ono

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TWO HIGHWAYS, 200 and 240, one year
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deluxe seated harness. Only used last
season. £170 and £190. Paul Davis,
Oakfield, Bridge Close, Byfleet, Surrey.

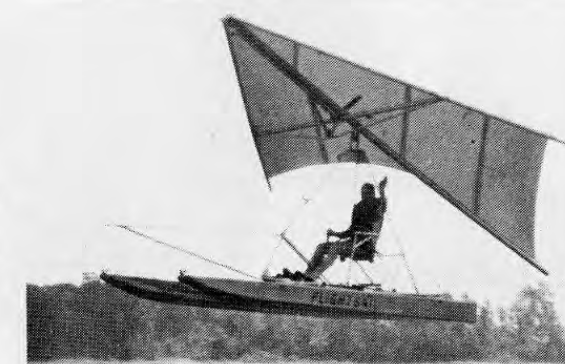
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Tel. Lester Cruse

Downland 54322



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well-known kites;

SWAP A FLONC
DIRE DIRGER GNATS MU
YIHAW CLOD ABUSE
SWILL N SWIG STAIL SWALLOW
SLIME WING PLUG
PYG IRON HELMS