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NOV 87

S.H.G.C.

**Christmas BANQUET**

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★ FRIDAY 11TH DECEMBER ★  
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★ TICKETS £6.75 ★





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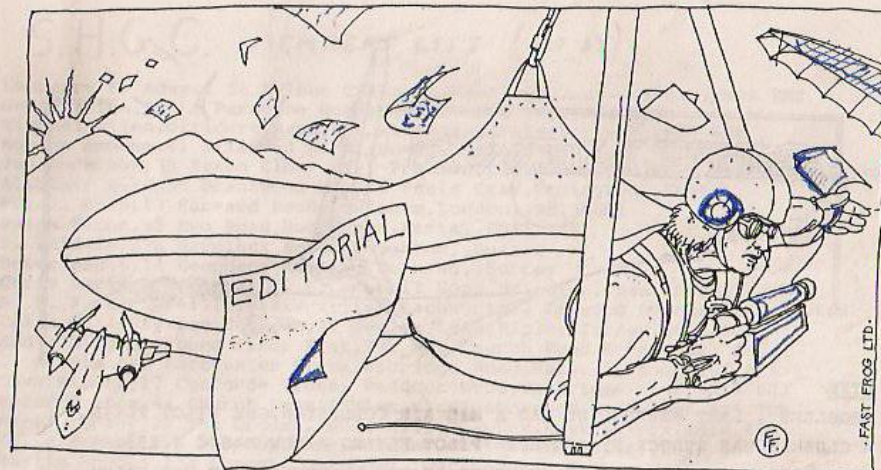
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Well I'll admit that my predictions of pleasant autumn flying have fallen on hard ground; most of us have spent more time repairing roofs, fences, and clearing fallen trees than on flying in the last couple of weeks... Any of you weather boffins predict a hurricane??? I admit I thought it a bit strange a few hours before the storm, when the bar of the Shepherd & Dog suddenly filled with smoke from the down draft of the rotor... this was not helped by some bright spark opening the window!

I'm pleased to say that the articles I was pleading for have begun to roll in; first one this month, a site report on Ager. My logbook says November can be very good or pretty hopeless for flying, so I may see you on a hill somewhere, or failing that, at the Annual Binge at the Dyke on 11th of December.. Should be a good do.

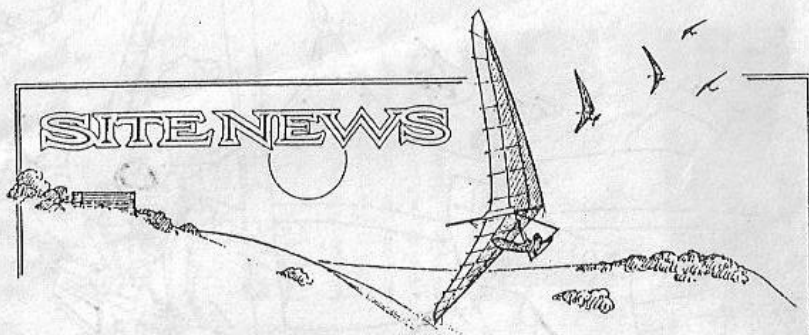
Safe flying

Mark Fisher.

**CONTRIBUTIONS:** These are always welcome. Please write clearly, or if possible, type single spaced on A4. Please enclose SAE if any material is to be returned. Send to Mark Fisher (address at front of Windsock). If writing an article, a small photo of you would be useful.

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**IEWS EXPRESSED IN WINDSOCK ARE NOT NECESSARILY THOSE OF THE SHGC COMMITTEE OR THE EDITORS.**



#### DYKE

PROBLEMS , LAST WEEKEND WE HAD A MID AIR COLLISION, ONE PILOT FLYING A CLUBMAN WAS STRUCK BY ANOTHER PILOT, FLYING A NEW MAGIC 4 155. THANKFULLY NO ONE WAS HURT .HOWEVER IT WAS OBSERVED THAT ONE PILOT STILL CONTINUED TO FLY WHILST THE OTHER PILOT (USING COMONSENSE) LANDED IMMEDIATELY. BOTH PILOTS ARE EXPECTED TO PUT IN REPORTS.

ON THE SAME WEEKEND ANOTHER INTERMEDIATE PILOT FLYING A VISION, WENT INTO THREE CONSECUTIVE 360°,s AND ON THE THIRD ONE CRASHED INTO THE HILL. THANKFULLY HE WAS NOT SERIOUSLY HURT, ALTHOUGH AN AMBULANCE HAD TO BE CALLED.

I WOULD LIKE TO REMIND ALL PILOTS THAT THIS TIME OF YEAR WHEN ITS FREEZING, YOU SHOULD BE AWARE OF HYPERTHERMIA AND ITS INSIDIOUS EFFECTS. YOUR REACTIONS SLOW DOWN ,SO IF YOU THINK YOU MAY BE GETTING TOO COLD, RETREAT TO THE WARMEST VEHICLE OR PLACE YOU CAN FIND. BECAUSE GETTING FROSTBITE IS NOT THE ONLY THING THAT MAY HAPPEN. FLY WELL AND SAFE.

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### PLEASE NOTE

IF YOUR DETAILS ARE 2 ADRIAN WEITMARSH  
INCORRECT PLEASE WRITE TO ... 1, Maple Close, Sussex  
(To change address file) Horsham.

CONT'D

## LETTERS

### HOLLINGBOURNE HILL SITE

Dear Jonathan,

Further to our telephone call a few days ago, I am writing to confirm to you that the above site is definitely closed to any flier other than a full member of the Dover and Folkestone Club.

We regret that this is a strict requirement of a legally binding Licence which it has taken the best part of a year to negotiate with the owner's agents.

Please would you inform your membership of this soonest.

We regret to inform you that in spite of the notice to this effect in July Wings, we understand that two pilots flew this site on the 23rd September who were joint members of the SHGC, Wessex HGC, and Joint Services. This threatened to jeopardise our Licence right at the final stage of negotiations before it became effective.

Anyone requiring details of membership should contact Ted Butler (0550) 713439 or (0550) 712993 (home). For your information we have to pay an annual fee are restricted to use on 20 days only per year, and have to pay £1 per pilot per day that the site is flown. We are also held responsible for any damage by anyone at all, when the site is being flown.

Thanking you in advance of your co-operation.

Yours sincerely,

C. J. GLADISH (---P.R., D & F HGC)

### late ads

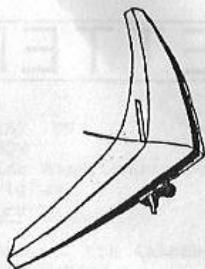
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"KIRK TO TRANSPORTER ROOM -  
COULD WE TRY THAT AGAIN, SCOTTY???"

# mere 1987

Report by MARK FISHER



The forecast for the weekend was enough to put most people off going anywhere. But those of us who had decided that they were going to have a good weekend anyway, whatever the weather were not disappointed. As it turned out, the weather chaps got it wrong, but it still wasn't much good for flying.

Saturday started very windy on the east side of the country, but driving west it cleared dramatically. Around midday, approaching Mere, there were some excellent looking cloud streets in the fresh W-SW airstream. At least one pilot (the young Rob Whittall) made the most of these conditions by flying 50 miles to win the best XC of the weekend.

Arriving at the rifle range, we paid our quid to the older Whittall and went for a snoop around. All the usual people were there: Lindsay Ruddock testing variometers and altimeters in his pressure chamber; Solar Wings had their miniature S4 dangling from the tent roof, Colin Lark underneath it preaching the virtues of the ACE and going for the Silk Cut Chain Smoking record; Queues of pilots waiting to dangle in ill fitting harnesses, and others queuing for greasy burgers and chips at the van.

About 15 or so gliders were rigged in the Glider Mart, mostly bearing very optimistic prices. The weather Gods decided to have their next joke: the whole area was in rotor from the ridge anyway, and an extra strong gust sent about half of the rigged gliders up on impromptu demo flights. Later a pilotless Clubman was to be seen doing aerobatics behind the ridge followed by a less than graceful landing and several pilots chasing down the hill in hot pursuit!

Some pilots were keen enough to do a bit of gale dangling in Spencer's Bowl, whilst others attempted to get the glide angle competition going. More sensible pilots were seen behind pints of beer in the tent!

The competition took the form of a glide angle and a duration/spot landing task. Wind was a fresh westerly and the ridge in use was about 200 feet above several very large fields. In conditions where many double surface glider pilots wisely chose not to launch, the marshalls seemed quite happy to allow some fairly ancient single surface gliders fly! One or two take offs in this category were extremely dodgy to say the least. A Gyr teetered on the edge, was released, shot up and was dumped six feet back, unable to penetrate. The pilot did not seem quite sure what had happened, but fortunately did not attempt to fly again.

Andy Napolitan, fresh from his heroic performance in the Airwave challenge the previous weekend, out performed everyone in the L/D task, by a very long chalk. Most of us thought he was going to disappear over the horizon, when he made a hasty and abrupt halt, in order to avoid gliding into a hedge. On unclipping, he saw that the hedge was in fact an overgrown ditch! Bad luck Andy, hope the keel straightened ok! And well done on winning the event.

Saturday evening started for many down the local pub and continued back at the field with a barbecue (£3.50 per head) and a long "...there I was at five grand..." session lubricated by copious amounts of alcohol, flashing lights and music. Sadly the decent beer ran out early and purists had to resort to drinking the Scrumpy, which tasted like paint stripper until you'd had the first one, after which it seemed quite pleasant!

Sunday dawned dry but with continuous rain forecast, few flew. Those who did used the Mike McMillan winch and only members of certain towing cliques were being launched.

By lunchtime the rain had started: the weather gods were having their final jest. Gliders and tents were derigged in the rain; Videos were put on in the tent, beer was consumed and flying forgotten. The prizegiving was moved forward to one o'clock. A certain John Fendry handed out decent sized cups to the winners. SHGC pilots took the glide angle (individual) and also the team awards.

For those who enjoy Mere, the best part is probably the friendly atmosphere: seeing pilots you have not seen for a long time; a feeling that this is perhaps the last real connection with the origins of the sport in this country. Either that or the piss up! Whatever reason, it was definitely a weekend well spent, and hope to see you there next year.

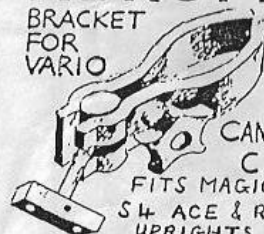
## SHGC ANNUAL AWARDS

NOMINATIONS ARE REQUIRED FOR THE FOLLOWING AWARDS, WHICH WILL BE GIVEN OUT AT THE CHRISTMAS BANQUET:

1. BEST NEWCOMER (ie started hang gliding within the last year)
2. MOST IMPROVED PILOT (beginner or advanced)
3. WALLY OF THE YEAR

PLEASE SEND NOMINATIONS, TOGETHER WITH YOUR REASONS FOR CHOOSING THE PARTICULAR PILOT, TO ANDY WOOD (ADDRESS IN FRONT OF MAG). IF NO SUGGESTIONS ARE RECEIVED, THE COMMITTEE WILL USE THEIR COLLECTIVE SKILL AND JUDGEMENT IN THIS MATTER! DEMOCRACY RULES OK.

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# TRAINING NEWS

Just a few very important words about Steyning Bowl. Obviously sometimes the school leaves the site sometimes prior to some experienced pilots enjoying evening soaring flights. As arranged in the past this leaves the farmer Mr Bower having to drive up and lock the gate in the late evening. Sometimes this is impossible.

Two weeks ago a fence was left down in the easterly bowl which had the potential for a lot of cattle escaping into Steyning and on to the A27. Fortunately this did not happen. However the result of this is that I must now ensure that all vehicles and gliders are out of the Bowl when the School leaves the site, and that all fences are checked for security. If you fly Steyning when the School is not teaching, please ensure that all is in order when you leave. Any fences down, any potential problems, give Mr Bower a ring on Steyning 813366. As advised in the past if the School is not teaching, it is not suitable for flying to take place. Please help us to preserve this site.

September and the beginning and end of October were good for training, but we closed down for 3 weeks due to the hurricane and the devastation which followed!

Once again I have been amazed at the dedication of most of the students we have had this year. The following students have passed their PI and joined the club:

Alex Lindsey  
Alex Green  
Chris Smith

Eric Wright  
Pete Zimmerman  
Mark Harrison

Congratulations!

The 24 October presented pilots with limited experience an ideal opportunity to fly the Dyke in 5 mph N-NE winds. After a little organisation eight PI's on Clubmans or Visions successfully flew from the Dyke with no problems, sticking to flight plans very nicely. Brought back memories of being ready to launch for the Big One with butterflies in my stomach and just a little nervous!

One unsatisfactory incident I recently witnessed was a PI flying a glider with a bent kingpost and a bent cross tube tensioning bolt! Talking to the pilot it became apparent that he thought the bent kingpost would have no effect on the stability/strength of the glider. What is the point of having a good SWANK if you do not adhere to it? Pre flight checks preserve your life. Needless to say he got his ass kicked. The last letter of SWANK stands for Kingpost, yeah?

Pilots flying with us have been getting very cold due to not wearing enough warm clothes. If you are cold you become unhappy and unsure and your responses slow down. Its time to get out the gloves, bar mits and balaclavas. Thermals and Thinsulate gear are worth the money boys. Try a POD for the winter-- keeps you warm! Firie Beacon in November with a 20 mph NE will kill you if not suitably dressed.

A few snippets: The Hiway Vision now has British C of A and at long last we have at Free Flight got just about all the uprights etc., available! Even better news the Stubby hes passed the pitch & load tests with flying colours.

I have at last (long last) managed to get my dual instructors Licence and have purchased a large Typhoon for this purpose. For those of you who are interested this is the only glider which fits the legal requirements for dual flying.

I am now allowed to use this technique as a training supplement when conditions and needs permit. So if you see me floating around complete with student, dont panic -- it's all official!

Needless to say I'll be putting in some 20 hours flying with Ella (our second half!) before taking up students, just to iron out any problems which should be next year.

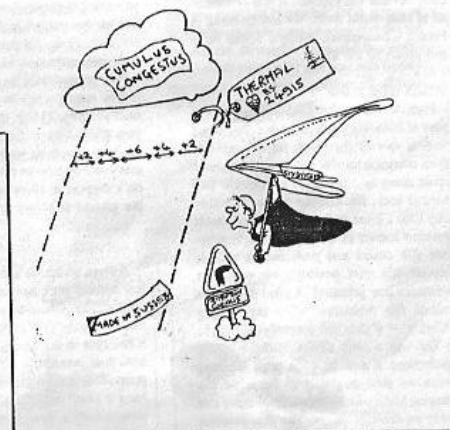
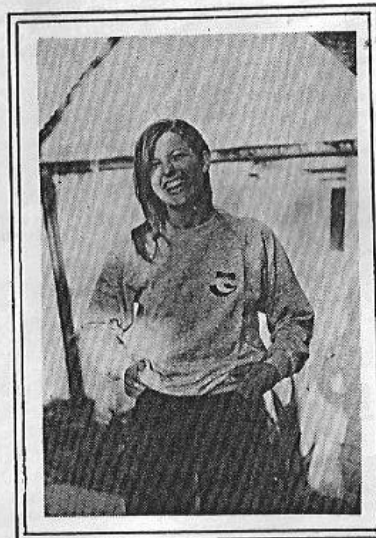
If you want to fly dual, get in touch with the BHGA training Officer; The rules & regulations are very strict.

Enough for this month...

Fly safe, fly high, fly warm.

EDDIE BILOUS (Club Coach)

## club sweatshirts



NOW AVAILABLE FROM ALL COMMITTEE MEMBERS. ONLY £7.50 EACH (THEY MAKE GOOD PRESENTS). SIZES... SMALL, MEDIUM, LARGE AND X.LARGE. COLOUR IS LIGHT GREY WITH THE CLUB BADGE IN YELLOW AND BLACK. YOU CAN ALSO MAIL ORDER FROM JOHNNY CARR. ORDER NOW....

# Pitch Devices

©1986 by Dennis Pagen

My definition of luck is when preparation meets opportunity. Unfortunately, the reverse is also true: lack of preparation meeting the wrong opportunity can result in disastrous luck. Such was the case when at least two pilots modified their gliders with pitch devices that were set up improperly. Their lack of preparation resulted in severe accidents.

The preparation we speak of here is taking the time to understand how pitch devices work and how to set them up properly. Since these devices are popular, it will benefit us all to understand them. We are speaking of French Connections, Pitchys, Speed Rails and others of the kind.

## WHAT THEY DO

Pitch devices are intended for the sole purpose of reducing pitch pressures. For those readers new to the sport, let me explain. Pitch control is moving the nose of the glider up or down by moving the control bar forward or back. Because our gliders are stable they have a great desire to return to a preset position known as trim. If we try to override this desire and push out or pull in beyond this trim position, we encounter resistance (bar pressure). A pitch device can reduce this resistance while maintaining stability — if they are properly set up.

The way a pitch device works is easily understood if you imagine what happens when we shift our weight. Since we are hanging like a pendulum, when we move our body we describe an arc. The trim position is the low point of this arc. If we move out of trim, we raise our body as we swing up the arc. This means we are doing work against gravity which is felt as a force in our arms.

Now imagine that as we move our body we also move our hang point so that our body doesn't have to rise as we move out of trim. We would then feel reduced or no bar pressure. Figure 1 illustrates this principle.

Pitch devices are a mechanical method of virtually moving our hang point forward or back as we move our body forward or back. Another way of looking at the process is to imagine that they simulate a much higher hang point so the radius of the arc is much longer and the amount of rise is much less for a given amount of forward or back displacement.

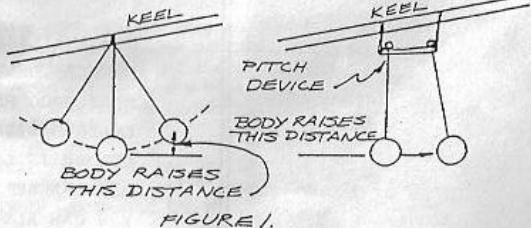


FIGURE 1.

## THE PROPER SET-UP

It should be noted again that pitch devices do not affect the pitch stability of a glider if they are attached properly. On the other hand, an improperly set up pitch device can allow a pilot to get behind the stability point or have an excess of bar pressure.

Here are the simple steps for setting up all pitch devices currently on the market.

1) Set your glider up and enlist the help of a trustworthy friend. Hook in to your glider and have the friend raise or lower the keel until you swing to the position relative to the control bar that you are in during normal hands off (trim) flight. Normally, this will be near your minimum sink bar position.

Now permanently fix the keel in this position by setting it on a bench, ladder or some such support. This is the attitude in which your glider flies at trim. This position is the guide to setting up your pitch device. Note that you may have to place your control bar on a support to allow you to swing free of the ground as shown in figure 2.

2) Next, attach the rear of the pitch device just behind your normal hang point. The pitch device should be moved forward and back along the keel so that when the device is swung to its rearward position, it coincides with your previously set normal trim hang point. This is illustrated in figure 3. You can hang a small weight on your normal hang strap to keep it from moving while you make this adjustment.

3) Finally, attach the front of the pitch device in its proper position (see the discussion below). Now raise and lower this front position until you trim out at your normal trim position, that is, at the rear of the pitch device (see figure 3).

So there you go — three easy steps. To review, find your normal trim hang point; place the pitch device so that its rearmost position is at this hang point; then raise and lower the front of the pitch device until you trim out in this rearmost position. From this we can see that a pitch device is used in the speed range at trim speed and above (this is proper since the speeds below trim speed are at or near a stall).

If you set your pitch device too far back you will be able to get behind the rearmost point of stability and may have problems controlling the glider in pitch and yaw. If you lower the front of the pitch device too much you may find the glider enters a dive which requires a strong push out force to terminate.

## SPECIAL PROBLEMS

Figure 4 shows the most common pitch device. Note that they all project an arc at the ends of their swing (we don't want to eliminate all bar pressure). The shape of this arc can be affected by how we spread the main straps of the devices. For example, if the straps of a French Connection or Speed Rail are spread apart the arc drops off at both ends and becomes longer. If the straps are brought together, the arc becomes a shortened hump. Both of these patterns are unstable. For this reason the main straps or support bars must be vertical on a French Connection and a Speed Rail. The patterns for different main strap positions are shown in figure 4.

A Pitchy is somewhat different as it requires the main straps to be somewhat spread for proper working. Spreading them too much flattens the arc while bringing them together deepens the arc; the former in manners less stable, the latter, more

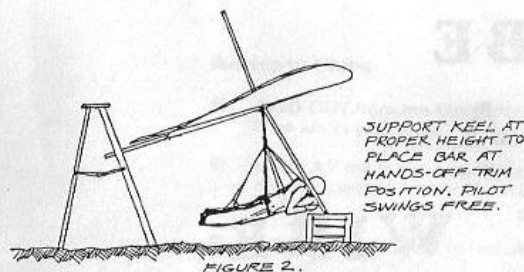


FIGURE 2.

The directions that accompany a Pitchy state that the main straps should be twelve inches apart. However, if you lengthen or shorten your main straps, this will not hold true. In this case you should correct the spread so as to preserve the same angle that the straps make with one another.

The relative length of the straps is a matter for serious consideration. You will find the proper length by following the steps outlined above. These devices normally come with the front strap about four inches longer than the back strap. However, with gliders lacking a keel pocket, the keel is at a lesser angle with respect to the horizontal so a shorter front strap is required. You cannot change your pitch device from one glider to another without making a strap length correction. One pilot did this and experienced a fatal accident when he swung forward unexpectedly during takeoff.

Another problem to watch for is the chance that your pitch device may get caught in front of or behind the control bar. If this is possible you must add a limiter line to keep the device in place. Also, be sure that the pitch device cannot contact a vital part of your glider and wear or cut material. Make sure your secondary hang strap is strong (it will take quite a jolt if the pitch device breaks) and long enough to allow the full range of the pitch device to be utilized.

One final problem is the application of a pitch device to a glider that has a hang point attached to the kingpost. The result of this is that the rear main support strap may be much longer than the front strap. This may cause the arcs of the pitch devices to change.

With a French Connection or a Speed Rail there may not be much problem if the support straps are kept parallel. With a Pitchy that requires the support straps to be spread, a longer rear strap will destabilize the rear. Stewart Smith used a line at the keel to hold the rear strap of his Pitchy at the proper angle. Theoretically this should work, and I feel the only problem with Stew's Pitchy set-up was that it was back too far. However, the reader is strongly warned that any experiments of this nature are turning you into a test pilot with all the associated dangers. None of these set-ups have been on a test vehicle and no one can assure the safety of operation of any pitch device and glider combination that hasn't been tested with hours of airtime.

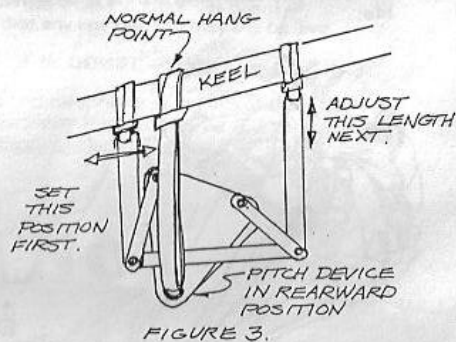
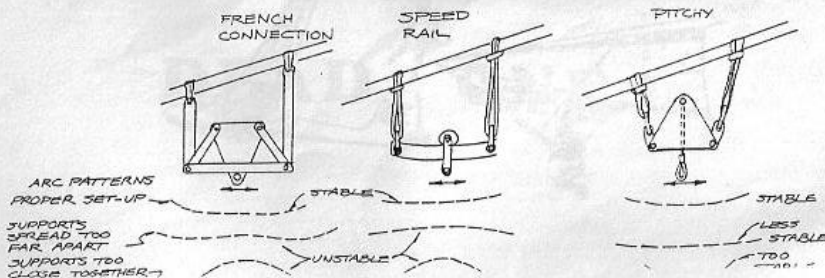


FIGURE 3.



## FLYING WITH DEVICES

The first thing you should do once you have properly set up your pitch device by reading the directions that come with it and checking it with the three steps given earlier, is test fly it in gentle conditions. You will notice a reduction in pitch pressures so that your glider may feel unstable. You should still be able to put your bar to your knees and feel a slight forward pressure or release and have the bar move forward to trim position. If this is not the case, you have the front strap too long and must shorten it. Make sure that your hands-off trim point is in the proper position. If not, adjust the front strap.

You must maintain your pitch device just like the rest of your glider. The small radius shackles or links of some devices produce extra wear and stress on the hang straps, so inspect these frequently and replace them every 200 hours or so even if they show no sign of wear.

Hopefully this piece will have prepared you for the use of pitch devices to enhance control. For further reading you may consult the May and November 1984 issues of this magazine when we previously covered the subject. Be careful when making modifications to your glider and you will be taking a major step toward making all of your luck good. ■

HANG GLIDING

DECEMBER 1986

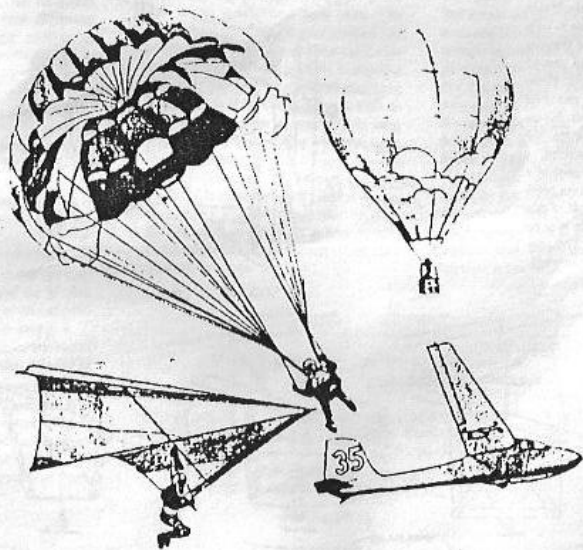
# BE A LIVE WIRE

THE ELECTRICITY COUNCIL

## A Safety Guide

Gliding, hang gliding, parachuting  
or ballooning

There are overhead electric lines carrying voltages varying from 415 to 400,000 volts in many parts of the country. Collision with an overhead line can cause serious burns, and electric shock which can be fatal. The following advice is designed to save life:



### Advice to Clubs

- **FIND OUT** from the Electricity Board where these lines are in your area.
- **DISPLAY** maps showing the location of lines and the emergency telephone numbers of the Electricity Board
- **INSTRUCT** members in rescue and first aid

### Advice to Flyers

- **NAVIGATE** from a map, if practicable, on which all overhead lines have been marked
- **KEEP WELL AWAY** from lines. Remember lines, especially those on wood poles, are not easily seen from the air
- **STAY PUT**, if you collide or become entangled with a line, until help arrives

### Advice to Rescuers

- **DO NOT APPROACH**, nor let anyone else approach, damaged or grounded lines
- **TELEPHONE** the Electricity Board immediately, giving the location of the accident as accurately as possible
- **AWAIT ADVICE** from the Electricity Board — remember that any line involved may still be 'live'

### IF IN DOUBT — ASK

The addresses and telephone numbers of the local office of the Electricity Boards may be found in the telephone directory under "Electricity".

# NOT A DEAD ONE

site report:

Ager

By MARK JOHNS



Ager is located in the foothills of the Pyrenees about seventy miles south of Andorra NW Spain.

We travelled from Dieppe to Roen then picked up the autoroutes skirting Paris and stayed on them until south of Orlean. At this point the autoroute runs out and you join the N°20. This road takes you all the way to Andorra. From Andorra you can go over a very mountainous and windy road that will finish you if like us you have attempted the whole journey without stopping. There is another longer but much straighter road that will eventually take you to Ager. It is this route that I would recommend.

The town of Ager is located about half way down the main ridge rising to approx /3400FT on one side and 1500 FT ON the other. It is the larger ridge that is home to the three take off points.

The campsite is located a stone's throw away from the landing field and both are virtually part of the town itself. Every day a taxi service to the top of the ridge is available in the form of a Mercedes 4WD truck converted to carry about twelve pilots and their gliders, pods etc, this vehicle is of unknown vintage and reminded me of a second world war troop carrier. The driver is a German called Gurtz and for five hundred pts he will help you load your gliders, drive to the top and also be your nose man, all this for about £2.50. If you feel up to it he is quite happy to let you have a go at taking the wheel, this does not always go down to well with the other pilots who have to watch drops of several hundred feet go past the well worn wheels with inches to spare.

The site has three take off points spread out along the ridge, the first is a grassy slope covered in bushes, and as far as I know no-one used it. The second is the first of the ramps and is located next to the bushy slope. The third is located a couple of KM along the ridge, this is a spectacular ramp that has to be seen to be believed. I have seen pilots reduced to bowel movements after inspecting the ramp prior to take off. This ramp takes two wind directions and has a sheer drop of 1000 plus feet.

Once in the air, this site provides some of the most spectacular flying in Europe. In summer staying the right way up is said to be almost impossible; at mid-day the lift is at its best and good heights gains can be made. Later on in the day the air becomes smoother, and more suitable for less experienced pilots. Towards the end of the day a magic lift seems to set in and pilots have been heard to complain of being unable to lose height over the middle of the valley whilst trying to land. Towards the end of the flying season it is wise to be aware of huge Cu-Nimbs which can build up very quickly it goes without saying that you do not want to be caught up in these awesome skies when they start to build.

As a rule the season lasts until October with the best of the weather running out about the end of September. If you go late in the year you will find the swimming pool closed and very little real facilities laid on, however the campsite is well located with good washing facilities and a shop/reception that sells the essentials like beer and fags, there is also a phone so you are not completely cut off. The nightly cost is 200pts for each tent, 200pts for each person and 200pts for the car about £2.75 a night. There are also some fantastic lakes at each end of the valley that are ideal for swimming in before or after you fly.

The high point is the cost of eating out we managed to eat out for about £7.00 every night; that was for three of us.

I have personally never had such good flying before, if like a few of the pilots that came out with us you are beginning to think you will never thermal successfully, then Ager is for you, every one agreed that they had learnt a lot from the ten days that we were there, some pilots went from half hour flights to two and a half hour cruises up and down the valley.

Well that about rounds up my report, but look for my account of the crash I had whilst out in Ager!

See you up there

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## PRESSING ON

In my last article we discovered how to centre quickly in a thermal and how to stay centred. Now it is time to apply this skill to the business of going cross-country ...

an active cloud will have changed shape noticeably.

Next you must estimate how far away it is, how long it will take you to reach it and what height you will lose getting to it. Find the shadow of your chosen cloud to make the best estimate of distance. It is very difficult to judge the distance to a cloud directly but its shadow four miles away viewed from 4000ft will appear to be about half-way to the horizon. How long to get there? Say five minutes for four miles at the sort of speed at which you would expect to fly your K-6. As for the height loss, this is where your calculator might come in handy. But you can guess about five miles per thousand feet in wood, six miles in glass, seven miles in super-glass. In still air, of course. You would need the calculator to make a proper allowance for significant wind.

*A vigorous thermal has a life span of about thirty minutes of which probably a third is in the decaying stage*

Finally you should realise that a small cumulus marking the top of a vigorous thermal has a total life span of about thirty minutes, of which probably a third is in the decaying stage. Arrival under a decaying cloud has its own peculiar problems, as we shall see in a moment. Now you can see that the decision to go to a specific cloud is subject to quite critical timing and you would be wise to be flexible in your judgment, to choose a route which gives you more than one option.

— And Trigger Spots. Below 2500ft you should turn your attention to the ground for clues to the whereabouts of your next thermal. In all but the most uniform of circumstances the ground heats unevenly, depending on the direction of any slopes, the angle of the sun, surface moisture, vegetation, soil type and the degree of drainage. The thermal derives from the heated layer of air close above the surface which will tend to be released first from the vicinity of the warmest area — the trigger spot. It then draws in all the warmed air from hundreds of yards around. As you look down try to imagine where you would feel warmest if you were down there. A sunny corner, sheltered from a cool breeze by a hillock or large wood, perhaps. Or a warm, dry ploughed field, a built-up area, a village. Look, too, for tail-tale signs in any smoke. Not that a bonfire would add significantly to the energy in

your thermal — a good one involves a mass of lens of thousands of tons of air! But the smoke can often give away the presence of a thermal close by. It may look "dead", holding low to the ground, trailing away directly downwind. Or it may be billowing around, or bending suddenly crosswind, both signs that a thermal is not far away. By keeping your eyes open for these signs you stand a much better chance of finding it.

In any significant wind the base of the thermal could well migrate downwind, swinging this way and that to take in further hot spots, resulting in a sustained thermal. To have the best chance of contacting the thermal from a given trigger spot, therefore, you should approach from directly downwind, being ready to turn left or right as required.

**Avoiding The Sink.** It takes little imagination to realise that cross-country progress would be much more rapid if you always flew in lift. This article isn't about racing techniques so I won't go into the fine detail of street flying and dolphin soaring. Clearly, if you are able to take advantage of adjacent thermals and clouds, you should do so. Even if you can't fly always in lift you might be able to not fly in sink with a little foresight and route planning. All thermals have their corresponding downcurrents. These are usually relatively gentle around the thermal itself, since the displacement air which is forced to descend by virtue of the thermal's upward thrust is spread over a much greater area than the fast rising core. Thus a 6kt thermal may induce a 1kt down-current all around itself. We know that it's going to be there when we press on and we deal with it by speeding up for a few moments until we are through the worst of it.

If you cast your mind back to my last article you will realise that the way to minimise the sink surrounding each thermal is to fly directly towards it, straight across the "contours". You can't usually see the next thermal but you should have a clue in the cloud patterns above. If you think a certain cloud is still growing then fly directly beneath it, not just to one side which is sink without any visible clue to where the thermal is then use the wing-tilt to guide you towards the lifting wing, away from the sink. And finally, beware the cascade falling from the decaying cumulus.

You will recall that as the thermal reached its condensation level the cumulus cloud formed. Formation of the water droplets released extra heat back into the air. This was the heat originally taken when the water evaporated to form water vapour in the first place and its release into the

thermal gave a boost to the lift at and above cloudbase. When the cumulus has stopped growing the droplets once more start to evaporate, using up heat in the process. When you use up heat something has to cool down. In this case it is the air itself, and cool air will descend! As it descends, it warms at the dry adiabatic rate, which you will recall is 3°C/1000ft.

But there are good thermals around, which implies that the airmass is unstable. The ambient air in an unstable airmass is cooler as you go up by slightly more than 3°C/1000ft. And, of course, it is warmer by the same amount as you go down.

*It is this down-current that you should watch out for and avoid like the plague!*

So the down-current caused by the evaporating cloud will find itself surrounded by an airmass which is becoming progressively warmer than itself. It continues downwards — in extreme conditions it may even accelerate — like an un-thermal, possibly forming much the same doughnut shape as did the thermal that spawned it half an hour earlier. It is this down-current that you should watch out for and avoid like the plague! Your clue is the evaporating cloud of ten minutes previously. Be sure to have spotted it and remembered where it was. It won't be there when you fly that way, but it's cascade will be! Navigation. Along with all the problems of finding lift, avoiding sink, keeping a good look-out and generally flying your sailplane, you also have to know where you are going! The airspace in this country is too congested for you to feel free to wander where you will. You have to navigate.

Navigation in gliders is a matter of map reading, which is simple enough so long as you know where you are. The occasions when you might have to do dead-reckoning, work out vectors, estimate time of arrival, and all the things that go with power flying, are so rare as to not be worth worrying you with here. Let's stick to map reading.

The first essential is that you should be able to see where you are going. For your early cross-country the visibility should be at least ten miles, which means that there should be a reasonable horizon and that you can see clearly most of the way to it. The worse the visibility the harder the task. Next you should, in your flight planning, have noted the significant visual features that occur on your route, such as lakes, rivers, motorways and large towns, and the positional relationship between them. You may need advice with this from someone who is experienced because features which look prominent on your map may not be so when viewed from the air. Ordinary roads all look the same, as do small towns and villages. Railways, clear enough on your map, can be very hard to see unless you are directly above them. Surprisingly, disused railways, printed as a series of insignificant dashes on the air map, are easier to spot than those that are still active because they nearly always have overgrown bushes along the length of them which stand out as bold lines across the other-

wise chaotic muddle of hedges, streams and roads. Knowing what to expect, and when, gives you a better chance of spotting it when you get there.

Be sure to fly in the right general direction for your course. Accurate compass flying is rarely necessary in gliders but as you come near the top of each thermal, check and check again the direction in which you should depart. Choose a likely cloud within 30° of that direction and, as you fly, look ahead for your expected landmarks. You need to appreciate how far away things are and what they might look like. In the UK you can rarely see details at more than twenty miles. Ten miles is pretty near your normal horizon and even at that range you can't see the pattern of towns and roads because of the flat perspective. The view changes, of course, with height. A feature may look far away from 2000ft and almost under the nose from 5000ft, ten minutes later.

While you know where you are make a point of checking with your map very frequently. This may not be universal advice but, with many thousands of miles of cross-country behind me, I still find myself referring to the map every few minutes. Practical glider navigation is a matter of moving from one landmark to another, trying to pick up the next before the last is lost to view. Even over familiar country I want to cross-check the relationship of this town and that landmark, to confirm my impression of orientation with the direction of the sun, to be sure of the optimum direction in which to press on next. Even so there comes a time when one is temporarily uncertain of one's position — which means *lost!* What happens next is down to you.

First, stay calm and try to apply simple logic. Search the area around you for a feature, or combination of features, which would be shown on the map you are using. Then think back to where you were last absolutely sure of your position. Estimate about 25 to 30 miles flown (if a relative novice) for each hour since then, and then scan the map in the appropriate place for the landmark features you have seen outside. Do NOT try to do it the other way round, by "knowing" where you are, and insisting to yourself that the ground is at fault because it doesn't have the features you "know" are there somewhere!

One pilot, from a continent where the landmarks are further apart and perhaps less confusing, set off eastwards to fly to Cambridge. Not wishing to admit to any uncertainty, even to himself, he reported his position confidently every so often. Eventually, having passed "Aylesbury", "Luton", "Saldock" and "Royston", he admitted to some confusion, being unable to identify a large town with a river wiggling through it. His crew, armed with the "facts" of his previous progress, projected his flight forwards and decided it must be Cambridge. He followed their advice to "go a bit further in the same direction" and land at the airfield he would "soon come to." Half an hour later he landed at Biggin Hill, having failed to recognise Tower Bridge on the way!

So, by taking it in easy steps, keeping one eye on the clouds and the other on the hot-spots below, and not getting lost in the process, you will have got to your goal. But supposing the day goes "blue", or you have to land out. We will contemplate these eventualities in my next article. ☑

## PRESSING ON

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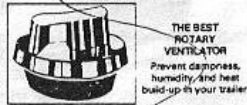
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EVENINGS

Reprinted from Sailplane and Gliding, April/May 1987.

Part 3 next month.

# CHRISTMAS BANQUET

THE INN AT DEVILS DYKE

FRIDAY, 11TH DECEMBER 1987

7.30 for 8.00 pm - TICKETS £6.75



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STREAMERS  CRACKERS  
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Please note: the Dyke Pub need to know the numbers attending two weeks prior to the event so THE DEADLINE FOR TICKETS HAS TO BE SATURDAY 29TH NOVEMBER.

TICKETS AVBL. FROM SOCIAL SECRETARY OR ANY COMMITTEE MEMBER

## MENU

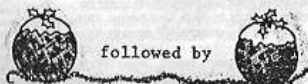
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## GWW2 Pranks of Whirlwinds and Dust Devils

**Description.** A catch-all category of curious observations connected with whirlwinds and dust devils, such as the propensity of these phenomena to lift up people and things and set them down in unusual places and, more remarkably, the dust devil's "inquisitive" behavior.

**Data Evaluation.** Only a few tales have been collected so far, but they seem authentic. Probably many stories never get into the scientific literature. Rating: 2.

**Anomaly Evaluation.** As in the cases of lightning and tornados, the pranks of these small vortices can doubtless be handled by current theories of aerodynamics and physics. For example, the "inquisitive" behavior of dust devils is likely generated by the observer's modulation of wind patterns. Pranks are fascinating but hardly a challenge to basic scientific laws. Rating: 3.

**Possible Explanations.** See above.

**Similar and Related Phenomena.** The inquisitive nature of some ball lightning (GLB1), the pranks of the tornado (GWT7), lightning's pranks (GLL11).

### Examples of Pranks Played by Whirlwinds and Dust Devils

X1. February 25, 1911. Bradford, England. A letter to the editor called the report of a girl being killed by a gust of wind preposterous and asked for an investigation. The editor replied: "Acting on this suggestion, we communicated with Mr. H. Lander, the rainfall observer at Lister Park, Bradford, who kindly sent us a copy of the Yorkshire Observer for February 25th, in which there was a fairly full report of the inquest on the school-girl who was undoubtedly killed by a fall from a great height in an extremely exposed playground during very gusty weather. One witness saw the girl enter the playground from the school at 8.40 a. m., and saw her carried in three minutes later. Another witness saw the girl in the air parallel with the balcony of the school 20 feet above the ground, her arms extended, and her skirts blown out like a balloon. He saw her fall with a crash. The jury found a verdict, 'Died as the result of a fall caused by a sudden gust of wind.'" (R1)

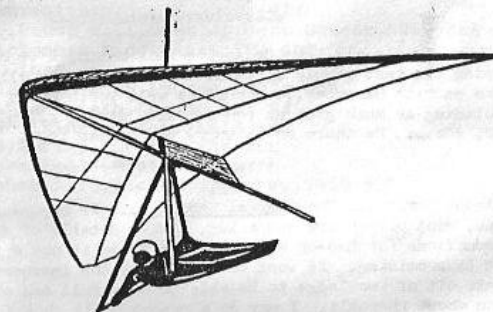
X2. No date given. Egypt. While walking

over the desert. "Hearing a swishing sound behind me, I turned and observed a large revolving ring of sand less than a foot high approaching me slowly. It stopped a few feet away and the ring, containing sand and small pieces of vegetable debris in a sheet less than one inch thick, revolved rapidly around a circle of about 12 ft. diameter while the axis remained stationary. It then moved slowly around me after remaining in one spot for at least thirty seconds, and slowly died down. It would be interesting to know if others acquainted with the desert have come across similar examples of a broad, flat eddy. The ancient superstition among desert tribes that these whirlwinds are spirits, called 'afrit' or 'ginni' (the 'ginni' of the 'Arabian Nights'), would seem to have a reasonable foundation in face of such an 'inquisitive' apparition," (R2)

### References

- R1. Godden, William; "The Tale of---a Gust," Symons's Meteorological Magazine, 46:54, 1911. (X1)  
R2. Capes, J. L.; "A Remarkable Whirlwind," Nature, 135:511, 1935. (X2)

**Source:** Tornados, dark days, anomalous precipitation and related weather phenomena. Compiled by William R. Corliss. Published by the Sourcebook Project, 1983.



# GRAPEVINE

COMPILED BY M.F.

My hotline from Airtime informs me that all the Solar Boys are going to come down, armed with all sizes of demo Aces, to give test flights to all and sundry, whenever it looks good for a weekend on the Dyke....

\*\*\*\*\*

Bob Dear, (Wessex Airmail Editor) reports that his members read his mag twice on average... Wonder what the figure is for Windsock?? Who'd admit to reading this drivel more than once??!!

\*\*\*\*\*

Rumour has it that AIRWAVE are working on a new secret weapon in the ACE War, unfortunately this will make our nice new Magic 4's obsolete.... still we mustn't believe everything we hear...

\*\*\*\*\*

Hollingsbourne Hill site is still not to be flown by mere SHGC members, even if they do know where it is! See letter about this in this issue, from the D&F HGC.

\*\*\*\*\*

Sheffield HGC are seriously thinking of installing a piece of wondrous technology on top of Bradwell Edge which will monitor wind speed and direction and using a voice synthesiser, transmit this information to anyone who dials the number. Radio Boffin Rod Buck (Chairman of the club), believes that this could be financed by a one off surcharge of about £10 on the annual membership (about £2-3K). Good luck to this project; we could do with one on the Dyke I reckon, as long as it could be kept vandal proof. Perhaps Rod could devise one that actually phones you up the night before to warn you that a day off work has to be arranged when it looks good!

\*\*\*\*\*

Grapevine also hears from a very reliable source that Committee newcomer Mark Johns is to make his debut as Santa Claus in a charitable Public Relations type Plummet from the top of the Dyke the week before Xmas! Let's hope the weather is as charitable... If all goes well there will be all sorts of media coverage including southern TV, local press & radio, interviews on Terry Wogan, etc, etc... If it's South Westerly, we'll just have to rig the glider at the bottom & tell the kids they missed Santa's landing! Well done Mark, Sharon and Ian for doing this valuable bit of PR....

\*\*\*\*\*

Grapevine also notes that the letter to Windsock about courteous flying, by Pete Rolinson has been lifted in its entirety and printed in the Dales magazine! Well we did nick a few of their cartoons I suppose....

\*\*\*\*\*

Think that's all from Grapevine this month, I've certainly done enough typing the last couple of days! Hope to see you all at the Banquet at the Dyke on 11th December... should be well worth going to, a snip at £7.50, including as much grub as you can eat, disco, extended license, bar soaring, etc, etc... Be there or be sorry you missed it...

+++++

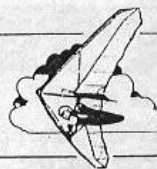
Almost forgot... The Thermal Snooper... if anyone is interested in buying one, dont pay an arm and a leg, I have details of direct order prices, and reductions for two or more. I have tried it out a few times now and I think it is promising. It wont be any use to the inexperienced pilot, & needs a fair bit of knowledge to be able to make full use of the information it gives you about thermals. I may do a report on it when I have tried it some more. See the report in July Hang Gliding mag for more info...

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## SKY SYSTEMS

Sky Systems Ltd, Knoll Workshops, Bellingham Crescent, Old Shoreham Road, Hove, Brighton, BN3 7GS, Great Britain. Tel: Brighton (0273) 423650 (3 lines).

### AIRWAVE LATEST NEWS

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155	Red, rainbow and red
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166FR	Dark blue, dayglo orange and mid-blue

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VISION MEDIUM:	'87 model, Black l.e., rest is red.....	£795

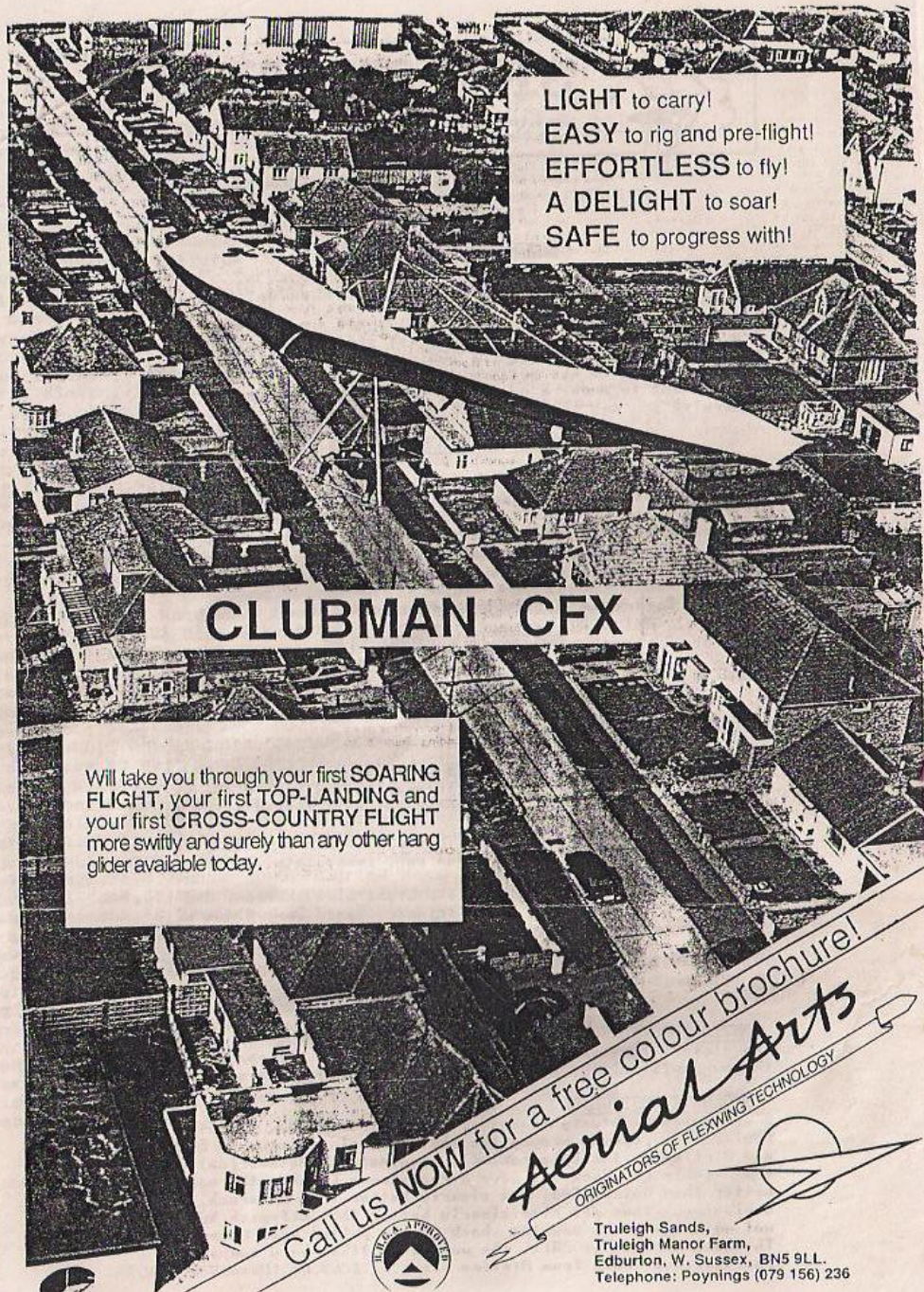
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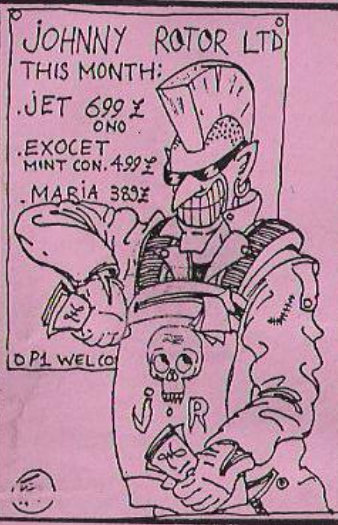
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