

Ridge soaring - Questions you didn't think to ask, but wished you knew the answers to

Ridge soaring is what the majority of us in the UK spend most of our flying hours doing, yet it is surprising how little information is written down about it. This series of articles seeks to answer some of the unasked questions.

Ridge soaring, we all know what it is, don't we?

- 1 Flying back and forth in rising air that is being forced upwards by a conveniently placed hill. If we are lucky there will be thermals mixed in with this air that will take us even higher.

Good, I'm glad about that. Now lets get down to the more interesting stuff.

Part 1 - When should I take off?

I don't want to go down when the winds are light.

The easy answer to this is, take off when other pilots are easily soaring. If you haven't got any other pilots to watch then look for birds or other signs.

What other signs?

Lets assume that the winds are light and you are not sure whether you will be able to stay up. Feel the glider on take-off, pick it up and see if it wants to fly. If it doesn't, are you on the best lift producing bit of the hill? On some sites the take-off area produces less usable ridge lift than the main ridge, so holding your glider on take-off will tell you very little. Nevertheless, notice how it feels on good soaring days, then you'll know how to judge it when things are no so good.

In the winter the air is cold and is more dense. Less wind is needed to soar in the winter than in the summer, although you'll probably not get as high. The summer brings other advantages in the form of thermals. If you've spent some time watching experienced pilots on light thermic days, you'll probably notice that often they seem to take-off just as a thermal is coming through. Now a lot of this is luck, but there are signs to watch for.

On a good thermic day with light winds the approach of a thermal can be observed in many ways.

Movement of foliage. Watch what's happening out in front of the hill, you can often see a thermal approaching as it rattles the trees and blows the grass and crops about.

Birds. The best sign. Look for thermalling birds and for swifts chasing insects. Thermals suck up clouds of insects invisible to us, but they attract swifts like a magnet. Watch how the birds are climbing. If they are climbing well, time your take-off so that you can fly in amongst them. If the birds are just above or below the ridge be less eager, they could just be using ridge lift too weak to keep you up, or catching the insects ejected from a thermal into the sink!

Wind or lack of it. If the winds suddenly drop to nothing it is a good sign that there is a thermal brewing close at hand. The theory is that the thermal forms a block, sucking air into it and dropping or even reversing the background wind. As the thermal approaches the

wind will increase again slightly and you may be able to feel a slight increase in temperature. This is a good time to launch as the thermal is probably just out in front of the hill. As the thermal passes by, the winds may increase even further and it will probably feel very soarable. Don't be fooled, the wind will probably feel cool. Chances are the thermal has passed you by, the air is just rushing in to fill the gap it left behind. In the worst case you'll be launching into sink, the descending air surrounding the thermal. Most likely you'll soar for a few beats before visiting the bottom landing. Timing here is everything, and it's not easy.

Clouds and sunshine. On a day with well spaced, nicely developed or developing cumulous clouds, time you take-off so that you can catch any thermals that may be still producing lift under a passing cloud. If the clouds are not obviously working, wait until the sun has been shining on the ground in front of the ridge for a while. It may have heated things up enough to produce a good thermal.

When should I launch if the winds are gusty?

If could be that you should not be launching at all. Variations in wind speed can cause more problems than absolute wind speeds. It is much safer to fly a hang-glider in a steady 27 mph wind, than in winds of 12 mph gusting 20 mph. If you are caught unaware, gusts may cause you to stall and dive at the ground. In gusty conditions it is important to maintain airspeed as your ground speed may be varying with the gusts. Gusts can effect you greatly on landing, when they may cause your angle of attack to alter, resulting in a climb followed by a dive at the ground. With excess airspeed you can control this. If you fly close to the stall, the dive could be a full stall dive, with no airspeed available for recovery!

As a general rule if you don't want to land in it, don't fly in it! If it is gusty land with **lots** of speed on!

Gust are usually caused by thermals and rotor. To avoid thermal gusts fly early in the morning or late in the afternoon when the thermals are weakest.

Avoiding rotor should be obvious! The NW take-off at Westbury is very rotory when the wind is off to the north, as it curls over the white-horse spur. If you can, move to a take-off where the airflow is clean and devoid of rotors! If you want to experience the full horrors of flying in rotor, try the Rifle Range in a moderate ESE - E.

Sometimes the air is just plain rough and horrible. This is often the case when "waves" are at work. Check the sky for signs of wave clouds. On days when out of phase wave (i.e. the descending air) effects a site, the flying is usually horrible. Even if it is very windy, there will be little ridge lift as the rising air is smashed about by the descending air from the wave. If you are lucky the rising wave-air may be near-by, as it was in January 94 at Westbury.

How strong a wind should I fly in?

This depends on lots of things; the performance of your glider, the smoothness of the wind, the site, the landing etc. If you don't think you're going to enjoy it, don't fly. Gale dangling isn't fun. Ask a knowledgeable pilot to assess the conditions for you if you are unsure. If in doubt don't fly. As is often said - **You fly, you die!** *and* **There are old pilots and bold pilots, but no old bold, pilots.**

What about other pilots in the air?

The last thing you should do before you launch, is look to see if there are any gliders or other craft in the way. Don't cause another pilot to take avoiding action by launching when they are close by.

If other pilots appear to be struggling then don't launch, wait for a better time. This is especially pertinent to paraglider pilots when hang-glider pilots are also flying. Be aware that hang-gliders probably need a lot more height to be able to land back on top, than you do. They can't just land on the side. When you see hang-gliders struggling to stay up, don't take off if you are going to be using the same bit of ridge. Wait until they are high enough to land, or have landed. What may be a fun bit of low soaring on a paraglider, may be a desperate struggle to get up on a hang-glider.

Similarly on light thermic days don't hog the ridge by flying up and down it for ages, give other pilots a chance, especially those wishing to catch a thermal and be away. *At the time of writing, novice paraglider pilots have made Combe Gibbet a very difficult place to fly in light winds for XC hang-glider pilots, because they hog the air. The wall of soaring paragliders leave very little space for the thermal pilot to turn once they have found a thermal.* Be considerate and know your limitations. Land often and give others a fare crack at it.

How far off can the winds be and I'll still be able to stay up?

Again, it depends on the site. Many sites have irregular ridges; Westbury for example can be flown in anything from 270° to 360° on the main NW ridge and bowl (if your are desperate!). The best way to find out if it is soarable is to ask a pilot who has flown a site many times before. Be aware that the wind may feel more *on* the hill than it really is. The wind tends to straighten up when it is forced up a large ridge and may give a false direction at take-off. This wind will provide little lift.

If you are flying a bowl, such as Cowards Bowl, always check the wind direction from a point outside the bowl. If the wind is off, it may be producing rotor at one side of the bowl, even though the wind direction at take-off appears smack on. This is because the bowl **funnels** the wind so that it appears smack on, even when it is not.

As a rule of thumb, on a perfectly straight ridge, of good height and gradient, with winds of 10 - 15 mph, it is probably soarable if the wind is 30° off. You should bare in mind that one leg of your soaring beat will be much faster than the other, as you will be flying a with either a tail wind or head wind. Take care!

In this kind of situation there is now substitute for experience. On one day it may be soarable with the wind 30° off, on another it may not. Only fly if you have a safe bail out, should you not stay up. It is not fun to go scratching a tree covered hill when the wind if off, ask anybody who has flown Ubley when the winds are from the east!

Chris