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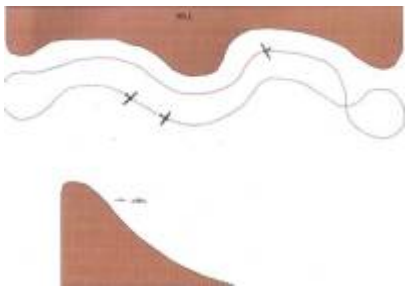
B. Ridge Soaring

B.1 Introduction

Ridge/hill soaring uses one of the most basic forms of lift but we appreciate that many pilots may have little opportunity to become proficient in its use and a few hints therefore will not come amiss.

The lift strength is a product of wind strength, direction, ground contours and lapse rate. It must be remembered that a wave formation or thermals can cancel out hill lift altogether if the phasing is right and the fact that you experienced lift during one beat along the hill is no guarantee that it will be there on the next.

B.2 Basic Rules and Airmanship



Pilots wishing to ridge soar on Bishop Hill and Benarty require separate authorisations; permission for one is not automatic permission for the other.

The basic principles are (and also refer **Hill Flying Discipline**):

- All turns must be away from the hill.
- If catching up another glider ahead of you on the ridge the safest option is to turn back to avoid the need to overtake. Any glider overtaking another on the hill should exercise extreme caution, bearing in mind that the other glider could suddenly change direction.
- If approaching head on, both gliders should turn right, but since the glider with the hill on the right probably can’t do this, the onus is with the pilot with the hill on the left to give way. It is essential that pilots understand that the pilot who has the hill on the left must give way **and be seen to be doing so** in plenty of time.
- Be aware that when flying with a significant drift angle, FLARM direction indications can be

misleading (refer **Lookout**).

When soaring on Bishop Hill fly the pattern as shown adjacent, that is northbound gliders fly close to the ridge and southbound ones fly further out to leave space on the left for the northbound gliders. When reaching the southern end, with a very good lookout, angle the glider towards the S end of the ridge, then turn to the right (lookout!), away from the ridge and all the way around to bring you pointing N back along the ridge.

It is acceptable to use thermals on the hill provided you do not interfere with the normal hill soaring pattern and you are well above the hilltop.

Rifle shooting takes place at the Blairadam range at the western end of Benarty. This area must not be overflown if a red flag is flying at the top of the West end of the hill.

B.3 Hill Flying Discipline

Aggressive flying styles are strongly discouraged. High energy low passes over the hills may contravene SERA.3101 Negligent or Reckless Operation of Aircraft. Hill soaring is permitted by the Civil Aviation Authority under an exemption to 'SERA.3105 Minimum Heights' and SERA.5005(f) 'VFR Flight Minimum Height' (the 500' rule). It is extremely important that this exemption is used only for its intended purpose.

- Do not fly lower than the soaring conditions require.
- NEVER fly close to, towards or directly over any person on the ground.
- Lookout is always paramount.

Local residents and hill walkers may perceive low flying as dangerous or obtrusive so please avoid creating this impression.

Please report any inconsiderate or poor hill discipline to the instructor in charge, with details of the occurrence, the aircraft and the time.

B.4 Lookout

> Aircraft density at the site and on the ridge can be very high and the need for a good lookout cannot be over-emphasised, particularly as hill soaring confines you to a relatively small area of sky

When hill soaring, a very good and continuously vigilant lookout is required – look well ahead when cruising the hill and make appropriate manoeuvres well before you get close to other gliders. Never position your glider so that you are in another glider's blind spot and they are in yours – this is very easily done as gliders tend to be flying "line astern" along the ridge – so be aware!

> Keep looking out all the time. Your life and someone else's depends on it.

If you are using Flarm to supplement your lookout, note that it works on track, not heading, and may give confusing indications of direction for hill-soaring gliders crabbing along the ridge or a wave bar. If you get a Flarm alert the key thing to do is **look out**, especially ahead and either side of the nose, not to look at the instrument.

If you feel the hill is uncomfortably crowded then move to a less busy height band or area, or land and fly again later. A low sun, especially in winter time, can make hill soaring dangerous, particularly on Benarty. When approaching the hill, glare can be excessive so if you are blinded by the sun abandon any attempt to hill soar.

> Ensure your canopy is clean and clear before taking off! Remember a misted canopy may not clear quickly, especially on aerotow. If the canopy is misted, stop the launch, open the canopy, and wait until the misting has cleared.

B.5 Orographic cloud

- The number of gliders allowed to soar with orographic cloud present will be decided by the Lead Instructor.
- Keep clear of orographic cloud at all times as it can spread forward from the hill in a matter of seconds and envelop any aircraft flying too close. Watch out for tell-tale signs such as wisps of cloud forward of the main cloud as these indicate that the cloud may be about to spread out rapidly.
- Do not fly through any wisps which may conceal another glider and similarly do not fly in the haze near cloudbase. If flying above or in front orographic cloud, be very careful not to drift back into it.
- Watch for canopy misting as (obviously) the air adjacent to the cloud is nearly saturated.
- Again, ensure you canopy is clean before taking off!

B.6 Guidance

- If you are not familiar with ridge soaring protocols and techniques please get a briefing from an SGC Instructor and ask for advice on the best approach for the launch in question, winch or aerotow.
- Hill approach heights are critical at this site. If lift is not contacted by 700 feet on Bishop Hill, turn away from the hill and return to the airfield. Benarty will require more height for a safe return, 800–900 feet.

> These heights will vary according to aircraft performance but should be used as a safe guideline for pilots inexperienced in hill soaring.

- Think about the wind direction and parts of the hill likely to work before you fly to it. Remember that when there is a significant southerly component on Bishop Hill you are getting further downwind from the airfield as you progress along the hill. If it doesn’t work on the SW facing slopes, it is extremely unlikely to work as you fly further round the corner to the W and NW

slopes. Turn back before you find yourself with a marginal glide back into wind to the airfield.
- The safe way is to soar the Bishop is to work the SW face to hilltop height before proceeding; if this is not possible consider an aerotow.
- Having contacted lift, it is not necessary to fly excessively close to the hillside.
- Maintain an extra safe airspeed below hilltop height; recommended 5–10 knots above normal to give you adequate control authority and an enhanced margin above stall speed particularly in turbulent conditions.
- As with all ridges, do not approach a blind shoulder close into the hill – you may meet another glider coming around from the other side doing the same thing! In particular pilots should not go around the corner of Bishop into the 'bowl' below hilltop height because of the blind corner at this spot. Flarm will not help in these situations either as it requires "line-of-sight" for communication.
- Don't drift back behind the crest of the ridge unless you have an adequate height reserve; there is usually turbulence, sink and stronger winds behind the crest which can be a major problem to put it mildly.
- Never rely on the hill lift being there. The hills often don't work below a certain height, and in wave or strong thermal conditions the hill lift has been known to be cancelled out in a matter of minutes.
- Do not fly close to hang gliders or paragliders as they can be disturbed by the turbulent wake of a glider. They also have blind spots upwards and backwards. While they can turn very rapidly, they fly very slowly compared to a glider and will find it difficult to take timely avoiding action. They are best treated as being stationary with you being responsible for any avoiding manoeuvres. Best practice is to pass well in front of them, contrary to normal overtaking procedure. Passing them on the upwind side like this is usually safest because their into-wind speed is very low but they may move rapidly downwind.

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