

Flying in Northerlies

BGGC Notes are articles produced by experienced Club instructors and pundits. The articles provide topical and informed views on a particular feature of the flying at Nympsfield. They are not intended as substitutes for formal training or detailed instructor briefings.

The BGGC airfield at Nympsfield is located at the top of the Cotswold escarpment, which produces some interesting effects when there are any significant Northerly winds.

The airfield runs from East to West, with the main local ridge facing north. Most winds with a Northerly component will produce excellent ridge and wave soaring conditions.

An unwelcome characteristic of Northerly winds are the turbulence (or curlover) they can produce. Curlover is unpredictable and can vary from flight to flight with only a small change in wind direction or strength.

The effects of curlover are equally unpredictable and can easily catch the unwary or inexperienced pilot out. Mild curlover may only result in a glider being gently buffeted on the approach, with the pilot wondering what all the fuss was about. Severe curlover, accompanied by a pronounced wind gradient, can cause wild sudden and sharp turbulence on approach, an abrupt loss of speed and unresponsive controls. Curlover can be present from 400' to ground level.

Another feature and peculiarity of a Nympsfield Northerly is a "wind shadow". The wind shadow can suggest different and conflicting wind conditions at different points on the airfield. For example it is common to be at the launch point (West end) where conditions appear totally calm, but for a strong wind to be blowing on the ridge on the North side of the airfield.

In these conditions the windsock is unreliable and should be ignored, but fortunately there is a better alternative. To the South of the airfield there is a wind turbine, which is a reliable indicator of wind direction and speed. It also has the advantage of being visible from some distance.

Nympsfield, in common with other hilltop sites, produces a 'clutching hand' or downdraft effect in the lee (downwind) side of the hill. So contrary to training for landing in flat fields, on no account should a glider circuit be attempted on this side even in light crosswinds.

All visiting pilots should discuss the likely conditions with the Duty Instructor before flying from Nympsfield. It is also advisable to listen out on 130.125 MHz for an announcement to land out, usually at the Cotswold Gliding Club at Aston Down which is easily reachable downwind of the site if the conditions are too severe for a safe landing.

How to Plan Circuits

On calm days Nympsfield is just like any other gliding site when it comes to circuit planning. However a few new techniques need to be developed and some old ones modified slightly when the wind starts to blow.

At hilltop sites, or near any undulating terrain, it is particularly useful to note the shape of the land ahead and anticipate the probable effect the wind will have on sink or climb rate. This is much preferable to just waiting for it to take effect, as it is much easier to conduct an orderly and appropriate circuit in difficult conditions given anticipation of what the air is likely to do next.

In the past it was common practice in windy or ridge conditions to circuit at about the normal height but stay too close and brake off the height from the base leg down. This was commonly known as a 'Nympsfield Circuit'.

However it is much easier if a little more height is used and a normal sized circuit conducted higher up. If the wind has a northerly component then curlover is likely and in these conditions it may be unsafe to attempt a short landing. The most important thing is to land on a safe line rather on a point. Curlover can be 400' deep so it is desirable to complete the final turn above this height and make a suitably swift approach through it.

Most pilots prefer a full brake approach so that they do not linger in the levels with the most unpleasant turbulence. For gliders that one would approach at 50 kts on a calm day, 'suitably swift' means 55 kts for light turbulence ranging up to 65 kts for rough weather. (Personally if I think I may need 70 kts I think very hard before flying.)

In northerly winds the degree of lay off for drift can be quite alarming off the final turn but by the time the flare is reached, usually after a rough ride through the curlover, it has normally all but disappeared and sometimes slightly reversed. If the north ridge is working then it is desirable to ensure that one's downwind leg is sufficiently far out that one does not conflict with gliders actually on the ridge. This also gives time to look right and left on base leg in order to cross the flow of ridge traffic.

Handling circuits in rough and windy weather is a valuable skill for Nympsfield pilots as these weather conditions often include some excellent soaring, on the ridges from Bath in the south to Cheltenham in the north and off into Wales in the pursuit of wave.