BGA GLIDING STRIP CRITERIA

This guidance has been developed to support gliding clubs and airfield owners and operators.

Background

Gliders are designed to operate from an unprepared reasonably flat and solid surface, e.g. well drained short grass. Having completed a launch, a glider descends at some 200 feet per minute (fpm). Glider pilots use thermals and other sources of air that are rising faster than the glider's natural rate of descent to climb and remain airborne for extended periods of time. Soaring is a fundamentally important aspect of gliding. Gliders fly circuits and approaches that are constantly descending and generally lower and closer to the landing area than those flown by other air sport aircraft. Unpowered gliders can taxi albeit limited to the available rolling inertia after landing. 'Going around' i.e. overshooting is only an option (and occasionally necessary) where excessive energy is acquired on approach to the airfield.

Launch methods

Gliders are usually launched by:

- Winch
- Aerotow
- Self-launch
- Bungee (this method of launch is limited to hill-top sites and is not discussed here)

Winch

A purpose designed winch reels in steel or fibre cable to provide forward motion for the glider. The glider pilot controls the flightpath of the glider to optimise the launch following which the pilot releases from the cable. The height achieved is limited by the length of the launching strip. A 1500 metre strip will normally result in a 1500 feet high launch if launched into the wind. The strip needs to be wide enough to accommodate a landing glider in the event of a failed launch. There needs to be an adequate area of unoccupied ground to accommodate the cable attached to its drogue parachute as it falls after the launch as well as a weak link break resulting in a falling strop assembly.

A training glider will glide at a descent rate of around 200 fpm. Bearing in mind that a glider circuit starts at about 700 feet, a 1000' winch launch does not provide a reasonable amount of training time. Most aerotow launches climb to around 2000' above ground level.

Aerotow

An appropriately certified aeroplane tows the glider. The glider pilot stays in position behind the towing aeroplane until the desired height/position has been reached and then releases. The relationship between the available aeroplane towing acceleration and the length of the available launching strip are important. It is clearly undesirable if the launching strip is too short for the available acceleration. The strip needs to be wide enough to accommodate a landing aeroplane and/or glider in the event of a failed launch. A 500-metre hard strip may be theoretically manageable for a powerful aeroplane towing an average rather than heavily loaded glider.

A critical issue is take-off and climb to clear obstacles with real world factors (e.g. wet grass, some slope, and CAA recommended safety factor) applied. Here are two examples:

- Tug take-off on grass with a climb to clear a person or persons (with typical two-seat training glider). Take off distance on grass (180m) x Wet Grass Factor (1.30) x 2% Uphill Slope Factor (1.20) x Soft Ground Factor (1.25) x ASK21 (2.0) x Safety Factor (1.33) = a safe take-off distance of 860m.
- Tug take-off on tarmac with a climb to clear a person or persons (with typical two-seat training glider). Take off distance on tarmac (150m) x 2% Uphill Slope Factor (1.20) x ASK21 (2.0) x Safety Factor (1.33) = a safe take-off distance of 480m

Towing pilots are encouraged to consider several variables before carrying out aero towing. As with most flying, the more runway in front during take-off, the better.

Self-launch

Some gliders have self-launch capability supplied by an integrally mounted power-plant and retractable propeller. The power-plant is shut down after launch and the propeller retracted. In that configuration they are indistinguishable from other gliders. The required launching strip is as required for a 'normal' aerotow launching strip.

Landing

At gliding sites, it is important to provide adequate space for landing and parking both gliders and tow aircraft. Gliders may taxi-off after landing or occasionally pivot around a wingtip during landing - a manoeuvre known as a ground loop - which can result in the aircraft ending up perpendicular or even reversed relative to its landing direction. A strip width of approximately 40 metres will safely allow for landing, basic manoeuvring, a ground loop, and situations where multiple gliders land in succession and can taxi to one side. While some gliding clubs operate on significantly wider strips which provides improved flexibility, this is not always practical or achievable on many airfields. Additional space for parking and retrieval can be provided as required adjacent to the landing area.

Safeguarding

There is clear need to ensure safe and unobstructed arrival and departure routes for aircraft using a runway or strip in accordance with Civil Aviation Authority standards. CAA policy guidance is that unofficial safeguarding is acceptable for unlicensed airfields.

Summary

A glider operating area needs to accommodate launching and landing operations, as well as any known training or contingency situations, eg practice or real launch failure.

Where required, specific guidance can be sought from the BGA.

BGA October 2025