

Gliding Activity Explained

by Pete Stratten, CEO British Gliding Association

This short article aims to help aircrew and controllers to become more aware of gliding activity and is based on Aeronautical Information Circular (AIC) Yellow 083/2011 linked from the NATS Aeronautical Information Service website. That AIC is recommended reading for any pilot who operates in class G.

So, why do people go gliding? Aside from the obvious fact that flying is hugely attractive to many of us earthbound souls, the connection with the air, the adventure, the views, the silence of flight in its purest form and the intellectual, physical and other challenges associated with gliding are particularly rewarding. Powered pilots and all adventurous outdoor people reading this will understand this feeling. Gliding is a self-funded, self-managed, weather dependent air sport and, although most active from March to October, gliding can and does take place throughout the year. Gliders operate from club sites clearly marked on half and quarter mil maps – the sites are identified at <https://www.gliding.co.uk/club-finder>. The UK AIP ENR1 5.5 signposts further detail.

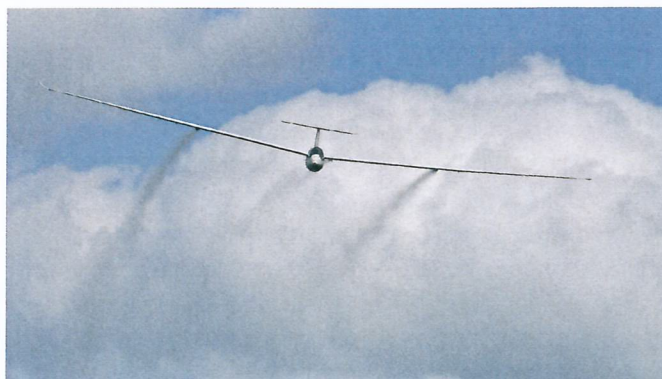
Pilots whose only exposure to gliding has been flying circuits in the post-war generation of training gliders or with the Air Cadets may not realise what modern gliders can now achieve. In the UK, the longest single flight distance is 1100km. Gliders routinely fly closed-circuit 300 km cross country flights at average speeds of around 100 kph, and they routinely climb above FL100 near mountains and hills. There are around 7000 glider pilots operating some 2300 aircraft at 84 clubs flying around 130 000 hours and covering more than 1.3M Km every year. Our Air Cadet colleagues carry out a huge amount of training in winch and self-launched gliders from their sites throughout the UK.

How to See and Avoid?

Most gliders have a small frontal area that reduces wasteful drag (all aircraft designs are inexorably following that same trend) and, for structural reasons, are usually white in colour. It's a fact that in certain conditions any low -frontal -area white aircraft can be difficult to spot. Manufacturers are starting to cure composites at very high temperatures, so the use of dark colours should be permitted on future composite

aircraft. It's been found that the apparently tempting idea of applying reflective fluorescent patches breaks up the shape and doesn't necessarily help with airborne detection. This puts a real premium on effective lookout technique. However gliders rarely fly wings level for long periods and when manoeuvring they are easier to see. The view from a glider cockpit is excellent and look out techniques are reinforced from day one of their training.

[Editors Note: Composite aircraft are traditionally white in colour (gliders, RAF Tutors, others); the reflective nature helps to ensure that the structure does not heat beyond the curing temperature of the assembled composite structure. By curing at higher temperatures, the effect of higher temperatures becomes less of an issue on darker surfaces.



Electronic Aids

A significant and growing number of gliders are equipped with FLARM, an electronic aid to effective lookout that provides visual and aural warnings of closing traffic that is equipped with the same technology. A sizeable proportion of the UK's civilian glider and tow plane fleet now carries this relatively low cost equipment and voluntary equipage has grown quickly. PowerFlarm, which is appearing in increasing numbers of powered aircraft including air transport aircraft, detects both FLARM and transponder equipped traffic. You can view the FLARM picture on your home PC or laptop at www.live.glidernet.org.



Likely places

Lookout is also enhanced a lot by knowing where gliders are most likely to be, eg;

- Within an approximate 5nm radius of a gliding site (most gliding takes place in these areas).
- Below fair weather cumulus clouds and in particular under lines of cumulus clouds.
- On the windward side of ridges within 1000' of the terrain.
- Upwind of or above lenticular clouds.

How are glider pilots trained?

All gliding clubs are part of the BGA training organisation. Standardised training is delivered using purpose-designed two-seat gliders and pilots qualify under a BGA-regulated pilot certification system. Theoretical knowledge, flying skills and navigation tests result in qualification as a glider pilot. Instructors – most of whom operate as volunteers - are trained by BGA approved Flight Instructor Coaches on courses facilitated by the BGA. Volunteer examiners are appointed by the BGA. The entire BGA arrangement provides a low cost and very efficient approach that is largely equivalent to the EASA Aircrew Regulation requirements that will apply to gliding from 2018.

A day in the life of a cross-country flying glider pilot

The number of days when the weather is suitable for cross country is very limited. So, on those days, especially at weekends, gliding clubs can be very busy.

- The pilot will arrive at the gliding club having used the forecasts to judge that a cross-country task is possible and to identify a potential window of opportunity, i.e. which area and for how long.
- After assembling and checking the glider – designed to reside in purpose-built trailers and rig in minutes – the pilot may fill the wings with water to increase the wing-loading and therefore the potential cross-country speed.
- The next task is to plan the flight in the anticipated area of reasonable soaring weather taking into consideration controlled airspace, restrictions, NOTAMs, as well as the anticipated average cross country speed. The planned flight using standard waypoints is programmed into the GPS moving map device that all glider pilots use to reduce work load. Proximity warnings and other settings for airspace can be reviewed at this point. Pilot comfort is a priority too. It's not unusual to be airborne for five hours or more, so plenty of liquid needs to be on hand and not all of it is sweated out! All pilots fly wearing a parachute. Some also carry a personal locator beacon.
- As soon as the soaring conditions are suitable – e.g. a cloud base above 3000' agl with thermals or lee wave providing climbs of 1 m/s or more – the glider pilot will take either a winch launch or an aero tow, where the glider pilot can choose the tow release point. Using a combination of circling climbs, cruise climbing along lines of energy and gliding, the pilot exploits the rising air to fly around the task as efficiently as possible. Although in most cases the pilot will stay within 20° of track while 'following the energy', wider diversions can be necessary. Flying a glider cross country is a 3D problem-solving exercise with the potential for out-

landing constantly in mind. Perhaps that's why so many bored commercial pilots go gliding in their spare time! As many gliders can glide at 45:1 or much more (the best is 70:1), a significant section of any cross country flight is the final glide to the finish circle back at the home site. The on board GPS navigation kit helps with the computing.

- Modern gliders may have excellent performance, but they are subject to gravity and unless they fly in rising air they will end up on the ground – in effect they fly in a permanent state of engine failure. They get essential information on rising air from other gliders and find this much more valuable than anything available from an ATC unit – most glider pilots will therefore only communicate with ATC units when close to ATZs or CAS when the needs of other airspace users must take precedence.
- The whole flight is recorded in great detail using a secure GPS data logger. Pilots competing in the national ladder publish details of their flights and achievements on the BGA Ladder website <http://www.bgaladder.co.uk/Enquiry.asp>

Gliding Competitions

It's worth noting that all of the above can be even more fun if flown in the company of others. It's not unusual for gliding competitions to field up to 50 gliders in a 9-day competition of cross country races. The competitions are notified and details of the daily task should be published online at <http://www.bgaladder.co.uk/showtask.asp>. Despite, or perhaps because of, our indifferent weather and other challenges, the UK excels at developing successful racing pilots and the British Gliding Team regularly pulls in medals in European and World championships. A significant proportion of those medal winners have achieved success while on leave from professional flying.

Safety Education

The BGA is proactive with airspace and other safety education. Beyond the training and day to day peer oversight that takes

place at gliding clubs, the BGA publishes guidance on its website and regular pushes information to pilots through email and via club officials. We are actively engaged with the CAA and other airspace stakeholders with the aim of improving awareness by all, including glider pilots. See more at <https://members.gliding.co.uk/airspace/> and <https://members.gliding.co.uk/bga-safety-management/>.

Top Tips

- Class G airspace is shared by a diverse bunch of users all of whom would likely benefit from better mutual awareness and understanding.
- Please be aware of when and where gliders are likely to be found. AIC Y 083/2011 is helpful.
- Consider carrying an electronic aid to effective lookout that is FLARM compatible.
- Take particular care if you are tempted to fly near a glider launch site – winch cables will bite. Some sites may also have an aerobatic training box nearby.
- If you are a controller talking to a glider pilot who is taking a service or simply notifying intentions, please appreciate that he or she may be working hard to stay airborne. All of us have capacity limits and, like a driver using a mobile phone, any conversation can detract from primary needs of look-out and mitigating the effects of gravity!
- Please do engage with your local gliding club. If you need our help to do so, just let us know. Encourage them to attend your Regional Airspace User Working Group.
- If you have any questions or concerns about gliding operations, please do get in touch. Contact details are on our website at www.gliding.co.uk.



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