

GLIDER VS MILITARY

Glider pilot behaviour in and around a MATZ is a topic that often provokes strong opinions. Experts from gliding and military aviation explain how to make wise choices

COLLATED BY DEBB HACKETT

In each of the past three years there have been close to, or more than, 40 Airprox involving gliders. Here's just one possible scenario...

Picture the scene, you're comp flying a high-performance glider through a MATZ (Military Air Traffic Zone) of a busy airbase in East Anglia. What you don't know is that two fast jets are also nearby descending towards the centre line of the runway to land. Air Traffic Control (ATC) wasn't aware of you, so neither were the other pilots. Thankfully the jets spotted you and altered course. They passed within 100 feet and that's OK, right? I'd have to argue no, not really. At their speed, that distance is barely the blink of an eye, given their ability to cover a mile in roughly 10 seconds.

Glider pilot behaviour in and around a MATZ is a topic that often provokes strong opinions. Many believe that it's flat-out common sense to engage with ATC to ensure safe passage through a potentially hazardous area. Others take the view that because this isn't a legal requirement, there's no need. I

can see both sides and I understand not all glider pilots feel comfortable dealing with military air traffic controllers.

Personal feelings aside, Airprox and near misses happen. Frequently. And the chances are in glider vs military aircraft, the glider isn't going to win. I've been engaging with experts from across the fields of gliding and military aviation in a bid to shed light on engagement and deconfliction from their point of view, and to offer some ways forward to make wise choices when gliding near and within a MATZ.

WHAT IS A MATZ AND WHAT DO I DO WITH IT?

The BGA's joint Airprox Board Rep, Andrew Watson, explains:

UK military aerodromes are surrounded by both an Aerodrome Traffic Zone (ATZ) and a larger MATZ. While there are restrictions on flight within the smaller ATZ, the surrounding MATZ is not controlled airspace for civilian aircraft, and you do not need permission to fly within it. However, some MATZs see

high volumes of military aircraft, including jets, travelling at 300kts or more. While both military and glider pilots flying within a MATZ are bound by the usual rule to "See and Avoid" each other, it would be wise to use all the tools at our disposal to keep everyone safe.

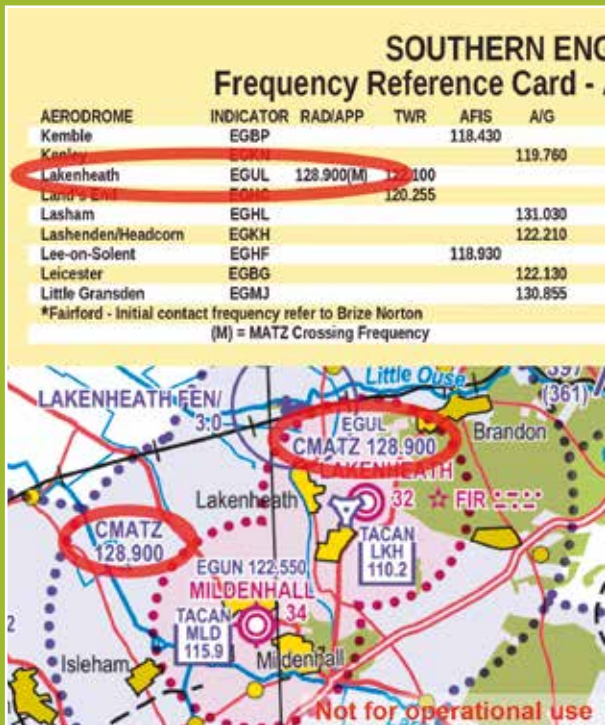
A MATZ is usually a cylinder 10NM in diameter, with 4NM wide stubs aligned with the main runway extending a further 5NM from the military aerodrome. The cylindrical part of the MATZ extends from the surface to 3,000ft above airfield level (AAL), while the stubs usually extend from 1,000ft to 3,000ft AAL. If several military airfields are close together, such as Lakenheath and Mildenhall, or Cranwell, Coningsby and Waddington, their so-called Combined MATZ or CMATZ has a more complex shape, but usually with a series of cylinders centred on each airfield.

When making a cross-country flight that passes through or close to a MATZ, it would be wise to ensure that the MATZ controllers know that you're there, so that they can divert military aircraft around you.

Gliders made of fibreglass display only intermittently on controllers' radar screens, so if your glider is one of the 5% or so that are fitted with a transponder, you are strongly advised to switch it on when within 10 minutes' flying time of the MATZ boundary. A transponding glider displays as a solid "blip" with an altitude label on ATC radar screens, whereas those without an operating transponder display intermittently at best (and sometimes not at all), and with no altitude. A reliable display of a glider's position and altitude allows ATC to route military traffic under, over, or around us. In addition, the automated Traffic Alert and Collision Avoidance System (TCAS) carried by larger military aircraft steers them safely away from transponding gliders. For both these reasons, please switch on your transponder (if fitted) in the vicinity of any MATZ. However,



The view from an Apache is restricted (Jim Trayhurn)



Above: Figure 1

Right: Figure 2

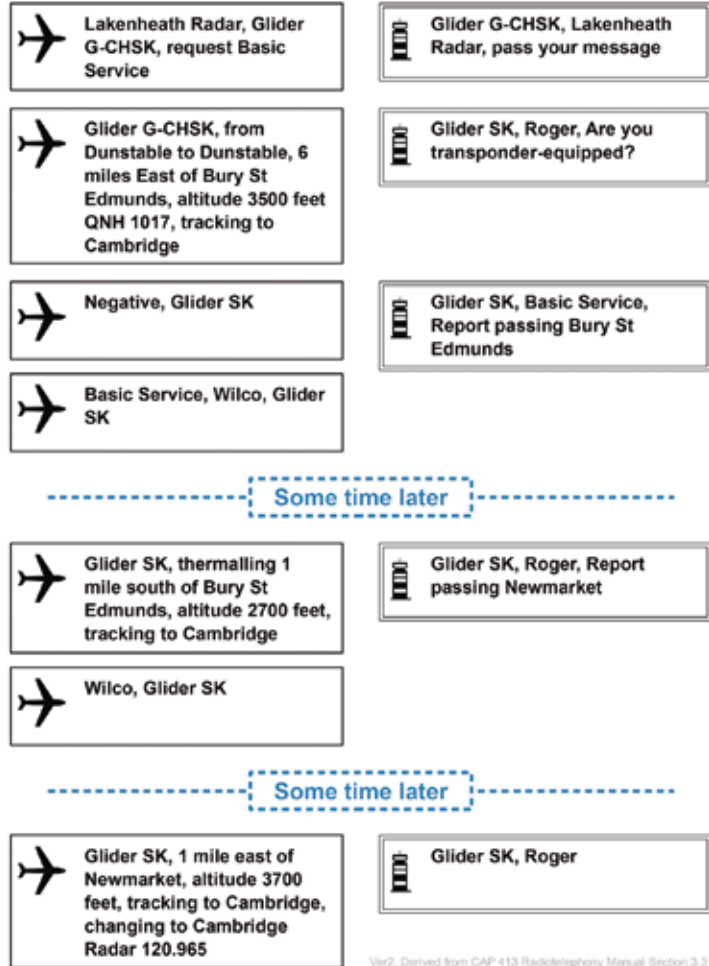
NEAR MISSES HAPPEN. AND THE CHANCES ARE IN GLIDER VS MILITARY AIRCRAFT, THE GLIDER ISN'T GOING TO WIN

Low-Power ADSB Transceivers (LPATs) such as SkyEcho 2 do not interoperate with TCAS or display on many ATC radar screens. While some military controllers use "FLARM Radar" to get a general idea of how many gliders are in their area, this again does not work with TCAS, and controllers aren't allowed to use this "unassured data" for collision avoidance.

Whether your glider is equipped with a transponder or not, if cockpit workload permits, it's good airmanship to contact MATZ controllers by radio if you're on a cross-country task and within about 10 minutes' flying time of the MATZ boundary. To do so, call on the "MATZ Crossing" radio channel that you'll find on the standard CAA 1:500,000 VFR chart. As an example, the lower panel in figure 1 shows where the channel for the RAF Mildenhall/Lakenheath CMATZ (about 30NM south-west of Norwich) appears on the chart. You can also find it

on the CAA "Frequency Reference Card" downloadable from the AIS website (go to <https://nats-uk.ead-it.com/cms-nats/opencms/en/home/> then click on the "Charts" button, then "VFR Charts", then "VFR Chart resources", then "Frequency Reference Cards"). These cards show several channels for each military aerodrome; you want the one labelled "(M)". Where there are several aerodromes within a CMATZ, you may have to search through all of them to find the crossing channel, as in the excerpt from the card shown in the upper panel in figure 1.

Tune your radio to the crossing channel and listen for a few seconds before transmitting to make sure you aren't interrupting other transmissions. However, many military aerodromes use multiple channels, including UHF channels that your radio cannot receive, so it may nevertheless take a few seconds for a busy controller to



reply to you, and you also cannot judge how many aircraft are flying in and around the MATZ just by the amount of radio traffic on the crossing channel.

It's best to ask the controller for a Basic Service, as shown in figure 2. Using the "Glider" prefix before your "G" registration tells the controller that your flight path may deviate around a straight-line route to take advantage of lift and avoid sink, and that your altitude may vary significantly. The controller will probably ask if you have a transponder. If you don't, reply "Negative", as in this example.

Once you've established contact and got a Basic Service, you have a framework for occasionally telling the controller where and how high you are, which greatly helps them route aircraft over, under, or around you. When asked, you simply provide your position relative to a prominent ground feature like a town, along with your altitude. If



✈ your workload is high, you can delay answering by telling the controller to “Stand By”. However, it’s important that you explicitly tell the controller that you’re “leaving the frequency” or “changing to” another channel before retuning or turning off your radio; if the controller later cannot contact you, they may assume the worst and launch a search-and-rescue operation.

All MATZ controllers are more than happy to talk to us, even if our radio technique is rusty, but if you’d like to practise, the BGA provides free online self-study materials; search for “BGA FRTOL Course”. Live online training with experienced R/T coaches is also available every winter.

SPECIAL CONSIDERATION

The RAF Lakenheath/RAF Mildenhall CMATZ in the centre of East Anglia is particularly busy. These two aerodromes record around 61,000 aircraft movements annually, including fast jets (F-15s and F-35s) transiting to and from the CMATZ at up to 400kts. However, the Lakenheath controllers are typically Americans with limited knowledge of local geography, which can make it difficult to communicate your position. To address this, we’ve agreed a list of seven “Gliding Visual Reference Points” around the Lakenheath CMATZ that controllers have programmed into their radar displays – see figure 3, above right. Each is a standard BGA turning point near a prominent ground feature. If you give the controller your height and position relative to one of them, they should quickly be able to work out where you are, even if you don’t show on their radar. You don’t need to be directly over the reporting point to refer to it; it’s better to give a rough estimate of your bearing and distance from a few miles away rather than to wait until you can give a precise location when overhead. You may also be able to use your GPS flight computer to give a distance and bearing from the relevant BGA turn point.

AN ARMY AIR CORPS VIEW

by Jim Trayhurn (former AAC Major) and now a Qualified Helicopter Instructor with Boeing Defence UK:

The Army Air Corps Centre at Middle Wallop is tasked with training Apache helicopter pilots how to fly the aircraft and then fight with it. Both courses last around eight months, with the trainees then moving to the frontline units at Wattisham in Suffolk.

The latest version of the Apache has a full Instrument Flight Rules (IFR) capability. To

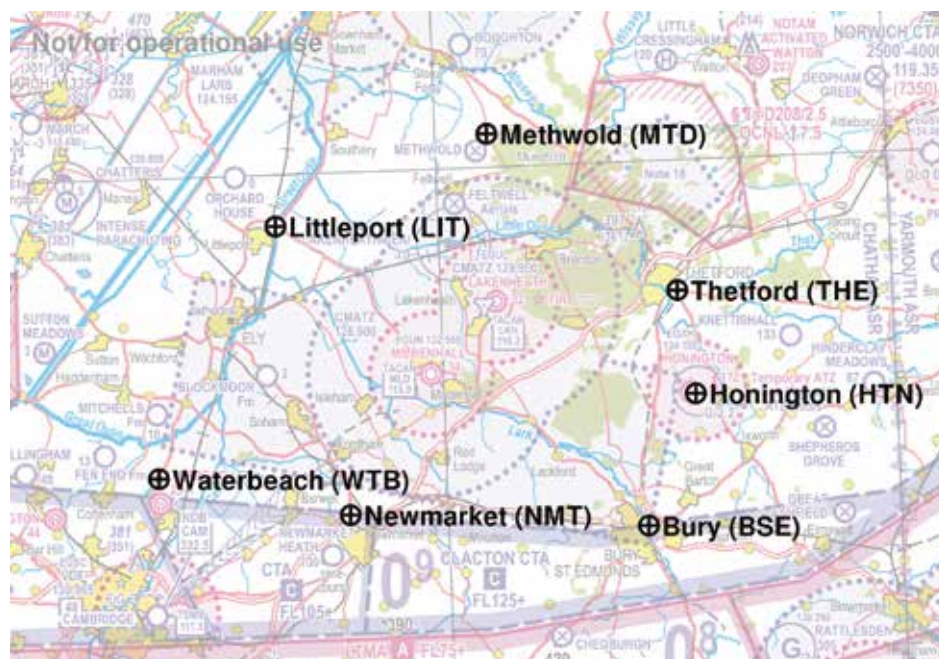


Figure 3: Seven ‘Gliding Visual Reference Points’ around the Lakenheath CMATZ

qualify an Apache pilot with a full procedural Instrument Rating, they must fly a number of different types of approaches. This means the sorties are reliant on different locations to achieve the training objectives. The natural options are RAF Odiham, Brize Norton, Benson and RNAS Yeovilton.

The Apache is the aircraft that likely carries the highest risk of mid-air collision in the Army fleet. Apart from its Fire Control Radar (FCR), which is not designed to detect gliders, the aircraft has no onboard systems to prevent a mid-air collision (MAC) and so relies heavily on the robustness of the radar service from ATC, along with lookout, to mitigate for a MAC event.

Modern ATC radars typically filter out clutter by suppressing returns with a ground speed of 40kts or less, so a thermalling glider may not even show on ATC equipment. This makes it even more important to carry a transponder or communicate via radio.

The Apache community is doing its part to mitigate for this issue. Plans are maturing to introduce an enhanced electronic conspicuity capability, ADS-B and possibly in future, SkyEcho on our tablets.

The main risk increase for an Apache vs glider MAC comes when crews are conducting IFR training. Odiham is a perfect example of the constraints of mixing military

IFR traffic with soaring gliders, airborne from Lasham. The IFR procedures for Runway 27 at Odiham see instrument holding patterns at 3,000ft, located west of the airfield due to Farnborough’s airspace. This means that gliders routing north/northwest from Lasham away from Farnborough and London’s airspace will head straight through the IFR route. What they are doing isn’t incorrect – it’s Class G airspace – but it highlights the issues of gliders sharing the airspace with military IFR traffic.

So what are the best ways to deconflict from our perspective? Communication is the first thing. Middle Wallop will call Lasham on the day to get an idea of their flying activity if IFR traffic is planning to go to Odiham. On the same subject, whilst the gliders are operating in Class G airspace and may not even be in the MATZ it would be good airmanship to speak to Odiham and inform them of your position and planned route – especially if you spot military traffic. With our skies becoming ever busier, consideration in sharing the privilege of flying is so important.

AN RAF INVITATION

by Sqn Ldr Pete Geddes, RAF Flight Safety
Engagement between airspace users is an important aspect that’s easily overlooked. The RAF Safety Centre oversees the policy

on hosting Regional Airspace Users' Working Groups (RAUWG). These are held every six months at a variety of RAF sites and aim to reduce the risk of MAC between common users of airspace. The RAF Safety Centre typically sends a representative and the networking opportunities can lead to meaningful change.

One successful example of engagement followed a visit to Black Mountains Gliding Club by the RAF Safety Centre. An Airprox hotspot close to their club in the UK Low Flying System was reviewed as it became obvious that existing regulation could be improved. Face-to-face discussion and mutual understanding of both aircraft operators' needs were generated. This worked a proposal to the military regulators, and it's likely low flying military aircraft will call the club on their local frequency and approach the area in a direction more suited to avoiding MAC; similar to the principle of gliders calling ATC when close to a MATZ. It's not always the case that gliders should call the military. Sometimes it's the military that should call the gliders. The table above right highlights where your local RAUWG will take place. If unable to find a contact online, send an email to Air-SafetyCtre-RAUWG@mod.gov.uk. Why not invite a military representative to your club so they can see things from your perspective?

CONCLUSION

To sum up, it's simple to sit back and remind the authors of this article that you are not required by law to communicate with

Area	Hosting Unit
Oxfordshire (location varies)	RAF Brize Norton
London (location varies)	RAF Northolt
Central Southern England	MoD Boscombe Down
Lincolnshire	RAFC Cranwell
North England	RAF Leeming
Scotland	RAF Lossiemouth
East Anglia	RAF Marham
Wales and West Midlands (location alternates)	RAF Shawbury RAF Valley

Where to find your nearest Regional Airspace Users' Working Group

controllers when in or near a MATZ. I'd like to gently remind you that you aren't legally required to clean your teeth. The lack of law doesn't mean either endeavour is anything less than an extremely good idea. And in the case of communicating when operating near or within a MATZ, that extremely good idea might well save lives, including yours.



**‘ WITH OUR SKIES
BECOMING BUSIER,
CONSIDERATION
IN SHARING THE
PRIVILEGE OF FLYING
IS SO IMPORTANT ’**