

## BGA DRAFT RESPONSE - MODE S PHASE 2 CONSULTATION

THIS DOCUMENT IS OFFERED BY THE BGA TO THE GLIDING COMMUNITY AS INITIAL THOUGHTS IN SUPPORT OF INDIVIDUAL RESPONSES TO THE CAA MODE S CONSULTATION ENDING 31<sup>st</sup> MAY 2008

THE BGA URGES ALL GLIDING CLUBS AND ALL GLIDER PILOTS TO RESPOND TO THIS CONSULTATION. FULL DETAILS ARE AT [www.gliding.co.uk/bgainfo/airspace/modes2008.htm](http://www.gliding.co.uk/bgainfo/airspace/modes2008.htm)

### Introduction

The BGA welcomes the fact that this consultation is not proposing that all aircraft in all airspace should carry mode S transponder secondary surveillance radar (SSR) equipment.

However the BGA is extremely concerned that options 1, 2 and particularly 3 as described in the consultation represent a disproportional approach by the CAA that will give rise to significant economic and social burdens for small businesses and individuals. Options 1, 2 and 3 have the potential to threaten the fundamental viability of the sport of gliding.

Option 4 regarding crossing of international boundaries presents a very limited challenge to the rights of glider pilots, primarily impacting on SLMGs, and is more relevant to aeroplane pilots.

**Segregation** - The CAA has made the assertion that improved levels of interoperability will reduce the need for segregation i.e. reduce the need for more controlled airspace. However, the BGA notes that there are no specific commitments within the consultation to examine ways in which some areas of controlled airspace might be returned to uncontrolled airspace.

**Access to CAS and FL100 by non-Transponder Aircraft** - The consultation suggests that there might be some opportunity for non-transponder equipped aircraft in controlled airspace and above FL100. Unfortunately, these suggestions are expressed in the form of vague possibilities. The BGA believes that the CAA must remain open to changing the specific detail of its proposals in order to give general and sporting aviation, owner/operators of some 96% of UK registered aircraft – many of which are not transponder equipped - greater confidence that its interests are being equitably considered.

**The Safety Case** - The phrase 'the CAA considers' is used in the document 9 times in support of the contention that mode S is necessary for safety, but in no instance is any supporting evidence provided. As has been previously stated by the BGA, there is a need to identify the documentary evidence that the CAA used to reach its conclusions as stakeholders cannot be expected to be convinced by assertions with no supporting evidence.

The word safety is used in the consultation document 59 times, but not once is there any specification of currently achieved levels of safety, or target levels. Quantified estimates are essential to identify and reduce the larger risks, and to avoid disproportionate regulation where the risk is low. The consultation claims that mode S is required to protect CAT aircraft in the face of traffic growth. However Airprox Board report number 17 tells us the number of risk A or B airprox involving CAT has declined from 29 in 1997 to 6 in 2006 while traffic has grown by 36%. In the face of this evidence, it is not clear to the BGA why the CAA claim that traffic growth results in reduced safety.

Airprox Board report number 17 for July-December 2006 informs us that there were no risk A and only 6 risk B airprox involving CAT aircraft in 2006 (the last full year for which figures are available),

and that this total of 6 is the lowest in the dataset (the previous 10 years). Speaking of the 6 events the Airprox Board notes 'there is nothing to suggest a common thread' and 'such wide variability does not point to the need for concerted action in a particular area of operations'. The Airprox Board has identified that the collision hazard for CAT is reducing, and that there is no need for concerted action. The BGA would like to know whether CAA has recognised and acted upon these Airprox Board findings.

### **Option 1 Questions**

#### **Q1: What other advantages and disadvantages could there be under Option 1 if all aircraft operating within controlled airspace used SSR?**

In terms of identifying 'other advantages' under Option 1, the consultation makes a rather sweeping suggestion. Not all controlled airspace has the same traffic density, mix of traffic or operating procedures and therefore the collision risk varies significantly. It is clear that where gliders currently are permitted to operate in controlled airspace, collision mitigation process other than SSR is and has historically been effective (zero CAT/gliders collisions and zero CAT/gliders fatalities). There are clearly advantages to *some* aircraft if all aircraft operating within *certain* controlled airspace used SSR. Stating that *all* aircraft operating in *all* controlled airspace used SSR 'will improve safety levels' is unconditional – it will in fact do nothing to improve the safety levels for gliders as the level of risk is already extremely low (zero CAT/gliders collisions and zero CAT/gliders fatalities).

Non-transponder-equipped aircraft have been able to gain access to Class D airspace for many years perfectly safely when the traffic situation permits. They have, as a consequence, created a known-traffic environment as required by the CAA. The BGA knows of no airprox in controlled airspace involving a glider with permission but no transponder. If the argument for change from the status quo is based on changes in CAT traffic density, we note that the forecast growth is not uniform and there are many parts of the country that are unlikely to see much change. As a consequence, the BGA believes very strongly that it is disproportional to force this option on all areas of controlled airspace in the UK. The BGA accepts, of course, that, as now, gliders may not always receive clearance to enter controlled airspace when circumstances would not allow so safely.

Option 1 mandates mode S in airspace of classification A to E. Future plans for increasing the extent of each of classes A, B, C, D, E are not described in the consultation. Class E is hardly used at present. The BGA would like to understand whether or not CAA intend to introduce greater use of class E and if so where. Without such disclosure, option 1 could be employed to mandate mode S everywhere.

The words around the proposal suggest that this option will "contribute towards improved access to controlled airspace for all users". The experience of many air sport pilots is that, even with transponders, access is denied and not always for obvious traffic-related reasons. The BGA is concerned that aircraft owners could equip with mode S at a cost of some £30M but subsequently be deprived of what should be equitable access rights to controlled airspace.

The BGA accepts that Letters of Agreements are have proven to be a highly effective, safe and practical means of allowing gliding to operate in proximity to CAT operations. The greatest issue with option 1 is that it does not deliver any commitment that gliders without SSR that currently have permitted and safe access to controlled airspace under local arrangements and letters of agreement can continue to do so. The BGA believes that it is more appropriate to exploit the practical success of LOAs rather than introduce new, unproven (in this context) and expensive technology.

It is not clear how the air traffic efficiencies quoted in the consultation document can be delivered, as existing controller capacity is inadequate to meet current user needs. It is accepted that option 1 could contribute towards improved access to controlled airspace for all users if resourced and managed properly. However, the small numbers of gliders in the UK equipped with SSR are already being refused access to controlled airspace. BGA experience to date is that access to controlled airspace by transponder equipped gliders flown by current, licensed pilots has been declining as a consequence.

This option and indeed the consultation document are based on the need to manage predicted growth in commercial air transport. That growth is only identified within option 1 as a benefit. There are many people in the UK, including a large proportion of the gliding community, who identify the growth of commercial air transport as an operational, economic and environmental threat. The options and supporting text described within this consultation indicate that those views are reasonable and therefore the growth of commercial air transport can also be viewed as a disadvantage to many stakeholders.

Glider pilots are at considerable disadvantage as a glider may only be able to access controlled airspace with a functioning SSR, regardless of other mitigation or traffic density (or indeed use at all by commercial air transport or military). Even this access is not guaranteed.

The economic and operational impact of option 1 will result in reduced participation in air sport as those with limited disposable income will not be able to absorb the disproportional increases in cost associated with SSR equipage. It is difficult to quantify this economic impact other than to state that when participation levels drop below a certain level, gliding clubs cannot continue to operate.

To re-emphasise, a very important point relating to option 1 is that the BGA believes that LOA's **must** continue to ensure access to associated controlled airspace by non-transponder equipped gliders and that Air Traffic Services should not be discouraged from facilitating ad-hoc non-transponder access to controlled airspace where controllers deem safe to do so.

***Q2: Has the cost impact of Option 1 been accurately estimated? When considering your response, please provide supporting data where available.***

The figures stated within the document appear to be reasonably accurate in some respects. The actual costs of retro-fitting a transponder to an existing instrument panel will vary case-by-case and this is one aspect of cost that is likely to have been understated for gliders.

The actual impact of the additional initial and ongoing cost burden can only be put into proper context by looking at individual air sports. The given cost estimates of SSR equipage can very easily represent 20-100% of the value of a glider. At these levels, many glider owners will have to seriously consider the fundamental justification and affordability of fitting a transponder at all.

A significant number of gliders are owned by gliding clubs. They will, in almost all instances, be seriously impacted as most are not-for-profit organizations, generating, at best, very modest surpluses.

***Q3: What would be the impact of Option 1 on small businesses? When considering your response, please provide supporting data where available.***

Option 1 makes no commitment that indicates existing freedoms to apply proportionate regulation to controlled airspace access by gliders without SSR will remain or indeed will apply in future.

All 90+ UK gliding clubs are small businesses which fundamentally operate as participant managed sporting clubs with associated, modest economic margins. It is not uncommon for a medium sized gliding club to make an annual surplus of less than £10K. If sport gliding clubs want to continue to facilitate cross country flying – a fundamental element of the sport - glider owners and clubs would be forced to equip with SSR to operate in the margins of unutilized controlled airspace where currently they have permitted access under letters of agreement (LOA's) and controller discretion. Details of existing LOA's are at <http://www.gliding.co.uk/bgainfo/airspace/loas.htm>

The ultimately damaging economic effect on small businesses, i.e. low participation levels resulting in closure, is possible but difficult to quantify.

The economic impact in terms of equipage is stated within option 1. For the clubs that would need to equip with SSR under option 1, the impact is considerable and presents a disproportional approach.

### ***Option 2 Questions***

#### ***Q4: What other issues should be taken into account within a mechanism to process and consider applications for TMZs?***

Option 2 is limited to seeking views as to whether or not a formal process should be used to support – note 'support', not 'consider' - the establishment of TMZs.

Although TMZ's have been previously established in UK airspace as an emergency measure, widespread normalization of use represents, to all intents and purposes, a new category of airspace for the UK. The BGA is concerned that the CAA has opened consultation on this issue from the perspective of process rather than to seek views on the broader aspects of TMZ usage and their impact on general and sporting aviation.

It is unclear from the consultation how widespread the use of TMZs might be, or indeed how a TMZ might be structured. Recent comments by CAA DAP staff have suggested that the CAA would like to have TMZs in place as soon as possible in certain "critical areas". The BGA would find it helpful to understand where these areas are and whether a recent CAA document that suggests that TMZs will be used to provide buffers around TMAs is indicative of a broad intent.

The CAA case for TMZs appears to rely heavily on a concern to reduce infringement risk.

In the 10 years from March 1997 to March 2007 there were 185 MOR reports of potential conflicts between gliders and other aircraft. Many of these were light aircraft over-flying gliding sites. 26 were airspace infringements by gliders. 11 of the 26 were at one gliding club near a big airport, where subsequent improvements in liaison and communications have solved any issues. As a result, there have been no infringements by gliders in this area since 2003. That leaves 15 in the rest of the UK in 10 years or 1.5 per year.

The consultation document refers to 300 infringements per year by GA. Gliding therefore represents 0.5% of the total GA infringements, with the % figure falling to zero in the period 2005-2007. The CAA have stated that it considers the use of moving maps to be an effective tool in reducing the risk of airspace infringement and have granted airspace access concessions to gliders that are appropriately equipped. Indeed, the use of moving maps to aid situational awareness may well have an important factor in reducing airspace infringements by gliders down to zero in the period 2005-2007.

Given that data clearly shows that the infringement risk associated with gliders is extremely low, the BGA is concerned that the CAA apparently believe it necessary to mandate transponder carriage by gliders in TMZs that have been established to reduce infringement risk. It is clear that appropriate exemption for certain classes of aircraft in such circumstances should be included within any TMZ process.

The consultation identifies that a proposal to establish a TMZ is a proposal for an Airspace Change and suggests that such a proposal should be required to follow the process set out in CAP 725, which includes a full assessment of the safety, operational, and economic impact on all affected parties. The BGA is content with that aspect of the Option.

The consultation, however, states that the elements of the ACP relevant to TMZ establishment would need to be “scaleable” to ensure that the burden on applicants is not disproportionate.

The BGA believes that any change in the process to allow it to be “scaleable” should be one that must operate in the common interests of the all parties concerned – not, as is clearly indicated in the consultation document, in the interests of the applicant alone. To allow this aspect of the Option to persist would permit bias into the process. At best this would result in an increase the costs of the other stakeholders. At worst, it could deny stakeholders their ability to exercise their due rights.

The BGA concern will remain for as long as the CAA has not clearly explained how any abbreviated process would not be biased towards the interests of the TMZ applicant.

***Q5: What could be the cost to businesses and General Aviation representative associations of participating in a process for considering the establishment of a TMZ? When considering your response, please provide supporting data where available.***

If the CAA is planning for greater use of TMZ's, noting our previous points regarding gliding as a sport managed by its participants, most of who are expert volunteers, there will be a considerable resource issue for gliding clubs as the specific expertise and time to participate in the airspace/TMZ change process is limited. This will result in human resource and economic issues associated with responding to the consultations which will follow applications by commercial airport operators. These airfield operators can each fund and resource professional support for their single application; against this, BGA and its clubs will be forced to challenge multiple applications so that existing rights to airspace access are maintained.

### ***Option 3 Questions***

***Q6: What other advantages and disadvantages could arise if gliders were brought within the SSR transponder carriage regulations?***

As the effect of bringing gliders within the SSR transponder carriage regulations will result in gliders being mandated to equip with Mode S transponders for flight above FL100 and in controlled airspace, all of the issues identified in our answer to question 1 above apply to question 6.

Option 3 and indeed the wider consultation document are based on the need to manage predicted growth in commercial air transport. That growth is only identified as a benefit. There are many people in the UK, including a large proportion of the gliding community, who identify the growth of commercial air transport as an operational, economic and environmental threat. The options and supporting text described within this consultation indicate that those views are reasonable and

therefore the growth of commercial air transport can also be viewed as a disadvantage to many stakeholders.

Not all airspace above FL100 has the same traffic density, mix of traffic or operating procedures and therefore any collision risk must vary significantly. It is clear that where gliders currently are permitted to operate above FL100, collision mitigation process other than SSR is effective and it is unclear what risk the CAA is trying to mitigate by applying a blanket requirement to gliders. Requiring gliders to equip with SSR above FL100 will do nothing to improve safety levels as the level of risk in areas above FL100 utilized by gliders for lee wave soaring is extremely low (zero CAT/glider collisions and zero CAT/glider fatalities).

Airprox Board reports 11 to 18 cover the 4 years from mid 2003 to mid 2007. In these four years there were 31 risk A/B airprox involving CAT aircraft. 18 of the 31 were outside controlled airspace. Not a single one of these was with a glider. Five of the 18 occurred between FL 100 and FL 195. These were all encounters between CAT and military aircraft. On that basis, it would be reasonable to conclude that gliders should not be required to have transponders in any airspace from FL100 to FL195. Yet the consultation proposes a blanket requirement for mode S above FL100, with only limited access to portions of that airspace by gliders without transponders.

There are many areas of the country where gliders fly above FL100 but below FL195 and where there is currently little or no CAT. The CAA have clearly judged there to be areas where there is sufficient risk to warrant the mandatory carriage of transponders. If this is the case, and the BGA has yet to see evidence that it is, the BGA believe that it would be equitable to limit the areas above FL100 that require transponder fitment to only those where there is a material risk issue.

It is inaccurate to state within option 3 that 'gliders are non-interoperable with air traffic safety systems'. Where required, gliders communicate with ATC and operate within national and local letters of agreement. Paragraph 14.3.3 specifically identifies within option 3 regarding flight above FL100 that the main collision risk for gliders in the UK is with other gliders. Although glider to glider collision is a serious issue that is being addressed by BGA working with others, including the CAA, those collisions do not represent actual or perceived risk to the public or third parties. Most UK glider collisions occur in the circuit or during soaring activity below 4000' agl. No glider to glider collisions have occurred in the UK above FL100. The statement regarding glider to glider collisions has been erroneously included within the option 3 text to infer that gliders present a specific collision risk above FL100 when this is not the case.

Given the obvious disproportionate impact it would have on gliding, the BGA believes option 3 is unnecessary and unacceptable as currently stated. The BGA believes that a far better approach would be to identify those areas of airspace above FL100 where a demonstrable risk actually exists – or might reasonably be expected to exist in the future – and to establish the appropriate risk mitigation measures for these areas specifically.

***Q7: Has the cost impact of Option 3 been accurately estimated? When considering your response, please provide supporting data where available.***

Our response to question 2 is entirely applicable to question 7 also.

The figures stated within the document appear to be reasonably accurate in some respects. The actual costs of retro-fitting a transponder to an existing instrument panel will vary case-by-case and this is one aspect of cost that is likely to have been understated for gliders.

The actual impact of the additional initial and ongoing cost burden can only be put into proper context by looking at individual air sports. The given cost estimates of SSR equipage can very easily represent 20-100% of the value of a glider. At these levels, many glider owners will have to seriously consider the fundamental justification and affordability of fitting a transponder at all.

A significant number of gliders are owned by gliding clubs. They will, in almost all instances, be seriously impacted as most are not-for-profit organizations and generate very modest surpluses if at all.

***Q8: What would be the impact of Option 3 on small businesses? When considering your response, please provide supporting data where available.***

The economic impact in terms of equipage is stated within option 3. For the small businesses (gliding clubs) that would need to equip with SSR under option 3, the impact is considerable and presents a disproportional approach.

All 90+ UK gliding clubs are small businesses which fundamentally operate as participant managed sporting clubs with associated, modest economic margins. It is not uncommon for a medium sized gliding club to make an annual surplus of less than £10K. If, by way of only a few examples, the sport gliding clubs at Ballarena in Northern Ireland, Talgarth in South Wales, Portmoak in Scotland, Shobdon in Herefordshire and at the Long Mynd in Shropshire want to continue to benefit from their unique selling point – access to lee wave cross country flying accessible to local gliding participants as well as those who travel to these areas - they would be forced to equip their entire fleet with SSR to operate in wave soaring areas above FL100 where, generally, commercial air transport does not operate. The club at Portmoak is notably unique in that considerable success has been made in exploring lee wave soaring potential throughout the far north of the United Kingdom with associated sport record breaking successes as well as wider participant development.

#### ***Option 4 Questions***

***Q9: Would the cost impact of Option 4 fall within the estimates for Option 1?***

***Q10: Has the number of UK aircraft affected by Option 4 been accurately estimated?***

***Q11: What other issues should be taken into account by the CAA when considering whether or not to continue to notify a 'Difference' with the ICAO Annex 6 international obligations?***

The BGA believes that option 4 represents an unnecessary operational and economic impact to aeroplanes. The CAA states that they need option 4 so the UK can become compliant with ICAO practices which recommend that all aeroplanes and helicopters conducting international flights should carry and operate pressure-altitude reporting SSR transponders. In common with all other European states the UK has filed a difference on this but the CAA now wants to comply as part of this proposal.

Aircraft without transponders would be able to fly in class G airspace within the UK FIR or within the FIR of our neighbours right up to the boundary but would not be able to actually cross it. Such aircraft from Europe could fly legally within the UK but will not be able to cross the FIR boundary to get here. The UK will be closing its borders to these aircraft.

Clearly there is no safety case that supports option 4 for UK aircraft. The ICAO recommendation is designed to increase safety in parts of the world where adjacent countries' ATC systems do not speak to each other and commercial flights have to arrange their own handover and separation. The

Eastern Mediterranean, the Middle East and Central Africa are just some examples of this where transponders are critical to safety. A light aircraft flying VFR to or from France is not relevant.

The suggestion that special corridors for non-transponding aircraft could be developed is ill-considered. Such corridors existed in the past but were removed because they greatly increase the risk of mid-air collision over the sea which would inevitably lead to the death of those involved.

It is of note that the CAA has currently filed 603 specific differences to ICAO recommendations but it is now proposing to remove just this one.

***Q12: What would be the impact of maintaining the current status quo on your main activity?***

By status quo we assume that the CAA means the continued use of operating protocols for gliders in all UK airspace, controlled or uncontrolled, above and below FL100, and within the exemptions granted to gliding by the ANO.

If this interpretation is correct then:

- Gliding clubs and the BGA would continue to exercise their rights as stakeholders in all relevant airspace change requests within the current procedural framework. Aside from the effort required to deal with individual applications, we regard the current process as equitable and, therefore, appropriate
- Glider pilots would continue to enjoy access to controlled airspace under current arrangements:
  - Fully recognising that access may not be permitted if there are practical reasons
  - The CAA will continue to endeavour to ensure that access is not denied for matters of pure convenience
- Glider pilots would be able to continue to operate outside controlled airspace between FL100 and FL195 without the need to carry a transponder

Clearly there would be no adverse economic impact under this version of the status quo. The BGA's safety analysis also shows that there would be no material change in infringement, airprox or collision risks. We are very open to reviewing any data the CAA has that would suggest the contrary.

The CAA has discussed with the gliding community the need to maintain rights of access for the sport and to adopt a proportional approach to regulation regarding mode S. The BGA firmly believe that this consultation does not indicate commitment by the CAA to adopt a proportional approach to regulating the extremely low level of glider to commercial air transport collision risk. The BGA remains committed to ensuring that gliding operates safely and responsibly within the UK airspace environment, and with due care for public safety and the needs of other airspace users.

End