



# **AIRWORTHINESS UNDER EASA PART M**

## **GUIDANCE FOR BGA INSPECTORS**

**Version 1.1 December 2008**

These guidance notes are designed to help inspectors understand how the BGA airworthiness organisation will operate under the EASA Part M airworthiness requirements that will apply in full to gliders from May 2009 and to powered aircraft in January 2009.

As the CAA clarifies its approach to Part M oversight of glider maintenance during the early part of 2009, developments may occur that will result in changes to this information. Please stay close to the BGA website for further advice.

Thank you very much for supporting owners through the ongoing EASA transition process. The following text, in Q&A style, aims to help you understand how you and the BGA working in partnership will continue to maintain and repair gliders, SLMG's and tugs in compliance with EASA airworthiness requirements and at minimum cost to owners. There is quite a bit of information here and we hope it doesn't give you indigestion! Seriously though, there are some new issues here that we all need to understand. It is hoped that this document will be helpful, particularly during the changeover.

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BGA CTO  
December 2008

## **INSPECTOR INFORMATION – BGA INSPECTORS AND PART M**

This information aims to provide insight for BGA Inspectors into the Part M maintenance regime. The BGA has produced a further document to inform owners. Having read this document, which is laid out in Q&A style, please note the closing comment on page 7.

### **What are the principle differences to airworthiness/maintenance under Part M?**

Part-M is a pan-European code essentially common to all air vehicles. It is a code developed under political direction by bureaucrats. That said strong representations have been to ensure a fair and proportionate deal for general, light and sport aviation. The basic rationale is that aircraft are to be maintained by competent personnel within an organisation. The powers and abilities (privileges) of existing individual licensed engineer (under Part 66) have been reduced because of fear of lack of control by bureaucracy, and the inability of such individuals to maintain proper liability cover. Licensed Engineers in UK might take offence to this, but it is the bureaucratic view on the continent.

The responsible organisations are scoped as two distinct types; those actually doing maintenance and repair (Subpart F) and those managing ongoing airworthiness planning scheduling, called a 'Continuing Airworthiness Management Organisation' (CAMO, under Subpart G) This is logical for large airframes and companies but the distinction becomes rather academic for a light/sport aircraft such as ours. However there is no bar, apart from expense of securing and maintaining approvals, to an organisation holding both. In addition, properly qualified entities under Subpart G are empowered to issue renewals of Certificate of Airworthiness or Airworthiness Review Certificates (ARC) previously handled by the CAA in UK (the National Airworthiness Authority). In this respect the management of Airworthiness is being 'privatised', conditional on that such organisation qualifying to hold appropriate approvals.

### **How is the BGA responding to these in UK?**

In some aspects the BGA operation actually exemplifies the scheme. To date in UK, gliding has been unregulated and the BGA has been permitted to issue C of A within the soaring community. We have been sufficiently successful that almost all gliders in UK have had their C of A issued by BGA and we have been able to extend the practice to tugs and motor-gliders with the approval under M3 by CAA. We expect to secure parallel privileges from CAA under the new EASA system. Negotiations are at a late stage.

The BGA has never 'managed' owners, particularly private owners, in guiding and scheduling their maintenance. We leave them to manage their own simple airframes and engines. This has been progressed on both a day-to-day and an annual basis between an owner/operator and his BGA inspector. This approach is enabled in the Part-M rules under what is called the 'Uncontrolled Environment'. In this model the owner remains responsible for arranging scheduled maintenance and continuing airworthiness, but is guided by the CAMO for provision of maintenance processes, for example the BGA General Maintenance Schedule. So the inspector will follow BGA guidelines in servicing the aircraft, but it is the owner's responsibility to make the arrangements in a timely manner such as booking his annual maintenance (as is the current understanding). A well heeled owner may care to have his entire operation managed professionally by 'XYZ Aircraft Services' in a so called 'Controlled Environment', but the BGA does not intend to cover that market.

### **How will my inspector ticket be revalidated under EASA?**

The BGA expect to include all current, correctly qualified BGA 'inspectors' in its organisation umbrella approval under Subpart F. This will happen automatically provided you are current and paid up.

## **What about my current BGA 'materials' and type ratings?**

For gliders the BGA has justified to CAA that almost all maintenance schedules are sufficiently similar that it can be carried out under the BGA Glider Maintenance Schedule, provide this does not conflict with any manufacturers instruction in their maintenance manuals which take precedence. SLMG ratings will be preserved. Annex II tug maintenance will require a Part 66 licence for release to service. In summary, the BGA inspector ratings remain essentially unchanged.

## **What additional role/ratings will there be? Do I need to seek additional approvals?**

BGA will need a class of rating to enable it to reissue the ARC. Within the BGA scheme we have established a 'Chief Engineer' status to carry out ARC renewals. We need at least one at every BGA site and more at large sites. This is a new rating as it will carry the accreditation of the CAA. That said the requirements are relatively modest over and above that expected for a current inspector.

With the addition of training to carry ARC renewals, these are (ref : Part M: MA707 (a) 2)

- Three years experience in continuing airworthiness
- Appropriate national licence/nationally recognised maintenance personnel qualification.
- Appropriate aeronautical training.
- Appropriate responsibilities within the approved organisation (ie BGA).

We believe that most current inspectors with the stated experience should/could qualify for this accreditation.

## **What if the scope of my activity is wider than that of Gliders, SLMG and Tugs?**

If the scope of your activity is wider than the BGA's approval, or you wish to work on non-BGA airframes, then you will have to take out your own additional subpart F approval.

## **Can I operate with equal privileges on EASA and Annex II types?**

Yes. The BGA is undertaking a review of all EASA types that it manages, in order to embody them in the umbrella approval and provide comprehensive cover for the gliding community. For EASA types this will be the scope of activity under the BGA Subpart F approval. It also allows you to continue activity on Annex II gliders, in these cases using the existing BGA (national) system and paperwork. The renewal of a BGA C of A for Annex II glider can be done without Chief Engineer status by a BGA inspector. For aeroplanes in Annex II, provided you were authorised under the BGA national M3 approval you can continue to operate the present system. This is because Annex II maintenance and C of A award remains a national remit and so can be done under national procedures. Where appropriate, the BGA aims to harmonise the two systems.

## **How much can I allow the owner to do?**

Within Part M there is an Appendix VIII which details routine actions that the pilot/owner can undertake on their own authority (and responsibility), without being required to involve the maintenance/airworthiness system. This is called '**Pilot/Owner Maintenance**'. The task list which is specific to airframe types, sailplanes, light aircraft etc) is actually pretty generous, and is available separately via the BGA website. The Pilot/Owner may authorise himself to undertake these tasks on the basis that he holds a pilots qualification (a BGA qualified pilot is one who holds a Bronze Badge). He is of course encouraged to interact with you, the expert, if he is unsure of anything. Formally he can record the maintenance (sign a CRS note in the logbook) or ask you, as his 'inspector' to countersign this work – your call. If this goes unrecorded it may cause trouble at the next ARC renewal. Thus this represents no more than a formalisation of our present operation.

## **What will I be permitted to do under the BGA subpart F approval?**

Maintenance that is not on the Appendix VIII list will require your direct involvement. Firstly, you must formally clarify with the owner that this airframe comes under the BGA Airworthiness Organisation. This is important – if a glider is outside the BGA Airworthiness Organisation, an BGA inspector cannot work on it. The BGA overall approval under Subpart F allows you to perform or supervise ongoing maintenance tasks as defined in the BGA GMS/LAMP and in the glider/aeroplane maintenance manual.

EASA has ruled that for aircraft below 1000kg, a subpart F inspector – in our case a BGA inspector – can carry out and release all maintenance and repair within the scope of their BGA rating.

A task sheet must be raised defining any fault and the rectification action taken and the subsequent sign off. This can all be done in the log book, as now, or within a workshop documentation system. BGA has always encouraged a documented approach to such actions and Part M compliant worksheets will be available from the website. Accurate record keeping continues to be important.

In short, the processes will become stronger on documentation but the practices are much as before

## **Will maintenance facilities need to be approved?**

Part M requires that suitable facilities must be used for maintenance and repair activities and is covered by "Maintenance Standards" (see below). For most maintenance and repair activities on BGA aircraft a formal facility approval is not required as maintenance certification is possible by a licensed engineer or BGA inspector in lieu of a licence. The only exception is "complex maintenance" on aircraft over 1000 kg where the facility requires Subpart F approval (see below for definition of complex maintenance).

This means that in most cases facilities used by BGA inspectors, Clubs and maintainers will not need to be approved in accordance with Part M subpart F. However, appropriate maintenance standards apply.

Clearly some inspectors will be routinely carrying out complex maintenance tasks - professional maintainers for example - and the BGA needs to be able to demonstrate we have compliant quality oversight for all inspectors. How will we achieve this?

Although the CAA has yet to clarify exactly what is acceptable to them, we will essentially be classifying inspectors into two groups;

1. Inspectors who routinely carry out complex maintenance. These inspectors and their facilities will be listed in the BGA exposition and can expect BGA audits as well as CAA audits. They will have a specific scope of work approved and will be able to demonstrate compliant control of paperwork, maintenance work orders, documentation, tools, equipment and all the infrastructure to support the approved scope. They will have to contribute towards the CAA approval fees payable by the BGA.

2: All other inspectors. This group will be limited in the scope of maintenance they can undertake.. There is no guarantee that they can carry out complex maintenance tasks. BGA oversight will be by ad-hoc and product (aircraft) audits usually triggered by a work request or ARC/BGA C of A renewal. The CAA will still expect to carry out sample aircraft audits.

## **What is meant by "Maintenance Standards"?**

In line with accepted aeronautical practice and to satisfy Part M, maintenance & repair must be

carried out in suitable conditions with the appropriate tools, equipment and maintenance data (manuals etc) and by suitably experienced and qualified engineers. This has always been the case and the BGA has always supported this approach. The BGA is updating its guidance information AMP leaflet 2-2 to offer guidance to inspectors and clubs.

### **What repairs will I be allowed to undertake?**

There are two classes of repair under Part M. **Simple Repairs** that can only be carried out in accordance with the repair manual. These will continue to be permitted so long as you hold the appropriate material rating (Wood, Metal, Composite). For **Complex Repair** tasks on gliders & SLMGs you will be expected to hold a Senior inspector rating which in the new system specifically authorised you to undertake such complex repair tasks. For complex repairs on ELA 1 tugs a Part 66 licence is required and complex repairs on all other (Annex 1) tugs have to take place in a subpart F approved facility.

### **How is a complex repair task defined?**

EASA define "Complex Maintenance Tasks" in Appendix VII of part M. In essence any modification or repair that involves any of the following structural parts is considered "complex": Spar, wing stringer, main wing rib, strut or brace, longeron or frame (includes fuselage repairs), bulkhead, engine mount, seat support, landing gear, repairs requiring jiggling, load bearing parts of a control system and anything the manufacturer has identified as primary structure.

Certification of complex tasks falls into two classes;

- ELA 1 aircraft (under 1000 kg) - certification by a Licensed engineer or BGA inspector with the appropriate rating (under the BGA subpart F), including "Senior" if jiggling is involved.
- Aircraft above 1000 kg - by a person authorised as part of a Part M subpart F maintenance organisation.

### **What about repair/overhaul of individual and special components?**

This takes a little explaining. EASA consider that any item removed from an airframe becomes a component. You are entitled to remove a component to improve access to others. As the airframe maintainer, within the scope of an inspector rating you can repair any ELA 1 airframe component in accordance with the repair manual and return it to the same airframe covered by a release to service. However on return from repair of a component requiring special services (NDT, welding, plating etc) or a specialist shop (instruments, radios, tow hooks), you should expect that component to be returned from the specialist BGA inspector with a CRS for the aircraft.

Overhaul can only be undertaken by a subpart F organisation with component ratings, where an EASA Form 1 can be issued. The definition of overhaul is refurbishment back to manufactured standard. An overhauled component can be fitted to any suitable aircraft. Overhaul is not within the scope of the BGA subpart F approval.

### **Can I prepare and/or authorise modifications?**

No. A BGA inspector can no longer authorise/approve modifications or installations in EASA gliders as we used to do. Under EASA rules modifications fall under 'Initial Airworthiness' covered in Part 21. This requires the designers to be part of a Design Approved Organisation which the BGA has identified as being beyond the reach its resources. This is a big issue for the BGA particularly as we have been in the habit of instigating modifications, both minor and major for reasons of flight safety. A Minor Modification can be applied for direct to EASA but a case has to be made and the process appears lengthy. The BGA will consider, via the Technical Committee, supporting modification proposals that have wider benefit to the gliding community.

## **What is a BGA inspector's role, and that of the BGA, in delivering an ARC??**

The EASA parlance for what we knew as 'the C of A renewal' is the renewal of the 'Airworthiness Review Certificate' (ARC). This is in fact a validation document to the 'perpetual' C of A. Demonstrating correct maintenance practice, including the annual inspection, according to the BGA GMS (and so Part M) is only one of the necessary requirements for ARC renewal. In this the role of the BGA inspector is unchanged. ARC renewal, including collection of fees, will be carried out by the BGA Leicester office in much the same way as before through the BGA approval as a CAMO with ARC renewal privileges (Subparts G and I) and our formal quality system.

The ARC renewal paperwork is based on the new **BGA Form 276** which, with the inclusion of the BGA Form 267 for gliders or the BGA Form 202 for SLMG brings together a documentary survey of various aspects of your glider's 'Continuing Airworthiness'. This will include such aspects as demonstrating AD's and mandatory modifications are incorporated, conformity to Type Certificate and other documentation, and correct completing of hours/launches and comparison of the life of 'lifer' parts. This additional submission will be reviewed and signed by a BGA Chief Engineer approved to do so..

Full details of the ARC renewal process will be published on the BGA website.

## **When renewing a BGA ARC, does it matter which subpart F organisation or authorised person carried out the required maintenance?**

No. - providing the required maintenance and repairs are correctly certified and recorded. Given also that the glider is within the BGA Airworthiness Organisation, a BGA Chief Engineer approved to do so can renew the ARC on application.

## **Can I still charge for my services?**

Yes. Your approval under the BGA is entirely separated from any business aspirations, arrangements and practices that you might operate either as an individual or commercially. This separation is necessary to guarantee the impartiality of the BGA in any reviews of individual approval privileges.

## **Can I act as inspector to all gliders/aeroplanes?**

No. Not unless the airframe concerned is within the BGA Airworthiness Organisation, even if they are the same type of class of aeroplanes for which BGA is approved. As part of your initial negotiations with an owner/client you must establish that the subject airframe is recorded as within the BGA Airworthiness Organisation. This means that your approval is only valid if both you and the candidate airframe are part of the BGA's approval under Part M. Your signature is not valid and your BGA insurance in support of BGA airworthiness activity is not be valid for inspector activity on airframes other than under the BGA system.

## **Does any of this change my relationship with my client/owner/club?**

Not in the view of the BGA. The BGA's prime concern is safe, efficient and affordable functioning of airworthiness under the BGA umbrella.

## **Does BGA insurance still extend to me?**

Yes. The BGA does not expect any change in the terms of current inspector insurance provided you and the airframe are operating within the BGA Airworthiness Organisation. Inspectors must of course consider their exposure and therefore insurance needs re any commercial liabilities they may face.

## **What will be the role of BGA Quality System and what effect will it have on me?**

Given an organisation of the scale of the BGA, a formal Quality System is a pre-requisite under Part M. We have already engaged and are working with an Airworthiness Quality Manager. A large part of the quality element is pertinent to the BGA Central Office only. However there are aspects of the quality process which will of course impact on inspectors as BGA agents in the field. A brief re the quality requirements will be provided to all inspectors.

BGA also needs voluntary Quality Personnel to assist the Quality Manager in the internal audit our systems. If you aspire to either of these roles the direct contact with the CTO is recommended

## **When are BGA/CAA audits likely to occur?**

A BGA or CAA audit can occur at any time. The BGA has an audit plan, which will certainly involve the BGA quality system and CAA pre-arranged audits for oversight purposes. Other audits will take place on an ad-hoc basis. The key to success is staying within the 'rules'. Details of audit planning are still developing.

## **Will there be changes in the BGA support system, eg. The CTO, RTO's and website.**

The BGA support system under airworthiness will continue to strive to be as comprehensive as possible. The role of the CTO has already changed to cope with new regime. The role of the RTO's are essentially unchanged. In future the airworthiness section of the BGA website may need to be password protected to assure our intellectual property.

## **How will charges be affected?**

Inspector approval fees will continue to be subject to insurance and other market forces. Cost recovery of quality oversight under Part M, including significant CAA fees will be recovered where appropriate ie from where the greatest level of oversight is required.

## **What is BGA relationship with professional repairers?**

Professional repairers are an equally vital part of the gliding community and as BGA inspectors are encouraged to continue to support BGA Airworthiness Organisation and its activity.

**IMPORTANT NOTE.** This briefing document has been produced to help inspectors consider the changes brought about by Part M. As various elements are developed with CAA input over the next few months leading up to the full UK implementation of Part M in May 2009, some detail within this document may be subject to change. Please stay close to the BGA website for the latest news.