

# **BGA AIRWORTHINESS AND MAINTENANCE PROCEDURES**

## **PART 2, LEAFLET 11**

### **EASA AIRCRAFT ARC RENEWAL PROCEDURE**

#### **General**

1. EASA aircraft issued with a non expiring C of A and Airworthiness Review Certificate (ARC) is subject to an Airworthiness Review to renew the ARC and maintain the validity of the Certificate of Airworthiness.

This procedure approved in the BGA Airworthiness Exposition Part 7, is explained in this AMP leaflet.

#### **Reference information**

2. EU regulation 1702/2003 Part M and its amendments detail the regulatory requirements.

#### **ARC validity & renewal**

3. The ARC is normally valid for 1 year. If the aircraft has remained in a controlled environment and the maintenance managed by a part M subpart G, Continuing Airworthiness Management Organisation (CAMO) the ARC may be extended twice each for 1 year at a time.

To operate a controlled environment requires a complex, centralised maintenance management system that is inappropriate for BGA gliding clubs and private owners. To keep the cost of operating an aircraft within the BGA Airworthiness Organisation within reasonable limits, the maintenance management is carried out by the owner in the uncontrolled environment.

As the BGA is not operating a controlled environment, instead of ARC extensions the ARC must be issued each year by carrying out an airworthiness review with validity according to the CAA ARC dating protocol. An airworthiness review on a glider, or tug for that matter, is no big issue and is no more than what would have been done at a normal C of A renewal previously.

In the uncontrolled environment the aircraft owner or operator is responsible for the continued airworthiness and maintenance management of his aircraft or the aircraft he operates the BGA is operating a limited contract where the CAMO (BGA) manages the BGA GMS generic maintenance programme. The transition to EASA C of A establishes this limited contract by way of the Letter of Agreement (LOA) completed at that time.

#### **Eligible aircraft**

4. Only gliders, motor gliders and BGA gliding club tugs that are within the BGA Airworthiness Organisation are eligible for ARC renewals through the BGA CAMO.

All aircraft that were transitioned to EASA C of A using the BGA are initially included in the BGA Airworthiness Organisation, that includes gliders, motor gliders and tugs. To remain eligible the ARC must be continued to be renewed using the BGA. Staying within the BGA has several other advantages, access to BGA inspectors, use of BGA revised limitations and access to BGA airworthiness information for example.

From 2010, Owners wishing to renew their ARC with another CAMO may join the BGA Airworthiness Organisation giving them access to BGA inspectors. See BGA web site for information on this.

#### **Authorisation to carry out the Airworthiness Review and ARC signatories**

5. BGA inspectors with a Chief Engineer rating and valid CAA EASA form 4 approval, identified by "ARC Signatory" on the inspectors certificate are authorised to carry out the Airworthiness Review and sign the ARC on behalf of the BGA CAMO in line with their inspector privileges.

The CAA EASA form 4 is the mechanism where the CAA formally approves the ARC signatory.

6. BGA Chief Engineers may certify maintenance but may not carry out an airworthiness review on aircraft where they also manage the maintenance. By manage we mean; plan maintenance, decide if certain modifications should be embodied, decide what optional maintenance should be carried out. Management does not include maintenance certification.

The best way to achieve this, establishing the required level of independence, is to arrange for someone who representing the club committee of management or the aircraft owner, carry out the maintenance management role seeking advice from the certifying engineer.

If the BGA Chief engineer is sole owner of an aircraft and manages his own maintenance he cannot carry out the airworthiness review. In the case of syndicated aircraft, provided the BGA Chief Engineer is not involved with the maintenance management he/she may carry out the airworthiness review.

7. BGA Chief Engineers must attend BGA Airworthiness Review training and be formally approved by the CAA on submission of an EASA form 4.

### **Airworthiness Review**

9. Before an Airworthiness Review can be carried out, the aircraft owner must give permission. This is achieved by the completion of a Maintenance Work Order. The work order may also include the planned maintenance activity. An example of a typical maintenance work order is in the BGA GMS. Note: the maintenance work order must be raised prior to the airworthiness review and/or maintenance activity.

10. The airworthiness review is recorded on form BGA 276 Airworthiness Review Checklist. This form is submitted to the BGA together with a copy of the renewed ARC and payment.

**It should be noted that the airworthiness review is a full compliance verification and in depth sampling process.**

**For example: it must be verified that all Airworthiness Directives have been complied with and additionally an in depth document sample check, as indicated, to verify all aspects of the AD have been embodied as required.**

The in depth sample means you should take a document e.g. a modification and review the mod instructions, verify it has been complied with as required on the instructions, the correct parts have been used and released as required and the mod has been properly recorded in the aircraft documents and log book. A similar process for all other sections of the airworthiness review.

11. Completion of BGA 276

A. Aircraft and owners details.

If a field is not applicable to the aircraft you are reviewing then enter N/A

Complete aircraft and owner details

B. Document airworthiness review.

Each section starts with a basic question with a Satisfactory YES/NO, This is a separate question to the sampling below that forms an in depth sample.

Some sections ask for specific questions to be answered

All sections contain a tick box to indicate the documents you have sampled in depth. Above the tick boxes is the minimum number of documents you would normally sample. In some cases it may not be possible to sample the required number, in that case state reason in comments box on the right.

Referring to previous Airworthiness Reviews, wherever possible, sample review different documents each year so over the course of time all the relevant documents are sampled in depth.

1. *Airframe, engine and propeller flying hours and associated flight cycles, as appropriate, have been properly recorded.*

Check that the hours have been properly recorded, (engines and propellers N/A for gliders) checking for items such as correct owner details, log books correctly completed with no obvious errors

Sample 2 documents in depth from list.

2. *The flight manual, if applicable, is applicable to the aircraft configuration and reflects the latest applicable revision status. Flight manual details.*

Check the flight manual revision to either the Declaration of Flight Manual Standard (DFMS) (if available from CAA G-INFO page) or from manufacturers published data and complete the details on the form.

Check flight manual content, number of pages, revisions incorporated.

Sample 1 document in depth from list

3. *All the maintenance due on the aircraft according to the approved maintenance programme has been carried out. All known defects have been corrected or, when applicable, carried forward in a controlled manner. All maintenance has been released to service by an approved organisation, licensed engineer or BGA inspector.*

Check maintenance log book entries, including pilot/owner maintenance, and certifications to ensure they are completed correctly and as far as possible that all maintenance has been recorded. Check each certification entry contains either the license or authorisation number or in the case of pilot/owner maintenance, the pilots details. Check maintenance file and any other maintenance related paperwork.

Sample 3 documents in depth from list

4. *All applicable airworthiness directives and generic requirements have been applied and properly registered.*

Check all Airworthiness Directives and generic requirements issued since the last airworthiness review have been applied as directed and recorded in the appropriate log book. Review Service Bulletins/Technical Notes (SB/TN) etc to ensure they have been reviewed and considered for embodiment by the owner.

Sample 2 documents in depth from list

5. *All parts, components, modifications and repairs fitted or applied to the aircraft have been registered and are approved or released according to Part 21.*

Check that any modifications or repairs were incorporated to an EASA approved scheme. Modifications will be supported by a SB/TN or EASA modification number, repairs must have a reference to either a repair manual or if outside the scope of generic repairs and individual repair reference.

Check parts and materials (used or introduced) have the appropriate release paperwork.

Sample 1 document in depth from list

6. *All service life limited components installed on the aircraft are properly identified and have not exceeded their approved service life limit according to the approved maintenance programme*

Check that life limited items (airframe, release unit, engine, propeller, pressure vessels...) have not exceeded their approved life. If any item is likely to exceed the life limitation within the next ARC period, taking into account expected use, the owner must be advised and a comment entered in the Comments section. Provided the service life is within its approved life the ARC can be renewed.

Sample 2 documents in depth from list

7. *The current mass and balance statement reflects the configuration of the aircraft and is valid.*

Check the last weighing against aircraft configuration, have any items been removed or fitted, modifications carried out that could affect the weight & balance. If the aircraft has been extensively repaired, recovered or repainted it should have been reweighed. For gliders check the weighing is within date.

Sample 1 document in depth from list

8. *The aircraft complies to the latest revision of its type design approved by EASA.*

Check the aircraft against the latest version of the Type Certificate Data Sheet (TCDS) to ensure there have been no changes to items such as operating limitations or new life limitations imposed or lifted.

Record the TCDS number and revision number on the form.

Sample 1 document in depth from list.

### C. Physical survey.

Carry out a survey of the aircraft to verify the document review and to answer the questions.

1. *All required markings and placards are properly installed*

Checking against the flight manual, maintenance manual, modification instructions or supplemental type certificates, check all mandatory placards are present and legible.

2. *The aircraft complies with its approved flight manual*

Check that the flight manual is applicable to the aircraft and any supplements required are embodied.

3. *The aircraft configuration complies with the approved documentation*

Check aircraft complies with C of A, ARC, and Registration etc.

4. *No evident defect can be found that has not been addressed*

Check that there are no obvious defects during the survey. Access panels may be removed if required. Please note this is not another annual check.

5. *No inconsistencies can be found between the aircraft and the documented review of the aircraft records.*

This is a closing check to verify that there are no inconsistencies between the aircraft and documentation.

D. Findings.

Enter any discrepancies you observed and the corrective action to remedy. It may be the case that it is something that has to be attended to before you complete the airworthiness review on the other hand it may be something insignificant where you could allow the finding to be carried forward as a deferred defect.

E. Certifying

Don't forget to certify each section and the final airworthiness review at the end. Please note there is no Certificate of Release to Service (CRS) as the airworthiness review is not a maintenance certification.

F. ARC renewal not in conjunction with annual inspection. (The BGA do not recommend this option for private aircraft)

In cases where the ARC renewal is not carried out at the same time as the annual inspection the previous annual (within the previous 12 months) may be used to support the ARC renewal. Annual inspection date is entered on BGA 276

Careful management of the ARC and Annual inspection expiry dates is required. For annual inspection without ARC renewal all that is required to certify is completion of the relevant worksheets and log book entry.

Note; the annual inspection is recorded on BGA 267 or LAMP worksheets and must be retained properly completed and certified with all associated worksheets in the aircraft records.

### **Completing the process and issue of ARC**

12 Approved BGA Chief Engineer / ARC signatory process using downloaded ARC template

See flow chart 1

1. Airworthiness Review is completed by BGA Chief Engineer / ARC signatory and completes BGA 276 form
2. BGA ARC template is downloaded from BGA web site after accepting terms and conditions.

Note: a serviceable printer is required. The BGA recommends that 120 gsm quality paper is used for the original ARC for the aircraft owner

3. ARC is produced by the Chief Engineer / ARC signatory, signed and forwarded to the aircraft owner
4. A signed second copy of the ARC (Marked COPY) is forwarded to the BGA together with form BGA 267 (BGA 202 for MG & Tugs) & BGA 276 with payment within 5 days
5. BGA updates records and notifies CAA

13. ARC Dating Protocol

**DATING PROTOCOLS**

The following anticipation period may be used:

Up to 90 days in anticipation of the issue of an ARC.

For the **issue** of an ARC:

**Anticipation less than 90 days** prior to expiry of the ARC:

The ARC issue date is from the day the ARC is issued.

The expiry date will be one year from the expiry date of the last ARC.

**Anticipation more than 90 days** prior to expiry of the ARC:

The ARC issue date is from the day the ARC is issued.

The expiry date is One-year from the review date for an ARC 15B

**Expired ARC**

The ARC issue date is from the day the ARC is issued

The expiry date is one year less one day from the Airworthiness Review survey date

**NOTE 1:** Where the anticipated period is within ninety days, both airworthiness review and survey must be carried out within the ninety days anticipated period.

**NOTE 2:** Where the anticipated period is greater than ninety days, both the airworthiness review and the aircraft survey must be carried out within the ninety days preceding the recommendation date.

**NOTE 3:** If the ARC issue is more than 90 days anticipation from the expiry of the old ARC, all the anticipation period is lost.

# Flow Chart 1

## BGA ARC renewal process flow chart

### Approved CE paper process Using BGA ARC template

*This processes assumes all aircraft are within BGA Airworthiness Organisation*

