

**BGA AIRWORTHINESS AND MAINTENANCE PROCEDURES**  
**MANUAL**

**PART 2**

**PROCEDURES APPLICABLE CAA & EASA AIRCRAFT**  
**GLIDERS, POWERED GLIDERS, TUGS**

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# **BGA AIRWORTHINESS AND MAINTENANCE PROCEDURES**

## **PART 2, LEAFLET 2-1**

### **PILOT OWNER MAINTENANCE**

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#### **INTRODUCTION**

1. Where an aircraft is used for private flying, the Air Navigation Order and EU regulation 1056/2008 allows certain work to be carried out and certified personally by the holder of a Private Pilots' Licence or glider equivalent who is the owner or operator of the aircraft concerned. Such aircraft must not exceed 2730 kg maximum total weight authorised and must not be used for commercial air transport. The nature of the work allowed to be carried out is specified in the Air Navigation Order and EU regulation as amended and form part of the approved maintenance programme. The aim of this Leaflet is to explain these requirements, identify permitted tasks and show how pilot owner maintenance should be certified in the aircraft Log Book.

#### **BASIC PRINCIPALS**

2. Explanation of the basic principals taken from Part M (1056/2008) Appendix viii.

##### **(a) Competence and responsibility**

1. The Pilot-owner is always responsible for any maintenance that he performs.

2. Before carrying out any Pilot-owner maintenance tasks, the Pilot-owner must satisfy himself that he is competent to do the task. It is the responsibility of Pilot-owners to familiarize themselves with the standard maintenance practices for their aircraft and with the aircraft maintenance programme. If the Pilot-owner does not consider him/herself confident they should not carry out the maintenance and seek advice from a BGA inspector.

A pilot-owner cannot carry out and certify maintenance on an aircraft that he is not the owner or operator.

3. The Pilot-owner or his CAMO is responsible for identifying the Pilot-owner tasks according to these basic principles and combining them into maintenance programme. For aircraft operating within the BGA airworthiness system the BGA has done this and will manage the approval and updates and this leaflet forms part of the maintenance programme.

### **(b) Tasks**

The Pilot-owner may carry out simple visual inspections or operations to check for general condition and obvious damage and normal operation of the airframe, engines, systems and components.

Maintenance tasks shall not be carried out by the Pilot-owner when the task:

1. is critically safety related, whose incorrect performance will drastically affect the airworthiness of the aircraft or is a flight safety sensitive maintenance task and/or;
2. requires the removal of major components or major assembly unless otherwise specified in the flight manual as a pilot task and/or;
3. is carried out in compliance with an Airworthiness Directive or an Airworthiness Limitation Item, unless specifically allowed in the AD or the ALI and/or;
4. requires the use of special tools, calibrated tools (except torque wrench and crimping tool) and/or;
5. requires the use of test equipment or special testing (e.g. NDT, system tests or operational checks for avionic equipment that is considered a maintenance or bench test) and/or;
6. is composed of any unscheduled special inspections (e.g. heavy landing, ground loop or similar check) and/or;
7. is effecting systems essential for the IFR operations and/or;
8. is listed as a Complex Maintenance task i.e. major repair, or is a component maintenance task i.e. instrument repair.

The criteria 1 to 8 listed above can not be overridden by less restrictive instructions in the Maintenance Programme.

Any task described in the aircraft flight manual as preparing the aircraft for flight (Example: assembling the glider wings or pre-flight), is considered to be a pilot task and is not considered a Pilot-owner maintenance task and therefore does not require a Certificate of Release to Service.

### **(c) Performance of the maintenance Pilot-owner tasks and records**

The maintenance data such as Flight or Maintenance manuals as appropriate must be always available during the conduct of Pilot-owner maintenance and must be complied with. Details of the data referred to in the conduct of Pilot-owner maintenance must be included in the Certificate of Release to Service.

The Pilot-owner must inform the approved continuing airworthiness management organisation responsible for the continuing airworthiness of the aircraft (if applicable) not later than 30 days after completion of the Pilot owner maintenance task to remain in the controlled environment. In the uncontrolled environment pilot owner maintenance is advised by way of log book entries at time of annual airworthiness review. (The BGA is operating “uncontrolled”)

### **(d) Additional information**

- 1 Inspection tasks/checks of any periodicity included in an approved maintenance programme can be carried out providing that the specified tasks are included in the generic lists in tables A to C.

All scheduled maintenance checks, other than 50 hour or less, are required to be certified by an appropriately rated BGA inspector or licensed engineer, however certain elements within that check, with the agreement of the certifying inspector, may be certified by a pilot owner in accordance with this scheme. The completion certification is always signed by the BGA inspector.

- 2 For the purposes of pilot owner maintenance a pilot is the owner or syndicate partner, in the case of leased or club owned aircraft, competent pilots are nominated by the operator or club management.
- 3 If a pilot/owner wishes to carry out maintenance outside the scope of this leaflet, it must be under the supervision of an appropriately rated BGA inspector or licensed engineer who will, on satisfactory completion of the work, certify the work in accordance with Part M.

### **SCOPE OF PERMITTED WORK**

IT SHOULD BE NOTED THAT SOME TASKS ARE ONLY APPLICABLE TO CERTAIN CLASSES OF AIRCRAFT AS ANNOTATED:

**Table A PILOT OWNER MAINTENANCE TASKS for EASA POWERED AIRCRAFT (TUGs)**

ATA	Area	Task	<1000kg	1000 – 2730 kg
05	General	Maintenance checks. Only tasks as defined in Table A are permitted. All other tasks must be certified by an appropriately rated Part 66 licensed Engineer. The 150 FH & Annual maintenance check final sign off can only be certified by a Part 66 licensed engineer	Yes	Yes
09	Towing	Tow release unit and tow cable retraction mechanism – Cleaning, lubrication and tow cable replacement (including weak links).	Yes	Yes
		Mirror – Installation and replacement of mirrors.	Yes	Yes
11	Placards	Placards, Markings – Installation and renewal of placards and markings required by AFM and AMM.	Yes	Yes
12	Servicing	Lubrication – Not requiring a disassembly other than non structural items such as cover plates, cowlings and fairings.	Yes	Yes
20	Standard Practices	Safety Wiring – Replacement of defective wiring or cotter keys, # Excluding those in engine, transmission, flight control systems.	Yes #	NO
		Simple Non Structural Standard Fasteners – Replacement and adjustment, excluding the replacement of receptacles and anchor nuts requiring riveting.	Yes	Yes
21	Air Conditioning	Replacement of flexible hoses and ducts.	Yes	Yes
23	Communication.	Communication devices – Remove and replace self contained, front instrument panel mount communication devices with quick disconnect connectors, excluding IFR operations.	Yes**	Yes**
24	Electrical power	Batteries – Replacement and servicing, excluding servicing of Ni-Cd batteries and IFR operations.	Yes**	Yes**
		Wiring – Repairing broken circuits in landing light and any other wiring for non critical equipment, excluding ignition system, primary generating system and required communication, navigation system and primary flight instruments.	Yes	Yes
		Bonding – Replacement of broken bonding cable.	Yes	Yes
		Fuses – Replacement with the correct rating.	Yes	Yes
25	Equipment	Safety Belts – Replacement of safety belts and harnesses excluding belts fitted with airbag systems.	Yes	Yes

		Seats – Replacement of seats or seat parts not involving disassembly of any primary structure or control system.	Yes	Yes
		Non essential instruments and/or equipment - Replacement of self contained, front instrument panel mount equipment with quick disconnect connectors.	Yes	Yes
		Oxygen System – Replacement of oxygen bottle and system in approved mountings	Yes	Yes
		ELT – Removal / Re-installation.	Yes	Yes
26	Fire Protection	Fire Warning – Replacement of sensors and indicators.	Yes	Yes
27	Flight controls	Removal or re-installation of co-pilot control column and rudder pedals where provision for quick disconnect is made by design.	Yes	Yes
28	Fuel System	Fuel lines – Replacement of prefabricated fuel lines fitted with self sealing couplings.	Yes	Yes
		Fuel Filter elements – Cleaning and/or replacement.	Yes	Yes
31	Instruments	Instrument Panel– Removal and re-installation provided this it is a design feature with quick disconnect connectors, excluding IFR operations.	Yes**	NO
		Pitot Static System – Simple sense and leak check, excluding IFR operations.	Yes**	NO
		Drainage – Drainage of water drainage traps or filters within the Pitot static system excluding IFR operations.	Yes**	Yes**
		Flexible tubes - Replacement of damaged tubes excluding IFR operations.	Yes**	NO
32	Landing Gear	Wheels – Removal, replacement and servicing, including replacement of wheel bearings and lubrication.	Yes	Yes
		Hydraulic fluid – Replenishment of hydraulic fluid such as brake fluid.	Yes	Yes
		Shock Absorber – Replacement of elastic cords or rubber dampers.	Yes	Yes
		Shock Struts – Replenishment of oil or air.	Yes	NO
		Skis – Changing between wheel and ski landing gear.	Yes	Yes
		Landing skids – Replacement of landing skids and skid shoes.	Yes	Yes
		Wheel fairings (spats) – Removal and re-installation.	Yes	Yes
		Mechanical brakes – Adjustment of simple cable operated systems.	Yes	NO
		Brake – Replacement of worn brake pads or shoes. #excludes relining brake pads or shoes	Yes #	NO
33	Lights	Lights – Replacement of internal and external bulbs, filaments, reflectors and lenses.	Yes	Yes
34	Navigation	Software – Updating self contained, front instrument panel mount navigational software databases, excluding automatic flight control systems and transponders.	Yes	Yes
		Navigation devices – Removal and replacement of self contained, front instrument panel mount navigation devices with quick disconnect connectors, excluding automatic flight control systems, transponders, primary flight control system and IFR operations.	Yes**	Yes**
		Self contained data logger – Installation, data restoration.	Yes	Yes
51	Structure	Fabric patches – Simple patches extending over not more than one rib, not requiring rib stitching or removal of structural parts or control surfaces.	Yes	Yes
		Protective Coating – Applying preservative material or coatings where no disassembly of any primary structure or operating system is involved. #excludes painting of aircraft	Yes #	Yes #
		Surface finish - Minor restoration where no disassembly of any primary structure or operating system is involved This includes application of signal coatings or thin foils as well as registration markings. # excludes painting of aircraft.	Yes #	Yes #

		Fairings – Simple repairs to non structural fairings and cover plates which do not change the contour.	Yes	Yes
52	Doors	Doors - Removal and re-installation.	Yes	Yes
53	Fuselage	Upholstery, furnishing – Minor repairs which do not require disassembly of primary structure or operating systems, or interfere with control systems.	Yes	Yes
56	Windows	Side Windows - Replacement if it does not require riveting, bonding or any special process.	Yes	Yes
61	Propeller	Spinner – Removal and re-installation.	Yes	Yes
71	Powerplant installation	Cowling – Removal and re-installation not requiring removal of propeller or disconnection of flight controls.	Yes	Yes
72	Engine	Chip detectors – Removal, checking and re-installation provided the chip detector is a self sealing type and not electrically indicated.	Yes	Yes
73	Engine fuel	Strainer or Filter elements – Cleaning and/or replacement.	Yes	Yes
		Fuel - Mixing of required oil into fuel.	Yes	Yes
74	Ignition	Spark Plugs – Removal, re-installation and adjustment.	Yes	Yes
75	Cooling	Coolant - Replenishment of coolant fluid.	Yes	Yes
77	Engine Indicating	Engine Indicating – Removal and replacement of self contained, front instrument panel mount indicators that do not employ direct reading connections.	Yes	NO
79	Oil System	Strainer or filter elements – Cleaning and/or replacement.	Yes	Yes
		Oil – Changing or replenishment of engine oil and gearbox fluid.	Yes	Yes

**Table B PILOT OWNER MAINTENANCE TASKS for EASA SAILPLANES AND POWERED SAILPLANES INCLUDING BGA ANNEX II GLIDERS**

**Abbreviations applicable to this table:**

N/A not applicable for this category

SP sailplane

SSPS self sustaining powered sailplane

SLPS/TM self launching powered sailplane/touring motor glider

ATA	Area	Task	SP	SSPS	SLPS/TM
05	General	Maintenance checks. Only tasks as defined in Table B are permitted. All other tasks must be certified by an appropriately rated BGA inspector. The 150 FH & Annual maintenance check final sign off can only be certified by a BGA inspector	N/A	Yes	Yes
08	Weighing	Recalculation – Small changes of the Trim plan without needing a reweighing.	Yes	Yes	Yes
09	Towing	Tow release unit – Cleaning, lubrication and replacement of unit not involving disassembly of any primary structure, control system or additional adjusting.	Yes	Yes	Yes
		Mirror –Removal and re-installation of mirrors.	N/A	N/A	Yes
11	Placards	Placards, Markings – Installation and renewal of placards and markings required by AFM and AMM.	Yes	Yes	Yes
12	Servicing	Lubrication – Not requiring a disassembly other than non structural items such as cover plates, cowlings and fairings.	Yes	Yes	Yes
20	Standard. Practices	Safety Wiring – Replacement of defective wiring or cotter keys. #Excluding flight or engine control systems	Yes #	Yes #	Yes #
		Simple Non Structural Standard Fasteners – Replacement and adjustment, excluding the replacement of receptacles and anchor nuts requiring riveting.	Yes	Yes	Yes
		Free play – Measurement of the free play in the control system and the wing to fuselage attachment including minor adjustments by simple means	Yes	Yes	Yes

		provided by the manufacturer.			
21	Air Conditioning	Replacement of flexible hoses and ducts.	Yes	Yes	Yes
23	Communication	Communication devices – Remove and replace self contained, front instrument panel mount communication devices with quick disconnect connectors.	Yes	Yes	Yes
24	Electrical power	Batteries and solar panels – Replacement and servicing.	Yes	Yes	Yes
		Wiring - Installation of simple wiring connections to the existing wiring for additional equipment such as electric variometers, flight computers but excluding communication, navigation systems and engine wiring.	Yes	Yes	Yes
		Wiring – Repairing broken circuits in landing light and any other wiring for non critical equipment, excluding ignition system, primary generating system and required communication, navigation system and primary flight instruments.	Yes	Yes	Yes
		Bonding – Replacement of broken bonding cable.	Yes	Yes	Yes
		Switches – Replacement without soldering.	Yes	Yes	Yes
		Fuses – Replacement with the correct rating.	Yes	Yes	Yes
25	Equipments	Safety Belts – Replacement of safety belt and harnesses.	Yes	Yes	Yes
		Seats – Replacement of seats or seat parts not involving disassembly of any primary structure or control system.	Yes	Yes	Yes
		Non essential instruments and/or equipments - Replacement of self contained, front instrument panel mount equipment with quick disconnect connectors.	Yes	Yes	Yes
		Removal and installation of non required instruments and/or equipment.	Yes	Yes	Yes
		Wing Wiper, Cleaner – Servicing, removal and re-installation not involving disassembly or modification of any primary structure, control	Yes	Yes	Yes
		Static Probes – Removal or re-installation of variometer static and total energy compensation probes.	Yes	Yes	Yes
		Oxygen System – Replacement of Oxygen Bottle and System.	Yes	Yes	Yes
		Air Brake Chute – Installation and servicing	Yes	Yes	Yes
		ELT – Removal / Re-installation.	Yes	Yes	Yes
		26	Fire Protection	Fire Warning – Replacement of sensors and indicators.	N/A
27	Flight Control	Gap Seals – Installation and servicing if it does not require complete flight control removal.	Yes	Yes	Yes
		Control System – Measurement of the control system travel without removing the control surfaces.	Yes	Yes	Yes
		Control Cables – Simple optical Inspection for Condition.	Yes	Yes	Yes
		Gas Dampener – Replacement of Gas Dampener in the Control or Air Brake System.	Yes	Yes	Yes
		Co-pilot stick and pedals - Removal or re-installation where provision for quick disconnect is made by design.	Yes	Yes	Yes
28	Fuel System	Fuel lines – Replacement of prefabricated fuel lines fitted with self sealing couplings.	N/A	Yes	Yes
		Fuel Filter – Cleaning and/or replacement.	N/A	Yes	Yes
31	Instruments	Instrument Panel– Removal and re-installation provided this is a design feature with quick disconnect, excluding IFR operations.	Yes	Yes	Yes
		Pitot Static System – Simple sense and leak check.	Yes	Yes	Yes
		Instrument Panel vibration damper / shock absorbers- Replacement.	Yes	Yes	Yes
		Drainage – Drainage of water drainage traps or	Yes	Yes	Yes

		filters within the Pitot static system.			
		Flexible tubes - Replacement of damaged tubes.	Yes	Yes	Yes
32	Landing Gear	Wheels – Removal, replacement and servicing, including replacement of wheel bearings and lubrication.	Yes	Yes	Yes
		Hydraulic fluid – Replenishment of hydraulic fluid such as brake fluid.	Yes	Yes	Yes
		Shock Absorber – Replacement or servicing of elastic cords or rubber dampers.	Yes	Yes	Yes
		Shock Struts – Replenishment of oil or air.	Yes	Yes	Yes
		Landing gear doors - Removal or re-installation and repair including operating straps.	Yes	Yes	Yes
		Skis – Changing between wheel and ski landing gear.	Yes	Yes	Yes
		Skids – Removal or re-installation and servicing of main, wing and tail skids.	Yes	Yes	Yes
		Wheels fairing (spats) – Removal and re-installation.	Yes	Yes	Yes
		Mechanical brakes – Adjustment of simple cable operated systems.	Yes	Yes	Yes
		Brake – Replacement of worn brake pads.	Yes	Yes	Yes
		Springs – Replacement of worn or aged springs.	Yes	Yes	Yes
		Gear Warning –Removal or re-installation of simple gear warning systems.	Yes	Yes	Yes
33	Lights	Lights – Replacement of internal and external bulbs, filaments, reflectors and lenses.	N/A	N/A	Yes
34	Navigation	Software – Updating self contained, front instrument panel mount navigational software databases, excluding automatic flight control systems and transponders and including update of non required instruments / equipments.	Yes	Yes	Yes
		Navigation devices – Removal and replacement of self contained, front instrument panel mount navigation devices with quick disconnect connectors, excluding automatic flight control systems, transponders, primary flight control system.	Yes	Yes	Yes
		Self contained data logger – Installation, data restoration	Yes	Yes	Yes
51	Structure	Fabric patches – Simple patches extending over not more than one rib, not requiring rib stitching or removal of structural parts or control surfaces.	Yes	Yes	Yes
		Protective Coating – Applying preservative material or coatings where no disassembly of any primary structure or operating system is involved. # Excludes painting of aircraft	Yes #	Yes #	Yes #
		Surface finish - Minor restoration where no disassembly of any primary structure or operating system is involved This includes application of signal coatings or thin foils as well as Registration markings. # Excluded painting of aircraft	Yes #	Yes #	Yes #
		Fairings – Simple repairs to non structural fairings and cover plates which do not change the contour.	Yes	Yes	Yes
52	Doors	Doors - Removal and re-installation.	Yes	Yes	Yes
53	Fuselage	Upholstery, furnishing – Minor repairs which do not require disassembly of primary structure or operating systems, or interfere with control systems.	Yes	Yes	Yes
56	Windows	Side Windows - Replacement if it does not require riveting, bonding or any special process.	Yes	Yes	Yes
		Canopies - Removal and re-fitment.	Yes	Yes	Yes
		Gas dampener – Replacement of Canopy Gas dampener.	Yes	Yes	Yes
57	Wings	Wing Skids – Removal or re-installation and service of lower wing skids or wing roller including spring assembly.	Yes	Yes	Yes
		Water ballast – Removal or re-installation of flexible	Yes	Yes	Yes

		tanks.			
		Turbulator and sealing tapes – Removal or re-installation of approved sealing tapes and turbulator tapes.	Yes	Yes	Yes
61	Propeller	Spinner – Removal and re-installation.	N/A	Yes	Yes
71	Power Plant	Removal or installation of power plant unit including engine and propeller. (provided the task is identified in the flight manual as a Pilot task) # Power Plant installation final sign off certified by a BGA inspector only.	N/A	Yes #	NO
		Cowling - Removal and re-installation not requiring removal of propeller or disconnection of flight controls.	N/A	Yes	Yes
72	Engine	Chip detectors – Removal, checking and re-installation provided the chip detector is a self sealing type and not electrically indicated.	N/A	Yes	Yes
		Rotax CCBCT check	N/A	Yes	No
73	Engine fuel	Strainer or Filter elements – Cleaning and/or replacement.	N/A	Yes	Yes
		Fuel - Mixing of required oil into fuel.	N/A	Yes	Yes
74	Ignition	Spark Plugs – Removal, re-installation and adjustment.	N/A	Yes	Yes
75	Cooling	Coolant – Replenishment of coolant fluid.	N/A	Yes	Yes
76	Engine Controls	Controls – Minor adjustments of non-flight or propulsion controls whose operation is not critical for any phase of flight.	N/A	Yes	NO
77	Engine Indicating	Engine Indicating – Removal and replacement of self contained, front instrument panel mount indicators that do not employ direct reading connections.	N/A	Yes	Yes
79	Oil System	Strainer or Filter elements – Cleaning and/or replacement	N/A	Yes	Yes
		Oil – Changing or replenishment of engine oil and gearbox fluid.	N/A	Yes	Yes

**Table C PILOT OWNER MAINTENANCE TASKS for CAA ANNEX II AIRCRAFT AND POWERED SAILPLANES**

**Abbreviations applicable to this table:**

>2730 – Aircraft up to 2730 KGS MTOW

SLPS/TM self launching powered sailplane/touring motor glider

ATA	Area	Task	SLPS/MG	>2730
05	General	Maintenance Checks up to 50hr/6 months but not including the certification of applicable Airworthiness Directives (AD's).	Yes	Yes
20	Standard practices	Replacement of defective safety wiring or split pins excluding those in engine, transmission, flight control and rotor systems;	Yes	Yes
23	Communication	Replacement of VHF communication equipment, being equipment which is not combined with navigation equipment.	Yes	Yes
24	Electrical power	Replacement of batteries	Yes	Yes
		Replacement of generator and fan belts designed for removal where special tools are not required;	Yes	Yes
25	Equipment	Repairs to upholstery and decorative furnishing of the cabin or cockpit interior when repair does not require dismantling of any structure or operating system or interfere with an operating system or affect the structure of the aircraft	Yes	Yes
		Replacement of safety belts or safety harness;	Yes	Yes
		Replacement of seats or seat parts not involving dismantling of any structure or of any operating system	Yes	Yes
32	Landing gear	Replacement of landing gear tyres, landing skids or skid shoes;	Yes	Yes
		Replacement of elastic shock absorber cord units on landing gear where special tools are not required;	Yes	Yes
51	Structure	Patch-repairs to fabric not requiring rib stitching or the removal of structural parts or control surfaces, if the repairs do not cover	Yes	Yes

		up structural damage and do not include repairs to rotor blades;		
		Repairs, not requiring welding, to fairings, non-structural cover plates and cowlings	Yes	Yes
56	Windows	Replacement of side windows where that work does not interfere with the structure or with any operating system;	Yes	Yes
57	Wings	Replacement of wings and tail surfaces and controls, the attachments of which are designed to provide for assembly immediately before each flight and dismantling after each flight;	Yes	Yes
33	Lights	Replacement of bulbs, reflectors, glasses, lenses or lights	Yes	Yes
72	Power plant	Replacement of any cowling not requiring removal of the propeller, rotors or disconnection of engine or flight controls	Yes	Yes
74	Ignition	Replacement of unserviceable sparking plugs	Yes	Yes

### **SOURCES OF INFORMATION**

3. Further information on the requirements for Pilot Maintenance may be obtained from CAP 520 “Light Aircraft Maintenance” or in CAA approved maintenance programmes – LAMS/A/1999, LAMP/A/2007 or BGA GMS, Manufacturers published information in the form of Maintenance Manuals, Operating Hand Books or Flight manuals should be used as appropriate. Part M regulation 2042/2003 amended by 1056/2008 M.A.803 and Appendix viii.

### **CERTIFICATION**

4. An example of how pilot maintenance should be certified in the aircraft Log Book is at Annex A.

**Note the different certification requirements for Annex II and EASA aircraft.**

5. If a mandatory inspection is due as part of the check or replacement then a suitably qualified engineer must sign for at least the mandatory items.

### **APPLICABILITY OF PERSONS TO CARRY OUT MAINTENANCE OF CLUB AIRCRAFT**

6. BGA Tug pilots, motor glider pilots or glider pilots who are members of a BGA gliding club, as specified on the aircraft registration document, that operates the aircraft would be deemed “Operators” provided that they were involved with the decision making process regarding pilot maintenance and the club committee designates that person to carry out the maintenance. It is recommended a record of the approval is maintained.

In the case of leased aircraft, the lessee is considered the operator/owner and the above rule applies.

7. It strongly recommended that all personnel engaged in maintenance of club aircraft be trained by the licensed engineer, maintenance organisation or BGA inspector that normally maintains the aircraft. Records of this training should be kept to demonstrate that they are competent persons to complete the tasks. Refresher training should be undertaken at regular intervals.

### **MONITORING PILOT/OWNER MAINTENANCE**

8. During normal maintenance checks and at other times as circumstances dictate, previously accomplished pilot /owner maintenance standards should be monitored by the licensed engineer, maintenance organisation or BGA inspector to verify standards are maintained. Discrepancies found

must be reported to the BGA Quality Manager at time of Airworthiness Review and the operating club management to enable retraining or withdrawal of privileges as appropriate.

Serious discrepancies must be reported to the BGA Quality Manager within 72 hours of finding the occurrence.

## **ANNEX A**

**BGA Airworthiness and Maintenance Procedures Manual – Example of Pilot Maintenance Certification**

1	2	3		4		5	6	7
		h	m	h	m			
Total bf.	246			197	50			
20/4/08	2	2	40	200	30		Annex II Aircraft CAA C of A	
21/4/08	3	2	25	202	55			
25/4/08	1	1	10	204	05			
6/5/08	4	4	30	208	35			
12/5/08	1	1	30	210	05		50 hour check carried out I.A.W. LAMS/A/1999 issue 2	
13/5/08	2	2	25	212	30			J Smith 13/5/08 PPL 12345
							50 hour check carried out I.A.W. LAMP/A/2007 issue 1	J Smith 13/5/08 PPL 12345
Total cf.								

**Example**

CAP 398 Airframe Log book CAA C of A aircraft

Example shows correct format for Private Pilot certified maintenance for aircraft used for private flying.

Note: The certification for Annex II is in the main section (box 6). The certification for EASA aircraft is in the CRS section (box 7)

# **BGA AIRWORTHINESS AND MAINTENANCE PROCEDURES**

## **PART 2, LEAFLET 2-2**

### **FACILITIES AT BGA M3 MAINTENANCE ORGANISATIONS**

#### **INTRODUCTION**

1. The CAA's requirements for the facilities to be provided at BGA M3 Maintenance Organisations are outlined in general terms in British Civil Airworthiness Requirements (BCAR), Section A8-15. This leaflet provides guidance to BGA Clubs on how the CAA requirements might be met.

#### **REQUIREMENTS**

2. The requirement for the provision of facilities for the grant of CAA M3 approval is outlined below. Additional guidance on the interpretation of the requirements may be obtained from the BGA CTO. The facilities required of an M3 facility conducting Tug maintenance will need to be of a higher level than those required for Motor Glider maintenance but under normal circumstances approval for Tug maintenance will include approval for Motor Glider maintenance.

#### **ACCOMMODATION**

3. The CAA makes the following requirements for accommodation:
- a. Hangar accommodation, with adequate lighting and power supplies and of sufficient size to house the maximum number of aircraft expected to be worked on at any one time, shall be provided.
  - b. The accommodation shall include suitable areas where publications and drawings may be studied and where aircraft maintenance documents may be prepared and stored.
  - c. Adequate storage arrangements, together with the necessary records and systems for controlling aircraft components, parts and materials shall be provided.
  - d. A separate secure quarantine stores area is needed where defective components are isolated in a clearly labelled state and stored awaiting repair, disposal or despatch to a repair shop.

#### **EQUIPMENT**

4. The CAA makes the following requirements for equipment:
- a. Adequate equipment, including general maintenance equipment and specialised tools shall be provided. Guidance on the range of equipment needed is provided below.
  - b. The calibration of test equipment shall be checked as frequently as is necessary to maintain confidence in the accuracy of the equipment.
  - c. A tool store facility to store and account for tools and test equipment is necessary, together with a suitable inventory control system to ensure that items are fully accounted for at the end of each work period.

#### **PUBLICATIONS AND INFORMATION**

5. The CAA requires the M3 organisation to have access to the following publications and information.
  - a. The Organisation shall make available to the staff concerned the necessary technical data, e.g. CAA publications, approved manuals, specifications, data sheets and related literature appropriate to the class of work for which Approval is sought.
  - b. The technical data shall consist of that issued from the manufacturers by way of maintenance manuals, micro fiche, service bulletins and other forms of continuing airworthiness information.
  - c. Written agreements shall be made by the Organisation with the appropriate manufacturers, or other recognised suppliers, for the supply of amendments and changes to the publications held. A suitable system for amending the documents shall be provided.
  - d. Where technical data is held on loan it shall be the responsibility of the user to ensure that the documents concerned are amended up to date.

The BGA supports certain motor gliders (BGA Approved Types) in respect of Mandatory Directives and Manufacturers service bulletins and information by inclusion in the BGA Compendium and Bi-Monthly TNS. It will normally be the responsibility of the aircraft owner or maintenance organisation to subscribe to, or obtain copies of, manufacturers publications

### **EXAMPLES OF EQUIPMENT**

6. In order to perform the maintenance operations listed in the CAA Light Aircraft Maintenance Schedule, BGA approved Local M3 Maintenance facilities will need to have access to the following range of equipment (this list is not exhaustive);
  - a. Aircraft cleaning equipment.
  - b. Engine cleaning equipment
  - c. Lubrication equipment (oils and grease).
  - d. Battery servicing equipment.
  - e. Spark plug cleaning facilities.
  - f. Fabric, dope, paints etc.
  - g. Corrosion control facilities appropriate to aircraft being serviced.
  - h. Aircraft jacking equipment appropriate to aircraft being serviced.
  - i. Tyre inflation, repair, replacement facilities.
  - j. Tools - special to the maintenance facilities of specific aircraft types.
  - k. Test equipment (as required) for electrical and instrument systems.
  - l. Non-destructive testing (dye penetrant) equipment.

Note: A detailed checklist of M3 facilities is available from the BGA.

# **BGA AIRWORTHINESS AND MAINTENANCE PROCEDURES**

## **PART 2, LEAFLET 2-3**

### **AIRWORTHINESS FLIGHT TESTING OF AIRCRAFT WITH CAA C of A**

#### **INTRODUCTION**

1. The flight testing requirements for aircraft with a CAA C of A are determined by British Civil Airworthiness Requirements (BCAR) Section A3-5. The aim of this leaflet is to make these requirements readily available to gliding clubs.

#### **FLIGHT TEST PERIODICITY**

2. For the purposes of flight testing, aircraft maintained under the BGA's maintenance approval are classified as Group II. BCAR Section A3-5 requires that Airworthiness Flight Tests on Group II aircraft are carried out within a period of 62 days immediately preceding the date of renewal of the C of A. The requirement therefore coincides with the 'Star' check. However, it may be necessary to carry out an Airworthiness Flight Test at other times to demonstrate the continued airworthiness of the airframe, engine, propeller or aircraft equipment.

#### **FLIGHT TEST SCHEDULE**

3. The requirements for the use of Flight Test Schedules are as follows:

a. **Tug Aircraft on BGA Maintenance Scheme**

An Airworthiness Flight Test for issue and renewal of a C of A is to be carried out using CAA Airworthiness Flight Test Schedule (AFTS) No 2. The completed schedule and the signed Flight Test Certificate are to be submitted to the Chief Engineer of the BGA M3 Facility which is supervising the C of A renewal process. Once satisfied with the aircraft's performance the Chief Engineer is to forward the original completed Flight Test Schedule together with all the C of A renewal paperwork to the BGA for approval and forwarding to the CAA.

b. **Motor Gliders**

An airworthiness flight test for the renewal of the C of A on a motor glider is to be carried out in accordance with BGA 267FT. The completed form is to be submitted to the Chief Engineer of the BGA M3 Facility which is supervising the C of A renewal process. Once satisfied with the aircraft's performance the Chief Engineer is to forward the original completed form together with all the C of A renewal paperwork to the BGA for approval and forwarding to the CAA.

For initial issue C of A applications only, the CAA currently (1/7/02) require AFTS No 2 to be used for motor gliders. If desired, ACFT No 2 may be used for C of A renewal flight testing.

#### **CONDUCT OF AIRWORTHINESS FLIGHT TESTS**

4. Airworthiness Flight tests are to be conducted as follows:

a. **Tug Aircraft on BGA Maintenance Scheme**

Airworthiness Flight Tests on Tug aircraft maintained under the BGA Maintenance Scheme are to be conducted under the supervision of the Chief Engineer of the BGA M3 Facility.

The pilot selected to fly the Flight Test must be acceptable to the CAA. However for aircraft certified in the Private category, the flight may be conducted by the owner of the aircraft who should be accompanied by an independent observer if possible see CAP 520 3.2 for details. The CAA may require to fly a proportion of Airworthiness Flight Tests using its own pilots; the maintenance organisation will be advised if this is required.

b. **Motor Gliders**

Airworthiness Flight Tests on Motor Gliders are to be conducted under the supervision of the Chief Engineer of the BGA M3 Facility. The pilot selected to fly the Flight Test must be acceptable to the CAA. However for aircraft certified in the Private category, the flight may be conducted by the owner of the aircraft who should be accompanied by an independent observer if possible see CAP 520 3.2 for details. The CAA may require to fly a proportion of Airworthiness Flight Tests using its own pilots; the maintenance organisation will be advised if this is required.

### **FLIGHT TESTING AFTER MODIFICATION OR REPAIR**

5. The requirements for Airworthiness Flight Testing after aircraft modification or repair are stated in BCAR Section A6-8. Any requirement for such a Flight Test on an aircraft supervised under the BGA's airworthiness approval is to be agreed by the BGA M3 Facility Chief Engineer and the BGA CTO. Depending on the extent of the repair or modification it may be necessary to obtain a CAA Permit to Fly before the flight test may be carried out.

Some design organisations will have the authority to issue a Certificate of Fitness for Flight under “B” conditions for the testing of a modification or repair

### **FLIGHT TESTING WITH AN EXPIRED C of A**

6. A certificate of Fitness for Flight under “A” conditions is required. See AMP Leaflet 3-4 for information.

# **BGA AIRWORTHINESS AND MAINTENANCE PROCEDURE**

## **PART 2, LEAFLET 2-4**

### **FLIGHT UNDER 'A CONDITIONS'**

#### **INTRODUCTION**

#### **ONLY APPLICABLE TO NON EASA AIRCRAFT**

1. Whilst Article 8 of the Air Navigation Order 2000 (ANO) requires a Certificate of Airworthiness to be in force whenever an aircraft is flown, Part A to Schedule 3 of the ANO permits an aircraft to be flown, under certain circumstances, without a valid C of A. Flight under these regulations is known as flight under 'A' Conditions. The aim of this Leaflet is to describe how 'A' Conditions apply to aircraft operated under the BGA's airworthiness approval. A detailed explanation of 'A' Conditions requirements is contained in BCAR Section A3-8.

#### **PRIVELEGES OF 'A' CONDITIONS**

2. Flight under 'A Conditions' is allowed for the purposes of:
- a. Qualify for the issue or renewal of a C of A (i.e., a flight test).
  - b. Carry out a functional test of a previously approved modification.
  - c. To proceed to or from a place at which any inspection, repair, modification, maintenance approval, test or weighing of, or the installation of equipment in, the aircraft is to take place, or at which the painting of the aircraft is to be undertaken.

#### **APPROVAL OF FLIGHT UNDER 'A' CONDITIONS**

3. Approval of an aircraft to fly under 'A' Conditions may be granted by a suitably type-rated licensed aircraft maintenance engineer or a BGA Chief Engineer or under the authority of BGA CTO subject to a number of restrictions which include:
- a. The aircraft and its engines are certified as fit for flight.
  - b. The aircraft carries the minimum flight crew specified and does NOT carry passengers.
  - c. The aircraft does not fly over any congested area etc.

#### **CERTIFICATE OF FITNESS FOR FLIGHT**

4. A Certificate of Fitness for Flight may be issued before an aircraft is flown under 'A' Conditions. The format required of the certificate required is shown in BCAR Section A3-8, but Form BGA 207 may be used for the purpose. The Certificate must be completed in duplicate and one copy kept elsewhere than in the aircraft.
5. A Certificate of Fitness for Flight may be issued by the BGA M3 Chief Engineer, a type rated LAE or a person approved by the CAA or the CTO.

# **BGA AIRWORTHINESS AND MAINTENANCE PROCEDURES**

## **PART 2, LEAFLET 2-5**

### **RENEWAL OF CAA CERTIFICATES OF AIRWORTHINESS, [EASA ARC](#), PERMIT TO FLY AND MAINTENANCE CHECKS** **(Motor Gliders and Tugs)**

#### **INTRODUCTION**

1. The CAA's requirements for the renewal of Certificates of Airworthiness (C of A) are outlined in British Civil Airworthiness Requirements (BCAR), Section A3-4. [Renewal of Airworthiness Review Certificates \(ARC\) is outlined in Part M.](#) This leaflet provides guidance to BGA clubs on how the CAA requirements might be met.

#### **EXTENSION OF CAA C of A AND CHECK PERIODICITIES**

2. [Check periods may be extended in accordance with LAMP section 4 however ARC and C of A's may not be extended. The C of A or ARC renewal may be anticipated by up to 62 days. Full anticipation will mean the C of A will be valid for 38 months and the ARC for 14 months](#)

3. 50 hour and 150 hour maintenance checks may be extended by 10% of the 50 hour period (5 hours) for planning purposes only. The 6 month check may be extended by up to [15 days and the annual by 1 month](#). The extension must be recorded in the aircraft logbook. The extension need not be deducted from the next maintenance period. The CAA monitors the use of maintenance extensions during audits to ensure that the privilege is not abused.

4. All maintenance checks must be recorded on worksheets (50, 150 hr, 6 month and Annual) the format of the [LAMP maintenance programme](#) is designed for this. You may use alternative worksheets if desired provided that all the tasks and certifications contained in the [LAMP](#) are included.

#### **CAA C of A RENEWAL**

4 It is a CAA requirement that an annual inspection together with a C of A renewal – Star Check, is carried out at M3 approved facility. The BGA's M3 approval allows for delegation of that capability to nominated gliding clubs and workshops which may undertake the work required and make a recommendation for the renewal of the CAA C of A to the BGA. If the C of A has expired [for EASA aircraft](#) a CAA Permit to fly must be obtained in accordance with Airworthiness Notice No 9 for the ferry flight to the maintenance facility and return on completion. [For Annex II aircraft a Certificate of Fitness for flight may be issued by a BGA Chief engineer.](#)

5. Before starting the Star Check/Annual inspection arrangements must be made to involve a BGA Chief engineer.

Tug maintenance must be certified by an appropriately type rated licensed engineer or BGA tug inspector. The Chief engineer must be a CAA licensed engineer for Tug C of A renewals.

## **C of A SUBSEQUENT ISSUE**

6. (a) If a Motor Glider C of A or ARC has expired for more than 12 months the renewal is classified as a subsequent issue and the CTO should be contacted as a survey of the aircraft is required.
- (b) If a Tug C of A or ARC has expired for more than 12 months then the renewal is classified as a subsequent issue and CAA Surveyor involvement will be required. The procedure below is not applicable.

## **C of A RENEWAL PROCESS**

7. On completion of the Annual inspection, download BGA 202 and complete
  - (A) From the CAA web site, G-INFO, download a Declaration of Flight Manual Standard (DFMS) and complete
  - (B) Check the radio installation, if it is the same as the radio licence and no alterations have been made, complete the section on the BGA 202. If the installation has been changed, download a AC968NR from the CAA web site “C of A renewal Touch it Once” and complete. Do not forget to include the EASA modification approval number.
  - (C) Download a copy of the Type Certificate Data Sheet (TCDS) and review the aircraft against it, provided it is compliant and any alterations from that standard are EASA approved or accepted complete the section on the BGA 202
  - (D) Complete all the other sections of the BGA 202
  - (F) For Annex II aircraft carry out flight test after consultation with the CAA Flight department who will advise. Enclose the original flight test report with the renewal. If the C of A has expired a Certificate of Fitness for Flight under A conditions may be issued.
  - (G) If the aircraft has been re-weighed include a copy of the weighing report and loading schedule with the renewal
  - (H) Look up the current C of A/ARC renewal fee on the BGA web site and make cheque payable to BGA
  - (I) Send completed BGA 202, payment, DFMS and other supporting documents to BGA for processing and recommendation for renewal.

For clarification see simplified flow chart on page 4.

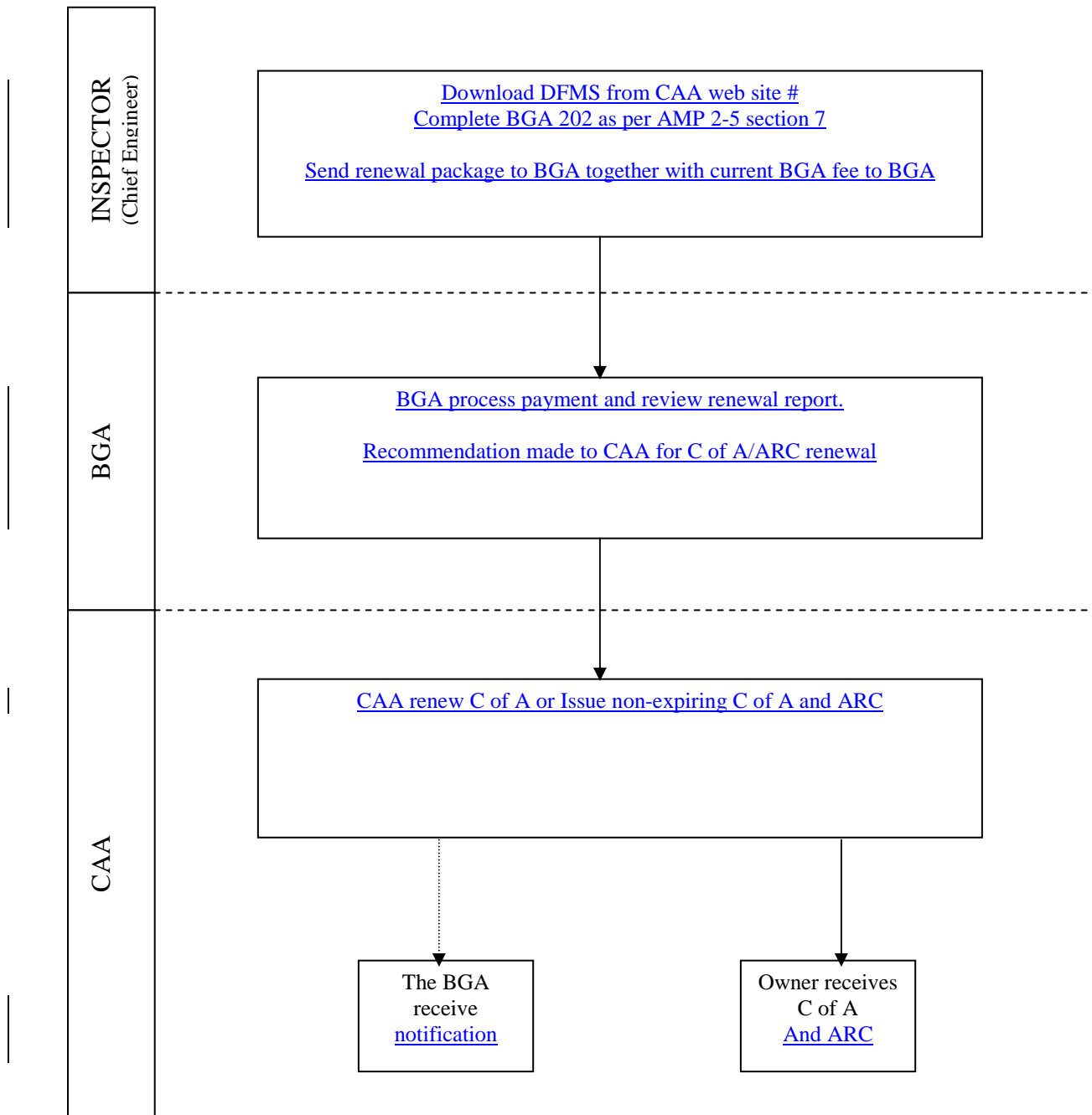
## **CAA PERMIT TO FLY AIRCRAFT**

8. Due to the revision of BCAR A3-7 issue 6, the procedure for maintenance release and Permit to Fly renewal has changed.

- 8.1 The Permit to Fly is now a non expiring document and is validated by a **Certificate of Validity** (C of V) normally renewed annually using a similar process to the C of A renewal.
- 8.2 A **Permit Flight Release Certificate** (PFRC) (BGA 214) is now issued for initial flight testing or Ferry once a Permit to Test or Ferry has been issued by the CAA. Also when the C of V has expired for completing the 3 year flight test, again, once a Permit to Test has been issued.
- 8.3 All maintenance is now released by issue of a **Permit Maintenance Release** (PMR) (BGA 213). The PMR supports the C of V, which in turn validates the Permit to Fly. The PMR now only releases the actual maintenance performed rather than re-certifying the entire aircraft.  
Provided the C of V remains valid (except where no flight test is required and the C of V expires) the only certification required is PMR.
- 8.4 A PMR is required for all maintenance except that allowed for under “Pilot Maintenance”
- 8.5 [CAA Permit to Fly aircraft require a Continued Airworthiness Management Document CAMD. If a CAMD has not been issued or is out of date then a new one is required. Contact BGA for further information.](#)

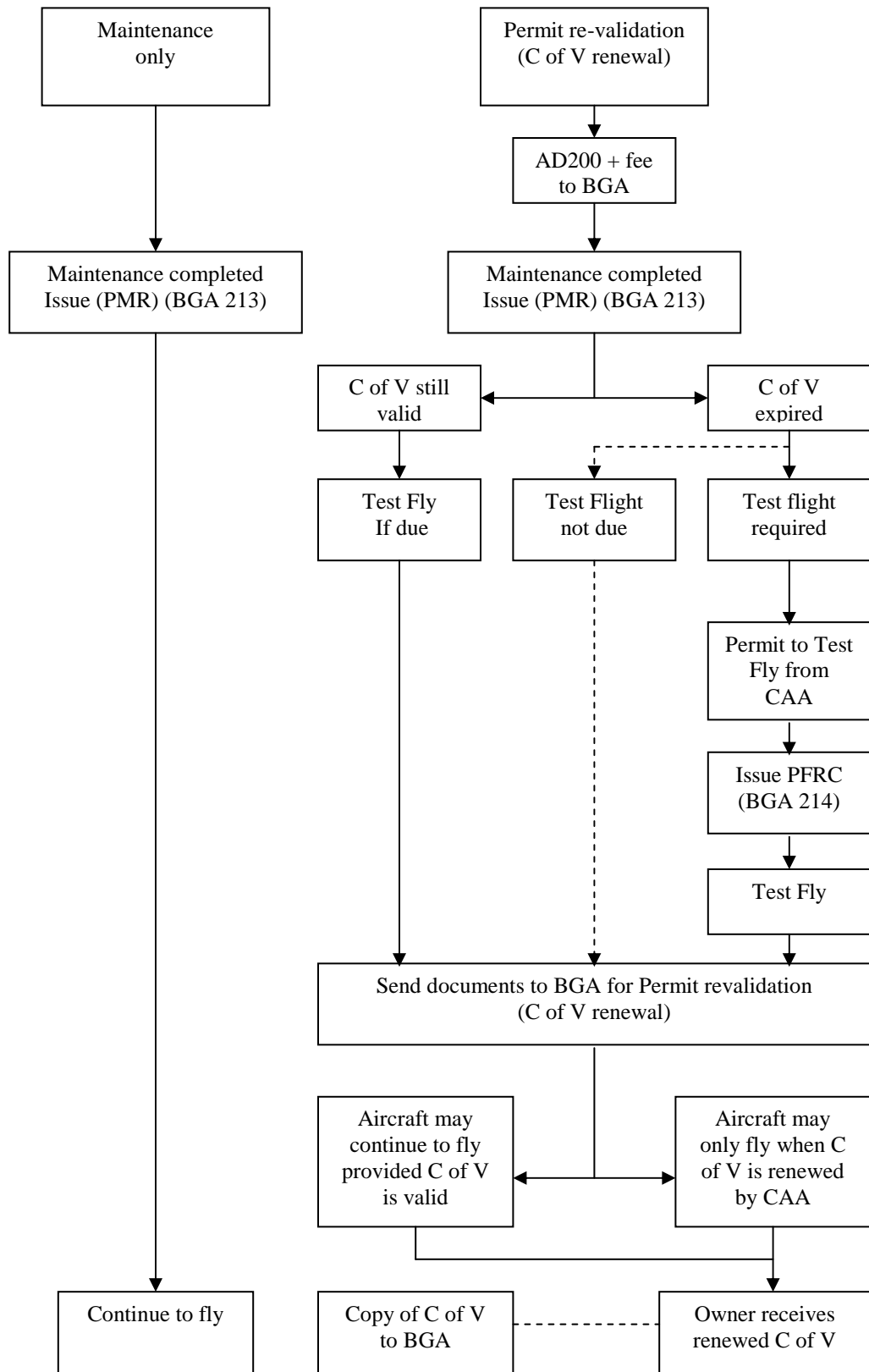
## BGA Procedures for CAA C of A Renewal – Flow Chart

This procedure is applicable to Motor Gliders and Tugs using the BGA M3 company approval.



# [DFMS](#) not applicable to aircraft with C of A with conditions.

**BGA Procedures for CAA Permit to Fly Revalidation and Maintenance Certification**  
**Flow Chart**



# BGA AIRWORTHINESS AND MAINTENANCE PROCEDURES

## PART 2, LEAFLET 2-6

### APPLICATION FOR BGA M3 MAINTENANCE APPROVAL

#### INTRODUCTION

1. A Gliding Club or Maintenance workshop may apply for extension of the BGA M3 approval, CAA reference no; DAI/8378/73 to their maintenance facility. There are two levels of approval, firstly for Motor Glider C of A renewals and secondly for Tug C of A renewals. The latter category excludes all other general aviation and is only applicable for BGA glider tugs.

**M3 approval is NOT required for any glider, sailplane or self sustainer sailplane maintenance with a BGA C of A.**

#### APPLICATION FOR M3 APPROVAL

2. Initial application should be made to the BGA requesting an M3 information pack. The pack will contain the application form and audit/check list, some useful information and guidance. An outline of the requirements is to be found in AMP Part 2, Leaflet 2-2.

3. For the grant of M3 approval the organisation will be required to appoint some or all of the following personnel:

- A) Chief Engineer
- B) Motor glider inspectors
- C) Tug Manager (Gliding Clubs with Tug M3 only)
- D) Licensed Aircraft Engineers (Tug M3)
- E) BGA Tug inspectors (Tug M3)

The above personnel will probably already be in place in the majority of clubs seeking M3 approval. The candidates should be advised of the additional responsibilities associated with M3 approval.

4. Application is made by completing form BGA 253 for motor glider maintenance and BGA 254 for Tug maintenance. Following completion of the application form, arrangements should be made with the CTO for a visit where an audit will be carried out using BGA 255 audit report. This form is included in the information pack for your information. Additionally the CTO will carry out an audit of a selection of "G" registered aircraft that are to be associated with the BGA M3.

5. Successful applicants will be advised and their details added to the BGA Exposition and forwarded to the CAA.

6. The CAA, as part of their statutory duties, advises applicants that they are liable for audit.

7. There are no fees to the applicant for BGA M3 approval. The BGA retains a proportion of the C of A fee to finance the M3 approval. However in the interests of fair play, the BGA reserves the right to review this policy should, in the view of the BGA Executive, a particular site is requiring a greater level of supervision or visits. The applicant will be advised if this is the case.

**BGA AIRWORTHINESS AND MAINTENANCE PROCEDURES**

**PART 2, LEAFLET 2-7**

**MODIFICATION PROCEDURE FOR MOTOR GLIDERS AND TUGS**

**INTRODUCTION**

All modifications to EASA aircraft are required to be approved by EASA.

Refer to the EASA web site for details.

# **BGA AIRWORTHINESS AND MAINTENANCE PROCEDURES**

## **PART 2, LEAFLET 2-8**

### **COMPILATION OF CAA LOG BOOKS**

#### **INTRODUCTION**

1. All CAA (G-reg) Motor gliders and Tugs are required to have approved Log Books detailing aircraft information, flights, maintenance, inspections, modifications and compliance with mandatory directives. The CAA supplies suitable Log Books, each of which has an "Instructions for use" section. However descriptive information is also contained, in an easier to use format, CAP520 "Light Aircraft Maintenance". The aim of this leaflet is to provide readily available guidance on how these Log Books are to be compiled to ensure the proper control of continued airworthiness. Further guidance on the compilation of Log Books is contained in Civil Aircraft Airworthiness and Inspection Procedures, Leaflet 1-5.

#### **AIRFRAME LOG BOOK**

2. The CAA Airframe Log Book is CAP398 and it has a Blue cover. The following information applies to Part A - White Pages - of the Log Book. See below for details of how to compile the coloured pages. The numbers apply to the column number on the page of the Log Book.

1. **Date**. Details of flights that day.
2. **No of Flights**. Unless your operation requires it or your airframe is flight cycle limited, it is not necessary to record the number of flights.
3. **Flight time**. Record the total for the day.\*
4. **Total since Manufacture**. This is the cumulative total airframe time.\*  
  
\*The time may be recorded in Hours and minutes or Hours and decimal points ie 2h 45m or 2h 75 depending on how you calculate flight time. If you adopt decimal you must make a statement at the start of using decimals in column 6 (Decimal Hours) and vice-versa if you go back to hours and minutes.
5. **Engine cycles**. Only required if your engine TBO is cycle controlled.
6. **Particulars of maintenance and other work**. You should record maintenance checks and maintenance schedule (*LAMS/A/1999/BGA issue 2*). A record of any mandatory inspections, modifications etc. Record serial numbers of components taken off and put on, and the release number of parts used; the latter may be contained in a file provided a reference is made. Part or all of the entry could be made with a stamp if preferred. In addition, any "Pilot Maintenance" should be certified in this section.
7. **Signature, Authority, Date**. You should sign this section and enter your BGA Authorisation number and BGA Approval number (DAI/8378/73) or CAA licence number if appropriate. You may stamp your Authorisation number provided it is legible but not your signature. The date is the date of completion of the maintenance activity and release to service. The signature constitutes a legal statement and is a

"Certificate of Release to Service". "Pilot maintenance" should not be certified in this section. (See leaflet 2-1 in this manual).

### **ENGINE LOG BOOKS**

3. The CAA Engine Log Book is CAP 399 and it has a Grey cover. The following information applies to Part A - White Pages - of the Log Book. See below how to compile the coloured pages. The numbers apply to the column number on the page of the Log Book.

1. **Date**. The entries in the engine log book may be grouped into blocks of a maximum of one week. If a maintenance check is performed, a block must end at that point.
2. **Time run since New or Complete overhaul**. The critical words here are NEW or COMPLETE OVERHAUL which mean ZERO houred. This is used for the engine TBO.\*  
If a separate method of recording engine hours is available (Thaco counter or Hobbs meter) actual engine operating hours may be recorded for check cycle and TBO. In this case the Airframe and Engine hours may run out of sequence, and say, a 50 hour Airframe check will be due before the 50 hour Engine check. The check cycle must be realigned at the Annual inspection.
3. **Time run since Top overhaul**. This means the cylinders and heads have been OVERHAULED or NEW fitted. It does not mean repaired.\*  
  
\*As with the airframe log book you can use decimal hours.
4. **Cycles run**. Again this need only be completed if your engine's TBO is cycle controlled.
5. **Particulars of maintenance**. A similar entry to the airframe logbook but you should also add after the schedule ref. The cylinder compression test results if required for the particular check. As with airframe log book "Pilot maintenance" should be certified in this section.
6. As per airframe log book.

### **VARIABLE PITCH PROPELLER LOG BOOK**

4. The CAA Variable Pitch Propeller Log Book is CAP 400 and it has a Yellow cover. The entries are similar to the engine logbook, but it is not necessary to run a separate log book unless you have a constant speed propeller. For Motor Gliders only - You can run the details in the engine logbook provided you remember to transfer the details when you have an engine overhaul;. On tugs the propeller should be run in the airframe logbook as you are unlikely to fly the aircraft without the propeller operating.

### **INFORMATION COMMON TO ALL LOG BOOKS**

5. **Part B - Green Pages**. Enter details of check ie 50 hr/6mth, 150 hr, Annual, Star. Date certified, hours from new or zero hour overhaul in the case of an engine or propeller.
6. **Part C - Pink Pages**. First is a section to enter mandatory requirements not applicable to the aircraft, Engine or propeller. This is to assist conducting mandatory searches in the future. By column number, the date required is:

1. **Modifications, SBs & ADs.** Enter the AD number ie *FAA2005-00-00* or *D-2005-001* in the mandatory section and Service bulletin number in the Non-mandatory section.
2. **Subject** ie *Fuel selector*.
3. **Date & Hrs at Compliance.** Date and hours the certification was made taken from Part A of the log book.
4. **Method of compliance.** As required in the instructions ie *Inspection. Part 1 only or modified.*
5. **One time.** Tick if the action performed completes the AD or SB and no further inspections or actions are required.
6. **Recurring.** Tick if any further action is required or it is a repetitive inspection.
7. **Next compliance due.** If you ticked column 6 then you have to enter the date and airframe or engine hours the inspection or action is next due.
8. **Signature.** This has to be signed with your approval or licence number and date. It is not however a certification. This is included in part A of the logbook.

### **TIME LIMITED TASK AND COMPONENT CHANGE RECORD**

7. The CAA Time Limited Task and Component Change record is CAP543 and it has a Blue cover. This document is essential for aircraft maintained to the CAA's Approved Maintenance Schedule CAA/LAMS/A 1999. The document is used to control the accomplishment of scheduled time-limited tasks and component changes. It can partly be used to replace the logbook Part C pink pages. If items are transferred to this document a reference should be made in part C of the logbook.

### **CORRECTIONS OF LOG BOOK ENTRIES**

7. Any errors should be drawn through with a single line (red if possible) initialled and dated. Corrector fluid (Tipp-ex) must not be used. There is no problem with errors provided they are corrected. If a flight time error occurs over a long period a correcting entry is required at the date it was found, duly certified. Do not correct all the previous entries.

### **ANNEXES:**

- A. Sample of completed Airframe log book
- B. Sample of completed Engine log book

Date 1	No. of Flight s 2	Flight Time 3		Total Since Manufacture 4		Engine Cycles 5	The work recorded below has been carried out in accordance with the requirements of the Air Navigation Order for the time being in force and in that respect the aircraft / equipment is considered fit for release to service.	
		h	m	h	m		Particulars of Maintenance and Other Work Carried Out on the Aircraft 6	Signature Authority Date 7
Total bf.								
12/6/01	4	2	30	1234	30			
13/6/01	1	1	15	1235	45			
15/6/01	6	4	00	1239	45			
16/6/01	4	3	10	1232	55			
17/6/01	6	2	30	1235	25			
18/6/01				1245	25		Error in addition 16/6/01 J. Smith 12345	
18/6/02	5	2	35	1248	00			
21/6/02	3	1	25	1249	25		50 hour check carried out in accordance with LAMS/A/1999 issue 1. AD 77-01-01, 79-02-02 complied with. Details on file ref AA/220602	J Smith 12345 22/6/02
Total cf.								

**Example**

CAP 398 Airframe Log book CAA/EASA C of A aircraft

Note; error in addition correction

Date 1	Time run Since New or Complete Overhaul 2		Time Run Since Top Overhaul 3		Cycles run Since New or Complete Overhaul 4	The work recorded below has been carried out in accordance with the requirements of the Air Navigation Order for the time being in force and in that respect the aircraft / equipment is considered fit for release to service. Particulars of Maintenance and Other Work Carried Out on the Engine 5	Signature Authority Date 6
	h	m	h	m			
Total bf.							
15/4/99	1234	10	100	10			
16/4/99	1234	25	100	25			
18/4/99	1236	00	102	00		150 hour check carried out in accordance with LAMS/A/1999 issue 1. Details on file	
20/4/99	1236	55	103	55		04/AA/99	J Smith 12459 19/4/99
Total cf.							

**Example**

CAP 399 Engine Log book CAA/EASA C of A aircraft

# **BGA AIRWORTHINESS AND MAINTENANCE PROCEDURES**

## **PART 2, LEAFLET 2-9**

### **INITIAL MOTOR GLIDER OR TUG APPLICATION FOR A CAA or EASA CERTIFICATE OF AIRWORTHINESS**

#### **INTRODUCTION**

1. In a change to previous practice the Civil Aviation Authority (CAA) have decided that from April 2001 that they will, in common with all General Aviation, process all new applications for Certificates of Airworthiness themselves in order to have “first sight” of all aircraft new the British register.
2. The BGA is now not normally involved with initial issue of EASA C of A’s.
3. The CAA will accept certifications made by an appropriately rated BGA inspector (MG) however the application should be from a BGA Chief Engineer at a BGA M3 facility. A commercial M3 may be used if desired provided the appropriate licence cover is available.
4. The procedure detailed below to assist prospective owners and inspectors with the application for an initial C of A for a Motor Glider.

#### **INITIAL APPLICATION – SERIES PRODUCTION AIRCRAFT** (new or used)

- a) Check that the aircraft type and variant is listed with the CAA or is an approved EASA type and that it will be a ‘SERIES’ C of A issue. The CAA Applications and Certifications section will be able to confirm this. If the aircraft is not a ‘series’ then follow this procedure and additional requirements for Prototype or Series Variant or Series Modified aircraft. A copy of the AAN (Airworthiness Approval Note) will be required to check the aircraft against and confirm status as above. Copies of AAN’s are available either from the BGA or the CAA.
- b) The aircraft must be registered with the CAA (Aircraft Registrations Section, CAA House, 45-59 Kingsway, London. WC2B 6TE. 020 7453 6666. See A/W notice 29) It is possible to reserve a registration number before actually registering it, this allows the documentation to be identified and the aircraft painted. The aircraft must be registered in the UK before flying with CAA permission; this includes ferry permits and fitness for flight certificates. For a used aircraft it would probably save expense if after obtaining an Export C of A, the aircraft was flown to the UK on the exporting country’s registration and de-registered on arrival in the UK. Or trailer the aircraft to the UK.
- c) Apply to register the aircraft using CAA form CA1 and send to the above address with the appropriate fee. A certificate or evidence of De-registration or Non-registration will be required to complete the registration. Please do not de-register the aircraft too early as the Export C of A (referred to later) can only be issued while the aircraft is registered in a foreign country but must not be more than 60 days old at time of UK CAA C of A application.
- d) An identification plate will be required to be fitted in the aircraft. This should be an engraved Stainless Steel plate approximately 3” x 2”, with the aircraft registration letters G-XXXX
- e) Application for the C of A should be made on form CA3 and sent to the Civil Aviation Authority, SRG, Applications & Certifications Section, Aviation House, Gatwick Airport

South, West Sussex. RH6 0YR. 01293 768374. With the appropriate fee. (see official record series 5 on the CAA web site)

- f) The CA3 form will require detailed information about the aircraft, history and equipment installed. This should be accompanied by the Export C of A (Copy) or EASA form 52 Statement of Conformity and a copy of the weight and balance schedule if available at the time. If not available these will be required before the C of A is issued.  
A Flight manual in English will be required.

If a ferry C of A or permit is required this will be issued on the strength of the Export C of A and application on form CA3, however if the aircraft is used, the CAA may require the aircraft to be inspected by a CAA surveyor prior to issuing. You should negotiate with the CAA, Applications and Certifications Section at Gatwick

- g) After an initial survey of the documentation a CAA surveyor will be appointed from the regional CAA office and arrangements will be made to survey the aircraft. You will receive notification and a FMAS flight manual status report and a request form for any CAA issued supplements or change sheets. You should check the flight manual against this report and request any required items. Manual revisions will have to be obtained from the aircraft manufacturer.
- h) When the aircraft is ready for issue of the C of A, that is, any maintenance is completed to LAMS/A/1999/ (used aircraft usually will require a star/annual inspection), a full inspection of the aircraft has been completed and any defects rectified. The aircraft has been reweighed, a new weight and balance schedule raised and the compass has been checked swung for used aircraft and for new aircraft if the items have not been completed by the manufacturer. The log books and CAP 543 Time limited task record completed fully.

Contact the CAA regional office as notified to you and arrange for the aircraft to be surveyed.

The CAA Surveyor will inspect the aircraft, records and documentation and if satisfied issue the C of A or advise on what action is required to be taken. The surveyor will also check the flight manual against the FMAS report.

Compliance with any UK additional requirements will have to be shown i.e GR6 (AN88) if applicable (not required for VFR SLMG). Also full compliance statement with all mandatory inspections and modifications and Generic requirements. New logbooks will have to be completed with the aircraft & flight data, mandatory and non-mandatory inspections as applicable. (Airframe CAP 398, Engine CAP 399, Propeller CAP 400, Time limited task record CAP 543 and LAMS CAP 411. A special purpose binder is available 1¼" or 2" sizes. All available from TSO)

- i) If you intend to purchase an aircraft that is damaged or in a non airworthy condition it is highly recommended that you contact the CAA, Applications and Certifications section, prior to making any commitments. There may be special requirements to meet or it may not be possible to issue a C of A at all.

### **PROTOTYPE, VARIANT OR SERIES MODIFIED AIRCRAFT**

- j) If the aircraft does not comply as a series type, as defined in the AAN, then depending on the difference application on the CA3 will be for a Prototype, Series Variant or Series Modified. The notes on the CA3 will give guidance.

- k) Generally the CAA will require some additional fees for other than a series aircraft. You will be advised at the time.
- l) Normally four additional copies of the flight manual will be required by the CAA for their retention. A copy of the Type Certificate Data Sheet will also be required.
- m) As a general guide:
  - Prototype – Aircraft type not on UK or other EU register.
  - Series Variant – Aircraft type is on UK or other EU register but as a different model.
  - Series Modified – Aircraft on UK or other EU register but with a different engine or propeller but retaining the same model designation.

Each type will need a TCDS (Type Certificate Data Sheet) and a Type Certificate showing the type or changes and certification to CS 22 or other recognised design code. The CAA fees will depend on the amount of investigation required and the services of an approved design company may be required.

A new or revised AAN will be required.

Note: Only the “Owner” of an AAN can apply to have it changed or varied or agree to pay the costs. The “Owner” is the person who paid the fees for the AAN.

### **RADIO INSTALLATIONS**

- n) If the aircraft has a radio or other avionics installed at the time of first registration and C of A this will normally be included in the application. If other equipment is installed after the C of A is issued then a modification will be required.
- o) A radio licence will also be required issued by the Telecommunications Agency.

### **CHECK LIST OF REQUIRED DOCUMENTS**

Document	Completed	Notes
Export C of A or EASA form 52		
Certificate of Non or De Registration		Required for registration
Flight manual (in English)		
CAA Airworthiness Approval Note (AAN) or EU Type Certificate Data Sheet		
Previous log books		
Previous maintenance records		
CAA Registration form		CA 1
CAA C of A application form		CA 3
FMAS Flight manual status report		From CAA
CAA log books, Time limited task record and binder		CAP 398,399,400,543.
LAMS maintenance schedule		CAP 411.
Weight and balance schedule		BGA 211
Modification statement		BGA 203
Maintenance manuals		
Fireproof identification plate		

# **BGA AIRWORTHINESS AND MAINTENANCE PROCEDURES**

## **PART 2, LEAFLET 2-10**

### **MOTOR GLIDER RESTORATION PROJECTS**

#### **INTRODUCTION**

1. Airworthiness Notice No11 sets out the requirements for CAA surveyor involvement for all light aircraft undergoing a long-term or major restoration. Together with the C of A subsequent issue (re-issue) the CAA has agreed that the BGA may carry out the surveys required to comply with Airworthiness Notice 11.

The arrangement does not preclude any motor glider owner inviting the CAA to become directly involved with the restoration project. In such cases application should be made directly to the CAA Applications and Certifications Section, Gatwick and the applicant will be liable for any “Special Survey” fees as charged by the CAA. Tug restoration projects fall outside the scope of the BGA approval and should be referred to the CAA directly.

The BGA has vast experience with gliders and motor gliders certified for use in the UK. The BGA can draw on the expertise of the Technical Committee and staff to advise or give technical assistance if required.

‘Long term restoration’ is defined as a restoration that is expected to take in excess of fifteen months to complete and ‘major restoration’ is defined as where the aircraft is reduced to its component parts or where major structural repair work is required to fuselage or wings.

#### **APPLICATION FOR APPROVAL OF RESTORATION**

2. At an early stage application should be made to the BGA advising of the restoration project. Details will be required outlining the extent of work and time scale envisaged. It is appreciated that some of this information may be subject to extensive revision during the subsequent restoration as in the majority of cases more work and a longer time scale will be needed. Application should be by letter to the Chief Technical Officer and should contain as much detail as possible. The following information will be needed:

- Registration letters
- Aircraft Type and serial number
- Location of aircraft
- Owners details
- Details of when aircraft was last flown
- Expiry of the last (or current) C of A
- Engineers certifying restoration
- Details of planned & expected work (including accident details if restoration is the result of an accident)
- Expected time scale

The CTO will arrange to survey the aircraft and discuss the proposed restoration project with the owner and/or engineers.

If a restoration project is on-going and the procedure as detailed in this leaflet has not been followed then urgent contact with the BGA CTO should be made before any further work is done as it may not be possible to make the recommendation to renew the C of A without some back tracking.

### **REQUIREMENTS**

3. All work carried out must be in accordance with British Civil Airworthiness Requirements. The relevant chapters are detailed in Airworthiness Notice 11. All repair work must be carried out to approved data using the correct materials. Any deviations from the type Type Certificate or CAA Airworthiness Approval Note for the aircraft must be supported by a modification. Minor alterations such as the use of modern synthetic fabric in place of obsolete natural cotton would not be regarded as a deviation provided that the equivalent grade was used.
4. Modifications should be applied for using the current CAA procedure and using the correct form (see AMP 2-7 for modification process)

### **PROCEDURE**

5. Once the restoration project has been inspected and approved by the CTO, the information is retained in the aircraft file held by the BGA. The engineer should make regular contact with the CTO and provide updates as to the progress of the restoration. The CTO will make a judgement as to the level and number of subsequent visits required, however a final visit will be required on completion of the restoration project prior to any flight testing.
6. It should be understood that accurate updates are required to be sent to the CTO giving such detail that a clear assessment can be made as to the level of restoration. Should this not be the case then it is possible that before a recommendation for the C of A to be renewed is made, certain areas may have to be opened up for inspection or in extreme cases the work repeated or modification removed.

### **CERTIFICATION**

7. Major repairs or total restoration certification fall outside the privileges of a BGA 'Ordinary' inspector. The services of a BGA Senior inspector or CAA "B" licensed engineer will be required. Application may be made to the BGA for specific authorisation to certify a particular project.

# **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.

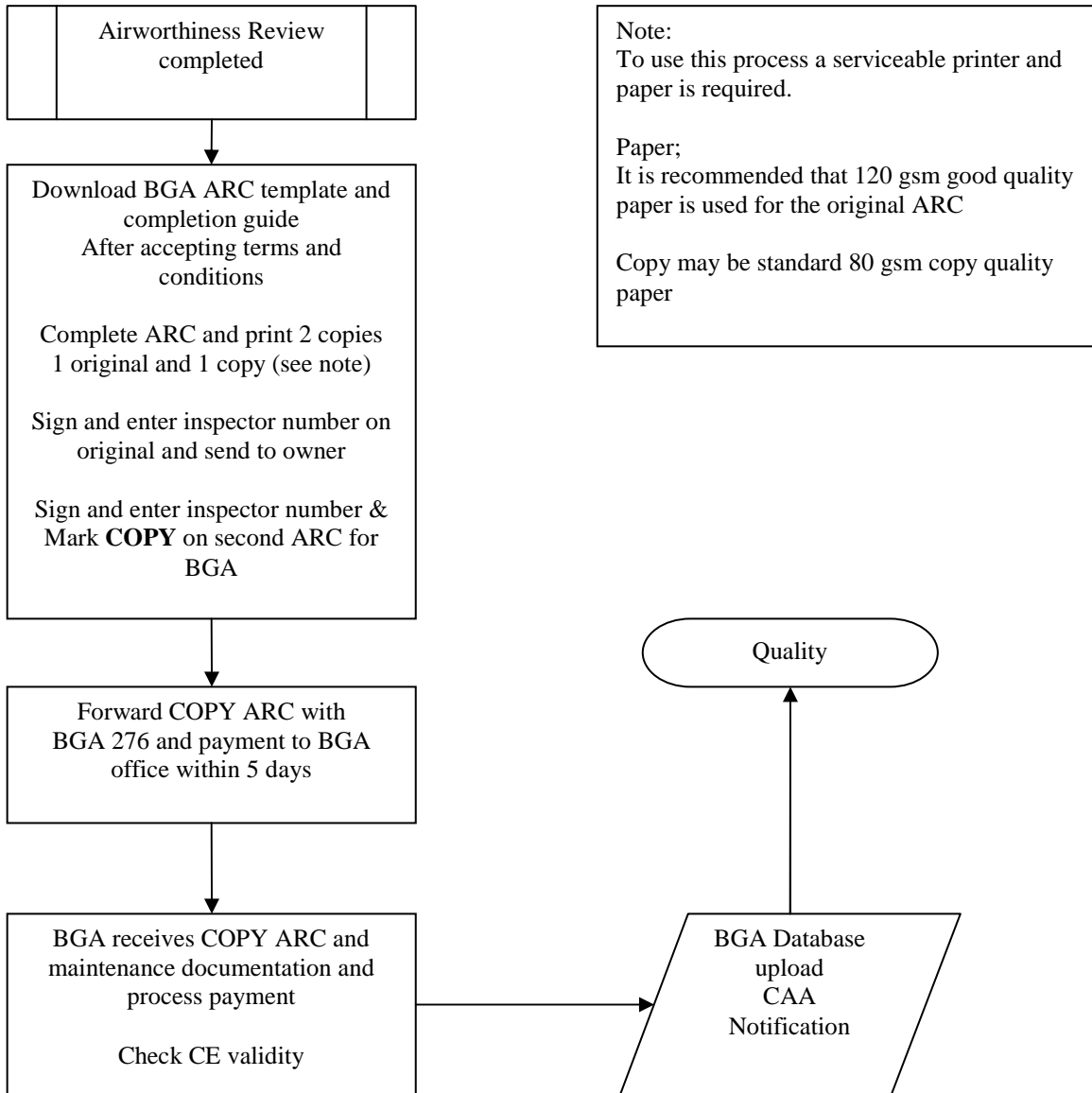
**NOTE 3:** If the ARC issue is more than 90 days anticipation from the expiry of the old ARC, all the anticipation period is lost.

# 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*



# BGA AIRWORTHINESS AND MAINTENANCE PROCEDURES

## PART 2, LEAFLET 13

### COMPLEX MAINTENANCE TASKS

#### DEFINITION AND AUTHORITY TO CARRY OUT COMPLEX TASKS

##### General

##### 1. Definition

Part M (M.A.801) requires that complex tasks are released by a person authorised by a Part M subpart F maintenance Organisation. Only in the case of ELA 1 aircraft where the certification is by a Part 66 Licensed Engineer is a subpart F not required. The BGA inspector authorisation although recognised by the CAA is not equivalent to a Part 66 licence hence subpart F authorisation is required.

Complex tasks are described in Part M Appendix vii, however this description does not lend itself to sailplanes or light aircraft easily. To assist BGA inspectors and owners the BGA has developed the following guidance.

##### 2. Complex airframe tasks.

Identifying what tasks would be considered by EASA or the CAA as complex tasks falling into the Part M Appendix vii category, needs to be accomplished before work is started. The lists below will assist you in categorising the task. Should a task fall into the complex task category application must be made in accordance with section 4 of this leaflet. If the task is identified as "non applicable" then all that is needed is proper recording on worksheets and an entry in the log book.

**The modification, repair or replacement by riveting, bonding, laminating or welding of any of the following airframe parts:**

*The examples in Italics does not constitute a complete list, please use it as a guide to the complexity of the task when making the assessment.*

	"Complex Tasks" Part M Appendix vii - requirement	"Complex Tasks" BGA part/task definition - <i>example</i> <b>Approval required</b>	"Non Complex Tasks" Non applicable parts/task - <i>example</i> <b>Approval not required</b>
A	Box Beam	Fuselage wing carry through structure and wing attachment <i>Replacement or repair of centre section member or frame</i>	Fairings, alignment guides. <i>Repair of secondary tubes or stiffening bulkheads not carrying primary structure</i>
B	Wing stringer or chord member	Wing stringer that has structural loads or supporting flying controls. <i>Composite or monocoque construction wing repair greater than 15cm in any direction before scarfing</i>	Stringers and formers that are used for carrying fabric or skin. <i>Small non primary structure repairs.</i>
C	Spar	Wing main spar, rear spar, auxiliary spar. <i>Broken or damaged spar repairs. Repair of spar web.</i>	False spar, trailing edge. Spar repairs on wooden structure wings that do not require the use of an alignment fixture or jig.

			<i>Minor spar repairs outboard of the aileron cut out</i>
D	Spar flange	Spar upper or lower flange or attachment or location. <i>Repair of spar joint or spigot</i>	<i>Spar flange repairs outboard of the aileron cut out</i>
E	Member of a truss type beam	Framework and supporting structure. <i>Repair of wing support, landing gear support, empennage support, engine support structures.</i>	Member used to support fabric, or fairings. <i>Repair of cowling or fairing supports.</i>
F	Web of a beam	Web of a spar or rib that is primary structure. <i>Repair of a tail plane mounting rib. Repair of a spar extension</i>	Minor reinforcements. <i>Aileron cut out reinforcement repair</i>
G	Keel or chine of a flying boat hull or float	Not applicable	
H	Corrugated sheet compression member in a wing or tail surface	Not applicable	
I	Main wing rib	Ribs used to support flying controls or attachment points. <i>Composite or monocoque construction wing repair more than 15 cm in any direction or involving a structural member</i>	Ribs used to support fabric, skin or profile. <i>Repair of a wooden wing rib. Repair of a GRP end rib not used for wing location</i>
J	Wing or tail brace strut	Brace strut or wire <i>Replacement of load bearing end fitting</i>	Fairings and attachment brackets not forming main load path <i>Replacement of cable guide or fairing bracket</i>
K	Engine mount	Mount, pylon, brace struts, attachment points, extension structure, pivot points. <i>Repair of pylon</i>	Accessory and fairing mountings <i>Repair of exhaust or ancillary equipment mounting</i>
L	Fuselage longeron or frame	Main longeron, keel tube. Composite or monocoque construction repair more than 15 cm in any direction or involving a structural member <i>Major fuselage repair</i>	Longeron, fabric or skin supports. Secondary non primary structure. <i>Repair to fuselage secondary tube. Minor fuselage GRP repair</i>
M	Member of a side truss, horizontal truss or bulkhead	Load carrying bulkhead or frame <i>Fuselage stiffening bulkhead repair</i>	Non load bearing formers. <i>Repair of non primary structural bulkheads and equipment shelves. Repair of instrument panels.</i>
N	Seat support brace or bracket	Main seat fixings, harness attachments. <i>Repair of seat harness attachment mounting points</i>	Seat pan or back support, fairings or panels, secondary seat backs/bases <i>Repair of seat harness guide and location attachments</i>
O	Seat rail replacement	Seat attachment rails <i>Repair of seat attachment rails</i>	Seat base or back locations. <i>Repair of peg location holes or adjustment slots</i>
P	Landing gear strut or brace strut	Frame and mounting structure. <i>Repair of landing gear load bearing mounting.</i>	Door or brake attachment, fairing attachments. <i>Repair of u/c doors and hinges.</i>
Q	Axle	Main wheel, nose/tail wheel axle <i>Weld repair of main wheel axle.</i>	Wing tip wheels <i>Repair of wing tip wheel axle location points</i>

R	Wheel	Main wheel, nose/tail wheel <i>Weld repair of a wheel</i>	Wing tip wheels <i>Any repairs</i>
S	Ski or ski pedestal	Not applicable	

The modification or repair of any of the following parts

	Appendix vii	BGA part/task definition	Non applicable parts/task
A	Aircraft skin or the skin of a float if the work requires the use of a support, jig or fixture	Any work that requires the use of a alignment jig or fixture, broken wings, broken fuselage, broken tail plane. <i>Major structural repairs on fabric/wooden skin aircraft involving the use of a alignment jig or fixture.</i> <i>Repair of control surfaces where mass balancing is required</i>	Repair work to aircraft skin or frame that does not require alignment of the aircraft. <i>Non primary structure repairs.</i> <i>Minor repairs to the skin or trailing edge of a control surface where mass balancing is not required.</i>
B	Aircraft skin that is subject to pressurisation loads	Not applicable	
C	Load bearing part of a control system including control column. Pedal, shaft, quadrant, bell crank, torque tube, control horn and forged or cast brackets, but excluding (i) the swaging of a repair splice or cable fitting (ii) the replacement of a push-pull tube end fitting that is attached by riveting	Including control system mountings and moving parts. <i>Primary control system repairs</i>	<i>Repair of control cables.</i> <i>Replacement of control rod fittings by riveting or bolting.</i> <i>Secondary control system repairs</i>
D	Any other structure not listed above that the manufacturer has identified as primary structure in its maintenance manual, structural repair manual or instructions for continued airworthiness	As identified in the manufacturers manuals or Technical Notes (SB) or Airworthiness Directives Any repairs identified by the manufacturer as a Major repair.	Any repair identified as a minor repair by the manufacturer and not listed above
E	BGA additional requirements applicable to EASA aircraft as the requirements do not consider GRP/FRP composite structures.	<i>Substantial repair or re-gelling/re finishing of a GRP/FRP aircraft, fuselage, wing or tail plane where the old gel or surface finish is to be substantially or completely removed on inner/lower 2/3 of a aerofoil/stabiliser section or fuselage between the wing and tail intersections.</i> <i>Lower fuselage repairs involving significant structural damage</i>  <i>In case of doubt please contact the BGA QM or CTO for guidance.</i>	<i>Refinishing not requiring the removal of all the old gel or surface finish.</i> <i>A wing minor repair or re-gel outboard of the aileron cut out.</i> <i>Fin or tail plane minor repair or re-gel on outer/upper 1/3.</i>  <i>Fuselage minor repair or refinish forward of the wing or aft/ below the fin intersections or in the lower fuselage section (wheels up landing type damage, tail or nose wheel heavy landing damage without significant structural damage and not adjacent to a structural intersection)</i>

Notes;

- (1) The above tasks are identified by EASA as Complex Tasks and apply to the actions identified at the start of the lists i.e. riveting, bonding, laminating or welding. It does not include replacement by normal processes such as bolting, disassembly where complex task approval would not be required.
- (2) The task list above assumes that the certifier holds the appropriate BGA authorisation i.e. CR, WR, MR, SS, MG or a part 66 licence and where appropriate BGA Senior Inspector authorisation
- (3) Some tasks above will require a duplicate or second inspection where it involves an item of sensitive maintenance, control system, critical bolted joint e.g. engine mount, landing gear mount, wing attachment (if not designed for disassembly after flight)
- (4) If a repair is determined as not needing authorisation but subsequently develops into a task identified above, the work must be halted until authorisation is gained.
- (5) Authorisation to carry out the repair does not substitute the requirement for an approved repair scheme published in the maintenance or repair manual, generic repair manual if specified by the aircraft type certificate holder as approved data, or DOA approved repair scheme.

### 3. **Authority to carry out complex tasks**

There are two ways to be issued with authorisation to carry out complex tasks

- List 1 Approved Complex Maintenance sites  
Inclusion in the BGA Airworthiness Exposition under "List 1". "Approval to carry out complex tasks"  
This is designed for professional maintainers who carry out complex tasks routinely on a regular basis. The approval involves a formal application process and CAA audit and oversight. For details of how to apply and costs please contact the BGA.
- List 2 maintenance sites (un-listed)  
BGA Internal application process. This is designed for all other than List 1 site inspectors who wish to carry out complex tasks but on an ad-hoc basis probably only a few occasions each year. The application process and requirements are described below. These inspectors will be under BGA Quality Group oversight.

Inspectors in List 2 who carry out a greater number of complex tasks may be asked to apply for List 1 approval.

If you are not list 1 then you are automatically included in list 2. The only exception is where you hold an EASA company approval to carry out complex maintenance tasks e.g. Part 145 with the aircraft type within your scope of approval.

Senior Inspectors

If a task involves a substantial major repair probably involving juggling or alignment of the aircraft fuselage, wing, tail plane or powerplant, a BGA Senior Inspector is required to certify these tasks. Authority to carry out a complex task does not in itself grant senior inspector privileges.

### 4. **Application to carry out complex tasks**

Application for list 2 BGA inspectors is on application form BGA 277.

5. BGA 277 will require the aircraft details, the description of the work, name of certifying inspector and location

6. To carry out the work you will be required to provide a description of the facilities including any special environmental requirements such as heat, dust extraction, humidity control etc. that will be available for the repair/work
7. You will also be required to describe the equipment, tools and data to support the work including modification instructions, repair manuals, specific repair schemes as applicable.
8. The application should be sent to the BGA office where it will be forwarded to a member of the technical team or quality manager who will assess the application and approve. The approval process may require a visit prior to the work starting and/or during work in progress or at the completion, applicants will be advised.
9. There will be a fee structure for authority to carry out complex tasks and will depend on the degree of oversight required. Details will be published in the BGA Fees and Charges on the BGA web site or by contacting the BGA office.
10. Some approvals will require a initial visit and sometimes subsequent visits depending on the complexity of the task or the individual inspectors experience, details of the requirement will be advised by returning the BGA 277 as authority to start work or as otherwise indicated.
11. Example BGA 277 below.



# British Gliding Association

## Complex Maintenance Application

This form is used for BGA inspectors at non approved maintenance sites (List 2) to apply for specific authorisation to carry out complex maintenance tasks on aircraft under BGA maintenance control.

ELA 1 aircraft; Sailplanes, Self Sustaining Sailplanes, Powered Sailplanes and Motor gliders.

For a definition of complex tasks and how to apply for approval see AMP 2-13.

BGA Number <b>9999</b>	Registration <b>G-ABCD</b>	Make & Type <b>SCHLEICHER ASK 21</b>
Serial/works number <b>21-0000</b>	Description of work (title) <b>REPAIR DAMAGED FUSELAGE</b>	
Location where work is to be accomplished <b>THE GLIDING CLUB, ANY TOWN.</b>		
Name of certifying BGA inspector <b>J SMITH</b>	Inspector number <b>I/A/9999</b>	Contact telephone number <b>01234 567890</b>
Date work is due to be started <b>01/04/2009</b>	Expected completion date <b>01/06/2009</b>	Work or Repair scheme approval reference <b>SCHLEICHER 21/0001</b>
Details of the work <b>Fuselage damaged 300 mm aft of wing, hole made by ground vehicle approx 200 mm dia. Double skin insertion repair to be carried out. Jigging not required.</b>		
Description of facility <b>Heated workshop with dust extraction. Heating by thermostatically controlled radiators and heat lamps and recording equipment available for post cure. Repair cloth stored in humidity controlled heated cabinet, resin stored in dark cool cupboard.</b>		
Description of equipment, tools & data to support work <b>Sanding equipment, vacuum forming equipment, temperature monitoring and recording. Resin mixing scales. Normal hand tools. Dust masks and personal protective equipment. Repair in accordance with Schleicher repair manual and TN 01-1999.</b>		

### Quality requirements

Approval (BGA USE)		
Work plan approved no visits required <input checked="" type="checkbox"/> Initial visit required <input type="checkbox"/> follow up visits required <input type="checkbox"/>		
Initial visit Date	Name	Comments
Approval to start work Date <b>04/04/2009</b>	Name <b>A Other</b>	Signed
1st Follow up visit Date	Name	Comments
2nd Follow up visit Date	Name	Comments