BHUTAN CIVIL AVIATION REQUIREMENTS

BCAR-M

Continuing Airworthiness Requirements

Issue 02, Revision 01
31 December 2022

Foreword

The South Asian Regional Initiative (SARI) has developed harmonized regulation SARI Part M for 'Continuing Airworthiness Requirements' to be adopted by its Member States.

Bhutan Civil Aviation Authority (BCAA) has published this regulation as BCAR-M 'Continuing Airworthiness Requirements'.

This amendment supersedes the existing BCAR-M 'Continuing Airworthiness Requirements' Issue 02, Revision 00 dated 01 March 2021.

Future amendments to BCAR-M will be in accordance with the Notice of Proposed Amendment (NPA) issued by the SARI. This procedure will allow for the amendment of SARI Part-M to be proposed by the Civil Aviation Authority of any of the SARI Member States and will, also, include provision for changes to be made with amendments to ICAO SARPS and EASA Part-M.

New, amended and corrected text will be enclosed with a vertical line on the left hand side of the page until a subsequent 'amendment' is issued. However, correction of typographical mistakes and reformat of paragraphs are however not indicated.

'Acceptable Means of Compliance' (AMC) illustrate a means, or several alternative means, but not necessarily the possible means by which a requirements can be met.

'Guidance Material' (GM) helps to illustrate the meaning of a requirement.

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List of Amendments

Issue/Revision	Issue Date	Remark
Initial Issue	January 2010	Initial Issue
Issue 01, Rev 01	August 2014	Minor
Issue 01, Rev 02	January 2019	Minor
Issue 02, Rev 00	01 March 2021	Major
Issue 02, Rev 01	31 December 2022	Minor

List of Effective Page

Section	Page	Issue/Revision	Date
Foreword	I	02/00	31 December 2022
List of amendment	II	02/00	31 December 2022
List of Effective Pages	III	02/00	31 December 2022
Table of contents	IV - IX	02/00	01 March 2021
Section A – Technical Requirements	1	02/00	01 March 2021
	2	02/01	31 December 2022
	3-22	02/00	01 March 2021
	23	02/01	31 December 2022
	24-106	02/00	01 March 2021
	107-109	02/01	31 December 2022
	110-126	02/00	01 March 2021
	127-128	02/01	31 December 2022
	129-147	02/00	01 March 2021
Section B – Procedure of BCAA	148-149	02/00	01 March 2021
Appendices to the Technical Requirements	150-195	02/00	01 March 2021
Appendices to AMCs	196-266	02/00	01 March 2021
	267-273	02/01	31 December 2022

Table of Contents

Section A – Technical Requirements

Subpart A General

BCAR-M.A.100 Definitions

Within the scope of this regulation, the following definitions shall apply:

a) "aircraft" means any machine that can derive support in the atmosphere from the reactions of the air other than reactions of the air against the earth's surface;

b) "certifying staff" means personnel responsible for the release of an aircraft or a component after maintenance;

c) "component" means any engine, propeller, part or appliance;

d) "continuing airworthiness" means all of the processes ensuring that, at any time in its operating life, the aircraft complies with the airworthiness requirements in force and is in a condition for safe operation;

e) "JAA" means "Joint Aviation Authorities";

f) "JAR" means "Joint Aviation Requirements";

g) "large aircraft" means an aircraft, classified as an aeroplane with a maximum take-off mass of more than 5700 kg (12500 lb), or a multi-engined helicopter;

h) “Large aeroplane” means an aeroplane of more than 5700 kg maximum certificated take-off weight. The category “Large aeroplane” does not include the commuter aeroplane category.

i) “Commuter aeroplane” means a propeller-driven twin-engine aeroplane that has a seating configuration, excluding the pilot seat(s) or 19 or fewer and a maximum certificated weight of 8618 kg (19000 lb) or less.

j) "Maintenance" means any one or combination of overhaul, repair, inspection, replacement, modification or defect rectification of an aircraft or component, with the exception of pre-flight inspection;

k) "Organisation" means a natural person, a legal person or part of a legal person. Such an organisation may be established at more than one location within the territory of the Member State;

l) "Pre-flight inspection" means the inspection carried out before flight to ensure that the aircraft is fit for the intended flight.

m) “LA1 aircraft” means the following Light Aircraft:

   a. an aeroplane, sailplane or powered sailplane with a Maximum Take-off Mass (MTOM) less than 1000 kg that is not classified as complex motor-powered aircraft;

   b. a balloon with a maximum design lifting gas or hot air volume of not more than 3400 m^3 for hot-air balloons, 1050 m^3 for gas balloons, 300 m^3 for tethered gas balloons;

c. an airship designed for not more than two occupants and a maximum design lifting gas or hot-air volume of not more than 2500 m^3 for hot-air airships and 1000 m^3 for gas airships;

n) "LSA aircraft" means a light sport aeroplane which has all of the following characteristics:

a. a Maximum Take-off Mass (MTOM) of not more than 600 kg;

b. a maximum stalling speed in the landing configuration (VS0) of not more than 45 knots Calibrated Airspeed (CAS) at the aircraft's maximum certificated take-off mass and most critical centre of gravity;

c. a maximum seating capacity of no more than two persons, including the pilot;

d. a single, non-turbine engine fitted with a propeller;

e. a non-pressurised cabin;

o) "principal place of business" means the head office or the registered office of the undertaking within which the principal financial functions and operational control of the activities referred to in this regulation are exercised.

p) "complex motor power aircraft" means:

(i) An aeroplane:

- with a maximum certificated take-off mass exceeding 5700 kg, or
- certificated for a maximum passenger seating configuration of more than nineteen, or
- certificated for operation with a minimum crew of at least two pilots, or
- equipped with (a) turbojet engine(s) or more than one turboprop engine, or

(ii) A helicopter certificated:

- for a maximum take-off mass exceeding 3 175 kg, or
- for a maximum passenger seating configuration of more than nine, or
- for operation with a minimum crew of at least two pilots, or

(iii) A tilt-rotor aircraft;

q) "Commercial Operation" means any operation of an aircraft, in return for remuneration or other valuable consideration, which is available to the public or when not made available to the public, which is performed under a contract between an operator and a customer where the later has no control over the operator.

r) "Commercial Air Transport" means any aircraft operation involving the transport of passengers, cargo or mail for remuneration or hire. (Reference: ICAO Annex 6, Part 1, Chapter 1).

BCAR-M.A.105 Applicability

1. The continuing airworthiness of aircraft and components shall be ensured in accordance with the provisions of this BCAR.

2. Organisations and personnel involved in the continuing airworthiness of aircraft and components, including maintenance, shall comply with the provisions of this BCAR and where appropriate with BCAR-145, and BCAR-66.

3. This amended BCAR shall become effective on 31 December 2022.

BCAR-M.A.110 Scope

This BCAR establishes the measures to be taken to ensure that airworthiness is maintained, including maintenance. It also specifies the conditions to be met by the persons or organisations involved in such continuing airworthiness management.

Subpart B Accountability

BCAR-M.A.201 Responsibilities

a) The owner is responsible for the continuing airworthiness of an aircraft and shall ensure that no flight takes place unless:

1. the aircraft is maintained in an airworthy condition, and;
2. any operational and emergency equipment fitted is correctly installed and serviceable or clearly identified as unserviceable, and;
3. the airworthiness certificate remains valid, and;
4. the maintenance of the aircraft is performed in accordance with the approved maintenance programme as specified in BCAR-M.A.302.

b) When the aircraft is leased, the responsibilities of the owner are transferred to the lessee if:

1. the lessee is stipulated on the registration document, or;
2. detailed in the leasing contract.

When reference is made in this BCAR to the "owner", the term owner covers the owner or the lessee, as applicable.

c) Any person or organisation performing maintenance shall be responsible for the tasks performed.

d) The pilot-in-command or, in the case of commercial air transport, the operator shall be responsible for the satisfactory accomplishment of the pre-flight inspection. This inspection must be carried out by the pilot or another qualified person but need not be carried out by an approved maintenance organisation or by BCAR-66 certifying staff.

e) In order to satisfy the responsibilities of paragraph (a),

(i) The owner of an aircraft may contract the tasks associated with continuing airworthiness to a continuing airworthiness management organisation approved in accordance with Section A, Subpart G of this BCAR. In this case, the continuing airworthiness management organisation assumes responsibility for the proper accomplishment of these tasks.

(ii) An owner who decides to manage the continuing airworthiness of the aircraft under its own responsibility, without a contract in accordance with Appendix I, may nevertheless make a limited contract with a continuing airworthiness management organisation approved in accordance with Section A, Subpart G of this BCAR, for the development of the maintenance programme and its approval in accordance with point BCAR-M.A.302. In that case, the limited contract transfers the responsibility for the development and approval of the

maintenance programme to the contracted continuing airworthiness management organisation.

f) In the case of large aircraft, in order to satisfy the responsibilities of paragraph (a) the owner of an aircraft shall ensure that the tasks associated with continuing airworthiness are performed by an approved continuing airworthiness management organisation. A written contract shall be made in accordance with Appendix I. In this case, the continuing airworthiness management organisation assumes responsibility for the proper accomplishment of these tasks.

g) Maintenance of large aircraft, aircraft used for commercial air transport and components thereof shall be carried out by a BCAR-145 approved maintenance organisation.

h) In the case of commercial air transport the operator is responsible for the continuing airworthiness of the aircraft it operates and shall:

1. be approved, as part of the air operator certificate issued by BCAA, pursuant to BCAR-M.A Subpart G for the aircraft it operates; and
2. be approved in accordance with BCAR-145 or contract such an organisation; and
3. ensure that paragraph (a) is satisfied.

i) When an operator applies for a certificate for commercial operations, other than for commercial air transport, it shall:

1. be appropriately approved, pursuant to BCAR-M.A Subpart G, for the management of the continuing airworthiness of the aircraft it operates or contract such an organisation; and
2. be appropriately approved in accordance with BCAR-M.A. Subpart F or BCAR-145, or contract such organisation; and
3. ensure that paragraph (a) is satisfied.

j) The owner/operator shall ensure that any person authorised by BCAA is granted access to any of its facilities, aircraft or documents related to its activities, including any subcontracted activities, to determine compliance with this BCAR.

AMC M.A.201(e) Responsibilities

The limited contract for the development and approval of the aircraft maintenance programme should cover the responsibilities related to BCAR-M.A.302(d) and (g). This contract may also entitle the M.A. Subpart G organisation to use the indirect approval procedure described in BCAR-M.A.302 (c).

AMC M.A.201(h) Responsibilities

1. Reference to aircraft includes the components fitted to or intended to be fitted to the aircraft.

2. The performance of ground de-icing and anti-icing activities does not require a BCAR-145 maintenance organisation approval. Nevertheless, inspections required to detect, and when necessary eliminate de-icing and/or anti-icing fluid residues are considered maintenance. Such inspections may only be carried out by suitably authorised personnel.

3. The requirement means that the operator is responsible for determining what maintenance is required, when it has to be performed and by whom and to what standard, in order to ensure the continued airworthiness of the aircraft being operated.

4. An operator should therefore have adequate knowledge of the design status (type specification, customer options, airworthiness directives (AD), airworthiness limitations as notified by the manufacturer and approved by the State of design fuel tank system airworthiness limitations including Critical Design Configuration Control Limitations (CDCCL) modifications, major repairs, operational equipment) and required and performed maintenance. The Status of aircraft design and maintenance should be adequately documented to support the performance of the quality system.

5. An operator should establish adequate co-ordination between flight operations and maintenance to ensure that both will receive all information on the condition of the aircraft necessary to enable both to perform their tasks.

6. The requirement does not mean that an operator himself performs the maintenance (this is to be done by a maintenance organisation approved under BCAR-145) but that the operator carries the responsibility for the airworthy condition of aircraft it operates and thus should be satisfied before the intended flight that all required maintenance has been properly carried out.

7. When an operator is not appropriately approved in accordance with BCAR-145, the operator should provide a clear work order to the maintenance contractor. The fact that an operator has contracted a maintenance organisation approved under BCAR-145 should not prevent it from checking at the maintenance facilities on any aspect of the contracted work if he wishes to do so to satisfy his responsibility for the airworthiness of the aircraft.

AMC M.A.201(h)1 - Responsibilities

1. An operator only needs to be approved for the management of the continuing airworthiness of the aircraft listed on its AOC.

2. This approval does not prevent the operator subcontracting certain continuing airworthiness management tasks to competent persons or organisations. This activity is considered as an integral element of the operator's BCAR-M.A Subpart G approval. The regulatory monitoring is exercised through the operator's BCAR-M.A Subpart G approval. The contracts should be acceptable to BCAA.

3. The accomplishment of continuing airworthiness activities forms an important part of the operator's responsibility with the operator remaining accountable for satisfactory completion irrespective of any contract that may be established.

4. BCAR-M does not provide for organisations to be independently approved to perform continuing airworthiness management tasks on behalf of commercial air transport operators. The approval of such activity is vested in the operator's air operator's certificate (AOC). The sub-contracted organisation is considered to perform the continuing airworthiness management tasks as an integral part of the operator's continuing airworthiness management system, irrespective of any other approval held by the subcontractor including BCAR-M.A Subpart G approval.

5. The operator is ultimately responsible and therefore accountable for the airworthiness of its aircraft. To exercise this responsibility the operator should be satisfied that the actions taken by sub-contracted organisations meet the standards required by BCAR-M.A Subpart G. The operator's management of such activities should therefore be accomplished:

   (a) by active control through direct involvement and/or

   (b) by endorsing the recommendations made by the sub-contracted organisation.

6. In order to retain ultimate responsibility the operator should limit sub-contracted tasks to the activities specified below:

   (a) airworthiness directive analysis and planning

   (b) service bulletin analysis

   (c) planning of maintenance

   (d) reliability monitoring, engine health monitoring

   (e) maintenance programme development and amendments

   (f) any other activities which do not limit the operators responsibilities as agreed by BCAA.

7. The operator's management controls associated with sub-contracted continuing airworthiness management tasks should be reflected in the associated written contract and be in accordance with the operator's policy and procedures defined in his continuing airworthiness management exposition. When such tasks are sub-contracted the operator's continuing airworthiness management system is considered to be extended to the sub-contracted organisation.

8. With the exception of engines and auxiliary power units, contracts would normally be limited to one organisation per aircraft type for any combination of the activities described in Appendix II. Where arrangements are made with more than one organisation the operator should demonstrate that adequate co-ordination controls are in place and that the individual responsibilities are clearly defined in related contracts.

9. Contracts should not authorise the sub-contracted organisation to sub-contract to other organisations elements of the continuing airworthiness management tasks.

10. The operator should ensure that any findings arising from BCAA monitoring of the sub-contracted continuing airworthiness management tasks will be closed to the satisfaction of BCAA. This provision should be included in the contract.

11. The sub-contracted organisation should agree to notify the respective operators of any changes affecting the contracts as soon as practical. The operator should then inform BCAA. Failure to do so may invalidate BCAA acceptance of the contract.

12. Appendix II provides information on the sub-contracting of continuing airworthiness management tasks.

13. The operator should only sub contract to organisations which are specified by BCAA on the AOC or BCAA Form 14 as applicable.

AMC M.A.201(h)2 - Responsibilities

1. The requirement is intended to provide for the possibility of the following three alternative options:

   (a) an operator to be approved in accordance with BCAR-145 to carry out all maintenance of the aircraft and components;

   (b) an operator to be approved in accordance with BCAR-145 to carry out some of the maintenance of the aircraft and components. This, at minimum, could be limited line maintenance but may be considerably more but still short of option (a);

   (c) An operator not approved in accordance with BCAR-145 to carry out any maintenance.

2. An operator or prospective operator may apply for any one of these options but it will be for BCAA to determine which option may be accepted in each particular case.

2.1 To make this determination BCAA will apply the primary criteria of relevant operator experience if carrying out some or all maintenance on comparable aircraft. Therefore where an operator applies for option (a) – all maintenance – BCAA will need to be satisfied that the operator has sufficient experience of carrying out all maintenance on a comparable type. For example, assuming that the experience is judged satisfactory, then it is reasonable from the maintenance viewpoint to add a different wide-bodied aircraft to an existing wide-bodied fleet. If the experience is not satisfactory or too limited BCAA may choose either to require more experienced management and/or more experienced release to service staff or may refuse to accept the new wide bodied aircraft if extra experienced staff cannot be found. Option (b) or (c) may be possible alternatives.

2.2 Where an operator applies for option (b) – some maintenance or BCAA has been unable to accept an application for option (a) – then satisfactory experience is again the key but in this case the satisfactory experience is related to the reduced maintenance of this option. If the experience is not satisfactory or too limited BCAA may choose to require more experienced staff or may refuse to accept the application if such staff cannot be found. Option (c) may be the possible alternative. Option (c) accepts that the operator either does not have satisfactory experience or has only limited experience of some maintenance.

2.3 BCAA will require an operator to enter into a contract with an appropriately approved BCAR-145 organisation except in those cases where BCAA believes that it is possible to obtain sufficient satisfactorily experienced staff to provide the minimal maintenance support for option (b), in which case option (b) would apply.

2.4 In respect of this paragraph, ‘experience’ means staff who have proven evidence that they were directly involved with at least line maintenance of similar aircraft types for not less than 12 months. Such experience should be demonstrated to be satisfactory. An operator is required to have enough personnel meeting the requirement of BCAR-M.A.706 to manage the maintenance responsibility whichever option is used.

BCAR-M.A.202 Occurrence Reporting

a) Any person or organisation responsible under BCAR-M.A.201 shall report to BCAA, the organisation responsible for the type design or supplemental type design and, if applicable, the State of operator, any identified condition of an aircraft or component that hazards seriously the flight safety.

b) Reports shall be made in a manner established by BCAA and contain all pertinent information about the condition known to the person or organisation.

c) Where the person or organisation maintaining the aircraft is contracted by an owner or an operator to carry out maintenance, the person or the organisation maintaining the aircraft shall also report to the owner, the operator or the continuing airworthiness management organisation any such condition affecting the owner's or the operator's aircraft or component.

d) Reports shall be made as soon as practicable, but in any case within 72 hours of the person or organisation identifying the condition to which the report relates.

AMC M.A.202(a) Occurrence Reporting

Accountable persons or organisations should ensure that the type certificate (TC) holder receives adequate reports of occurrences for that aircraft type, to enable it to issue appropriate service instructions and recommendations to all owners or operators.

Liaison with the TC holder is recommended to establish whether published or proposed service information will resolve the problem or to obtain a solution to a particular problem.

An approved continuing airworthiness management or maintenance organisation should assign responsibility for co-ordinating action on airworthiness occurrences and for initiating any necessary further investigation and follow-up activity to a suitably qualified person with clearly defined authority and status.

In respect of maintenance, reporting a condition which endangers flight safety is normally limited to:

- serious cracks, permanent deformation, burning or serious corrosion of structure found during scheduled maintenance of the aircraft or component.
- failure of any emergency system during scheduled testing.

AMC M.A.202(b) Occurrence Reporting

The reports may be transmitted by any method, i.e. electronically, by post or by facsimile.

Each report should contain at least the following information:

- reporter or organisation's name and approval reference if applicable,
- information necessary to identify the subject aircraft and/or component,
- date and time relative to any life or overhaul limitation in terms of flying hours/cycles/landings etc., as appropriate,
- details of the occurrence.

Note*: Guidance Material on Occurrence Reporting provides further guidance.*

For further details visit: https://www.bcaa.gov.bt.

Subpart C Continuing Airworthiness

BCAR-M.A.301 Continuing Airworthiness Tasks

The aircraft continuing airworthiness and the serviceability of both operational and emergency equipment shall be ensured by:

1. the accomplishment of pre-flight inspections;
2. the rectification in accordance with the data specified in point BCAR-M.A.304 and/or point BCAR-M.A.401, as applicable, of any defect and damage affecting safe operation, taking into account, for all large aircraft or aircraft used for commercial air transport, the minimum equipment list and configuration deviation list as applicable to the aircraft type;
3. the accomplishment of all maintenance, in accordance with the BCAR-M.A.302 approved aircraft maintenance programme.
4. for all large aircraft or aircraft used for commercial air transport the analysis of the effectiveness of the BCAR-M.A.302 approved maintenance programme;
5. the accomplishment of any applicable:
   (i) airworthiness directive,
   (ii) operational directive with a continuing airworthiness impact,
   (iii) continued airworthiness requirement established by BCAA,
   (iv) measures mandated by BCAA in immediate reaction to a safety problem.
6. the accomplishment of modifications and repairs in accordance with BCAR-M.A.304;
7. for non-mandatory modifications and/or inspections, for all large aircraft or aircraft used for commercial air transport the establishment of an embodiment policy;
8. maintenance check flights when necessary.

AMC M.A.301(1) Continuing Airworthiness Tasks

1. With regard to the pre-flight inspection it is intended to mean all of the actions necessary to ensure that the aircraft is fit to make the intended flight. These should typically include but are not necessarily limited to:

   a) a walk-around type inspection of the aircraft and its emergency equipment for condition including, in particular, any obvious signs of wear, damage or leakage. In addition, the presence of all required equipment including emergency equipment should be established.

   b) an inspection of the aircraft continuing airworthiness record system or the operators technical log as applicable to ensure that the intended flight is not adversely affected by any outstanding deferred defects and that no required maintenance action shown in the maintenance statement is overdue or will become due during the flight.

   c) a control that consumable fluids, gases etc. uplifted prior to flight are of the correct specification, free from contamination, and correctly recorded.

   d) a control that all doors are securely fastened.

   e) a control that control surface and landing gear locks, pitot/static covers, restraint devices and engine/aperture blanks have been removed.

   f) a control that all the aircraft's external surfaces and engines are free from ice, snow, sand, dust etc.

2. Tasks such as oil and hydraulic fluid uplift and tyre inflation may be considered as part of the pre-flight inspection. The related pre-flight inspection instructions should address the procedures to determine where the necessary uplift or inflation results from an abnormal consumption and possibly requires additional maintenance action by the approved maintenance organisation or certifying staff as appropriate.

3. In the case of commercial air transport, an operator should publish guidance to maintenance and flight personnel and any other personnel performing pre-flight inspection tasks, as appropriate, defining responsibilities for these actions and, where tasks are contracted to other organisations, how their accomplishment is subject to the quality system of BCAR-M.A.712. It should be demonstrated to BCAA that pre-flight inspection personnel have received appropriate training for the relevant pre-flight inspection tasks. The training standard for personnel performing the pre-flight inspection should be described in the operator's continuing airworthiness management exposition.

AMC M.A.301(2) Continuing Airworthiness Tasks

In the case of commercial air transport the operator should have a system to ensure that all defects affecting the safe operation of the aircraft are rectified within the limits prescribed by the approved minimum equipment list (MEL) or configuration deviation list (CDL) as

appropriate. Also that such defect rectification cannot be postponed unless agreed by the operator and in accordance with a procedure approved by BCAA.

In the case of commercial air transport or large aircraft, a system of assessment should be in operation to support the continuing airworthiness of an aircraft and to provide a continuous analysis of the effectiveness of the BCAR-M.A Subpart G approved continuing airworthiness management organisation's defect control system in use.

The system should provide for:

a) significant incidents and defects: monitor incidents and defects that have occurred in flight and defects found during maintenance and overhaul, highlighting any that appear significant in their own right.

b) repetitive incidents and defects: monitor on a continuous basis defects occurring in flight and defects found during maintenance and overhaul, highlighting any that are repetitive.

c) deferred and carried forward defects: Monitor on a continuous basis deferred and carried forward defects. Deferred defects are defined as those defects reported in operational service which are deferred for later rectification. Carried forward defects are defined as those defects arising during maintenance which are carried forward for rectification at a later maintenance input.

d) unscheduled removals and system performance: analyse unscheduled component removals and the performance of aircraft systems for use as part of the maintenance programme efficiency.

When deferring or carrying forward a defect the cumulative effect of a number of deferred or carried forward defects occurring on the same aircraft and any restrictions contained in the MEL should be considered. Whenever possible, deferred defects should be made known to the pilot/flight crew prior to their arrival at the aircraft.

AMC M.A.301(3) Continuing Airworthiness Tasks

The owner or the BCAR-M.A Subpart G approved continuing airworthiness management organisation as applicable should have a system to ensure that all aircraft maintenance checks are performed within the limits prescribed by the approved aircraft maintenance programme and that, whenever a maintenance check cannot be performed within the required time limit, its postponement is allowed in accordance with a procedure agreed by BCAA.

AMC M.A.301(4) Continuing Airworthiness Tasks

The operator or the contracted BCAR-M.A Subpart G approved organisation as applicable should have a system to analyse the effectiveness of the maintenance programme, with regard to spares, established defects, malfunctions and damage, and to amend the maintenance programme accordingly.

AMC M.A.301(5) Continuing Airworthiness Tasks

Operational directives with a continuing airworthiness impact include operating rules such as extended twin-engine operations (ETOPS) / long range operations (LROPS), reduced vertical separation minima (RVSM), MNPS, all weather operations (AWOPS), RNAV, etc.

Any other continued airworthiness requirement made mandatory by BCAA includes TC related requirements such as certification maintenance requirements (CMR), certification life limited parts, airworthiness limitations as notified by the manufacturer and approved by the State of design, fuel tank system airworthiness limitations including Critical Design Configuration Control Limitations (CDCCL), etc.

AMC M.A.301(7) Continuing Airworthiness Tasks

An operator or a contracted BCAR-M.A Subpart G approved organisation as applicable should establish and work to a policy, which assesses non-mandatory information related to the airworthiness of the aircraft. The following is considered non-mandatory information such as service bulletins, service letters and other information that is produced for the aircraft and its components by an approved design organisation, the manufacturer or BCAA.

BCAR-M.A.302 Maintenance Programme

a) Maintenance of each aircraft shall be organised in accordance with an aircraft maintenance programme.

b) The aircraft maintenance programme and any subsequent amendments shall be approved by BCAA.

c) When the continuing airworthiness of the aircraft is managed by a continuing airworthiness management organisation approved in accordance with Section A, Subpart G of this BCAR, the aircraft maintenance programme and its amendments may be approved through an indirect approval procedure.

(i) In that case, the indirect approval procedure shall be established by the continuing airworthiness management organisation as part of the Continuing Airworthiness Management Exposition and shall be approved by BCAA.

(ii) *Reserved*.

d) The maintenance programme must establish compliance with:

(i) instructions issued by BCAA;

(ii) instructions for continuing airworthiness issued by the holders of the type certificate, restricted type-certificate, supplemental type-certificate, major repair design approval, TSO authorisation or any other relevant approval issued under BCAR-21;

(iii) additional or alternative instructions proposed by the owner or the continuing airworthiness management organisation once approved in accordance with point BCAR-M.A.302, except for intervals of safety related tasks referred in paragraph (e), which may be escalated, subject to sufficient reviews carried out in accordance with paragraph (g) and only when subject to direct approval in accordance with point BCAR-M.A.302(b);

e) The Aircraft maintenance programme shall contain details, including frequency, of all maintenance to be carried out, including any specific tasks linked to the type and the specificity of operations.

f) For large aircraft, when the maintenance programme is based on maintenance steering group logic or on condition monitoring, the aircraft maintenance programme shall include a reliability programme.

g) The maintenance programme must be subject to periodic reviews and amendments when necessary. These reviews will ensure that the programme continues to be valid in light of the operating experience and instructions from BCAA whilst taking into account new and/or modified maintenance instructions promulgated by the type certificate and

supplementary type certificate holders and any other organisation that publishes such data in accordance with BCAR-21.

AMC M.A.302 Aircraft Maintenance Programme

1. The term "maintenance programme" is intended to include scheduled maintenance tasks the associated procedures and standard maintenance practises. The term "maintenance schedule" is intended to embrace the scheduled maintenance tasks alone.

2. The aircraft should only be maintained to one approved maintenance programme at a given point in time. Where an owner or operator wishes to change from one approved programme to other, a transfer check or inspection may need to be performed in order to implement the change.

3. The maintenance programme details should be reviewed at least annually. As a minimum revisions of documents affecting the programme basis need to be considered by the owner or operator for inclusion in the maintenance programme during the annual review. Applicable mandatory requirements for compliance with BCAR-21 should be incorporated into the owner or operator's maintenance programme as soon as possible.

4. The aircraft maintenance programme should contain a preface which will define the maintenance programme contents, the inspection standards to be applied, permitted variations to task frequencies and, where applicable, any procedure to manage the evolution of established check or inspection intervals.

   Appendix I to AMC M.A.302 provides detailed information on the contents of an approved aircraft maintenance programme.

5. Repetitive maintenance tasks derived from modifications and repairs should be incorporated into the approved maintenance programme.

AMC M.A.302(a) Aircraft Maintenance Programme

A maintenance programme may indicate that it applies to several aircraft registrations as long as the maintenance programme clearly identifies the effectivity of the tasks and procedures that are not applicable to all of the listed registrations.

AMC M.A.302(d) Aircraft Maintenance Programme Compliance

1. An owner or operator's maintenance programme should normally be based upon the maintenance review board (MRB) report where applicable, the maintenance planning document (MPD), the relevant chapters of the maintenance manual or any other maintenance data containing information on scheduling. Furthermore, an owner or operator's maintenance programme should also take into account any maintenance data containing information on scheduling for components.

2. Instructions issued by BCAA can encompass all types of instructions from a specific task for a particular aircraft to complete recommended maintenance schedules for certain aircraft types that can be used by the owner/operator directly. These instructions may be issued by BCAA in the following cases:

- in the absence of specific recommendations of the Type Certificate Holder.
- to provide alternate instructions to those described in the subparagraph 1 above, with the objective of providing flexibility to the operator.

3. Where an aircraft type has been subjected to the MRB report process, an operator should normally develop the initial operator's aircraft maintenance programme based upon the MRB report.

4. Where an aircraft is maintained in accordance with an aircraft maintenance programme based upon the MRB report process, any associated programme for the continuous surveillance of the reliability, or health monitoring of the aircraft should be considered as part of the aircraft maintenance programme.

5. Aircraft maintenance programmes for aircraft types subjected to the MRB report process should contain identification cross reference to the MRB report tasks such that it is always possible to relate such tasks to the current approved aircraft maintenance programme. This does not prevent the approved aircraft maintenance programme from being developed in the light of service experience to beyond the MRB report recommendations but will show the relationship to such recommendations.

6. Some approved aircraft maintenance programmes, not developed from the MRB process, utilise reliability programmes. Such reliability programmes should be considered as a part of the approved maintenance programme.

7. Alternate and/or additional instructions to those defined in paragraphs BCAR-M.A.302(d)(i) and (ii), proposed by the owner or the operator, may include but are not limited to the following:

   - Escalation of the interval for certain tasks based on reliability data or other supporting information. Appendix I recommends that the maintenance programme contains the corresponding escalation procedures. The escalation of these tasks is directly approved by BCAA, except in the case of ALIs (Airworthiness Limitations), which are approved by the State of design.
   - More restrictive intervals than those proposed by the TC holder as a result of the reliability data or because of a more stringent operational environment.
   - Additional tasks at the discretion of the operator.

AMC M.A.302(f) Aircraft Maintenance Programme - Reliability Programmes

1. Reliability programmes should be developed for aircraft maintenance programmes based upon maintenance steering group (MSG) logic or those that include condition monitored components or that do not contain overhaul time periods for all significant system components.

2. Reliability programmes need not be developed for aircraft not considered as large aircraft or that contain overhaul time periods for all significant aircraft system components.

3. The purpose of a reliability programme is to ensure that the aircraft maintenance programme tasks are effective and their periodicity is adequate.

4. The reliability programme may result in the escalation or deletion of a maintenance task, as well as the de-escalation or addition of a maintenance task.

5. A reliability programme provides an appropriate means of monitoring the effectiveness of the maintenance programme.

6. Appendix I to AMC M.A.302 gives further guidance.

BCAR-M.A.303 Airworthiness Directives

Any applicable airworthiness directive must be carried out within the requirements of that airworthiness directive unless otherwise specified by BCAA.

The compliance time of the airworthiness directives shall be as directed by the authority of the state of the type certificate holder.

BCAR-M.A.304 Data for Modifications and Repairs

Damage shall be assessed and modifications and repairs carried out using data approved by BCAA in accordance with BCAR-21.

AMC M.A.304 Data for Modifications and Repairs

A person or organisation repairing an aircraft or component should assess the damage against published approved repair data and the action to be taken if the damage is beyond the limits or outside the scope of such data. This could involve any one or more of the following options:

- repair by replacement of damaged parts,
- requesting approved data from the type certificate holder recognised/accepted by BCAA, or
- finally approved by BCAA in accordance with BCAR-21.

BCAR-M.A.305 Aircraft Continuing Airworthiness Record System

a) At the completion of any maintenance, the associated BCAR-M.A.801 or BCAR-145.A.50 certificate of release to service shall be entered in the aircraft continuing airworthiness records. Each entry shall be made as soon as practicable but in no event more than 30 days after the day of maintenance action.

b) The aircraft continuing airworthiness records shall consist of:

1. an aircraft logbook, engine logbook(s) or engine module log cards, propeller logbook(s) and log cards, for any service life limited component as appropriate, and,

2. when required in BCAR-M.A.306 for commercial air transport or by BCAA for commercial operations other than commercial air transport, the operator's technical log.

c) The aircraft type and registration mark, the date, together with total flight time and/or flight cycles and/or landings, as appropriate, shall be entered in the aircraft logbooks.

d) The aircraft continuing airworthiness records shall contain the current:

1. status of airworthiness directives and measures mandated by BCAA in immediate reaction to a safety problem;

2. status of modifications and repairs;

3. status of compliance with maintenance programme;

4. status of service life limited components;

5. mass and balance report;

6. list of deferred maintenance.

e) In addition to the authorised release document, a BCAA Form 1 or equivalent, the following information relevant to any component installed (engine, propeller, engine module or service life-limited component) shall be entered in the appropriate engine or propeller logbook, engine module or service life limited component log card:

1. identification of the component, and;

2. the type, serial number and registration, as appropriate, of the aircraft, engine, propeller, engine module or service life-limited component to which the particular component has been fitted, along with the reference to the installation and removal of the component, and;

3. the date together with the component’s accumulated total flight time and/or flight cycles and/or landings and/or calendar time, as appropriate, and;

4. the current paragraph (d) information applicable to the component.

f) The person responsible for the management of continuing airworthiness tasks pursuant to BCAR-M.A Subpart B shall control the records as detailed in this paragraph and present the records to BCAA upon request.

g) All entries made in the aircraft continuing airworthiness records shall be clear and accurate. When it is necessary to correct an entry, the correction shall be made in a manner that clearly shows the original entry.

h) An owner or operator shall ensure that a system has been established to keep the following records for the periods specified:

1. all detailed maintenance records in respect of the aircraft and any service life-limited component fitted thereto, until such time as the information contained therein is superseded by new information equivalent in scope and detail but not less than 36 months after the aircraft or component has been released to service, and;

2. the total time in service (hours, calendar time, cycles and landings) of the aircraft and all service life-limited components, at least 12 months after the aircraft or component has been permanently withdrawn from service, and;

3. the time in service (hours, calendar time, cycles and landings) as appropriate, since last scheduled maintenance of the component subjected to a service life limit, at least until the component scheduled maintenance has been superseded by another scheduled maintenance of equivalent work scope and detail, and;

4. the current status of compliance with maintenance programme such that compliance with the approved aircraft maintenance programme can be established, at least until the aircraft or component scheduled maintenance has been superseded by other scheduled maintenance of equivalent work scope and detail, and;

5. the current status of airworthiness directives applicable to the aircraft and components, at least 12 months after the aircraft or component has been permanently withdrawn from service, and;

6. details of current modifications and repairs to the aircraft, engine(s), propeller(s) and any other component vital to flight safety, at least 12 months after they have been permanently withdrawn from service.

AMC M.A.305(d) Aircraft Continuing Airworthiness Record System

The current status of AD should identify the applicable AD including revision or amendment numbers. Where an AD is generally applicable to the aircraft or component type but is not applicable to the particular aircraft or component, then this should be identified. The AD status includes the date when the AD was accomplished, and where the AD is controlled by flight hours or flight cycles it should include the aircraft or engine or component total flight hours or cycles, as appropriate. For repetitive ADs, only the last application should be recorded in the AD status. The status should also specify which part of a multi-part directive has been accomplished and the method, where a choice is available in the AD.

The status of current modification and repairs means a list of embodied modification and repairs together with the substantiating data supporting compliance with the airworthiness requirements. This can be in the form of a Supplemental Type Certificate (STC), SB, Structural Repair Manual (SRM) or similar approved document.

The substantiating data may include:

(a) compliance programme; and

(b) master drawing or drawing list, production drawings, and installation instructions; and

(c) engineering reports (static strength, fatigue, damage tolerance, fault analysis, etc.); and

(d) ground and flight test programme and results; and

(e) mass and balance change data; and

(f) maintenance and repair manual supplements; and

(g) maintenance programme changes and instructions for continuing airworthiness; and

(h) aircraft flight manual supplement.

Some gas turbine engines are assembled from modules and a true total time in service for a total engine is not kept. When owners and operators wish to take advantage of the modular design, then total time in service and maintenance records for each module is to be maintained. The continuing airworthiness records as specified are to be kept with the module and should show compliance with any mandatory requirements pertaining to that module.

AMC M.A.305(d)(4) and AMC M.A.305(h) Aircraft Continuing Airworthiness Record System

The term ‘service life-limited components’ embraces: (i) components subject to a certified life limit after which the components should be retired, and (ii) components subject to a service life limit after which the components should undergo maintenance to restore their serviceability.

The current status of service life-limited aircraft components should indicate:

i. for components subject to a certified life limit: the component life limitation, total number of hours, accumulated cycles or calendar time and the number of hours/cycles/time remaining before the required retirement time of the component is reached;

ii. for components subject to a service life limit: the component service life limit, the hours, cycles or calendar time since the component has been restored back to their service life and the remaining service (hours, cycles, calendar time) life before the components need to undergo maintenance.

Any action that alters the components' life limit (certified or service) or changes the parameter of the life limit (certified or service) should be recorded.

When the determination of the remaining life requires knowledge of the different types of aircraft/engine on which the component has previously been installed, the status of all service-life limited aircraft components should additionally include a full installation history indicating the number of hours, cycles or calendar time relevant to each installation on these different types of aircraft/engine. The indication of the type of aircraft/engine should be sufficiently detailed with regard to the required determination of remaining life.

Recommendations from the type certificate holder on the procedures to record the remaining life may be considered.

AMC M.A.305(h) Aircraft Continuing Airworthiness Record System

When an owner/operator arranges for the relevant maintenance organisation to retain copies of the continuing airworthiness records on their behalf, the owner/operator will continue to be responsible for the retention of records. If they cease to be the owner/operator of the aircraft, they also remain responsible for transferring the records to any other person who becomes the owner/operator of the aircraft.

Keeping continuing airworthiness records in a form acceptable to BCAA normally means in paper form or on a computer database or a combination of both methods. Records stored in microfilm or optical disc form are also acceptable. All records should remain legible throughout the required retention period.

Paper systems should use robust material, which can withstand normal handling and filing.

Computer systems should have at least one backup system, which should be updated at least within 24 hours of any maintenance. Each terminal is required to contain programme safeguards against the ability of unauthorised personnel to alter the database.

Continuing airworthiness records should be stored in a safe way with regard to damage, alteration and theft. Computer backup discs, tapes etc., should be stored in a different location from that containing the current working discs, tapes, etc., and in a safe environment. Reconstruction of lost or destroyed records can be done by reference to other records which reflect the time in service, research of records maintained by repair facilities and reference to

records maintained by individual mechanics, etc. When these things have been done and the record is still incomplete, the owner/operator may make a statement in the new record describing the loss and establishing the time in service based on the research and the best estimate of time in service. The reconstructed records should be submitted to BCAA for acceptance. BCAA may require the performance of additional maintenance if not satisfied with the reconstructed records.

AMC M.A.305(h)6 - Aircraft Continuing Airworthiness Record System

For the purpose of this paragraph, a "component vital to flight safety" means a component that includes certified life limited parts or is subject to airworthiness limitations or a major component such as undercarriage or flight controls.

BCAR-M.A.306 Operator's Technical Log System

a) In the case of commercial air transport, in addition to the requirements of BCAR-M.A.305, an operator shall use an aircraft technical log system containing the following information for each aircraft:

1. information about each flight, necessary to ensure continued flight safety, and;
2. the current aircraft certificate of release to service, and;
3. the current maintenance statement giving the aircraft maintenance status of what scheduled and out of phase maintenance is next due except that BCAA may agree to the maintenance statement being kept elsewhere, and;
4. all outstanding deferred defects rectifications that affect the operation of the aircraft, and;
5. any necessary guidance instructions on maintenance support arrangements.

b) The aircraft technical log system and any subsequent amendment shall be approved by BCAA.

c) An operator shall ensure that the aircraft technical log is retained for 36 months after the date of the last entry.

AMC M.A.306(a) Operators Technical Log System

For commercial air transport the operator's aircraft technical log is a system for recording defects and malfunctions during the aircraft operation and for recording details of all maintenance carried out on an aircraft between scheduled base maintenance visits. In addition, it is used for recording flight safety and maintenance information the operating crew need to know.

Cabin or galley defects and malfunctions that affect the safe operation of the aircraft or the safety of its occupants are regarded as forming part of the aircraft log book where recorded by another means.

The operator's aircraft technical log system may range from a simple single section document to a complex system containing many sections but in all cases it should include the information specified for the example used here which happens to use a 5 section document/computer system:

Section 1 should contain details of the registered name and address of the operator the aircraft type and the complete international registration marks of the aircraft.

Section 2 should contain details of when the next scheduled maintenance is due, including, if relevant any out of phase component changes due before the next maintenance check. In addition this section should contain the current certificate of release to service (CRS), for the complete aircraft, issued normally at the end of the last maintenance check.

Note: The flight crew do not need to receive such details if the next scheduled maintenance is controlled by other means acceptable to BCAA.

Section 3 should contain details of all information considered necessary to ensure continued flight safety. Such information includes:

i. the aircraft type and registration mark,

ii. the date and place of take-off and landing,

iii. the times at which the aircraft took off and landed,

iv. the running total of flying hours, such that the hours to the next schedule maintenance can be determined. The flight crew does not need to receive such details if the next scheduled maintenance is controlled by other means acceptable to BCAA.

v. details of any failure, defect or malfunction to the aircraft affecting airworthiness or safe operation of the aircraft including emergency systems, and any failure, defect or malfunctions in the cabin or galleys that affect the safe operation of the aircraft or the safety of its occupants that are known to the commander. Provision should be made for the commander to date and sign such entries including, where appropriate, the nil defect state for continuity of the record. Provision should be made for a CRS following rectification of a defect or any deferred defect or maintenance check carried out. Such

a certificate appearing on each page of this section should readily identify the defect(s) to which it relates or the particular maintenance check as appropriate.

It is acceptable to use an alternate abbreviated certificate of release to service consisting of the statement 'BCAR-145 release to service' instead of the full certification statement specified in AMC 145.A.50(b) paragraph 1. When the alternate abbreviated certificate of release to service is used, the introductory section of the technical log should include an example of the full certification statement from AMC 145.A.50(b) paragraph 1.

vi. the quantity of fuel and oil uplifted and the quantity of fuel available in each tank, or combination of tanks, at the beginning and end of each flight; provision to show, in the same units of quantity, both the amount of fuel planned to be uplifted and the amount of fuel actually uplifted; provision for the time when ground de-icing and/or anti-icing was started and the type of fluid applied, including mixture ratio fluid/water and any other information required by the operator's procedures in order to allow the assessment on whether inspections for and/or elimination of de-icing/anti-icing fluid residues that could endanger flight safety are required.

vii. the pre-flight inspection signature.

In addition to the above, it may be necessary to record the following supplementary information:

- the time spent in particular engine power ranges where use of such engine power affects the life of the engine or engine module;
- the number of landings where landings affect the life of an aircraft or aircraft component;
- flight cycles or flight pressure cycles where such cycles affect the life of an aircraft or aircraft component.

Note 1: Where Section 3 is of the multi-sector 'part removable' type, then such 'part removable' sections should contain all of the foregoing information where appropriate.

Note 2: Section 3 should be designed so that one copy of each page may remain on the aircraft and one copy may be retained on the ground until completion of the flight to which it relates.

Note 3: Section 3 layout should be divided to show clearly what is required to be completed after flight and what is required to be completed in preparation for the next flight."

Section 4 should contain details of all deferred defects that affect or may affect the safe operation of the aircraft and should therefore be known to the aircraft commander. Each page of this section should be pre-printed with the operator's name and page serial number and make provision for recording the following:

i. a cross reference for each deferred defect such that the original defect can be identified in the particular section 3 sector record page.

ii. the original date of occurrence of the defect deferred.

iii. brief details of the defect.

iv. details of the eventual rectification carried out and its CRS or a clear cross-reference back to the document that contains details of the eventual rectification.

Section 5 should contain any necessary maintenance support information that the aircraft commander needs to know. Such information would include data on how to contact maintenance engineering if problems arise whilst operating the routes etc.

AMC M.A.306(b) Operators Technical Log System

The aircraft technical log system can be either a paper or computer system or any combination of both methods acceptable to BCAA.

In case of a computer system, it should contain programme safeguards against the ability of unauthorised personnel to alter the database.

BCAR-M.A.307 Transfer of Aircraft Continuing Airworthiness Records

a) The owner or operator shall ensure when an aircraft is permanently transferred from one owner or operator to another that the BCAR-M.A.305 continuing airworthiness records and, if applicable, BCAR-M.A.306 operator's technical log are also transferred.

b) The owner shall ensure, when he contracts the continuing airworthiness management tasks to a continuing airworthiness management organisation, that the BCAR-M.A.305 continuing airworthiness records are transferred to the organisation.

c) The time periods prescribed for the retention of records shall continue to apply to the new owner, operator or continuing airworthiness management organisation.

AMC M.A.307(a) Transfer of Aircraft Continuing Airworthiness Records

Where an owner/operator terminates his operation, all retained continuing airworthiness records should be passed on to the new owner/operator or stored.

A “permanent transfer” does not generally include the dry lease-out of an aircraft when the duration of the lease agreement is less than 6 months. However, BCAA should be satisfied that all continuing airworthiness records necessary for the duration of the lease agreement are transferred to the lessee or made accessible to them.

Subpart D Maintenance Standards

BCAR-M.A.401 Maintenance Data

a) The person or organisation maintaining an aircraft shall have access to and use only applicable current maintenance data in the performance of maintenance including modifications and repairs.

b) For the purposes of this BCAR, applicable maintenance data is:

1. any applicable requirement, procedure, standard or information issued by BCAA,
2. any applicable airworthiness directive,
3. applicable instructions for continuing airworthiness, issued by type certificate holders, supplementary type certificate holders and any other organisation that publishes such data in accordance with BCAR-21.
4. any applicable data issued in accordance with BCAR-145.45(d).

c) The person or organisation maintaining an aircraft shall ensure that all applicable maintenance data is current and readily available for use when required. The person or organisation shall establish a work card or worksheet system to be used and shall either transcribe accurately the maintenance data onto such work cards or worksheets or make precise reference to the particular maintenance task or tasks contained in such maintenance data.

AMC M.A.401(b) Maintenance Data

1. Except as specified in sub-paragraph 2, each person or organisation performing aircraft maintenance should have access to and use:

   (a) all maintenance related BACRs and associated AMC's, together with the maintenance related guidance material,

   (b) all applicable maintenance requirements and notices such as BCAA standards and specifications that have not been superseded by a requirement, procedure or directive,

   (c) all applicable airworthiness directives,

   (d) the appropriate sections of the aircraft maintenance programme, aircraft maintenance manual, repair manual, supplementary structural inspection document, corrosion control document, service bulletins, service sheets modification leaflets, non-destructive inspection manual, parts catalogue, type certificate data sheets as required for the work undertaken and any other specific document issued by the type certificate or supplementary type certificate holder's maintenance data, except that in the case of operator or customer provided maintenance data it is not necessary to hold such provided data when the work order is completed.

2. In addition to sub-paragraph 1, for components each organisation performing aircraft maintenance should hold and use the appropriate sections of the vendor maintenance and repair manual, service bulletins and service letters plus any document issued by the type certificate holder as maintenance data on whose product the component may be fitted when applicable, except that in the case of operator or customer provided maintenance data it is not necessary to hold such provided data when the work order is completed.

AMC M.A.401(c) Maintenance Data

1. Data being made available to personnel maintaining aircraft means that the data should be available in close proximity to the aircraft or component being maintained, for mechanics and certifying staff to perform maintenance.

2. Where computer systems are used, the number of computer terminals should be sufficient in relation to the size of the work programme to enable easy access, unless the computer system can produce paper copies. Where microfilm or microfiche readers/printers are used, a similar requirement is applicable.

3. Maintenance tasks should be transcribed onto the work cards or worksheets and subdivided into clear stages to ensure a record of the accomplishment of the maintenance task. Of particular importance is the need to differentiate and specify, when relevant, disassembly, accomplishment of task, reassembly and testing. In the case of a lengthy maintenance task involving a succession of personnel to complete such task, it may be necessary to use supplementary work cards or worksheets to indicate what was actually accomplished by

each individual person. A worksheet or work card system should refer to particular maintenance tasks.

4. The workcard/worksheet system may take the form of, but is not limited to, the following:

   - a format where the mechanic writes the defect and the maintenance action taken together with information of the maintenance data used, including its revision status,
   - an aircraft log book that contains the reports of defects and the actions taken by authorised personnel together with information of the maintenance data used, including its revision status,
   - for maintenance checks, the checklist issued by the manufacturer (i.e., 100H checklist, Revision 5, Items 1 through 95)

5. Maintenance data should be kept up to date by:

   - subscribing to the applicable amendment scheme,
   - checking that all amendments are being received,
   - monitoring the amendment status of all data.

BCAR-M.A.402 Performance of Maintenance

Except for maintenance performed by a maintenance organisation approved in accordance with BCAR-145, any person or organisation performing maintenance shall:

(a) be qualified for the tasks performed, as required by this part;

(b) ensure that the area in which maintenance is carried out is well organised and clean in respect of dirt and contamination;

(c) use the methods, techniques, standards and instructions specified in the BCAR-M.A.401 maintenance data;

(d) use the tools, equipment and material specified in the BCAR-M.A.401 maintenance data. If necessary, tools and equipment shall be controlled and calibrated to an officially recognised standard;

(e) ensure that maintenance is performed within any environmental limitations specified in the BCAR-M.A.401 maintenance data;

(f) ensure that proper facilities are used in case of inclement weather or lengthy maintenance;

(g) ensure that the risk of multiple errors during maintenance and the risk of errors being repeated in identical maintenance tasks are minimised;

(h) ensure that an error capturing method is implemented after the performance of any critical maintenance task; and

(i) carry out a general verification after completion of maintenance to ensure the aircraft or component is clear of all tools, equipment and any extraneous parts or material, and that all access panels removed have been refitted.

AMC M.A.402(a) Performance of Maintenance

1. When working outside the scope of an approved maintenance organisation personnel not authorised to issue a CRS should work under the supervision of certifying personnel. They may only perform maintenance that their supervisor is authorised to release, if the supervisor personally observes the work being carried out to the extent necessary to ensure that it is being done properly and if the supervisor is readily available, in person, for consultation. In this case licensed engineers should ensure that each person maintaining an aircraft or component has had appropriate training or relevant previous experience and is capable of performing the task required, and that personnel who carry out specialised tasks such as welding are qualified in accordance with an officially recognised standard.

2. In the case of limited Pilot-Owner maintenance as specified in BCAR-M.A.803, any person maintaining an aircraft which they own or jointly own, provided they hold a valid pilot licence with the appropriate type or class rating, may perform the limited Pilot-owner maintenance tasks in accordance with BCAR-M.

3. "The general maintenance and inspection standards applied to individual maintenance tasks should meet the recommended standards and practices of the organisation responsible for the type design which are normally published in the maintenance manuals.

   In the absence of maintenance and inspection standards published by the organisation responsible for the type design maintenance personnel should refer to the relevant aircraft airworthiness standards and procedures published or used as guidance by the Agency or BCAA. The maintenance standards used should contain methods, techniques and practices acceptable to BCAA for the maintenance of aircraft and its components.

4. Independent inspections.

4.1 The manufacturer's instructions for continued airworthiness should be followed when determining the need for an independent inspection.

4.2 In the absence of maintenance and inspection standards published by organisation responsible for the type design, maintenance tasks that involve the assembly or any disturbance of a control system that, if errors occurred, could result in a failure, malfunction, or defect endangering the safe operation of the aircraft should be considered as flight safety sensitive maintenance tasks needing an independent inspection. A control system is an aircraft system by which the flight path, attitude, or propulsive force of the aircraft is changed, including the flight, engine and propeller controls, the related system controls and the associated operating mechanisms.

4.3 Independent inspections should be carried out by at least two persons, to ensure correct assembly, locking and sense of operation. A technical record of the inspections should contain the signatures of both persons before the relevant CRS is issued.

4.3.1 An independent inspection is an inspection first made by an authorised person signing the maintenance release who assumes full responsibility for the satisfactory completion

of the work, before being subsequently inspected by a second independent competent person who attests to the satisfactory completion of the work recorded and that no deficiencies have been found.

4.3.2 The second independent competent person is not issuing a maintenance release therefore is not required to hold certification privileges. However, they should be suitably qualified to carry out the inspection.

4.4 When work is being done under the control of an approved maintenance organisation the organisation should have procedures to demonstrate that the signatories have been trained and have gained experience on the specific control systems being inspected.

4.5 When work is being undertaken by an independent BCAR-M.A.801(b)2 certifying staff, the qualifications and experience of the second independent competent person should be directly assessed by the person certifying for the maintenance, taking into account the individual's training and experience. It should not be acceptable for the certifying staff signing the release to show the person performing the independent inspection how to perform the inspection at the time the work is completed.

4.6 In summary, the following maintenance tasks should primarily be considered when inspecting aircraft control systems that have been disturbed:

- installation, rigging and adjustment of flight controls.
- installation of aircraft engines, propellers and rotors.
- overhaul, calibration or rigging of components such as engines, propellers, transmissions and gearboxes.

Consideration should also be given to:

- previous experience of maintenance errors, depending on the consequences of the failure.
- information arising from an 'occurrence reporting system'

4.7 When checking control systems that have undergone maintenance, the person signing the maintenance release and the person performing the independent check should consider the following points independently:

- all those parts of the system that have actually been disconnected or disturbed should be inspected for correct assembly and locking.
- the system as a whole should be inspected for full and free movement over the complete range.
- cables should be tensioned correctly with adequate clearance at secondary stops.

- the operation of the control system as a whole should be observed to ensure that the controls are operating in the correct sense.
- if the control system is duplicated to provide redundancy, each system should be checked separately.
- if different control systems are interconnected so that they affect each other, all interactions should be checked through the full range of the applicable controls.

AMC M.A.402(b) Performance of Maintenance

When performing maintenance, personnel are required to use the tools, equipment and test apparatus necessary to ensure completion of work in accordance with accepted maintenance and inspection standards. Inspection, service or calibration on a regular basis should be in accordance with the equipment manufacturers' instructions. All tools requiring calibration should be traceable to an acceptable standard.

In this context officially recognised standard means those standards established or published by an official body whether having legal personality or not, which are widely recognised by the air transport sector as constituting good practice.

If the organisation responsible for the type design involved recommends special equipment or test apparatus, personnel should use the recommended equipment or apparatus or equivalent equipment accepted by BCAA.

All work should be performed using materials of such quality and in a manner, that the condition of the aircraft or its components after maintenance will be at least equal to its original or modified condition (with regard to aerodynamic function, structural strength, resistance to vibration, deterioration and any other qualities affecting airworthiness).

AMC M.A.402(d) Performance of Maintenance

The working environment should be appropriate for the maintenance task being performed such that the effectiveness of personnel is not impaired.

(a) Temperature should be maintained such that personnel can perform the required tasks without undue discomfort.

(b) Airborne contamination (e.g. dust, precipitation, paint particles, filings) should be kept to a minimum to ensure aircraft/components surfaces are not contaminated, if this is not possible all susceptible systems should be sealed until acceptable conditions are re-established.

(c) Lighting should be adequate to ensure each inspection and maintenance task can be performed effectively.

(d) Noise levels should not be allowed to rise to the level of distraction for inspection staff or if this is not possible inspection staff should be provided with personnel equipment to reduce excessive noise.

AMC M.A.402(e) Performance of Maintenance

Facilities should be provided appropriate for all planned maintenance. This may require aircraft hangars that are both available and large enough for the planned maintenance.

Aircraft component workshops should be large enough to accommodate the components that are planned to be maintained.

Protection from inclement weather means the hangar or component workshop structures should be to a standard that prevents the ingress of rain, hail, ice, snow, wind and dust etc.

BCAR-M.A.403 Aircraft Defects

a) Any aircraft defect that hazards seriously the flight safety shall be rectified before further flight.

b) Only the authorised certifying staff, according to BCAR-M.A.801(b) 1, BCAR-M.A.801(b)2 or BCAR-145 can decide, using BCAR-M.A.401 maintenance data, whether an aircraft defect hazards seriously the flight safety and therefore decide when and which rectification action shall be taken before further flight and which defect rectification can be deferred. However, this does not apply when:

   1. the approved minimum equipment list as mandated by BCAA is used by the pilot; or,

   2. aircraft defects are defined as being acceptable by BCAA.

c) Any aircraft defect that would not hazard seriously the flight safety shall be rectified as soon as practicable, after the date the aircraft defect was first identified and within any limits specified in the maintenance data.

d) Any defect not rectified before flight shall be recorded in the BCAR-M.A.305 aircraft maintenance record system or BCAR-M.A.306 operator's technical log system as applicable.

AMC M.A.403(b) Aircraft Defects

An assessment of both the cause and any potentially hazardous effect of any defect or combination of defects that could affect flight safety should be made in order to initiate any necessary further investigation and analysis necessary to identify the root cause of the defect.

AMC M.A.403(d) Aircraft Defects

All deferred defects should be made known to the pilot/flight crew, whenever possible, prior to their arrival at the aircraft.

Deferred defects should be transferred onto worksheets at the next appropriate maintenance check, and any deferred defect which is not rectified during the maintenance check should be re-entered onto a new deferred defect record sheet. The original date of the defect should be retained.

The necessary components or parts needed for the rectification of defects should be made available or ordered on a priority basis and fitted at the earliest opportunity.

Subpart E Components

BCAR-M.A.501 Installation

a) No component may be fitted unless it is in a satisfactory condition, has been appropriately released to service on a BCAA Form 1 or equivalent and is marked in accordance with BCAR-21 Subpart Q, unless otherwise specified in BCAR-21, BCAR-145 and Subpart F, Section A to this BCAR.

b) Prior to installation of a component on an aircraft the person or approved maintenance organisation shall ensure that the particular component is eligible to be fitted when different modification and/or airworthiness directive configurations may be applicable.

c) Standard parts shall only be fitted to an aircraft or a component when the maintenance data specifies the particular standard part. Standard parts shall only be fitted when accompanied by evidence of conformity traceable to the applicable standard.

d) Material being either raw material or consumable material shall only be used on an aircraft or a component when the aircraft or component manufacturer states so in relevant maintenance data or as specified in BCAR-145. Such material shall only be used when the material meets the required specification and has appropriate traceability. All material must be accompanied by documentation clearly relating to the particular material and containing conformity to specification statement plus both the manufacturing and supplier source.

AMC M.A.501(a) – Installation

1. To ensure a component is in a satisfactory condition, the person referred to under BCAR-M.A.801 or the approved maintenance organisation should perform checks and verifications.

2. Performance of above checks and verifications should take place before the component is installed on the aircraft.

3. The following list, though not exhaustive, contains typical checks to be performed:

   (a) verify the general condition of components and their packaging in relation to damages that could affect the integrity of the components;

   (b) verify that the shelf life of the component has not expired;

   (c) verify that items are received in the appropriate package in respect of the type of component: e.g. correct ATA 300 or electrostatic sensitive devices packaging, when necessary;

   (d) verify that component has all plugs and caps appropriately installed to prevent damage or internal contamination. Tape should not be used to cover electrical connections or fluid fittings/openings because adhesive residues can insulate electrical connections and contaminate hydraulic or fuel units.

4. The purpose of a BCAA Form 1 (see also BCAR-M Appendix II) is to release components after manufacture and to release maintenance work carried out on such components under the approval of BCAA and to allow components removed from one aircraft/component to be fitted to another aircraft/ component.

5. Reserved.

6. Any item in storage without a BCAA Form 1 or equivalent cannot be installed on aircraft registered in a Member States unless a BCAA Form 1 is issued for such item by an appropriately approved maintenance organisation in accordance with AMC M.A.613(a).

AMC M.A.501(b) – Installation

1. The BCAA Form 1 identifies the airworthiness status of an aircraft component. Block 12 ‘Remarks’ on BCAA Form 1 in some cases contains vital airworthiness related information (see also BCAR-M Appendix II), which may need appropriate and necessary actions.

2. The fitment of replacement components should only take place when the person referred to in BCAR-M.A.801 or the BCAR-M.A. Subpart F or BCAR-145 maintenance organisation is satisfied that such components meet required standards in respect of manufacture or maintenance, as appropriate.

3. The person referred to under BCAR-M.A.801 or the BCAR-M.A. Subpart F or BCAR-145 approved maintenance organisation should be satisfied that the component in question meets the approved data/standard, such as the required design and modification standards. This may be accomplished by reference to the (S)TC holder or manufacturer's parts catalogue or other approved data (i.e. Service Bulletin). Care should also be taken in ensuring compliance with applicable AD and the status of any service life-limited parts fitted to the aircraft component.

AMC M.A.501(c) – Installation

1. Standard parts are:

   (a) Parts manufactured in complete compliance with an established industry, agency, BCAA or other Government specification which includes design, manufacturing, test and acceptance criteria, and uniform identification requirements. The specification should include all information necessary to produce and verify conformity of the part. It should be published so that any party may manufacture the part. Examples of specifications are National Aerospace Standards (NAS), Army-Navy Aeronautical Standard (AN), Society of Automotive Engineers (SAE), SAE Sematec, Joint Electron Device Engineering Council, Joint Electron Tube Engineering Council, and American National Standards Institute (ANSI), EN Specifications etc.…

   (b) For sailplanes and powered sailplanes, non-required instruments and/or equipment certified under the provision of applicable airworthiness codes, if those instruments or equipment, when installed, functioning, functioning improperly or not functioning at all, do not in itself, or by its effect upon the sailplane and its operation, constitute a safety hazard.

   "Required" in the term "non-required" as used above means required by the applicable airworthiness code or required by the relevant operating regulations and the applicable Rules of the Air or as required by Air Traffic Management (e.g. a transponder in certain controlled airspace). Examples of equipment which can be considered standard parts are electrical variometers, bank/slip indicators ball type, total energy probes, capacity bottles (for variometers), final glide calculators, navigation computers, data logger/barograph/turnpoint camera, bug-wipers and anti-collision systems. Equipment which must be approved in accordance to the airworthiness code shall comply with the applicable STSO or equivalent and is not considered a standard part (e.g. oxygen equipment).

2. To designate a part as a standard part the TC holder may issue a standard parts manual accepted by the Competent Authority of original TC holder or may make reference in the parts catalogue to a national/international specification (such as a standard diode/capacitor etc.) not being an aviation only specification for the particular part.

3. Documentation accompanying standard parts should clearly relate to the particular parts and contain a conformity statement plus both the manufacturing and supplier source. Some

material is subject to special conditions such as storage condition or life limitation etc. and this should be included on the documentation and/or material packaging.

4. A BCAA Form 1 or equivalent is not normally issued and therefore none should be expected.

AMC M.A.501(d) – Installation

1. Consumable material is any material which is only used once, such as lubricants, cements, compounds, paints, chemicals dyes and sealants etc.

2. Raw material is any material that requires further work to make it into a component part of the aircraft such as metals, plastics, wood, fabric etc.

3. Material both raw and consumable should only be accepted when satisfied that it is to the required specification. To be satisfied, the material and or its packaging should be marked with the specification and where appropriate the batch number.

4. Documentation accompanying all material should clearly relate to the particular material and contain a conformity statement plus both the manufacturing and supplier source. Some material is subject to special conditions such as storage condition or life limitation etc. and this should be included on the documentation and/or material packaging.

5. BCAA Form 1 or equivalent should not be issued for such material and therefore none should be expected. The material specification is normally identified in the (S)TC holder's data except in the case where BCAA has agreed otherwise.

6. Items purchased in batches (fasteners etc.) should be supplied in a package. The packaging should state the applicable specification/standard, P/N, batch number and the quantity of the items. The documentation accompanying the material should contain the applicable specification/standard, P/N, batch number, supplied quantity, and the manufacturing sources. If the material is acquired from different batches, acceptance documentation for each batch should be supplied.

BCAR-M.A.502 Component Maintenance

a) The maintenance of components shall be performed by maintenance organisations appropriately approved with Section A, Subpart F of this BCAR or BCAR-145.

b) By derogation from paragraph (a), maintenance of a component in accordance with aircraft maintenance data or, if agreed by BCAA, in accordance with component maintenance data, may be performed by an A rated organisation approved in accordance with Section A, Subpart F of this BCAR or with BCAR-145 as well as by certifying staff referred to in point BCAR-M.A.801(b)2 only whilst such components are fitted to the aircraft. Nevertheless, such organisation or certifying staff may temporarily remove this component for maintenance, in order to improve access to the component, except when such removal generates the need for additional maintenance not eligible for the provisions of this paragraph. Component maintenance performed in accordance with this paragraph is not eligible for the issuance of a BCAA Form 1 and shall be subject to the aircraft release requirements provided for in point BCAR-M.A.801.

c) By derogation from paragraph (a), maintenance of an engine/Auxiliary Power Unit (APU) component in accordance with engine/APU maintenance data or, if agreed by BCAA, in accordance with component maintenance data, may be performed by a B rated organisation approved in accordance with Section A, Subpart F of this BCAR or with BCAR-145 only whilst such components are fitted to the engine/APU. Nevertheless, such B rated organisation may temporarily remove this component for maintenance, in order to improve access to the component, except when such removal generates the need for additional maintenance not eligible for the provisions of this paragraph.

d) By derogation from paragraph (a) and point BCAR-M.A.801(b)2, maintenance of a component while installed or temporarily removed from an LA1 aircraft not used in commercial air transport and performed in accordance with component maintenance data, may be performed by certifying staff referred to in point BCAR-M.A.801(b)2, except for:

    1. overhaul of components other than engines and propellers, and;

    2. overhaul of engines and propellers for aircraft other than VLA, sailplanes and LSA.

    Component maintenance performed in accordance with paragraph (d) is not eligible for the issuance of a BCAA Form 1 and shall be subject to the aircraft release requirements provided for in point BCAR-M.A.801.

AMC M.A.502 Component Maintenance

Component removal from and installation on an aircraft is considered to be aircraft maintenance and not component maintenance. As a consequence, BCAR-M.A.502 requirements do not apply to this case.

AMC M.A.502(b) and (c) Component Maintenance

BCAR-M.A.502(b) and (c) allow the performance of certain component maintenance, in accordance with component maintenance data, to maintenance organisations not holding the corresponding B/C rating and to independent certifying staff, subject to the agreement of BCAA.

This should only be permitted by BCAA in the case of simple component maintenance, where BCAA is satisfied that the certifying staff are appropriately qualified and the proper tooling and facilities are available. It is important to note that for more complex component maintenance, special qualifications may be required and it is not enough with holding a BCAR-66 aircraft maintenance licence.

BCAR-M.A.503 Service Life Limited Components

a) Installed service life limited components shall not exceed the approved service life limit as specified in the approved maintenance programme and airworthiness directives, except as provided for in BCAR-M.A.504(c).

b) The approved service life is expressed in calendar time, flight hours, landings or cycles, as appropriate.

c) At the end the approved service life, the component must be removed from the aircraft for maintenance, or for disposal in the case of components with a certified life limit.

BCAR-M.A.504 Control of Unserviceable Components

a) A component shall be considered unserviceable in any one of the following circumstances:

1. expiry of the service life limit as defined in the maintenance program;
2. non-compliance with the applicable airworthiness directives and other continued airworthiness requirements mandated by BCAA;
3. absence of the necessary information to determine the airworthiness status or eligibility for installation;
4. evidence of defects or malfunctions;
5. Involvement in an incident or accident likely to affect its serviceability.

b) Unserviceable components shall be identified and stored in a secure location under the control of an approved maintenance organisation until a decision is made on the future status of such components. Nevertheless, for aircraft not used in commercial air transport other than large aircraft, the person or organisation that declared the component unserviceable may transfer its custody, after identifying it as unserviceable, to the aircraft owner provided that such transfer is reflected in the aircraft logbook or engine logbook or component logbook.

c) Components which have reached their certified life limit or contain a non-repairable defect shall be classified as unsalvageable and shall not be permitted to re-enter the component supply system unless certified life limits have been extended or a repair solution has been approved according to BCAR-M.A.304.

d) Any person or organisation accountable under BCAR-M shall, in the case of a paragraph (c) unsalvageable components:

1. retain such component in the paragraph (b) location, or;
2. arrange for the component to be mutilated in a manner that ensures that it is beyond economic salvage or repair before relinquishing responsibility for such component.

e) Notwithstanding paragraph (d) a person or organisation accountable under BCAR-M may transfer responsibility of components classified as unsalvageable to an organisation for training or research without mutilation.

AMC M.A.504(a) - Control of Unserviceable Components

A component continues to be unserviceable until a decision is taken pursuant to AMC M.A.605(c)6.

AMC M.A.504(b) - Control of Unserviceable Components

1. BCAR-M.A.801(b)(2) and BCAR-M.A.801(c) certifying staff or the Section A Subpart F / BCAR-145 approved maintenance organisation performing maintenance should ensure proper identification of any unserviceable components.

2. The unserviceable status of the component should be clearly declared on a tag together with the component identification data and any information useful to define actions necessary to be taken. Such information should state, as applicable, in service times, maintenance status, preservation status, failures, defects or malfunctions reported or detected exposure to adverse environmental conditions, if the component has been involved in or affected by an accident/incident. Means should be provided to prevent unwanted separation of this tag from the component.

3. BCAR-M.A.801(b)(2) and BCAR-M.A.801(c) certifying staff performing aircraft maintenance should send, with the agreement of the aircraft owner/lessee, any unserviceable component to a maintenance organisation approved under Section A Subpart F or BCAR-145 for controlled storage, or transfer the custody of the component to the owner itself under the conditions specified in BCAR-M.A.504(b).

   "A secure location under the control of an approved maintenance organisation" means a secure location for which security is the responsibility of the approved maintenance organisation. This may include facilities established by the approved maintenance organisation at locations different from the main maintenance facilities. These locations should be identified in the relevant procedures of the approved maintenance organisation.

AMC M.A.504(c) - Control of Unserviceable Components – Unsalvageable Components

1. The following types of components should typically be classified as unsalvageable:

   (a) components with non-repairable defects, whether visible or not to the naked eye;

   (b) components that do not meet design specifications, and cannot be brought into conformity with such specifications;

   (c) components subjected to unacceptable modification or rework that is irreversible;

   (d) certified life-limited parts that have reached or exceeded their certified life limits, or have missing or incomplete records;

   (e) components that cannot be returned to airworthy condition due to exposure to extreme forces, heat or adverse environment;

(f) components for which conformity with an applicable airworthiness directive cannot be accomplished;

(g) components for which continuing airworthiness records and/or traceability to the manufacturer cannot be retrieved.

2. It is common practice for possessors of aircraft components to dispose of unsalvageable components by selling, discarding, or transferring such items. In some instances, these items have reappeared for sale and in the active parts inventories of the aviation community. Misrepresentation of the status of components and the practice of making such items appear serviceable has resulted in the use of unsalvageable nonconforming components. Therefore organisations disposing of unsalvageable aircraft components should consider the possibility of such components later being misrepresented and sold as serviceable components. Caution should be exercised to ensure that unsalvageable components are disposed of in a manner that does not allow them to be returned to service.

AMC M.A.504(d)2 - Control of Unserviceable Components

1. Mutilation should be accomplished in such a manner that the components become permanently unusable for their original intended use. Mutilated components should not be able to be reworked or camouflaged to provide the appearance of being serviceable, such as by re-plating, shortening and re-threading long bolts, welding, straightening, machining, cleaning, polishing, or repainting.

2. Mutilation may be accomplished by one or a combination of the following procedures:

(a) grinding,

(b) burning,

(c) removal of a major lug or other integral feature,

(d) permanent distortion of parts,

(e) cutting a hole with cutting torch or saw,

(f) melting,

(g) sawing into many small pieces,

(h) any other method accepted by BCAA on a case by case basis.

3. The following procedures are examples of mutilation that are often less successful because they may not be consistently effective:

(a) stamping or vibro-etching,

(b) spraying with paint,

(c) small distortions, incisions or hammer marks,

(d) identification by tag or markings,

(e) drilling small holes,

(f) sawing in two pieces only.

4. Since manufacturers producing approved aircraft components should maintain records of serial numbers for "retired" certified life-limited or other critical components, the organisation that mutilates a component should provide the original manufacturer with the data plate and/or serial number and final disposition of the component.

AMC M.A.504(e) - Control of Unserviceable Components

A maintenance organisation may choose, in agreement with the component's owner, to release an unsalvageable component for legitimate non-flight uses, such as for training and education, research and development. In such instances, mutilation may not be appropriate. The following methods should be used to prevent the component re-entering the aviation supply system:

(a) permanently marking or stamping the component, as "NOT SERVICEABLE." (Ink stamping is not an acceptable method);

(b) removing original part number identification;

(c) removing data plate identification;

(d) maintaining a tracking or accountability system, by serial number or other individualised data, to record transferred unsalvageable aircraft component;

(e) including written procedures concerning disposal of such components in any agreement or contract transferring such components.

Note: Unsalvageable components should not be released to any person or organisation that is known to return unsalvageable components back into the aviation supply system, due to the potential safety threat.

Subpart F Maintenance Organisation

BCAR-M.A.601 Scope

This Subpart establishes the requirements to be met by an organisation to qualify for the issue or continuation of an approval for the maintenance of aircraft and components not listed in BCAR-M.A.201(g).

BCAR-M.A.602 Application

An application for issue or variation of a maintenance organisation approval shall be made on a form and in a manner established by BCAA.

AMC M.A.602 Application

An application should be made on the BCAA Form 2 (Appendix IX to AMC M.A.602 and AMC M.A.702) or equivalent acceptable to BCAA.

The BCAA Form 2 is valid for the application for BCAR-M.A Subpart F, BCAR- 145 and BCAR-M.A Subpart G organisations. Organisations applying for several approvals may do so by using a single BCAA Form 2.

BCAR-M.A.603 Extent of Approval

a) An organisation involved in activities subject to this Subpart shall not exercise its activities unless approved by BCAA. Appendix V to BCAR-M provides the template certificate for this approval.

b) The maintenance organisation's manual referred to in point BCAR-M.A.604 shall specify the scope of work deemed to constitute approval. Appendix IV to BCAR-M defines all classes and ratings possible under Subpart F.

c) An approved maintenance organisation may fabricate, in conformity with maintenance data, a restricted range of parts for the use in the course of undergoing work within its own facilities, as identified in the maintenance organisation manual.

AMC M.A.603(a) Extent of Approval

The following table identifies the ATA Specification 2200 chapter for the category C component rating. If the maintenance manual or equivalent document does not follow the ATA Chapters, the corresponding subjects still apply to the applicable C rating.

CLASS	RATING	ATA CHAPTERS
COMPONENTS OTHER THAN COMPLETE ENGINES OR APUs	C1 Air Cond & Press	21
	C2 Auto Flight	22
	C3 Comms and Nav	23-24
	C4 Doors - Hatches	52
	C5 Electrical Power & Lights	24-33-85
	C6 Equipment	25-38-44-45-50
	C7 Engine – APU	49-71-72-73-74-75-76-77-78-79-80-81-82-83
	C8 Flight Controls	27-55-57.40-57.50-57.60-57.70
	C9 Fuel	28-47
	C10 Helicopters - Rotors	62-64-66-67
	C11 Helicopter - Trans	63-65
	C12 Hydraulic Power	29
	C13 Indicating/Recording Systems	31-42-46
	C14 Landing Gear	32
	C15 Oxygen	35
	C16 Propellers	61
	C17 Pneumatic & Vacuum	36-37
	C18 Protection ice/rain/fire	26-30
	C19 Windows	56
	C20 Structural	53-54-57.10-57.20-57.30
	C21 Water Ballast	41
	C22 Propulsion Augmentation	84

AMC M.A.603(c) Extent of Approval

1. The agreement by BCAA for the fabrication of parts by the approved maintenance organisation should be formalised through the approval of a detailed procedure in the maintenance organisation manual. This AMC contains principles and conditions to be taken into account for the preparation of an acceptable procedure.

2. Fabrication, inspection, assembly and test should be clearly within the technical and procedural capability of the approved maintenance organisation.

3. The approved data necessary to fabricate the part are those approved either by BCAA, the TC holder, BCAR-21 design organisation approval holder, or STC holder.

4. Items fabricated by an approved maintenance organisation may only be used by that organisation in the course of overhaul, maintenance, modifications, or repair of aircraft or components undergoing work within its own facility. The permission to fabricate does not constitute approval for manufacture, or to supply externally and the parts do not qualify for certification on a BCAA Form 1. This also applies to the bulk transfer or surplus inventory, in that locally fabricated parts are physically segregated and excluded from any delivery certification.

5. Fabrication of parts, modification kits etc. for onward supply and/or sale may not be conducted under a BCAR-M.A Subpart F approval.

6. The data specified in paragraph 3 may include repair procedures involving the fabrication of parts. Where the data on such parts is sufficient to facilitate fabrication, the parts may be fabricated by an approved maintenance organisation. Care should be taken to ensure that the data include details of part numbering, dimensions, materials, processes, and any special manufacturing techniques, special raw material specification or/and incoming inspection requirement and that the approved organisation has the necessary capability. That capability should be defined by way of maintenance organisation manual content. Where special processes or inspection procedures are defined in the approved data which are not available at the approved maintenance organisation, that organisation cannot fabricate the part unless the TC/STC-holder gives an approved alternative."

7. Examples of fabrication under the scope of BCAR-M.A Subpart F approval can include but are not limited to the following:

   (a) fabrication of bushes, sleeves and shims,

   (b) fabrication of secondary structural elements and skin panels,

   (c) fabrication of control cables,

   (d) fabrication of flexible and rigid pipes,

   (e) fabrication of electrical cable looms and assemblies,

(f) formed or machined sheet metal panels for repairs.

Note: It is not acceptable to fabricate any item to pattern unless an engineering drawing of the item is produced which includes any necessary fabrication processes and which is accepted to BCAA.

8. Where a TC-holder or an approved production organisation is prepared to make available complete data which is not referred to in aircraft manuals or service bulletins but provides manufacturing drawings for items specified in parts lists, the fabrication of these items is not considered to be within the scope of BCAR-M.A Subpart F approval unless agreed otherwise by BCAA in accordance with a procedure specified in the maintenance organisation manual.

9. Inspection and Identification.

Any locally fabricated part should be subject to an inspection stage before, separately, and preferably independently from, any inspection of its installation. The inspection should establish full compliance with the relevant manufacturing data, and the part should be unambiguously identified as fit for use by stating conformity to the approved data. Adequate records should be maintained of all such fabrication processes including heat treatment and the final inspections. All parts, excepting those with inadequate space, should carry a part number which clearly relates it to the manufacturing/inspection data. Additional to the part number the approved maintenance organisation's identity should be marked on the part for traceability purposes.

BCAR M.604 Maintenance Organisation Manual

a) The maintenance organisation shall provide a manual containing at least the following information:

1. a statement signed by the accountable manager to confirm that the organisation will continuously work in accordance with BCAR-M and the manual at all times, and;
2. the organisation's scope of work, and;
3. the title(s) and name(s) of person(s) referred to in BCAR-M.A.606(b), and;
4. an organisation chart showing associated chains of responsibility between the person(s) referred to in BCAR-M.A.606(b), and;
5. a list of certifying staff with their scope of approval, and;
6. a list of locations where maintenance is carried out, together with a general description of the facilities, and;
7. procedures specifying how the maintenance organisation ensures compliance with this BCAR, and;
8. the maintenance organisation manual amendment procedure(s).

b) The maintenance organisation manual and its amendments shall be approved by BCAA.

c) Notwithstanding paragraph (b) minor amendments to the manual may be approved through a procedure (hereinafter called indirect approval).

AMC M.A.604 Maintenance Organisation Manual

1. Appendix IV to this AMC provides an outline of the format of an acceptable maintenance organisation manual for a small organisation with less than 10 maintenance staff.

2. The maintenance organisation exposition as specified in BCAR-145 provides an outline of the format of an acceptable maintenance organisation manual for larger organisations with more than 10 maintenance staff, dependent upon the complexity of the organisation.

BCAR-M.A.605 Facilities

The organisation shall ensure that:

(a) Facilities are provided for all planned work, specialised workshops and bays are segregated as appropriate, to ensure protection from contamination and the environment.

(b) Office accommodation is provided for the management of all planned work including in particular, the completion of maintenance records.

(c) Secure storage facilities are provided for components, equipment, tools and material. Storage conditions shall ensure segregation of unserviceable components and material from all other components, material, equipment and tools. Storage conditions shall be in accordance with the manufacturers' instructions and access shall be restricted to authorised personnel.

AMC M.A.605(a) Facilities

1. Where a hangar is not owned by the BCAR-M.A Subpart F organisation, it may be necessary to establish proof of tenancy. In addition, sufficiency of hangar space to carry out planned maintenance should be demonstrated by the preparation of a projected aircraft hangar visit plan relative to the aircraft maintenance programme. The aircraft hangar visit plan should be updated on a regular basis.

   For balloons and airships a hangar may not be required where maintenance of the envelope and bottom end equipment can more appropriately be performed outside, providing all necessary maintenance can be accomplished in accordance with BCAR-M.A.402. For complex repairs or component maintenance requiring a BCAA Form 1, suitable approved workshops should be provided. The facilities and environmental conditions required for inspection and maintenance should be defined in the Maintenance Organisation Manual.

2. Protection from the weather elements relates to the normal prevailing local weather elements that are expected throughout any twelve-month period. Aircraft hangar and aircraft component workshop structures should be to a standard that prevents the ingress of rain, hail, ice, snow, wind and dust etc. Aircraft hangar and aircraft component workshop floors should be sealed to minimise dust generation.

3. Aircraft maintenance staff should be provided with an area where they may study maintenance instructions and complete continuing airworthiness records in a proper manner.

AMC M.A.605(b) Facilities

It is acceptable to combine any or all of the office accommodation requirements into one office subject to the staff having sufficient room to carry out assigned tasks.

AMC M.A.605(c) Facilities

1. Storage facilities for serviceable aircraft components should be clean, well-ventilated and maintained at an even dry temperature to minimise the effects of condensation. Manufacturer's storage recommendations should be followed for those aircraft components identified in such published recommendations.

2. Adequate storage racks should be provided and strong enough to hold aircraft components and provide sufficient support for large components such that the component is not damaged during storage.

3. All aircraft components, wherever practicable, should remain packaged in their protective material to minimise damage and corrosion during storage. A shelf life control system should be utilised and identity tags used to identify components.

4. Segregation means storing unserviceable components in a separate secured location from serviceable components.

5. Segregation and management of any unserviceable component should be ensured according to the pertinent procedure approved to that organisation.

6. Procedures should be defined by the organisation describing the decision process for the status of unserviceable components. This procedure should identify at least the following:

    - role and responsibilities of the persons managing the decision process;

    - description of the decision process to choose between maintaining, storing or mutilating a component;

    - traceability of decision.

7. Once unserviceable components or materials have been identified as unsalvageable in accordance with BCAR-M.A.504(c), the organisation should establish secure areas in which to segregate such items and to prevent unauthorised access. Unsalvageable components should be managed through a procedure to ensure that these components receive the appropriate final disposal according to BCAR-M.A.504(d) or (e). The person responsible for the implementation of this procedure should be identified.

BCAR-M.606 Personnel Requirements

a) The organisation shall appoint an accountable manager, who has corporate authority for ensuring that all maintenance required by the customer can be financed and carried out to the standard required by this BCAR.

b) A person or group of persons shall be nominated with the responsibility of ensuring that the organisation is always in compliance with this Subpart. Such person(s) shall be ultimately responsible to the accountable manager.

c) All paragraph (b) persons shall be able to show relevant knowledge, background and appropriate experience related to aircraft and/or component maintenance.

d) The organisation shall have appropriate staff for the normal expected contracted work. The use of temporarily sub-contracted staff is permitted in the case of higher than normally expected contracted work and only for personnel not issuing a certificate of release to service.

e) The qualification of all personnel involved in maintenance shall be demonstrated and recorded.

f) Personnel who carry out specialised tasks such as welding, non-destructive testing/inspection other than colour contrast shall be qualified in accordance with an officially recognised standard.

g) The maintenance organisation shall have sufficient certifying staff to issue BCAR-M.A.612 and BCAR-M.A.613 certificates of release to service for aircraft and components. They shall comply with the requirements of BCAR-66.

h) By derogation from paragraph (g), the organisation may use certifying staff qualified in accordance with the following provisions when providing maintenance support to operators involved in commercial operations, subject to appropriate procedures to be approved as part of the organisation's manual:

1. For a repetitive pre-flight airworthiness directive which specifically states that the flight crew may carry out such airworthiness directive, the organisation may issue a limited certifying staff authorisation to the aircraft commander on the basis of the flight crew licence held, provided that the organisation ensures that sufficient practical training has been carried out to ensure that such person can accomplish the airworthiness directive to the required standard;

2. In the case of aircraft operating away from a supported location the organisation may issue a limited certifying staff authorisation to the aircraft commander on the basis of the flight crew licence, provided that the organisation ensures that sufficient practical training has been carried out to ensure that such person can accomplish the task to the required standard.

AMC M.A.606(a) Personnel Requirements

With regard to the accountable manager, it is normally intended to mean the chief executive officer of the maintenance organisation approved under BCAR-M.A Subpart F, who by virtue of position has overall (including in particular financial) responsibility for running the organisation. The accountable manager may be the accountable manager for more than one organisation and is not required to be necessarily knowledgeable on technical matters. When the accountable manager is not the chief executive officer, BCAA will need to be assured that such an accountable manager has direct access to chief executive officer and has a sufficiency of maintenance funding allocation.

AMC M.A.606(b) Personnel Requirements

1. Dependent upon the size of the organisation, the functions may be subdivided under individual managers or combined in any number of ways.

2. The maintenance organisation should have, dependent upon the extent of approval, an aircraft maintenance manager, a workshop manager all of whom should report to the accountable manager. In small maintenance organisations any manager may also be the accountable manager, and may also be the aircraft maintenance manager or the workshop manager.

3. The aircraft maintenance manager is responsible for ensuring that all maintenance required to be carried out, plus any defect rectification carried out during aircraft maintenance, is carried out to the design and quality standards specified in this BCAR. The aircraft maintenance manager is also responsible for any corrective action resulting from the BCAR-M.A.616 organisational review.

4. The workshop manager is responsible for ensuring that all work on aircraft components is carried out to the standards specified in this BCAR and also responsible for any corrective action resulting from the BCAR-M.A.616 organisational review.

5. Notwithstanding the example sub-paragraphs 2- 4 titles, the organisation may adopt any title for the foregoing managerial positions but should identify to BCAA the titles and persons chosen to carry out these functions.

AMC M.A.606(c) Personnel Requirements

1. All nominated persons should, in the normal way, be expected to satisfy BCAA that they possess the appropriate experience and qualifications which are listed in paragraphs 2.1 to 2.5 below.

2. All nominated persons should have:

   2.1 practical experience and expertise in the application of aviation safety standards and safe maintenance practices;

2.2 comprehensive knowledge of:

(a) BCAR-M and any associated requirements and procedures;

(b) the maintenance organisation manual;

2.3 five years aviation experience of which at least three years should be practical maintenance experience;

2.4 knowledge of the relevant type(s) of aircraft or components maintained. This knowledge may be demonstrated by documented evidence or by an assessment performed by BCAA. This assessment should be recorded.

Training courses should be as a minimum at a level equivalent to BCAR-66 Appendix III Level 1 General Familiarisation and could be imparted by a BCAR-147 organisation, by the manufacturer, or by any other organisation accepted by BCAA.

2.5 knowledge of maintenance standards.

AMC M.A.606(d) Personnel Requirements

1. All staff are subjected to compliance with the organisation's procedures specified in the maintenance organisation manual relevant to their duties.

2. To have sufficient staff means that the approved maintenance organisation employs or contracts staff directly, even on a volunteer basis, for the anticipated maintenance workload.

3. Temporarily sub-contracted means the person is employed by another organisation and contracted by that organisation to the approved maintenance organisation.

AMC M.A.606(e) Personnel Requirements

1. Personnel involved in maintenance should be assessed for competence by 'on the job' evaluation and/or by examination relevant to their particular job role within the organisation before unsupervised work is permitted.

2. Adequate initial and recurrent training should be provided and recorded to ensure continued competence.

AMC M.A.606(f) Personnel Requirements

1. Continued airworthiness non-destructive testing means such testing specified by the type certificate holder of the aircraft, engine or propeller in the BCAR-M.A.304 (b) maintenance data for in service aircraft/aircraft components for the purpose of determining the continued fitness of the product to operate safely.

2. Appropriately qualified means to level 1, 2 or 3 as defined by European Standard EN 4179 or equivalent dependent upon the non-destructive testing function to be carried out.

3. Notwithstanding the fact that level 3 personnel may be qualified via EN 4179 or equivalent to establish and authorise methods, techniques, etc., this does not permit such personnel to deviate from methods and techniques published by the type certificate holder/manufacturer in the form of continued airworthiness data, such as in non-destructive test manuals or service bulletins, unless the manual or service bulletin expressly permits such deviation.

4. All examinations should be conducted by personnel or organisations under the control of an organisation (NDT board for example) recognised by BCAA.

5. Particular non-destructive test means any one or more of the following: dye penetrant, magnetic particle, eddy current, ultrasonic and radiographic methods including X-ray and gamma ray.

6. In addition it should be noted that new methods are and will be developed, such as, but not limited to thermography and shearography, which are not specifically addressed by EN 4179 or equivalent. Until such time as an agreed standard is established such methods should be carried out in accordance with the particular equipment manufacturers' recommendations including any training and examination process to ensure competence of the personnel with the process.

7. Any approved maintenance organisation that carries out continued airworthiness non-destructive testing should establish qualification procedures for non-destructive testing.

8. Boroscoping and other techniques such as delamination coin tapping are non-destructive inspections rather than non-destructive testing. Notwithstanding such differentiation, approved maintenance organisation should establish a procedure to ensure that personnel who carry out and interpret such inspections are properly trained and assessed for their competence with the process. Non-destructive inspections, not being considered as non-destructive testing by BCAR-M.A Subpart F are not listed in Appendix IV to BCAR-M under class rating D1.

9. The referenced standards, methods, training and procedures should be specified in the maintenance organisation manual.

10. Any such personnel who intend to carry out and/or control a non-destructive test for which they were not qualified prior to the effective date of BCAR-M should qualify for such non-destructive test in accordance with EN 4179 or equivalent.

11. In this context officially recognised standard means those standards established or published by an official body whether having legal personality or not, which are widely recognised by the air transport sector as constituting good practice.

AMC M.A.606(h)2 Personnel Requirements

1. For the issue of a limited certification authorisation the commander should hold either a valid air transport pilot license (ATPL), or commercial pilot license (CPL), or a national equivalent acceptable to BCAA on the aircraft type. In addition, the limited certification

authorisation is subject to the maintenance organisation manual containing procedures to address the following:

a. Completion of adequate maintenance airworthiness regulation training.

b. Completion of adequate task training for the specific task on the aircraft. The task training should be of sufficient duration to ensure that the individual has a thorough understanding of the task to be completed and should involve training in the use of associated maintenance data.

c. Completion of the procedural training.

The above procedures should be specified in the maintenance organisation manual and be accepted by BCAA.

2. Typical tasks that may be certified and/or carried out by the commander holding an ATPL or CPL are minor maintenance or simple checks included in the following list:

a. Replacement of internal lights, filaments and flash tubes.

b. Closing of cowlings and refitment of quick access inspection panels.

c. Role changes, e.g., stretcher fit, dual controls, FLIR, doors, photographic equipment etc.

d. Inspection for and removal of de-icing/anti-icing fluid residues, including removal/closure of panels, cowls or covers that are easily accessible but not requiring the use of special tools.

e. Any check/replacement involving simple techniques consistent with this AMC and as agreed by BCAA.

3. The authorisation should have a finite life of twelve months subject to satisfactory recurrent training on the applicable aircraft type.

BCAR-M.A.607 Certifying Staff

a) In addition to BCAR-M.A.606(g), certifying staff can only exercise their privileges, if the organisation has ensured:

1. that certifying staff can demonstrate that they meet the requirement of point BCAR-66.A.20(b) of BCAR-66.

2. that certifying staff have an adequate understanding of the relevant aircraft and/or aircraft component(s) to be maintained together with the associated organisation procedures.

b) In the following unforeseen cases, where an aircraft is grounded at a location other than the main base where no appropriate certifying staff is available, the maintenance organisation contracted to provide maintenance support may issue a one-off certification authorisation:

1. to one of its employees holding type qualifications on aircraft of similar technology, construction and systems; or

2. to any person with not less than five years maintenance experience and holding a valid ICAO aircraft maintenance licence rated for the aircraft type requiring certification provided there is no organisation appropriately approved under this BCAR at that location and the contracted organisation obtains and holds on file evidence of the experience and the licence of that person.

All such cases must be reported to BCAA within seven days of the issuance of such certification authorisation. The approved maintenance organisation issuing the one-off certification authorisation shall ensure that any such maintenance that could affect flight safety is re-checked.

c) The approved maintenance organisation shall record all details concerning certifying staff and maintain a current list of all certifying staff together with their scope of approval as part of the organisation's manual pursuant to point BCAR-M.A.604(a)5.

AMC M.A.607 Certifying Staff

1. Adequate understanding of the relevant aircraft and/or aircraft component(s) to be maintained together with the associated organisation procedures means that the person has received training and has relevant maintenance experience on the product type and associated organisation procedures such that the person understands how the product functions, what are the more common defects with associated consequences.

2. All prospective certifying staff is required to be assessed for competence, qualification and capability related to intended certifying duties. Competence and capability can be assessed by having the person work under the supervision of another certifying person for sufficient time to arrive at a conclusion. Sufficient time could be as little as a few weeks if the person is fully exposed to relevant work. The person need not be assessed against the complete spectrum of intended duties. When the person has been recruited from another approved maintenance organisation and was a certifying person in that organisation then it is reasonable to accept a written confirmation from the previous organisation.

3. The organisation should hold copies of all documents that attest to qualification, and to recent experience.

AMC M.A.607(c) Certifying Staff

1. The following minimum information as applicable should be kept on record in respect of each certifying person:

   (a) name;

   (b) date of birth;

   (c) basic training;

   (d) type training;

   (e) recurrent training;

   (f) specialised training;

   (g) experience;

   (h) qualifications relevant to the approval;

   (i) scope of the authorisation and personal authorisation reference;

   (j) date of first issue of the authorisation;

   (k) if appropriate - expiry date of the authorisation.

2. Persons authorised to access the system should be maintained at a minimum to ensure that records cannot be altered in an unauthorised manner or that such confidential records become accessible to unauthorised persons.

3. BCAA should be granted access to the records upon request.

BCAR-M.A.608 Components, Equipment and Tools

a) The organisation shall:

1. hold the equipment and tools specified in the maintenance data described in BCAR-M.A.609 or verified equivalents as listed in the maintenance organisation manual as necessary for day-to-day maintenance within the scope of the approval; and,

2. demonstrate that it has access to all other equipment and tools used only on an occasional basis.

b) Tools and equipment shall be controlled and calibrated to an officially recognised standard. Records of such calibrations and the standard used shall be kept by the organisation.

c) The organisation shall inspect, classify and appropriately segregate all incoming components.

AMC M.A.608(a) Components, Equipment and Tools

1. Once the applicant for BCAR-M.A Subpart F approval has determined the intended scope of approval for consideration by BCAA, it will be necessary to show that all tools and equipment as specified in the maintenance data can be made available when needed.

2. All such tools should be clearly identified and listed in a control register including any personal tools and equipment that the organisation agrees can be used.

3. For tools required on an occasional basis, the organisation should ensure that they are controlled in terms of servicing or calibration as required.

AMC M.A.608(b) Components, Equipment and Tools

1. The control of these tools and equipment requires that the organisation has a procedure to inspect/service and, where appropriate, calibrate such items on a regular basis and indicate to users that the item is within any inspection or service or calibration time-limit. A clear system of labelling all tooling, equipment and test equipment is therefore necessary giving information on when the next inspection or service or calibration is due and if the item is unserviceable for any other reason where it may not be obvious. A register should be maintained for all the organisation's precision tooling and equipment together with a record of calibrations and standards used.

2. Inspection, service or calibration on a regular basis should be in accordance with the equipment manufacturers' instructions except where the BCAR-M.A Subpart F organisation can show by results that a different time period is appropriate in a particular case.

3. In this context officially recognised standard means those standards established or published by an official body whether having legal personality or not, which are widely recognised by the air transport sector as constituting good practice.

BCAR-M.A.609 Maintenance Data

The approved maintenance organisation shall hold and use applicable current maintenance data specified in BCAR-M.A.401 in the performance of maintenance including modifications and repairs. In the case of customer provided maintenance data, it is only necessary to have such data when the work is in progress.

AMC M.A.609 Maintenance Data

When an organisation uses customer provided maintenance data, the scope of approval indicated in the maintenance organisation manual should be limited to the individual aircraft covered by the contracts signed with those customers unless the organisation also holds its own complete set of maintenance data for that type of aircraft.

BCAR-M.A.610 Maintenance Work Orders

Before the commencement of maintenance a written work order shall be agreed between the organisation and the organisation requesting maintenance to clearly establish the maintenance to be carried out.

AMC M.A.610 Maintenance Work Orders

A written "work order" may take the form of, but not limited to, the following:

- A formal document or form specifying the work to be carried out. This form may be provided by the continuing airworthiness management organisation managing the aircraft, or by the maintenance organisation undertaking the work, or by the owner/operator himself,
- An entry in the aircraft logbook specifying the defect that needs to be corrected.

BCAR-M.A.611 Maintenance Standards

All maintenance shall be carried out in accordance with the requirements of BCAR-M.A Subpart D.

BCAR-M.A.612 Aircraft Certificate of Release to Service

At the completion of all required aircraft maintenance in accordance with this Subpart an aircraft certificate of release to service shall be issued according to BCAR-M.A.801.

BCAR-M.A.613 Component Certificate of Release to Service

a) At the completion of all required component maintenance in accordance with this Subpart a component certificate of release to service shall be issued according to BCAR-M.A.802, a BCAA Form 1 shall be issued except for those components maintained in accordance with BCAR-M.A.502(b) and BACR-M.A.502(d) and components fabricated in accordance with BCAR-M.A.603(b).

b) The component certificate release to service document, a BCAA Form 1 may be generated from a computer database.

AMC M.A.613(a) Component Certificate of Release to Service

1. An aircraft component which has been maintained off the aircraft requires the issuance of a certificate of release to service for such maintenance and another CRS to service in regard to being installed properly on the aircraft when such action occurs. When an organisation maintains a component for use by the same organisation, a BCAA Form 1 may not be necessary depending upon the organisation's internal release procedures defined in the maintenance organisation exposition.

2. In the case of components in storage prior to BCAR-145, BCAR-M and BCAR-21 and not released on a BCAA Form 1 or equivalent in accordance with BCAR-M.A.501(a) or removed serviceable from active aircraft which have been withdrawn from service, this paragraph provides additional guidance regarding the conditions under which a BCAA Form 1 may be issued.

   2.1 BCAA Form 1 may be issued for an aircraft component which has been:

   - Maintained before BCAR-145, or BCAR-M became effective or manufactured before BCAR-21 became effective.
   - Used on an aircraft and removed in a serviceable condition. Examples include leased and loaned aircraft components.
   - Removed from aircraft which have been withdrawn from service, or from aircraft which have been involved in abnormal occurrences such as accidents, incidents, heavy landings or lightning strikes.

   2.2 An appropriately rated BCAR-M.A Subpart F maintenance organisation may issue a BCAA Form 1 as detailed in this AMC subparagraph 2.5 to 2.9, as appropriate, in accordance with the procedures detailed in the manual as approved by BCAA. The appropriately rated BCAR-M.A Subpart F maintenance organisation is responsible for ensuring that all reasonable measures have been taken to ensure that only approved and serviceable aircraft components are issued a BCAA Form 1 under this paragraph.

   2.3 For the purposes of this paragraph 2 only, 'appropriately rated' means an organisation with an approval class rating for the type of component or for the product in which it may be installed.

   2.4 BCAA Form 1 issued in accordance with this paragraph 2 should be issued by signing in block 14b and stating 'Inspected' in block 11. In addition, block 12 should specify:

      2.4.1 when the last maintenance was carried out and by whom;

      2.4.2 if the component is unused, when the component was manufactured and by whom with a cross-reference to any original documentation which should be included with the Form;

2.4.3 a list of all airworthiness directives, repairs and modifications known to have been incorporated. If no airworthiness directives or repairs or modifications are known to be incorporated then this should be stated;

2.4.4 detail of life used for service life-limited parts being any combination of fatigue, overhaul or storage life;

2.4.5 for any aircraft component having its own maintenance history record, reference to the particular maintenance history record as long as the record contains the details that would otherwise be required in block 12. The maintenance history record and acceptance test report or statement, if applicable, should be attached to a BCAA Form 1.

2.5 New/unused aircraft components

2.5.1 Any unused aircraft component in storage without a BCAA Form 1 up to the effective date(s) for BCAR-21 that was manufactured by an organisation acceptable to BCAA at the time may be issued a BCAA Form 1 by an appropriately rated maintenance organisation approved under BCAR-M.A Subpart F. The BCAA Form 1 should be issued in accordance with the following subparagraphs which should be included in a procedure within the maintenance organisation manual.

Note 1: It should be understood that the release of a stored but unused aircraft component in accordance with this paragraph represents a maintenance release under BCAR-M.A Subpart F and not a production release under BCAR-21. It is not intended to bypass the production release procedure for parts and subassemblies intended for fitment on the manufacturers own production line.

(a) An acceptance test report or statement should be available for all used and unused aircraft components that are subject to acceptance testing after manufacturing or maintenance as appropriate.

(b) The aircraft component should be inspected for compliance with the manufacturer's instructions and limitations for storage and condition including any requirement for limited storage life, inhibitors, controlled climate and special storage containers. In addition, or in the absence of specific storage instructions, the aircraft component should be inspected for damage, corrosion and leakage to ensure good condition.

(c) The storage life used of any storage life-limited parts should be established.

2.5.2 If it is not possible to establish satisfactory compliance with all applicable conditions specified in subparagraph 2.5.1 (a) to (c) inclusive, the aircraft component should be disassembled by an appropriately rated organisation and subjected to a check for incorporated airworthiness directives, repairs and modifications and inspected/tested in accordance with the maintenance data to establish satisfactory condition and, if relevant, all seals, lubricants and life-

limited parts replaced. Upon satisfactory completion after reassembly, a BCAA Form 1 may be issued stating what was carried out and the reference to the maintenance data included.

2.6 Used aircraft components removed from a serviceable aircraft.

2.6.1 Serviceable aircraft components removed from a Bhutanese registered aircraft may be issued a BCAA Form 1 by an appropriately rated organisation subject to compliance with this subparagraph.

(a) The organisation should ensure that the component was removed from the aircraft by an appropriately qualified person.

(b) The aircraft component may only be deemed serviceable if the last flight operation with the component fitted revealed no faults on that component/related system.

(c) The aircraft component should be inspected for satisfactory condition including in particular damage, corrosion or leakage and compliance with any additional maintenance data.

(d) The aircraft record should be researched for any unusual events that could affect the serviceability of the aircraft component such as involvement in accidents, incidents, heavy landings or lightning strikes. Under no circumstances may a BCAA Form 1 be issued in accordance with this paragraph 2.6 if it is suspected that the aircraft component has been subjected to extremes of stress, temperatures or immersion which could affect its operation.

(e) A maintenance history record should be available for all used serialised aircraft components.

(f) Compliance with known modifications and repairs should be established.

(g) The flight hours/cycles/landings as applicable of any service life-limited parts including time since overhaul should be established.

(h) Compliance with known applicable airworthiness directives should be established.

(i) Subject to satisfactory compliance with this subparagraph 2.6.1, a BCAA Form 1 may be issued and should contain the information as specified in paragraph 2.4 including the aircraft from which the aircraft component was removed.

2.6.2 Serviceable aircraft components removed from a Bhutanese registered aircraft may only be issued a BCAA Form 1 if the components are leased or loaned from the maintenance organisation approved under BCAR-M.A Subpart F who

retains control of the airworthiness status of the components. A BCAA Form 1 may be issued and should contain the information as specified in paragraph 2.4 including the aircraft from which the aircraft component was removed.

2.7 Used aircraft components removed from an aircraft withdrawn from service. Serviceable aircraft components removed from a Bhutanese registered aircraft withdrawn from service may be issued a BCAA Form 1 by a maintenance organisation approved under BCAA-M.A Subpart F subject to compliance with this subparagraph.

(a) Aircraft withdrawn from service are sometimes dismantled for spares. This is considered to be a maintenance activity and should be accomplished under the control of an organisation approved under BCAR-M.A Subpart F, employing procedures approved by BCAA.

(b) To be eligible for installation, components removed from such aircraft may be issued with a BCAA Form 1 by an appropriately rated organisation following a satisfactory assessment.

(c) As a minimum, the assessment will need to satisfy the standards set out in paragraphs 2.5 and 2.6 as appropriate. This should, where known, include the possible need for the alignment of scheduled maintenance that may be necessary to comply with the maintenance programme applicable to the aircraft on which the component is to be installed.

(d) Irrespective of whether the aircraft holds a certificate of airworthiness or not, the organisation responsible for certifying any removed component should satisfy itself that the manner in which the components were removed and stored are compatible with the standards required by BCAR-M.A Subpart F.

(e) A structured plan should be formulated to control the aircraft disassembly process. The disassembly is to be carried out by an appropriately rated organisation under the supervision of certifying staff, who will ensure that the aircraft components are removed and documented in a structured manner in accordance with the appropriate maintenance data and disassembly plan.

(f) All recorded aircraft defects should be reviewed and the possible effects these may have on both normal and standby functions of removed components are to be considered.

(g) Dedicated control documentation is to be used as detailed by the disassembly plan, to facilitate the recording of all maintenance actions and component removals performed during the disassembly process. Components found to be unserviceable are to be identified as such and quarantined pending a decision on the actions to be taken. Records of the maintenance accomplished to establish serviceability are to form part of the component maintenance history.

(h) Suitable BCAR-M.A Subpart F facilities for the removal and storage of removed components are to be used which include suitable environmental conditions, lighting, access equipment, aircraft tooling and storage facilities for the work to be undertaken. While it may be acceptable for components to be removed, given local environmental conditions, without the benefit of an enclosed facility subsequent disassembly (if required) and storage of the components should be in accordance with the manufacturer's recommendations.

2.8 Used aircraft components maintained by organisations not approved in accordance with BCAR-M.A Subpart F or BCAR-145.

For used components maintained by a maintenance organisation not approved under BCAR-M Subpart F or BCAR-145, due care should be taken before acceptance of such components. In such cases an appropriately rated maintenance organisation approved under BCAR-M.A Subpart F should establish satisfactory conditions by:

(a) dismantling the component for sufficient inspection in accordance with the appropriate maintenance data,

(b) replacing of all service life-limited components when no satisfactory evidence of life used is available and/or the components are in an unsatisfactory condition,

(c) re-assembling and testing as necessary the component,

(d) completing all certification requirements as specified in BCAR-M.A.613.

2.9 Used aircraft components removed from an aircraft involved in an accident or incident. Such components should only be issued with a BCAA Form 1 when processed in accordance with paragraph 2.7 and a specific work order including all additional necessary tests and inspections made necessary by the accident or incident. Such a work order may require input from the TC holder or original manufacturer as appropriate. This work order should be referenced in block 12.

3. A certificate should not be issued for any component when it is known that the component is unserviceable except in the case of a component undergoing a series of maintenance processes at several approved maintenance organisations and the component needs a certificate for the previous maintenance process carried out for the next approved maintenance organisation to accept the component for subsequent maintenance processes. In such a case, a clear statement of limitation should be endorsed in block.

4. The certificate is to be used for export/import purposes, as well as for domestic purposes and serves as an official certificate for components from the manufacturer/maintenance organisation to users. *It should only be issued by organisations approved by BCAA within the scope of the approval.*

BCAR-M.A.614 Maintenance Records

a) The approved maintenance organisation shall record all details of work carried out. Records necessary to prove all requirements have been met for issuance of the certificate of release to service including the sub-contractor's release documents shall be retained.

b) The approved maintenance organisation shall provide a copy of each certificate of release to service to the aircraft owner, together with a copy of any specific approved repair/modification data used for repairs/modifications carried out.

c) The approved maintenance organisation shall retain a copy of all maintenance records and any associated maintenance data for three years from the date the aircraft or aircraft component to which the work relates was released from the approved maintenance organisation.

1. The records under this paragraph shall be stored in a manner that ensures protection from damage and theft.

2. All computer hardware used to ensure backup shall be stored in a different location from that containing the working data in an environment that ensures they remain in good condition.

3. Where an approved maintenance organisation terminates its operation, all retained maintenance records covering the last two years shall be distributed to the last owner or customer of the respective aircraft or component or shall be stored as specified by BCAA.

AMC M.A.614(a) Maintenance Records

1. Properly executed and retained records provide owners, operators and maintenance personnel with information essential in controlling unscheduled and scheduled maintenance, and troubleshooting to eliminate the need for re-inspection and rework to establish airworthiness.

   The prime objective is to have secure and easily retrievable records with comprehensive and legible contents. The aircraft record should contain basic details of all serialised aircraft components and all other significant aircraft components installed, to ensure traceability to such installed aircraft component documentation and associated BCAR-M.A.304 maintenance data.

2. The maintenance record can be either a paper or computer system or any combination of both. The records should remain legible throughout the required retention period.

3. Paper systems should use robust material which can withstand normal handling and filing.

4. Computer systems may be used to control maintenance and/or record details of maintenance work carried out. Computer systems used for maintenance should have at least one backup system which should be updated at least within 24 hours of any maintenance. Each terminal is required to contain programme safeguards against the ability of unauthorised personnel to alter the database.

AMC M.A.614(c) Maintenance Records

Associated maintenance data is specific information such as repair and modification data. This does not necessarily require the retention of all aircraft maintenance manuals, component maintenance manuals, parts catalogues etc. issued by the TC holder or STC holder. Maintenance records should refer to the revision status of the data used.

BCAR-M.A.615 Privileges of the Organisation

The maintenance organisation approved in accordance with Section A, Subpart F of this BCAR, may:

a) maintain any aircraft and/or component for which it is approved at the locations specified in the approval certificate and the maintenance organisation manual;

b) arrange for the performance of specialized services under the control of the maintenance organisation at another organisation appropriately qualified, subject to appropriate procedures being established as part of the Maintenance Organisation Manual approved by BCAA;

c) maintain any aircraft and/or component for which it is approved at any location subject to the need of such maintenance arising either from the unserviceability of the aircraft or from the necessity of supporting occasional maintenance, subject to the conditions specified in the Maintenance Organisation Manual;

d) issue certificates of release to service on completion of maintenance, in accordance with BCAR-M.A.612 or BCAR-M.A.613.

GM M.A.615 Privileges of the Organisation

BCAR-M.A.615 states that the organisation shall only maintain an aircraft or component for which it is approved when all the necessary facilities, equipment, tooling, material, maintenance data, and certifying staff are available.

This provision is intended to cover the situation where the larger organisation may temporarily not hold all the necessary tools, equipment, etc. for an aircraft type or variant specified in the organisation's approval. This paragraph means that BCAA need not amend the approval to delete the aircraft type or variants on the basis that it is a temporary situation and there is a commitment from the organisation to re-acquire tools, equipment, etc. before maintenance on the type may recommence.

AMC M.A.615(b) Privileges of the Organisation

BCAR-M.A.615(b) refers to work carried out by another organisation which is not appropriately approved under BCAR-M.A Subpart F or BCAR-145 to carry out such tasks.

The intent is to permit the acceptance of specialised maintenance services, such as, but not limited to, non-destructive testing, surface treatment, heat-treatment, welding, fabrication of specified parts for minor repairs and modifications, etc., without the need of Subpart F approval for those tasks.

The requirement that the organisation performing the specialised services must be "appropriately qualified" means that it should meet an officially recognised standard or, otherwise, it should be acceptable to BCAA (through the approval of the Maintenance Organisation Manual).

"Under the control of the Subpart F organisation" means that the Subpart F organisation should investigate the capability of the subcontracted organisation (including qualifications, facilities, equipment and materials) and ensure that such organisation:

- Receives appropriate maintenance instructions and maintenance data for the task to be performed.
- Properly records the maintenance performed in the Subpart F airworthiness records.
- Notifies the Subpart F organisation for any deviation or non-conformity, which has arisen during such maintenance.

The certificate of release to service may be issued either at the subcontractors or at the organisation facility by authorised certifying staff and always under the BCAR-M.A Subpart F organisation reference. Such staff would normally come from the BCAR-M.A Subpart F organisation but may otherwise be a person from the subcontractor who meets the BCAR-M.A Subpart F organisation certifying staff standard which itself is approved by BCAA via the Maintenance Organisation Manual.

Subcontracted specialised services organisations should be listed in the Maintenance Organisation Manual of the Subpart F organisation together with their qualifications, and the associated control procedures.

BCAR-M.A.616 Organisational Review

To ensure that the approved maintenance organisation continues to meet the requirements of this Subpart, it shall organise, on a regular basis, organisational reviews.

AMC M.A.616 Organisational Review

1. The primary objectives of the organisational review are to enable the approved maintenance organisation to ensure that it can deliver a safe product and that approved maintenance organisation remains in compliance with the requirements.

2. The approved maintenance organisation should identify:

   2.1 The person responsible for the organisational review, and;

   2.2 The frequency of the reviews, and;

   2.3 The scope and content of the reviews, and;

   2.4 The persons accomplishing the reviews, and;

   2.5 The procedure for planning, performing and processing review findings.

   2.6 The procedure for ensuring corrective actions are carried out in the appropriate time frame.

3. The organisation quality system as specified in BCAR-145 provides an acceptable basic structure for the organisational review system for organisations with more than 10 maintenance staff, dependent upon the complexity of the organisation.

4. Appendix VIII should be used to manage the organisational reviews.

BCAR-M.A.617 Changes to the Approved Maintenance Organisation

In order to enable BCAA to determine continued compliance with this BCAR, the approved maintenance organisation shall notify it of any proposal to carry out any of the following changes, before such changes take place:

1. the name of the organisation;
2. the location of the organisation;
3. additional locations of the organisation;
4. the accountable manager;
5. any of the persons specified in paragraph BCAR-M.A.606(b);
6. the facilities, equipment, tools, material, procedures, work scope and certifying staff that could affect the approval.

In the case of proposed change in personnel not known to the management beforehand, these changes shall be notified at the earliest opportunity.

AMC M.A.617 Changes to the Approved Maintenance Organisation

BCAA should be given adequate notification of any proposed changes in order to enable the maintenance organisation to remain approved if agreed by BCAA during negotiations about any of the specified changes. Without this paragraph the approval would automatically be suspended in all cases.

BCAR-M.A.618 Validity of Approval

a) An approval shall be issued for duration acceptable to BCAA. It shall remain valid subject to:

1. the organisation remaining in compliance with this BCAR, in accordance with the provisions related to the handling of findings as specified under BCAR-M.A.619, and;

2. BCAA being granted access to the organisation to determine continued compliance with this BCAR, and;

3. the approval not being surrendered or revoked;

b) Upon surrender or revocation, the approval certificate shall be returned to BCAA.

BCAR-M.A.619 Findings

a) A level 1 finding is any significant non-compliance with BCAR-M requirements which lowers the safety standard and hazards seriously the flight safety.

b) A level 2 finding is any non-compliance with the BCAR-M requirements which could lower the safety standard and possibly hazard the flight safety.

c) After receipt of notification of findings raised by BCAA, the holder of the maintenance organisation approval shall define a corrective action plan and demonstrate corrective action to the satisfaction of BCAA within a period agreed with BCAA.

Subpart G Continuing Airworthiness Management Organisation

BCAR-M.A.701 Scope

This Subpart establishes the requirements to be met by an organisation to qualify for the issue or continuation of an approval for the management of aircraft continuing airworthiness.

BCAR-M.A.702 Application

An application for issue or variation of a continuing airworthiness management organisation approval shall be made on a form and in a manner established by BCAA.

AMC M.A.702 Application

An application should be made on a BCAA Form 2 (Appendix IX to AMC M.A.602 and AMC M.A.702) or equivalent acceptable to BCAA.

BCAA Form 2 is valid for the application for BCAR-M.A Subpart F, BCAR-145 and BCAR-M.A Subpart G organisations. Organisations applying for several approvals may do so using a single BCAA Form 2.

BCAR-M.A.703 Extent of Approval

a) The approval is indicated on a certificate included in Appendix VI issued by BCAA.

b) Notwithstanding paragraph (a), for commercial air transport, the approval shall be part of the air operator certificate issued by BCAA, for the aircraft operated.

c) The scope of work deemed to constitute approval shall be specified in the continuing airworthiness management exposition in accordance with BCAR-M.A.704.

BCAR-M.A.704 Continuing Airworthiness Management Exposition

a) The continuing airworthiness management organisation shall provide a continuing airworthiness management exposition containing the following information:

1. a statement signed by the accountable manager to confirm that the organisation will work in accordance with this BCAR and the exposition at all times, and;
2. the organisation's scope of work, and;
3. the title(s) and name(s) of person(s) referred to in BCAR-M.A.706(a), BCAR-M.706(c), BACR-M.A.706 (d) and BCAR-M.A.706(i);
4. an organisation chart showing associated chains of responsibility between the person(s) referred to in BCAR-M.A.706(a), BCAR-M.A.706(c), BCAR-M.A.706(d) and BCAR-M.A.706(i);
5. *Reserved*;
6. a general description and location of the facilities, and;
7. procedures specifying how the continuing airworthiness management organisation ensures compliance with this BCAR, and;
8. the continuing airworthiness management exposition amendment procedures.
9. The list of approved aircraft maintenance programmes, or, for aircraft not involved in commercial air transport, the list of "generic" and "baseline" maintenance programmes.
10. The exposition shall refer to the safety management system manual (SMSM).

b) The continuing airworthiness management exposition and its amendments shall be approved by BCAA.

c) Notwithstanding paragraph (b) minor amendments to the exposition may be approved indirectly through an indirect approval procedure. The indirect approval procedure shall define the minor amendment eligible, be established by the continuing airworthiness management organisation as part of the exposition and be approved by BCAA responsible for that continuing airworthiness management organisation.

AMC M.A.704 Continuing Airworthiness Management Exposition

1. The purpose of the continuing airworthiness management exposition is to set forth the procedures, means and methods of the BCAR-M.A Subpart G organisation. Compliance with its contents will assure compliance with BCAR-M requirements.

2. A continuing airworthiness management exposition should comprise:

   Part 0 General organisation

   Part 1 Continuing airworthiness procedures

   Part 2 Quality system or organisational review (as applicable)

   Part 3 Contracted maintenance (for operators) – management of maintenance (liaison with maintenance organisations in the case of non-commercial air transport)

   Part 4 *Reserved.*

3. *Reserved.*

4. Personnel should be familiar with those parts of the exposition that are relevant to their tasks.

5. The BCAR-M.A. Subpart G organisation should specify in the exposition who is responsible for the amendment of the document.

6. Unless otherwise agreed by BCAA, the person responsible for the management of the quality system or for the organisational review should be responsible for monitoring and amending the exposition, including associated procedures manuals, and the submission of proposed amendments to BCAA. BCAA may agree a procedure, which will be stated in the amendment control section of the exposition, defining the class of amendments which can be incorporated without the prior consent of BCAA.

7. The operator may use electronic data processing (EDP) for publication of the continuing airworthiness management exposition. The continuing airworthiness management exposition should be made available to BCAA in a form acceptable to BCAA. Attention should be paid to the compatibility of EDP publication systems with the necessary dissemination of the continuing airworthiness management exposition, both internally and externally.

8. Part 0 “General organisation” of the continuing airworthiness management exposition should include a corporate commitment by the BCAR-M.A Subpart G organisation, signed by the accountable manager confirming that the continuing airworthiness management exposition and any associated manuals define the organisation compliance with BCAR-M and will be complied with at all times.

9. The accountable manager's exposition statement should embrace the intent of the following paragraph, and in fact this statement may be used without amendment. Any modification to the statement should not alter the intent:
   This exposition defines the organisation and procedures upon which the Bhutan Civil Aviation Authority BCAR-M.A. Subpart G continuing airworthiness management approval is based.
   These procedures are approved by the undersigned and should be complied with, as applicable, in order to ensure that all continuing airworthiness tasks of ... (quote operator's name) ... fleet of aircraft and/or of all aircraft under contract in accordance with BCAR-M.A.201(e) with ... (quote organisation's name) ... are carried out on time to an approved standard.
   It is accepted that these procedures do not override the necessity of complying with any new or amended regulation published from time to time where these new or amended regulations are in conflict with these procedures.
   It is understood that the Bhutan Civil Aviation Authority will approve this organisation whilst the Bhutan Civil Aviation Authority is satisfied that the procedures are being followed and the work standard is maintained. It is understood that the Bhutan Civil Aviation Authority reserves the right to suspend, vary or revoke the BCAR-M.A. Subpart G continuing airworthiness management approval of the organisation or the air operators certificate, as applicable, if the Bhutan Civil Aviation Authority has evidence that the procedures are not followed and the standards not upheld.
   Signed .....
   Dated .....
   Accountable Manager and ... (quote position) ...
   For and on behalf of ... (quote organisation's name)...'

10. Whenever the accountable manager is changed it is important to ensure that the new accountable manager signs the paragraph 9 statement at the earliest opportunity as part of the acceptance by BCAA.

    Failure to carry out this action invalidates the BCAR-M.A Subpart G continuing airworthiness management approval or the air operator certificate.

11. The exposition should contain information as applicable, on how the continuing airworthiness management organisation complies with CDCCL instructions.

Appendix V contains an example of an exposition layout.

AMC M.A.704(a)(10) Continuing Airworthiness Management Expositions

The Continuing Airworthiness Management Organization exposition should include a reference to the Safety Management System Manual. As BCAA issues specific approvals for each Safety Management System, the Safety Management System Manual should be issued as a specific manual and not be integrated within the maintenance organization exposition.

BCAR-M.A.705 Facilities

The continuing airworthiness management organisation shall provide suitable office accommodation at appropriate locations for the personnel specified in BCAR-M.A.706.

AMC M.A.705 Facilities

Office accommodation should be such that the incumbents, whether they be continuing airworthiness management, planning, technical records or quality staff, can carry out their designated tasks in a manner that contributes to good standards. In the smaller BCAR-M.A Subpart G organisations, BCAA may agree to these tasks being conducted from one office subject to being satisfied that there is sufficient space and that each task can be carried out without undue disturbance. Office accommodation should also include an adequate technical library and room for document consultation.

BCAR-M.A.706 Personnel Requirements

a) The organisation shall appoint an accountable manager, who has corporate authority for ensuring that all continuing airworthiness management activities can be financed and carried out in accordance with this BCAR.

b) For commercial air transport the paragraph (a) accountable manager shall be the person who also has corporate authority for ensuring that all the operations of the operator can be financed and carried out to the standard required for the issue of an air operator's certificate.

c) A person or group of persons shall be nominated with the responsibility of ensuring that the organisation is always in compliance with this Subpart. Such person(s) shall be ultimately responsible to the accountable manager.

d) For commercial air transport, the accountable manager shall designate a nominated post holder. This person shall be responsible for the management and supervision of continuing airworthiness activities, pursuant to paragraph (c).

e) The nominated post holder referred to in paragraph (d) shall not be employed by a BCAR-145 approved organisation under contract to the operator, unless specifically agreed by BCAA.

f) The organisation shall have sufficient appropriately qualified staff for the expected work.

g) All paragraph (c) and (d) persons shall be able to show relevant knowledge, background and appropriate experience related to aircraft continuing airworthiness.

h) The qualification of all personnel involved in continuing airworthiness management shall be recorded.

i) *Reserved*.

j) The organisation shall define and keep updated in the continuing airworthiness management exposition the title(s) and name(s) of person(s) referred to in points BCAR-M.A.706(a), BCAR-M.A.706(c), BCAR-M.A.706(d) and BCAR-M.A.706(i).

k) For all large aircraft and for aircraft used for commercial air transport the organisation shall establish and control the competence of personnel involved in the continuing airworthiness management, and/or quality audits in accordance with a procedure and to a standard agreed by BCAA.

AMC M.A.706 Personnel Requirements

1. The person or group of persons should represent the continuing airworthiness management structure of the organisation and be responsible for all continuing airworthiness functions. Dependent on the size of the operation and the organisational set-up, the continuing airworthiness functions may be divided under individual managers or combined in nearly any number of ways. However, if a quality system is in place it should be independent from the other functions.

2. The actual number of persons to be employed and their necessary qualifications is dependent upon the tasks to be performed and thus dependent on the size and complexity of the organisation (number of aircraft and the aircraft types, complexity of the aircraft and their age and for commercial air transport, route network, line or charter, ETOPS) and the amount and complexity of maintenance contracting. Consequently, the number of persons needed, and their qualifications may differ greatly from one organisation to another and a simple formula covering the whole range of possibilities is not feasible.

3. To enable BCAA to accept the number of persons and their qualifications, an organisation should make an analysis of the tasks to be performed, the way in which it intends to divide and/or combine these tasks, indicate how it intends to assign responsibilities and establish the number of man/hours and the qualifications needed to perform the tasks. With significant changes in the aspects relevant to the number and qualifications of persons needed, this analysis should be updated.

4. Nominated person or group of persons should have:

   4.1 practical experience and expertise in the application of aviation safety standards and safe operating practices;

   4.2 a comprehensive knowledge of:

   (a) relevant parts of operational requirements and procedures;

   (b) the AOC holder's Operations Specifications when applicable;

   (c) the need for, and content of, the relevant parts of the AOC holder's Operations Manual when applicable;

   4.3 knowledge of quality systems;

   4.4 five years relevant work experience of which at least two years should be from the aeronautical industry in an appropriate position;

   4.5 a relevant engineering degree or an aircraft maintenance technician qualification with additional education acceptable to BCAA. ‘relevant engineering degree’ means an engineering degree from aeronautical, mechanical, electrical, electronic, avionic or other studies relevant to the maintenance and continuing airworthiness of aircraft/aircraft components;

The above recommendation may be replaced by 5 years of experience additional to those already recommended by paragraph 4.4 above. These 5 years should cover an appropriate combination of experience in tasks related to aircraft maintenance and/or continuing airworthiness management (engineering) and/or surveillance of such tasks.

4.6 thorough knowledge with the organisation's continuing airworthiness management exposition;

4.7 knowledge of a relevant sample of the type(s) of aircraft gained through a formalised training course. These courses should be at least at a level equivalent to BCAR-66 Appendix III Level 1 General Familiarisation and could be imparted by a BCAR-147 organisation, by the manufacturer, or by any other organisation accepted by BCAA.

"Relevant sample" means that these courses should cover typical systems embodied in those aircraft being within the scope of approval.

For all balloons and any other aircraft of 2730 Kg MTOM and below the formalised training courses may be replaced by demonstration of knowledge. This knowledge may be demonstrated by documented evidence or by an assessment performed by BCAA. This assessment should be recorded.

4.8 knowledge of maintenance methods.

4.9 knowledge of applicable regulations.

AMC M.A.706(a) Personnel Requirements

Accountable manager is normally intended to mean the chief executive officer of the continuing airworthiness management organisation approved under BCAR-M.A Subpart G, who by virtue of position has overall (including in particular financial) responsibility for running the organisation. The accountable manager may be the accountable manager for more than one organisation and is not required to be knowledgeable on technical matters. When the accountable manager is not the chief executive officer, BCAA will need to be assured that such an accountable manager has direct access to the chief executive officer and has a sufficiency of continuing airworthiness funding allocation.

AMC M.A.706 (e) Personnel Requirements

1. BCAA will only accept that the nominated post holder be employed by the organisation approved under BCAR-145 when it is manifest that he/she is the only available competent person in a position to exercise this function, within a practical working distance from the operator's offices.

2. This paragraph only applies to contracted maintenance and therefore does not affect situations where the organisation approved under BCAR-145 and the operator are the same organisation.

AMC M.A.706(f) Personnel Requirements

Additional training in fuel tank safety as well as associated inspection standards and maintenance procedures should be required of continuing airworthiness management organisations' technical personnel, especially the staff involved with the management of CDCCL, Service Bulletin assessment, work planning and maintenance programme management. Guidance is provided for training to Continuing Airworthiness Management Organisations' continuing airworthiness personnel in Appendix XII to AMC to BCAR-M.A.706(f).

AMC M.A.706(i) Personnel Requirements

– *Reserved*.

AMC M.A.706(k) Personnel Requirements

Adequate initial and recurrent training should be provided and recorded to ensure continued competence.

BCAR-M.A.707 Airworthiness Review Staff - *Reserved*

BCAR-M.A.708 Continuing Airworthiness Management

a) All continuing airworthiness management shall be carried out according to the prescriptions of BCAR-M Subpart C.

b) For every aircraft managed, the approved continuing airworthiness management organisation shall:

1. develop and control a maintenance programme for the aircraft managed including any applicable reliability programme,

2. present the aircraft maintenance programme and its amendments to BCAA for approval, unless covered by an indirect approval procedure in accordance with point BCAR-M.A.302(c), and provide a copy of the programme to the owner of not involved in commercial air transport.

3. manage the approval of modification and repairs,

4. ensure that all maintenance is carried out in accordance with the approved maintenance programme and released in accordance with BCAR-M Subpart H,

5. ensure that all applicable airworthiness directives and operational directives with a continuing airworthiness impact are applied,

6. ensure that all defects discovered during scheduled maintenance or reported are corrected by an appropriately approved maintenance organisation,

7. ensure that the aircraft is taken to an appropriately approved maintenance organisation whenever necessary,

8. coordinate scheduled maintenance, the application of airworthiness directives, the replacement of service life limited parts, and component inspection to ensure the work is carried out properly,

9. manage and archive all continuing airworthiness records and/or operator's technical log.

10. ensure that the mass and balance statement reflects the current status of the aircraft.

c) In the case of complex motor-powered aircraft or aircraft used for CAT, when the continuing airworthiness management organisation is not also holding a BCAR-145 or BCAR-M.A. Subpart-F approval, the organisation shall in consultation with the operator, establish a written maintenance contract with a BCAR-145 or BCAR-M.A. Subpart-F approved organisation or another operator, detailing the functions specified under BCAR-M.A.301-2, BCAR-M.A.301-3, BCAR-M.A.301-5 and BCAR-M.A.301-6, ensuring that all maintenance is ultimately carried out by a BCAR-145 or BCAR-M.A. Subpart-F approved maintenance organisation and defining the support of the quality functions of BCAR-M.A.712(b).

d) Notwithstanding point (c), the contract may be in the form of individual work orders addressed to the BCAR-145 or BCAR-M.A. Subpart-F maintenance organisation in the case of:

1. an aircraft requiring unscheduled line maintenance,

2. component maintenance, including engine maintenance.

AMC M.A.708(b)3 Continuing Airworthiness Management

When managing the approval of modifications or repairs the organisation should ensure that Critical Design Configuration Control Limitations are taken into account.

AMC M.A.708(c) Continuing Airworthiness Management

1. Where an operator is not approved under BCAR-145 or an operator's maintenance organisation is an independent organisation, a contract should be agreed between the operator and a maintenance organisation approved under BCAR-145, which specifies, in detail, the work to be performed by the maintenance organisation. Appendix XI to this AMC gives further details on the subject.

2. Both the specification of work and the assignment of responsibilities should be clear, unambiguous and sufficiently detailed to ensure that no misunderstanding should arise between the parties concerned (operator, maintenance organisation and BCAA) that could result in a situation where work that has a bearing on the airworthiness or serviceability of aircraft is not or will not be properly performed.

3. Special attention should be paid to procedures and responsibilities to ensure that all maintenance work is performed, service bulletins are analysed and decisions taken on accomplishment, airworthiness directives are completed on time and that all work, including non-mandatory modifications is carried out to approved data and to the latest standards.

4. For line maintenance, the actual layout of the contract the IATA Standard Ground Handling Agreement may be used as a basis, but this does not preclude BCAA from ensuring that the content of the contract is acceptable to them, and especially that the contract allows the operator to properly exercise its maintenance responsibility. Those parts of a contract that have no bearing on the technical or operational aspects of airworthiness are outside the scope of this paragraph.

5. It is possible to contract another operator that is not directly approved under BCAR-145. In this case the operator's continuing airworthiness management exposition should include appropriate procedures to ensure that all this contracted maintenance is ultimately performed on time by organisations approved under BCAR-145 in accordance with the contracting operator's data. In particular the quality system procedures should place great emphasis on monitoring compliance with the above. The list of BCAR-145 approved contractors, or a reference to this list, should be included in the operator's continuing airworthiness management exposition.

6. Such a maintenance arrangement does not absolve the operator from its overall continuing airworthiness responsibility. Specifically, in order to accept the maintenance arrangement, BCAA should be satisfied that such an arrangement allows the operator to ensure full compliance with responsibilities pursuant to BCAR-M.A.201.

7. The purpose of BCAR-M.A.708(c) is to ensure that all maintenance is carried out by properly approved BCAR-145 organisations. This does not preclude a primary maintenance arrangement with an operator that is not such an organisation, when it proves that such an arrangement is in the interest of the operator by simplifying the management of its maintenance, and the operator keeps an appropriate control of it. Such an arrangement should not preclude the operator from ensuring that all maintenance is performed by a BCAR-145 approved organisation and complying with the BCAR-M.A.201 continuing airworthiness responsibility requirements. Typical examples of such arrangements follow:

   – Component maintenance:

   The operator may find it more appropriate to have a primary contractor, that would despatch the components to appropriately approved organisations, rather than sending himself different types of components to various maintenance organisations approved under BCAR-145. The benefit for the operator is that the management of maintenance is simplified by having a single contact point for component maintenance. The operator remains responsible for ensuring that all maintenance is performed by maintenance organisations approved under BCAR-145 and in accordance with the approved standard.

   – Aircraft, engine and component maintenance:

   The operator may wish to have a maintenance contract with another operator of the same type of aircraft not approved under BCAR-145. A typical case is that of a dry-leased aeroplane between operators where the parties, for consistency or continuity reasons (especially for short term lease agreements), find it appropriate to keep the aeroplane under the current maintenance arrangement. Where this arrangement involves various BCAR-145 approved contractors, it might be more manageable for the lessee operator to have a single contract with the lessor operator. Such an arrangement should not be understood as a transfer of responsibility to the lessor operator: the lessee operator, being the approved operator of the aircraft, remains responsible for the continuing airworthiness of the aircraft in performing the BCAR-M.A.708 functions, and employing the BCAR-M.A.706 continuing airworthiness management group of persons and staff.

   In essence, this does not alter the intent of BCAR-M.A.201(h) in that it also requires that the operator has to establish a written maintenance contract acceptable to BCAA and, whatever type of acceptable arrangement is made, the operator is required to exercise the same level of control on contracted maintenance, particularly through the BCAR-M.A.706(c) continuing airworthiness management group of persons and quality system as referred to in BCAR-M.A.712.

AMC M.A.708(c)(1) Continuing Airworthiness Management – Unscheduled Maintenance

The intent of this paragraph is that maintenance contracts are not necessary when the operator's continuing airworthiness system, as approved by BCAA, specifies that the relevant maintenance activity may be ordered through one-time work orders. This includes for obvious reasons unscheduled line maintenance and may also include aeroplane component maintenance up to engines, so long as BCAA considers that the maintenance is manageable through work orders, both in term of volume and complexity. It should be noted that this paragraph implies that even where base maintenance is ordered on a case-by-case basis, there should be a written maintenance contract.

BCAR-M.A.709 Documentation

a) The approved continuing airworthiness management organisation shall hold and use applicable current maintenance data in accordance with BCAR-M.A.401 for the performance of continuing airworthiness task referred in BCAR-M.A.708. This data may be provided by the owner or the operator, subject to an appropriate contract being established with such an owner or operator. In such case, the continuing airworthiness management organisation only needs to keep such data for the duration of the contract, except when required by point BCAR-M.A.714.

b) For aircraft not involved in commercial air transport, the approved continuing airworthiness management organisation may develop "baseline" and/or "generic" maintenance programmes in order to allow for the initial approval and/or the extension of the scope of an approval without having the contracts referred to in Appendix I to BCAR-M. These "baseline" and/or "generic" maintenance programmes however do not preclude the need to establish an adequate Aircraft Maintenance Programme in compliance with point BCAR-M.A.302 in due time before exercising the privileges referred to in BCAR-M.A.711.

AMC M.A.709 Documentation

When using maintenance data provided by the customer, the continuing airworthiness management organisation is responsible for ensuring that this data is current. As a consequence, it should establish appropriate procedures or provisions in the contract with the customer.

The sentence "…, except when required by point BCAR-M.A.714", means, in particular, the need to keep a copy of the customer data which was used to perform continuing airworthiness activities during the contract period.

"Baseline" maintenance programme: it is a maintenance programme developed for a particular aircraft type following, where applicable, the maintenance review board (MRB) report, the type certificate holder's maintenance planning document (MPD), the relevant chapters of the maintenance manual or any other maintenance data containing information on scheduling.

"Generic" maintenance programme: it is a maintenance programme developed to cover a group of similar types of aircraft. These programmes should be based on the same type of instructions as the baseline maintenance programme. Examples of "generic" maintenance programmes could be Cessna 100 Series (covering Cessna 150, 172, 177, etc.).

"Baseline" and "generic" maintenance programmes are not applicable to a particular aircraft registration mark, but to an aircraft type or group of types, and should be available to BCAA prior to the initial approval and prior to the extension of the scope of an existing organisation approval. The intent is that BCAA is aware of the scope and complexity of tasks that will be managed before granting an organisation approval or change of approval.

After this initial approval, when an owner/operator is contracted, the baseline or generic maintenance programme, as applicable, may be used to establish the BCAR-M.A.302 aircraft maintenance programme, incorporating the additional maintenance tasks and indicating those which are not applicable to a particular aircraft registration mark. This may be achieved by adding an Annex to the baseline/generic maintenance programme for each aircraft registration, specifying which tasks are added and which are not applicable. This will result in an aircraft maintenance programme specific for each customer.

However, this does not mean that this adaptation must be performed for each contracted aircraft registration. The reason is that the customer may already have an approved aircraft maintenance programme, which in that case should be used by the continuing airworthiness management organisation to manage the continuing airworthiness of such aircraft.

Continuing airworthiness management organisations may seek authorisation for indirect approval in order to amend the aircraft maintenance programme mentioned above in accordance with BCAR-M.A.302(c). The indirect approval procedure should include provisions to notify to BCAA that an aircraft maintenance programme specific for a customer has been created. The reason is that, according to BCAR-M.A.704(a)9, for aircraft not involved in commercial air transport the Continuing Airworthiness Management Exposition (CAME) only needs to include the reference to the baseline/generic maintenance programme.

GM M.A.709 – *Reserved*

BCAR-M.A.710 Airworthiness Review - *Reserved*

BCAR-M.A.711 Privileges of the Organisation

a) A continuing airworthiness management organisation approved in accordance with Section A Subpart G of this BCAR, may:

1. manage the continuing airworthiness of aircraft, except those involved in commercial air transport aircraft as listed on the approval certificate;

2. manage the continuing airworthiness of commercial air transport aircraft when listed both on its approval certificate and on its air operator certificate (AOC);

3. arrange to carry out limited continuing airworthiness tasks with any sub-contracted organisation, working under its quality system, as listed on the approval certificate;

4. *Reserved*.

b) *Reserved*.

c) *Reserved*.

BCAR-M.A.712 Quality System & Safety Management System

a) To ensure that the approved continuing airworthiness management organisation meets continuously the requirements of this Subpart, it shall establish a quality system and designate a quality manager to monitor compliance with, and the adequacy of, procedures required to ensure airworthy aircraft. Compliance monitoring shall include a feedback system to the accountable manager to ensure corrective action as necessary.

b) The quality system shall monitor BCAR-M.A. Subpart G activities. It shall at least include the following functions:

1. monitoring that all BCAR-M.A. Subpart G activities are being performed in accordance with the approved procedures, and;

2. monitoring that all contracted maintenance is carried out in accordance with the contract, and;

3. monitoring the continued compliance with the requirements of this BCAR.

c) The records of these activities shall be stored for at least two years.

d) Where the approved continuing airworthiness management organisation is approved in accordance with another BCAR (e.g. BCAR-145 approval), the quality system may be combined with that required by the other BCAR.

e) In case of commercial air transport the BCAR-M.A. Subpart G quality system shall be an integrated part of the operator's quality system.

f) In the case of a small organisation not managing the continuing airworthiness of aircraft used in commercial air transport, the quality system may be replaced by regular organisational reviews subject to the approval of BCAA. In the case where there is no quality system, the organisation shall not contract continuing airworthiness management tasks to other parties.

g) In the case of commercial air transport, the organisation shall also implement a safety management system (SMS) that shall:

1. Achieve the following objectives as a minimum:

(i) Identifies safety hazards;

(ii) Assesses the impact of these safety hazards and mitigates risks;

(iii) Ensures the remedial action necessary to maintain an acceptable level of safety is implemented;

(iv) Provides for continuous improvement and regular assessment of the safety level achieved; and

(v) Aims to make continuous improvements to the overall level of safety.

2. Meet the requirements contained in appendix XIV to this BCAR;

3. Be approved by BCAA; and

4. Be an integrated part of the operator's SMS.

AMC M.A.712(a) Quality System

1. Procedures should be held current such that they reflect best practice within the organisation. It is the responsibility of all employees to report any difficulties with the procedures via their organisation's internal occurrence reporting mechanisms.

2. All procedures, and changes to the procedures, should be verified and validated before use where practicable.

3. The feedback part of the system should address who is required to rectify any non-compliance in each particular case and the procedure to be followed if rectification is not completed within appropriate timescales. The procedure should lead to the accountable manager specified in BCAR-M.A.706.

4. The independent quality audit reports referenced in AMC M.A.712(b) should be sent to the relevant department for rectification action giving target rectification dates. Rectification dates should be discussed with such department before the quality department or nominated quality auditor confirms such dates in the report. The relevant department is required to rectify findings and inform the quality manager or the quality auditor of such rectification.

5. The accountable manager should hold regular meetings with staff to check progress on rectification except that in the large organisations such meetings may be delegated on a day to day basis to the quality manager subject to the accountable manager meeting at least twice per year with the senior staff involved to review the overall performance and receiving at least a half yearly summary report on findings of non-compliance.

AMC M.A.712(b) Quality System

1. The primary objectives of the quality system are to enable the BCAR-M.A. Subpart G organisation to ensure continuing airworthiness of aircraft and to remain in compliance with the BCAR-M requirements.

2. An essential element of the quality system is the independent audit.

3. The independent audit is an objective process of routine sample checks of all aspects of the BCAR-M.A. Subpart G organisation's ability to carry out continuing airworthiness management to the required standards. It includes some product sampling as this is the end result of the process.

4. The independent audit represents an objective overview of the complete continuing airworthiness management related activities.

5. "The independent audit should ensure that all aspects of BCAR-M.A. Subpart G compliance are checked annually, including all the sub-contracted activities, and may be carried out as a complete single exercise or subdivided over the annual period in accordance with a scheduled plan. The independent audit does not require each procedure to be checked against each product line when it can be shown that the particular procedure is common to

more than one product line and the procedure has been checked every year without resultant findings. Where findings have been identified, the particular procedure should be rechecked against other product lines until the findings have been rectified after which the independent audit procedure may revert back to the annual interval for the particular procedure. Provided that there are no safety related findings, the audit time periods specified in this AMC may be increased by up to 100% subject to agreement by BCAA.

6. Where the organisation has more than one location approved the quality system should describe how these are integrated into the system and include a plan to audit each location every year.

7. A report should be raised each time an audit is carried out describing what was checked and the resulting findings against applicable requirements, procedures and products.

8. The independence of the audit should be established by always ensuring that audits are carried out by personnel not responsible for the function, procedure or products being checked.

9. An organisation should establish a quality plan acceptable to BCAA to show when and how often the activities as required by BCAR-M.A. Subpart G will be audited.

AMC M.A.712(f) Quality System

A small organisation is considered to be an organisation with up to 5 full-time staff (including all BCAR-M.A.706 personnel) or equivalent proportional number when using part-time staff. The complexity of the organisation, combination of aircraft and aircraft types, the utilisation of the aircraft and the number of approved locations of the organisations should also be considered before replacing the quality system by an organisational review.

Appendix XIII should be used to manage the organisational reviews.

The following activities should not be considered as subcontracting and, as a consequence, they may be performed without a Quality System, although they need to be described in the continuing airworthiness management exposition and be approved by BCAA:

- Subscription to a technical publisher that provides maintenance data (Aircraft Maintenance Manuals, Illustrated Parts Catalogues, Service Bulletins, etc.), which may be applicable to a wide range of aircraft. These data may include maintenance schedules recommended by different manufacturers that can be afterwards used by the continuing airworthiness management organisation in order to produce customised maintenance programmes.
- Contracting the use of a software tool for the management of continuing airworthiness data and records, under the following conditions (in addition to BCAR-M.A.714(d) and (e)):
    - If the tool is used by several organisations, each organisation should have access to its own data only.

- Introduction of data can only be performed by personnel of the continuing airworthiness management organisation.

- The data can be retrieved at any time.

BCAR-M.A.713 Changes to the Approved Continuing Airworthiness Organisation

In order to enable BCAA to determine continued compliance with this BCAR, the approved continuing airworthiness management organisation shall notify it of any proposal to carry out any of the following changes, before such changes take place:

1. The name of the organisation.
2. The location of the organisation.
3. Additional locations of the organisation.
4. The accountable manager.
5. Any of the persons specified in BCAR-M.A.706(c).
6. The facilities, procedures, work scope and staff that could affect the approval.

In the case of proposed changes in personnel not known to the management beforehand, these changes shall be notified at the earliest opportunity.

AMC M.A.713 Changes to the Approved Continuing Airworthiness Organisation

1. This paragraph covers scheduled changes to the continuing airworthiness organisation's approval. Whilst the requirements relating to air operator certificates, including their issue, variation and continued validity, are prescribed in the appropriate regulation, operators should be aware this paragraph is included in BCAR-M and may affect continued acceptance of the continuing airworthiness management.

2. The primary purpose of this paragraph is to enable the continuing airworthiness organisation to remain approved if agreed by BCAA during negotiations about any of the specified changes. Without this paragraph the approval would automatically be suspended in all cases.

BCAR-M.A.714 Record Keeping

a) The continuing airworthiness management organisation shall record all details of work carried out. The records required by BCAR-M.A.305 and if applicable BCAR-M.A.306 shall be retained.

b) *Reserved*.

c) *Reserved*.

d) *Reserved*.

e) The records shall be stored in a manner that ensures protection from damage, alteration and theft.

f) All computer hardware used to ensure backup shall be stored in a different location from that containing the working data in an environment that ensures they remain in good condition.

g) Where continuing airworthiness management of an aircraft is transferred to another organisation or person, all retained records shall be transferred to the said organisation or person. The time periods prescribed for the retention of records shall continue to apply to the said organisation or person.

h) Where a continuing airworthiness management organisation terminates its operation, all retained records shall be transferred to the owner of the aircraft.

AMC M.A.714 Record-Keeping

1. The BCAR-M.A. Subpart G organisation should ensure that it always receives a complete CRS from the approved maintenance organisation BCAR-M.A.801(b)(2) certifying staff and/or from the Pilot-owner such that the required records can be retained. The system to keep the continuing airworthiness records should be described in the organisation continuing airworthiness management exposition.

2. When an organisation arranges for the relevant maintenance organisation to retain copies of the continuing airworthiness records on its behalf, it will nevertheless continue to be responsible for the records under BCAR-M.A.714 relating to the preservation of records. If it ceases to be the organisation of the aircraft, it also remains responsible for transferring the records to any other person or organisation managing continuing airworthiness of the aircraft.

3. Keeping continuing airworthiness records in a form acceptable to BCAA means in paper form or on a computer database or a combination of both methods. Records stored in microfilm or optical disc form are also acceptable. The record should remain legible throughout the required retention period.

4. Paper systems should use robust material which can withstand normal handling and filing.

5. Computer systems should have at least one backup system which should be updated within 24 hours of any new entry. Each terminal is required to contain programme safeguards against the ability of unauthorised personnel to alter the database.

6. Microfilming or optical storage of continuing airworthiness records may be carried out at any time. The records should be as legible as the original record and remain so for the required retention period.

BCAR-M.A.715 Continued Validity of Approval

a) An approval shall be issued for one year. It shall remain valid subject to:

1. the organisation remaining in compliance with this BCAR, in accordance with the provisions related to the handling of findings and;

2. BCAA being granted access to the organisation to determine continued compliance with this BCAR and;

3. the approval not being surrendered or revoked.

b) Upon surrender or revocation, the approval certificate shall be returned to BCAA.

BCAR-M.A.716 Findings

a) A level 1 finding is any significant non-compliance with BCAR-M requirements which lowers the safety standard and hazards seriously the flight safety.

b) A level 2 finding is any non-compliance with the BCAR-M requirements which could lower the safety standard and possibly hazard the flight safety.

c) After receipt of notification of findings, the holder of the continuing airworthiness management organisation approval shall define a corrective action plan and demonstrate corrective action to the satisfaction of BCAA within a period agreed with BCAA.

Subpart H Certificate of Release to Service - CRS

BCAR-M.A.801 Aircraft Certificate of Release to Service

a) Except for aircraft released to service by a maintenance organisation approved in accordance with BCAR-145, the certificate of release to service shall be issued according to this Subpart;

b) No aircraft can be released to service unless a certificate of release to service is issued at the completion of any maintenance, when satisfied that all maintenance required has been properly carried out, by:

1. appropriate certifying staff on behalf of the maintenance organisation approved in accordance with Section A, Subpart F of BACR-M; or

2. certifying staff in compliance with the requirements laid down in BCAR-66, except for complex maintenance tasks listed in Appendix VII to BCAR-M for which point 1 applies; or

3. by the pilot-owner in compliance with BCAR-M.A.803.

c) By derogation from point BCAR-M.A.801(b)2 for LA1 aircraft not used in commercial air transport, aircraft complex maintenance tasks listed in Appendix VII may be released by certifying staff referred to in BCAR-M.A.801(b)2;

d) By derogation from point BCAR-M.A.801(b), in the case of unforeseen situations, when an aircraft is grounded at a location where no approved maintenance organisation appropriately approved under BCAR-M or BCAR-145 and no appropriate certifying staff are available, the owner may authorise any person, with not less than three years of appropriate maintenance experience and holding the proper qualifications, to maintain according to the standards set out in Subpart D of BCAR-M and release the aircraft. The owner shall in that case:

1. obtain and keep in the aircraft records details of all the work carried out and of the qualifications held by that person issuing the certification; and

2. ensure that any such maintenance is rechecked and released by an appropriately authorised person referred to in point BCAR-M.A.801(b) or an organisation approved in accordance with Section A, Subpart F of BCAR-M, or with BCAR-145 at the earliest opportunity but within a period not exceeding seven days; and

3. notify the organisation responsible for the continuing airworthiness management of the aircraft when contracted in accordance with point BCAR-M.A.201(e), or BCAA in the absence of such a contract, within seven days of the issuance of such certification authorisation.

e) In the case of a release to service in accordance with point BCAR-M.A.801(b)2 or point BCAR-M.A.801(c), the certifying staff may be assisted in the execution of the maintenance tasks by one or more persons subject to his/her direct and continuous control;

f) A certificate of release to service shall contain as a minimum:

1. basic details of the maintenance carried out; and

2. the date such maintenance was completed; and

3. the identity of the organisation and/or person issuing the release to service, including:

(i) the approval reference of the maintenance organisation approved in accordance with Section A, Subpart F of BCAR-M and the certifying staff issuing such a certificate; or

(ii) in the case of point BCAR-M.A.801(b)2 or BCAR-M.A.801(c) certificate of release to service, the identity and if applicable licence number of the certifying staff issuing such a certificate;

4. the limitations to airworthiness or operations, if any.

g) By derogation from paragraph (b) and notwithstanding the provisions of paragraph (h), when the maintenance prescribed cannot be completed, a certificate of release to service may be issued within the approved aircraft limitations. Such fact together with any applicable limitations of the airworthiness or the operations shall be entered in the aircraft certificate of release to service before its issue as part of the information required in paragraph (f)4.

h) A certificate of release to service shall not be issued in the case of any known non-compliance which hazards seriously the flight safety.

AMC M.A.801(b) Aircraft Certificate of Release to Service

A certificate of release to service is necessary before flight, at the completion of any defect rectification, whilst the aircraft operates a flight between scheduled maintenance checks.

AMC M.A.801(d) Aircraft Certificate of Release to Service

1. "3 years of appropriate maintenance experience" means 3 years working in an aircraft maintenance environment on at least some of the aircraft type systems corresponding to the aircraft endorsed on the aircraft maintenance license or on the certifying staff authorisation that the person holds.

2. "Holding the proper qualifications" means holding either:

   (a) a valid ICAO Annex 1 compliant maintenance license for the aircraft type requiring certification, or;

   (b) a certifying staff authorisation valid for the work requiring certification, issued by an ICAO Annex 6 approved maintenance organisation.

3. A release in accordance with this paragraph does not affect the controlled environment of the aircraft as long as the BCAR-M.A.801(d)2 recheck and release has been carried out by an approved maintenance organisation.

AMC M.A.801(f) Aircraft Certificate of Release to Service

1. The aircraft certificate of release to service should contain the following statement:

   (a) 'Certifies that the work specified except as otherwise specified was carried out in accordance with BCAR-M and in respect to that work the aircraft is considered ready for release to service'.

   (b) For a Pilot-owner a certificate of release to service should contain the following statement:

   'Certifies that the limited pilot-owner maintenance specified except as otherwise specified was carried out in accordance with BCAR-M and in respect to that work the aircraft is considered ready for release to service'.

2. The certificate of release to service should relate to the task specified in the manufacturer's or operator's instruction or the aircraft maintenance programme which itself may cross-refer to the latest manufacturer's/operator's instruction in a maintenance manual, service bulletin etc.

3. The date such maintenance was carried out should include when the maintenance took place relative to any life or overhaul limitation in terms of date/flying hours/cycles/ landings etc., as appropriate.

4. When extensive maintenance has been carried out, it is acceptable for the certificate of release to service to summarise the maintenance so long as there is a unique cross-reference to the work pack containing full details of maintenance carried out. Dimensional information should be retained in the work-pack record.

5. The person issuing the certificate of release to service should use his normal signature except in the case where a computer release to service system is used. In this latter case BCAA will need to be satisfied that only the particular person can electronically issue the release to service. One such method of compliance is the use of a magnetic or optical personal card in conjunction with a personal identity number (PIN) known only to the individual, which is keyed into the computer. A certification stamp is optional.

6. At the completion of all maintenance, owners, certifying staff, operators and maintenance organisations should ensure they have a clear, concise, legible record of the work performed.

7. In the case of BCAR-M.A.801(b)2 release to service, certifying staff should retain all records necessary to prove that all requirements have been met for the issuance of a certificate of release to service.

AMC M.A.801(g) Aircraft Certificate of Release to Service

1. Being unable to establish full compliance with sub-paragraph BCAR-M.A.801(b) means that the maintenance required by the aircraft owner or BCAR-M.A. Subpart G organisation could not be completed due either to running out of available aircraft maintenance downtime for the scheduled check or by virtue of the condition of the aircraft requiring additional maintenance downtime.

2. The aircraft owner or BCAR-M.A. Subpart G organisation is responsible for ensuring that all required maintenance has been carried out before flight. Therefore an aircraft owner or BCRA-M.A. Subpart G organisation should be informed and agree to the deferment of full compliance with BCAR-M.A.801(b). The certificate of release to service may then be issued subject to details of the deferment, including the aircraft owner or BCAR-M.A. Subpart G organisation authorisation, being endorsed on the certificate.

3. If a certificate of release to service is issued with incomplete maintenance a record should be kept stating what action the mechanic, supervisor and certifying staff should take to bring the matter to the attention of the relevant aircraft owner or BCAR-M.A. Subpart G organisation so that the issue may be discussed and resolved with the aircraft owner or BCAR-M.A. Subpart G organisation.

AMC M.A.801(h) Aircraft Certificate of Release to Service

'Endangers flight safety' means any instance where safe operation could not be assured or which could lead to an unsafe condition. It typically includes, but is not limited to, significant cracking, deformation, corrosion or failure of primary structure, any evidence of burning, electrical arcing, significant hydraulic fluid or fuel leakage and any emergency system or total system failure. An airworthiness directive overdue for compliance is also considered a hazard to flight safety."

BCAR-M.A.802 Component Certificate of Release to Service

a) A certificate of release to service shall be issued at the completion of any maintenance carried out on an aircraft component in accordance with BCAR-M.A.502

b) The authorised release certificate identified as BCAA Form 1 constitutes the aircraft component certificate of release to service, except when such maintenance on aircraft components has been performed in accordance with point BCAR-M.A.502(b) or point BCAR-M.A.502(d), in which case the maintenance is subject to aircraft release procedures in accordance with point BCAR-M.A.801.

AMC M.A.802 Component Certificate of Release to Service

When an approved organisation maintains an aircraft component for use by the organisation a BCAA Form 1 may not be necessary depending upon the organisation's internal release procedures, however all the information normally required for BCAA Form 1 should be adequately detailed in the certificate of release to service.

BCAR-M.A.803 Pilot-Owner Authorisation

a) To qualify as a Pilot-owner, the person must:

1. hold a valid pilot licence issued or validated by BCAA for the aircraft type or class rating; and

2. own the aircraft, either as sole or joint owner; that owner must be:

(i) one of the natural persons on the registration form; or

(ii) a member of a non-profit recreational legal entity, where the legal entity is specified on the registration document as owner or operator, and that member is directly involved in the decision making process of the legal entity and designated by that legal entity to carry out Pilot-owner maintenance.

b) For any privately operated non-complex motor-powered aircraft of 2730 kg MTOM and below, sailplane, powered sailplane or balloon, the pilot-owner may issue the certificate of release to service after limited Pilot-owner maintenance specified in Appendix VIII.

c) The scope of the limited Pilot-owner maintenance shall be specified in the aircraft maintenance programme referred to in point BCAR-M.A.302.

d) The certificate of release to service shall be entered in the logbooks and contain basic details of the maintenance carried out, the maintenance data used, the date on which that maintenance was completed and the identity, the signature and pilot licence number of the Pilot-owner issuing such a certificate.

AMC M.A.803 Pilot-Owner Authorisation

1. Privately operated means the aircraft is not operated pursuant to BCAR-M.A.201(h) and (i).

2. A Pilot-owner may only issue a certificate of release to service for maintenance he/she has performed.

3. In the case of a jointly-owned aircraft, the maintenance programme should list:

   - The names of all Pilot-owners competent and designated to perform Pilot-owner maintenance in accordance with the basic principles described in Appendix VIII of this BCAR. An alternative would be the maintenance programme to contain a procedure to ensure how such a list of competent Pilot-owners should be managed separately and kept current.

   - The limited maintenance tasks they may perform.

4. *Reserved*.

5. Not holding a valid medical examination certificate does not invalidate the pilot licence (or equivalent) required under BCAR-M.A.803(a)1 for the purpose of the Pilot-owner authorisation.

Subpart I Airworthiness Review Certificate - *Reserved*

Section B Procedure for BCAA

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Appendices to the Technical Requirements

Appendix I - Continuing Airworthiness Arrangement

1. When an owner contracts BCAR-M.A. Subpart G approved continuing airworthiness organisation in accordance with BCAR-M.A.201 to carry out continuing airworthiness management tasks, upon request by BCAA a copy of the arrangement shall be sent by the owner to BCAA once it has been signed by both parties.

2. The arrangement shall be developed taking into account the requirements of BCAR-M and shall define the obligations of the signatories in relation to continuing airworthiness of the aircraft.

3. It shall contain as a minimum the:

   – aircraft registration,

   – aircraft type,

   – aircraft serial number,

   – aircraft owner or registered lessee's name or company details including the address,

   – BCAR-M.A subpart G Approved continuing airworthiness organisation details including the address.

4. It shall state the following:

   "The owner entrusts to the approved organisation the management of the continuing airworthiness of the aircraft, the development of a maintenance programme that shall be approved by Bhutan Civil Aviation Authority and the organisation of the maintenance of the aircraft according to said maintenance programme in an approved organisation.

   According to the present arrangement, both signatories undertake to follow the respective obligations of this arrangement.

   The owner certifies, to the best of their belief that all the information given to the approved organisation concerning the continuing airworthiness of the aircraft is and will be accurate and that the aircraft will not be altered without prior approval of the approved organisation.

   In case of any non-conformity with this arrangement, by either of the signatories, it will become null. In such a case, the owner will retain full responsibility for every task linked to the continuing airworthiness of the aircraft and the owner will undertake to inform the Bhutan Civil Aviation Authority within two full weeks.'

5. When an owner contracts BCAR-M.A Subpart G approved continuing airworthiness organisation in accordance with BCAR-M.A.201 the obligations of each party shall be shared as follows:

5.1 Obligations of the approved organisation:

   1. have the aircraft's type in the scope of its approval;

2. respect the conditions to maintain the continuing airworthiness of the aircraft listed below:

   a) develop a maintenance programme for the aircraft, including any reliability programme developed, if applicable;

   b) declare the maintenance tasks (in the maintenance programme) that may be carried out by the pilot-owner in accordance with point BCAR-M.A.803(c);

   c) organise the approval of the aircraft's maintenance programme,

   d) once it has been approved, give a copy of the aircraft's maintenance programme to the owner,

   e) organise a bridging inspection with the aircraft's prior maintenance programme,

   f) organise for all maintenance to be carried out by an approved maintenance organisation,

   g) organise for all applicable airworthiness directives to be applied,

   h) organise for all defects discovered during scheduled maintenance or reported by the owner to be corrected by an approved maintenance organisation,

   i) coordinate scheduled maintenance, the application of airworthiness directives, the replacement of life limited parts, and component inspection requirements,

   j) inform the owner each time the aircraft shall be brought to an approved maintenance organisation,

   k) manage all technical records,

   l) archive all technical records;

3. organise the approval of any modification to the aircraft according to BCAR-21 before it is embodied;

4. organise the approval of any repair to the aircraft according to BCAR-21 before it is carried out;

5. inform BCAA whenever the aircraft is not presented to the approved maintenance organisation by the owner as requested by the approved organisation;

6. inform BCAA whenever the present arrangement has not been respected;

7. *Reserved*;

8. *Reserved*;

9. carry out all occurrence reporting mandated by applicable regulations;

10. inform BCAA whenever the present arrangement is denounced by either party.

5.2 Obligations of the owner:

1. have a general understanding of the approved maintenance programme;
2. have a general understanding of BCAR-M;
3. present the aircraft to the approved maintenance organisation agreed with the approved organisation at the due time designated by the approved organisation's request;
4. not modify the aircraft without first consulting the approved organisation;
5. inform the approved organisation of all maintenance exceptionally carried out without the knowledge and control of the approved organisation;
6. report to the approved organisation through the logbook all defects found during operations;
7. inform BCAA whenever the present arrangement is denounced by either party;
8. inform BCAA and the approved organisation whenever the aircraft is sold;
9. Carry out all occurrences reporting mandated by applicable regulations;
10. inform on a regular basis the approved organisation about the aircraft flying hours and any other utilisation data, as agreed with the approved organisation;
11. enter the certificate of release to service in the logbooks as mentioned in point BCAR-M.A.803(d) when performing pilot-owner maintenance without exceeding the limits of the maintenance tasks list as declared in the approved maintenance programme as laid down in point BCAR-M.A.803(c);
12. inform the approved continuing airworthiness management organisation responsible for the management of the continuing airworthiness of the aircraft not later than 30 days after completion of any pilot-owner maintenance task in accordance with point BCAR-M.A.305(a).

Appendix II - Authorised Release Certificate BCAA Form 1

These instructions relate only to the use of the BCAA Form 1 for maintenance purposes. Attention is drawn to BCAR-21 which covers the use of the BCAA Form 1 for production purposes.

1. PURPOSE AND USE

1.1. The primary purpose of the Certificate is to declare the airworthiness of maintenance work undertaken on products, parts and appliances (hereafter referred to as 'item(s)').

1.2. Correlation must be established between the Certificate and the item(s). The originator must retain a Certificate in a form that allows verification of the original data.

1.3. The Certificate is acceptable to many "airworthiness" authorities, but may be dependent on the existence of bilateral agreements and/or the policy of the airworthiness authority. The 'approved design data' mentioned in this Certificate then means approved by the airworthiness authority of the importing country.

1.4. The Certificate is not a delivery or shipping note.

1.5. Aircraft are not to be released using the Certificate.

1.6. The Certificate does not constitute approval to install the item on a particular aircraft, engine, or propeller but helps the end user determine its airworthiness approval status.

1.7. A mixture of production released and maintenance released items is not permitted on the same Certificate.

2. GENERAL FORMAT

2.1 The certificate shall comply with the format attached including block numbers in that each block must be located as per the layout. The size of each block may however be varied to suit the individual application, but not to the extent that would make the certificate unrecognisable.

2.2 The Certificate must be in 'landscape' format but the overall size may be significantly increased or decreased so long as the Certificate remains recognisable and legible. If in doubt consult BCAA.

2.3 The User/Installer responsibility statement can be placed on either side of the form.

2.4 All printing must be clear and legible to permit easy reading.

2.5 The Certificate may either be pre-printed or computer generated but in either case the printing of lines and characters must be clear and legible and in accordance with the defined format.

2.6 The Certificate should be in English, and if appropriate, in one or more other languages.

2.7 The details to be entered on the Certificate may be either machine/computer printed or hand-written using block letters and must permit easy reading.

2.8 Limit the use of abbreviations to a minimum, to aid clarity.

2.9 The space remaining on the reverse side of the Certificate may be used by the originator for any additional information but must not include any certification statement. Any use of the reverse side of the Certificate must be referenced in the appropriate block on the front side of the Certificate.

3. COPIES

3.1 There is no restriction in the number of copies of the Certificate sent to the customer or retained by the originator.

4. ERROR(S) ON CERTIFICATE

4.1 If an end-user finds an error(s) on a Certificate, he must identify it/them in writing to the originator. The originator may issue a new Certificate only if the error(s) can be verified and corrected.

4.2 The new Certificate must have a new tracking number, signature and date.

4.3 The request for a new Certificate may be honoured without re-verification of the item(s) condition. The new Certificate is not a statement of current condition and should refer to the previous Certificate in block 12 by the following statement; “This Certificate corrects the error(s) in block(s) [enter block(s) corrected] of the Certificate [enter original tracking number] dated [enter original issuance date] and does not cover conformity/condition/release to service”. Both Certificates should be retained according to the retention period associated with the first.

5. COMPLETION OF THE RELEASE CERTIFICATE BY THE ORIGINATOR

Block 1 - Pre-printed 'Bhutan Civil Aviation Authority'.

Block 2 - Pre-printed 'Authorised Release certificate, BCAA Form 1'.

Block 3 Form Tracking Number

Enter the unique number established by the numbering system/procedure of the organisation identified in block 4; this may include alpha/numeric characters.

Block 4 Organisation Name and Address

Enter the full name and address of the approved organisation (refer to Form 3) releasing the work covered by this Certificate. Logos, etc., are permitted if the logo can be contained within the block.

Block 5 Work Order/Contract/Invoice

To facilitate customer traceability of the item(s), enter the work order number, contract number, invoice number, or similar reference number.

Block 6 Item

Enter line item numbers when there is more than one line item. This block permits easy cross-referencing to the Remarks block 12.

Block 7 Description

Enter the name or description of the item. Preference should be given to the term used in the instructions for continued airworthiness or maintenance data (e.g. Illustrated Parts Catalogue, Aircraft Maintenance Manual, Service Bulletin, Component Maintenance Manual).

Block 8 Part Number

Enter the part number as it appears on the item or tag/packaging. In case of an engine or propeller the type designation may be used.

Block 9 Quantity

State the quantity of items.

Block 10 Serial Number

If the item is required by regulations to be identified with a serial number, enter it here. Additionally, any other serial number not required by regulation may also be entered. If there is no serial number identified on the item, enter "N/A".

Block 11 Status/Work

The following describes the permissible entries for block 11. Enter only one of these terms – where more than one may be applicable, use the one that most accurately describes the majority of the work performed and/or the status of the article.

(i) *Overhauled:* Means a process that ensures the item is in complete conformity with all the applicable service tolerances specified in the type certificate holders, or equipment manufacturer's instructions for continued airworthiness, or in the data which is approved or accepted by BCAA. The item will be at least disassembled, cleaned, inspected, repaired as necessary, reassembled and tested in accordance with the above specified data.

(ii) *Repaired*: Rectification of defect(s) using an applicable standard.*

(iii) *Inspected/Tested*: Examination, measurement, etc. in accordance with an applicable standard* (e.g. visual inspection, functional testing, bench testing etc.).

(iv) *Modified*: Alteration of an item to conform to an applicable standard.

*Applicable standard means a manufacturing / design / maintenance / quality standard, method, technique or practice approved by or acceptable to BCAA. The applicable standard shall be described in block 12.

Block 12 Remarks

Describe the work identified in Block 11, either directly or by reference to supporting documentation, necessary for the user or installer to determine the airworthiness of item(s) in relation to the work being certified. If necessary, a separate sheet may be used and referenced from the main BCAA Form 1. Each statement must clearly identify which item(s) in Block 6 it relates to.

Examples of information to be entered in block 12 are:

(i) Maintenance data used, including the revision status and reference.

(ii) Compliance with airworthiness directives or service bulletins.

(iii) Repairs carried out.

(iv) Modifications carried out.

(v) Replacement parts installed.

(vi) Life limited parts status.

(vii) Deviations from the customer work order.

(viii) Release statements to satisfy a foreign Civil Aviation Authority maintenance requirement.

(ix) Information needed to support shipment with shortages or re-assembly after delivery.

(x) For maintenance organisations approved in accordance with Subpart F of BCAR-M, the component certificate of release to service statement referred to in BCAR-M.A.613:

"Certifies that, unless otherwise specified in this block, the work identified in block 11 and described in this block was accomplished in accordance to the requirements of *Section A, Subpart F of BCAR-M* and in respect to that work the item is considered ready for release to service. THIS IS NOT A RELEASE UNDER BCAR-*145*."

If printing the data from an electronic BCAA Form 1, any appropriate data not fit for other blocks should be entered in this block.

Blocks 13a-13e

General Requirements for block 13a-13e: Not used for maintenance release. Shade, darken, or otherwise mark to preclude inadvertent or unauthorised use.

Block 14

Mark the appropriate box(es) indicating which regulations apply to the completed work. If the box "other regulations specified in block 12" is marked, then the regulations of the other *"airworthiness"* authority(ies) must be identified in block 12. At least one box must be marked, or both boxes may be marked, as appropriate.

For all maintenance carried out by maintenance organisations approved in accordance with Section A, Subpart F BCAR-M, the box "other regulation specified in block 12" shall be ticked and the certificate of release to service statement made in block 12. In that case, the certification statement "unless otherwise specified in this block" is intended to address the following cases;

(a) Where the maintenance could not be completed.

(b) Where the maintenance deviated from the standard required by BCAR-M.

(c) Where the maintenance was carried out in accordance with a requirement other than that specified in BCAR-M. In this case block 12 shall specify the particular national regulation.

For all maintenance carried out by maintenance organisations approved in accordance with Section A of BCAR-145, the certification statement "unless otherwise specified in block 12" is intended to address the following cases;

(a) Where the maintenance could not be completed.

(b) Where the maintenance deviated from the standard required by BCAR-145.

(c) Where the maintenance was carried out in accordance with a requirement other than that specified in BCAR-145. In this case block 12 shall specify the particular national regulation.

Block 14b Authorised Signature

This space shall be completed with the signature of the authorised person. Only persons specifically authorised under the rules and policies of BCAA are permitted to sign this block. To aid recognition, a unique number identifying the authorised person may be added.

Block 14c Certificate/Approval Number

Enter the Certificate/Approval number/reference. This number or reference is issued by BCAA.

Block 14d Name

Enter the name of the person signing block 14b in a legible form.

Block 14e Date

Enter the date on which block 14b is signed, the date must be in the format dd = 2 digit day, mmm = first 3 letters of the month, yyyy = 4 digit year.

Please note the User Responsibility Statements are on the reverse of this certificate. These statements may be added to the front of the certificate below the bottom line by reducing the depth of the form.

User/Installer Responsibilities

Place the following statement on the Certificate to notify end users that they are not relieved of their responsibilities concerning installation and use of any item accompanied by the form:

"THIS CERTIFICATE DOES NOT AUTOMATICALLY CONSTITUTE AUTHORITY TO INSTALL.

WHERE THE USER/INSTALLER PERFORMS WORK IN ACCORDANCE WITH REGULATIONS OF AN AIRWORTHINESS AUTHORITY DIFFERENT THAN THE AIRWORTHINESS AUTHORITY SPECIFIED IN BLOCK 1, IT IS ESSENTIAL THAT THE USER/INSTALLER ENSURES THAT HIS/HER AIRWORTHINESS AUTHORITY ACCEPTS ITEMS FROM THE AIRWORTHINESS AUTHORITY SPECIFIED IN BLOCK 1.

STATEMENTS IN BLOCKS 13A AND 14A DO NOT CONSTITUTE INSTALLATION CERTIFICATION. IN ALL CASES AIRCRAFT MAINTENANCE RECORDS MUST CONTAIN AN INSTALLATION CERTIFICATION ISSUED IN ACCORDANCE WITH THE NATIONAL REGULATIONS BY THE USER/INSTALLER BEFORE THE AIRCRAFT MAY BE FLOWN."

འབྲུག་ཞི་བའི་མཁའ་འགྲུལ་དབང་འཛིན། དཔལ་ལྡན་འབྲུག་གཞུང་།
Bhutan Civil Aviation Authority
Royal Government Of Bhutan
Paro : Bhutan

1. Bhutan Civil Aviation Authority	**2. AUTHORISED RELEASE CERTIFICATE** BCAA FORM 1				3. Form Tracking Number
4. Organisation Name and Address:					5. Work Order/Contract/Invoice
6. Item	7. Description	8. Part No.	9. Qty.	10. Serial No.	11. Status/Work
12. Remarks					

13a. Certifies that the items identified above were manufactured in conformity to: ☐ approved data design and are in condition for safe operation ☐ non-approved design data specified in block 12		14a. ☐ BCAR-145.A.50 Release to service. ☐ Other regulation specify in block 12. Certifies that unless otherwise specified in block 12, the work identified in block 11 and described in block 12, was accomplished in accordance with BCAR-145 and in respect to that work the items are considered ready for release to service.	
13b. Authorised Signature	13c. Approval/ Authorisation Number	14b. Authorised Signature	14c. Certificate/Approval Ref. No.
13d. Name	13e. Date (dd mmm yyyy)	14d. Name:	14e. Date (dd mmm yyyy)

USER/INSTALLER RESPONSIBILITIES
This certificate does not automatically constitute authority to install the item(s).
Where the user/installer performs work in accordance with regulations of an airworthiness authority different than the airworthiness authority specified in block 1, it is essential that the user/installer ensures that his/her airworthiness authority accepts items from the airworthiness authority specified in block 1.
Statements in blocks 13a and 14a do not constitute installation certification. In all cases aircraft maintenance records must contain an installation certification

BCAA Form 1 ***Page 1 of 1***

AMC to Appendix II to BCAR-M - Use of the BCAA Form 1 for Maintenance

1. The following formats of an issued BCAA Form 1 or equivalent certificate are acceptable:

   - A paper certificate bearing a signature (both originals and copies are accepted);
   - A paper certificate generated from an electronic system (printed from electronically stored data) when complying with the following subparagraph 2;
   - An electronic BCAA Form 1 or equivalent when complying with the following subparagraph 2.

2. Electronic signature and electronic exchange of the BCAA Form 1

a) Submission to BCAA

Any organisation intending to implement an electronic signature procedure to issue BCAA Form 1 and/or to exchange electronically such data contained on the BCAA Form 1 should document it and submit it to BCAA as part of the documents attached to its exposition.

b) Characteristics of the electronic system generating the BCAA Form 1

The electronic system should:

- guarantee secure access for each certifying staff;
- ensure integrity and accuracy of the data certified by the signature on the form and be able to show evidence of the authenticity of the BCAA Form 1 (recording and record keeping) with suitable security, safeguards and backups;
- be active only at the location where the part is being released with the BCAA Form 1;
- not permit to sign a blank form;
- provide a high degree of assurance that the data has not been modified after signature (if modification is necessary after issuance, i.e., re-certification of a part, a new form with a new number and reference to the initial issuance should be made).
- provide for a 'personal' electronic signature, identifying the signatory. The signature should be generated only in presence of the signatory.

An electronic signature means data in electronic form which is attached to or logically associated with other electronic data and which serves as a method of authentication and should meet the following criteria:

- it is uniquely linked to the signatory;
- it is capable of identifying the signatory;
- it is created using means that the signatory can maintain under his sole control.

This electronic signature should be an electronically generated value based on a cryptographic algorithm and appended to data in a way to enable the verification of the data's source and integrity.

Organisation(s) are reminded that additional national requirements may need to be satisfied when operating electronic systems. The electronic system should be based on a policy and management structure (confidentiality, integrity and availability), such as:

- Administrators, signatories;
- Scope of authorisation, rights;
- Password and secure access, authentication, protections, confidentiality;
- Track changes;
- Minimum blocks to be completed, completeness of information;
- Archives;
- etc.

The electronic system generating the BCAA Form 1 may contain additional data such as;

- Manufacturer code;
- Customer identification code;
- Workshop report;
- Inspection results;
- etc.

c) Characteristics of the BCAA Form 1 generated from the electronic system

To facilitate understanding and acceptance of the BCAA Form 1 released with an electronic signature, the following statement should be in Block 14b: 'Electronic Signature on File'.

In addition to this statement, it is accepted to print or display a signature in any form, such as a representation of the hand-written signature of the person signing (i.e. scanned signature) or a representation of their name.

When printing the electronic form, the BCAA Form 1 should meet the general format as specified in Appendix II to BCA-M.A watermark-type 'PRINTED FROM ELECTRONIC FILE' should be printed on the document.

When the electronic file contains a hyperlink to data required to determine the airworthiness of the item(s), the data associated to the hyperlink, when printed, should be in a legible format and be identified as a reference from the BCAA Form 1.

Additional information not required by the BCAA Form 1 completion instructions may be added to the printed copies of BCAA Form 1, as long as the additional data do not prevent a person from filling out, issuing, printing, or reading any portion of the BCAA Form 1. This additional data should be provided only in block 12 unless it is necessary to include it in another block to clarify the content of that block.

d) Electronic exchange of the electronic BCAA Form 1

The electronic exchange of the electronic BCAA Form 1 should be accomplished on a voluntary basis. Both parties (issuer and receiver) should agree on electronic transfer of the BCAA Form 1.

For that purpose, the exchange needs to include:

- all data of the BCAA Form 1, including referenced data required by the BCAA Form 1 completion instructions;
- all data required for authentication of the BCAA Form 1.
- In addition, the exchange may include:
- data necessary for the electronic format;
- additional data not required by the BCAA Form 1 completion instructions, such as manufacturer code, customer identification code.
- The system used for the exchange of the electronic BCAA Form 1 should provide:
- A high level of digital security; the data should be protected, not altered or not corrupted;
- Traceability of data back to its source.

Trading partners wishing to exchange BCAA Form 1 electronically should do so in accordance with the means of compliance stated in this document. It is recommended that they use an established, common, industry method such as Air Transport Association (ATA) Spec 2000 Chapter 16.

The organisation(s) are reminded that additional national requirements may need to be satisfied when operating the electronic exchange of the electronic BCAA Form 1.

The receiver should be capable of regenerating the BCAA Form 1 from the received data without alteration; if not, the system should revert back to the paper system.

When the receiver needs to print the electronic form, refer to subparagraph c) here above.

GM to Appendix II to BCAR-M Use of the BCAA Form 1 for Maintenance

BCAA Form 1 Block 12 'Remarks'

Examples of data to be entered in this block as appropriate:

- Maintenance documentation used, including the revision status, for all work performed and not limited to the entry made in block 11. A statement such as 'in accordance with the CMM' is not acceptable.
- NDT methods with appropriate documentation used when relevant.
- Compliance with airworthiness directives or service bulletins.
- Repairs carried out.
- Modifications carried out.
- Replacement parts installed.
- Life-limited parts status.
- Shelf life limitations.
- Deviations from the customer work order.
- Release statements to satisfy a foreign Civil Aviation Authority maintenance requirement.
- Information needed to support shipment with shortages or re-assembly after delivery.
- References to aid traceability, such as batch numbers."

Appendix III - Airworthiness Review Certificate - *Reserved*

Appendix IV - Class and ratings to be used for the Approval of Maintenance Organisations referred to in BCAR-M Subpart F and BCAR-145

1. Except as stated otherwise for the smallest organisation in paragraph 12, the table referred to in point 13 provides the standard system for the approval of maintenance organisation under Subpart F BCAR-M and BCAR-145. An organisation must be granted an approval ranging from a single class and rating with limitations to all classes and ratings with limitations.

2. In addition to the table referred to pint 13, the approved maintenance organisation is required to indicate its *scope of work* in the maintenance organisation manual/ exposition. See also paragraph 11.

3. Within the approval class(es) and rating(s) granted by BCAA, the scope of work specified in the maintenance organisation exposition defines the exact limits of approval. It is therefore essential that the approval class(es) and rating(s) and the organisation's scope of work are matching.

4. *A category A class rating* means that the approved maintenance organisation may carry out maintenance on the aircraft and any component (including engines and/or Auxiliary Power Units (APUs), in accordance with aircraft maintenance data or, if agreed by BCAA, in accordance with component maintenance data, only whilst such components are fitted to the aircraft. Nevertheless, such A-rated approved maintenance organisation may temporarily remove a component for maintenance, in order to improve access to that component, except when such removal generates the need for additional maintenance not eligible for the provisions of this paragraph. This will be subject to a control procedure in the maintenance organisation exposition to be approved by BCAA. The limitation section will specify the scope of such maintenance thereby indicating the extent of approval.

5. *A category B class rating* means that the approved maintenance organisation may carry out maintenance on the uninstalled engine and/or APU and engine and/or APU components, in accordance with engine and/or APU maintenance data or, if agreed by BCAA, in accordance with component maintenance data, only whilst such components are fitted to the engine and/or APU. Nevertheless, such B-rated approved maintenance organisation may temporarily remove a component for maintenance, in order to improve access to that component, except when such removal generates the need for additional maintenance not eligible for the provisions of this paragraph. The limitation section will specify the scope of such maintenance thereby indicating the extent of approval. A maintenance organisation approved with a category B class rating may also carry out maintenance on an installed engine during ‘base’ and ‘line’ maintenance subject to a control procedure in the maintenance organisation exposition to be approved by BCAA. The maintenance organisation exposition scope of work shall reflect such activity where permitted by BCAA.

6. *A category C class rating* means that the approved maintenance organisation may carry out maintenance on uninstalled components (excluding engines and APUs) intended for fitment to the aircraft or engine/APU. The limitation section will specify the scope of such maintenance thereby indicating the extent of approval. A maintenance organisation approved with a category C class rating may also carry out maintenance on an installed component during base and line

maintenance or at an engine/APU maintenance facility subject to a control procedure in the maintenance organisation exposition to be approved by BCAA. The maintenance organisation exposition scope of work shall reflect such activity where permitted by BCAA.

7. *A category D class rating* is a self-contained class rating not necessarily related to a specific aircraft, engine or other component. The D1 – Non Destructive Testing (NDT) rating is only necessary for an approved maintenance organisation that carries out NDT as a particular task for another organisation. An approved maintenance organisation with a class rating in A or B or C category may carry out NDT on products it is maintaining subject to the maintenance organisation exposition containing NDT procedures, without the need for a D1 class rating.

8. In the case of maintenance organisations approved in accordance with BCAR-145, category A class ratings are subdivided into 'Base' or 'Line' maintenance. Such an organisation may be approved for either 'Base' or 'Line' maintenance or both. It should be noted that a 'Line' facility located at a main base facility requires a 'Line' maintenance approval.

9. The limitation section is intended to give BCAA the flexibility to customise the approval to any particular organisation. Ratings shall be mentioned on the approval only when appropriately limited. The table referred to in point 13 specifies the types of limitation possible. Whilst maintenance is listed last in each class rating it is acceptable to stress the maintenance task rather than the aircraft or engine type or manufacturer, if this is more appropriate to the organisation (an example could be avionic systems installations and related maintenance). Such mention in the limitation section indicates that the maintenance organisation is approved to carry out maintenance up to and including this particular type/task.

10. When reference is made to series, type and group in the limitation section of class A and B, series means a specific type series such as Airbus 300 or 310 or 319 or Boeing 737- 300 series or RB211-524 series or Cessna 150 or Cessna 172 or Beech 55 series or continental O-200 series etc.; type means a specific type or model such as Airbus 310-240 type or RB 211-524 B4 type or Cessna 172RG type; any number of series or types may be quoted; group means for example Cessna single piston engine aircraft or Lycoming non-supercharged piston engines etc.

11. When a *lengthy capability list* is used which could be subject to frequent amendment, then such amendment shall be in accordance with the indirect procedure referred to in point BCAR-M.A.604(c) and BCAR-M.A.606(c) or BCAR-145.A.70(c) as applicable.

12. A maintenance organisation which employs only one person to both plan and carry out all maintenance can only hold a limited scope of approval rating. The maximum permissible limits are:-

CLASS	RATING	LIMITATION
CLASS AIRCRAFT	RATING A2 AEROPLANES 5700 KG AND BELOW	PISTON ENGINED 5700 KG AND BELOW
CLASS AIRCRAFT	RATING A3 HELICOPTERS	SINGLE PISTON ENGINED 3175 KG AND BELOW
CLASS AIRCRAFT	RATING A4 AIRCRAFT OTHER THAN A1, A2 AND A3	NO LIMITATION
CLASS ENGINES	RATING B2 PISTON	LESS THAN 450 HP
CLASS COMPONENTS RATING OTHER THAN COMPLETE ENGINES OR APUs	C1 TO C22	AS PER CAPABILITY LIST
CLASS SPECIALISED	D1 NDT	NDT METHOD(S) TO BE SPECIFIED

It should be noted that such an organisation may be further limited by BCAA in the scope of approval dependent upon the capability of the particular organisation.

13. Table

CLASS	RATING	LIMITATION	BASE	LINE
AIRCRAFT	A1 Aeroplanes above 5700 kg	[Rating reserved to Maintenance Organisations approved in accordance with BCAR-145)] [Shall state aeroplane manufacturer or group or series or type and/or the maintenance tasks] *Example: Airbus A320 Series*	[YES/ NO]*	[YES/ NO]*
	A2 Aeroplanes 5700 kg and below	[Shall state aeroplane manufacturer or group or series or type and/or the maintenance tasks] *Example: DHC-6 Twin Otter Series*	[YES/ NO]*	[YES/ NO]*
	A3 Helicopters	[Shall state helicopter manufacturer or group or series or type and/or the maintenance task(s)] *Example: Robinson R44*	[YES/ NO]*	[YES/ NO]*
	A4 Aircraft other than A1, A2 and A3	[Shall state aircraft category (sailplane, balloon, airship, etc.), manufacturer or group or series or type and/or the maintenance task (s).]	[YES/ NO]*	[YES/ NO]*
ENGINES	B1 Turbine	[Shall state engine series or type and/or the maintenance task(s)] *Example: PT6A Series*		
	B2 Piston	[Shall state engine manufacturer or group or series or type and/or the maintenance task(s)]		
	B3 APU	[Shall state engine manufacturer or series or type and/or the maintenance task(s)]		
COMPONENTS OTHER THAN	C1 Air Cond &Press			

COMPLETE ENGINES OR APUs	C2 Auto Flight	[Shall state aircraft type or aircraft manufacturer or component manufacturer or the particular component and/or cross-refer to a capability list in the exposition and/or the maintenance task(s).]
	C3 Comms and Nav	
	C4 Doors - Hatches	
	C5 Electrical Power & Lights	
	C6 Equipment	*Example: PT6A Fuel Control*
	C7 Engine - APU	
	C8 Flight Controls	
	C9 Fuel	
	C10 Helicopter - Rotors	
	C11 Helicopter - Trans	
	C12 Hydraulic Power	
	C13 Indicating – recording system	
	C14 Landing Gear	
	C15 Oxygen	
	C16 Propellers	
	C17 Pneumatic & Vacuum	
	C18 Protection ice/rain/fire	
	C19 Windows	
	C20 Structural	
	C21 Water ballast	

	C22 Propulsion Augmentation	
SPECIALISED SERVICES	D1 Non Destructive Testing	[Shall state particular NDT method(s)]

Appendix V – Maintenance Organisation Approval Referred to BCAR-M Subpart F

འབྲུག་ཞི་བའི་མཁའ་འགྲུལ་དབང་འཛིན། དཔལ་ལྡན་འབྲུག་གཞུང་།
Bhutan Civil Aviation Authority
Royal Government Of Bhutan
Paro : Bhutan

MAINTENANCE ORGANISATION APPROVAL CERTIFICATE

Reference: **BCAA.MF.XXXX**

Pursuant to Bhutan Air Navigation Regulations & Bhutan Civil Aviation Requirements for the time being in force and subject to the conditions specified below, the Bhutan Civil Aviation Authority hereby certifies:

[COMPANY NAME]
[COMPANY ADDRESS]

as a maintenance organisation in compliance with Section A, Subpart F of BCAR-M, approved to maintain the products, parts and appliances listed in the attached approval schedule and issue related certificates of release to service using the above reference.

CONDITIONS:

1. This approval is limited to that specified in the scope of work section of the approved maintenance organisation exposition as referred to in Section A of Subpart F of BCAR-M; and
2. This approval requires compliance with the procedures specified in the approved maintenance organisation manual, and
3. This approval is valid whilst the approved maintenance organisation remains in compliance with BCAR-M.
4. Subject to compliance with the foregoing conditions, this approval shall remain valid until any specified date of expiry unless the approval has previously been surrendered, superseded, suspended or revoked.

Effective date: XX.XX.XX
Date of expiry: XX.XX.XX

Date of issue: XX.XX.XX Signature: ……

BCAA Form 3-MF *Page 1 of 2*

འབྲུག་ཞི་བའི་མཁའ་འགྲུལ་དབང་འཛིན། དཔལ་ལྡན་འབྲུག་གཞུང་།

Bhutan Civil Aviation Authority
Royal Government Of Bhutan
Paro : Bhutan

MAINTENACE ORGANISATION APPROVAL SCHEDULE

Reference: **BCAA.MF.XXXX**

Organisation name: [**COMPANY NAME** AND COMPANY ADDRESS]

CLASS	RATING	LIMITATION	BASE	LINE
AIRCRAFT	XX	YY	[YES/NO]	[YES/NO]
ENGINES	XX	YY		
COMPONENTS OTHER THAN COMPLETE ENGINES OR APUs	XX	YY		
SPECIALISED SERVICES	XX	YY		

This approval is limited to the products, parts and appliances and to the activities specified in the scope of approval section of the approved maintenance organisation mamual,

Maintenance Organisation Manual reference:.....

Effective date: XX.XX.XX

Date of expiry: XX.XX.XX

Date of issue: XX.XX.XX Signature: …….....

BCAA Form 3-MF *Page 2 of 2*

Appendix VI - Continuing Airworthiness Management Organisation referred to in BCAR-M Subpart G

འབྲུག་ཞི་བའི་མཁའ་འགྲུལ་དབང་འཛིན། དཔལ་ལྡན་འབྲུག་གཞུང་།
Bhutan Civil Aviation Authority
Royal Government Of Bhutan
Paro : Bhutan

CONTINUING AIRWORTHINESS MANAGEMENT ORGANISATION APPROVAL CERTIFICATE

Reference: **BCAA.MG.04** (ref. AOC BCAA 04)

Pursuant to Bhutan Civil Aviation Regulations & Bhutan Civil Aviation Requirements for the time being in force and subject to the condition specified below, the Bhutan Civil Aviation Authority hereby certifies:

Drukair Helicopter Services
Drukair Corporation Limited
Paro International Airport

as a continuing airworthiness management organization in compliance with Section A, Subpart G of BCAR-M, approved to manage the continuing airworthiness of the aircraft listed in the attached schedule of approval.

CONDITIONS:

1. This approval is limited to that specified in the scope of approval section of the approved continuing airworthiness management exposition as referred to in Section A, Subpart G of BCAR-M.
2. This approval requires compliance with the procedures specified in the BCAR-M approved continuing airworthiness management exposition.
3. This approval is valid whilst the approved continuing airworthiness management organisation remains in compliance with BCAR-M.
4. Where the continuing airworthiness management organisation contracts under its Quality System the service of an/several organisation(s), this approval remains valid subject to such organisation(s) fulfilling applicable contractual obligations.
5. This approval does not constitute an authorisation to operate the types of aircraft paragraph 1. The authorisation to operate the aircraft is the Air Operator Certificate (AOC).
6. Termination, suspension or revocation of the AOC automatically invalidates the present approval in relation to the aircraft registrations specified in the AOC, unless otherwise explicitly stated by BCAA.
7. Subject to compliance with the previous conditions, this approval shall remain valid until any specified date of expiry unless the approval has previously been surrendered, superseded, suspended or revoked.

Effective date: **01 November 2022**

Date of expiry: **31 December 2022**

Date of issue: **28 October 2022**

Signature: .....

Page 1 of 2

BCAA Form 14

འབྲུག་ཞི་བའི་མཁའ་འགྲུལ་དབང་འཛིན། དཔལ་ལྡན་འབྲུག་གཞུང་།
Bhutan Civil Aviation Authority
Royal Government Of Bhutan
Paro : Bhutan

CONTINUING AIRWORTHINESS MANAGEMENT ORGANISATION APPROVAL SCHEDULE

Reference: **BCAA.MG.04** (ref. AOC BCAA 03(H))

Organization: **Drukair Helicopter Services**
Drukair Corporation Limited
Paro International Airport

Aircraft type/series/group	Permit to fly authorised	Organisation(s) working under quality sysytem
EC130T2/H130	No	None

This approval schedule is limited to that specified in the scope of approval contained in the approved Continuing Airworthiness Management Exposition section 0.2.5.

Continuing Airworthiness Management Exposition Reference: DHS/CAME Issue 01, Revision 00.

Effective date: **01 November 2022**

Date of expiry: **31 December 2022**

Date of issue: **28 October 2022**

Signature: ……

Page 2 of 2

BCAA Form 14

Appendix VII - Complex Maintenance Tasks

The following constitutes the complex maintenance tasks referred to in BCAR-M.A.502(d)3, BCAR-M.A.801(b)2 and BCAR-M.A.801(c):

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

    (a) a box beam;

    (b) wing stringer or chord member;

    (c) a spar;

    (d) a spar flange;

    (e) a member of a truss-type beam;

    (f) the web of a beam;

    (g) a keel or chine member of a flying boat hull or a float;

    (h) a corrugated sheet compression member in a wing or tail surface;

    (i) a wing main rib;

    (j) a wing or tail surface brace strut;

    (k) an engine mount;

    (l) a fuselage longeron or frame;

    (m) a member of a side truss, horizontal truss or bulkhead;

    (n) a seat support brace or bracket;

    (o) a seat rail replacement;

    (p) a landing gear strut or brace strut;

    (q) an axle;

    (r) a wheel; and

    (s) a ski or ski pedestal, excluding the replacement of a low-friction coating.

2. The modification or repair of any of the following parts:

    (a) aircraft skin, or the skin of an aircraft float, if the work requires the use of a support, jig or fixture;

    (b) aircraft skin that is subject to pressurization loads, if the damage to the skin

measures more than 15 cm (6 inches) in any direction;

(c) a load-bearing part of a control system, including a control column, pedal, shaft, quadrant, bell crank, torque tube, control horn and forged or cast bracket, but excluding:

(i) the swaging of a repair splice or cable fitting, and

(ii) the replacement of a push-pull tube end fitting that is attached by riveting; and

(d) any other structure, not listed in (1), that a manufacturer has identified as primary structure in its maintenance manual, structural repair manual or instructions for continuing airworthiness.

3. The performance of the following maintenance on a piston engine:

(a) dismantling and subsequent reassembling of a piston engine other than

(i) to obtain access to the piston/cylinder assemblies; or

(ii) to remove the rear accessory cover to inspect and/or replace oil pump assemblies, where such work does not involve the removal and re-fitment of internal gears;

(b) dismantling and subsequent reassembling of reduction gears;

(c) welding and brazing of joints, other than minor weld repairs to exhaust units carried out by a suitably approved or authorised welder but excluding component replacement;

(d) the disturbing of individual parts of units which are supplied as bench tested units, except for the replacement or adjustment of items normally replaceable or adjustable in service.

4. The balancing of a propeller, except:

(a) for the certification of static balancing where required by the maintenance manual;

(b) dynamic balancing on installed propellers using electronic balancing equipment where permitted by the maintenance manual or other approved airworthiness data;

5. Any additional task that requires:

(a) specialized tooling, equipment or facilities; or

(b) significant coordination procedures because of the extensive duration of the tasks and the involvement of several persons.

AMC to Appendix VII "Complex Maintenance Tasks"

The sentence "suitably approved or authorised welder" contained in Appendix VII, paragraph 3(c), means that the qualification should meet an officially recognised standard or, otherwise, should be accepted by BCAA.

Appendix VIII - Limited Pilot-Owner Maintenance

In addition to the requirements laid down in BCAR-M, the following basic principles are to be complied with before any maintenance task is carried out under the terms of Pilot-owner maintenance:

(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 is not competent for the task to be carried out, the task cannot be released by the Pilot-owner.

3. The Pilot-owner (or his contracted continuing airworthiness management organisation referred to in Subpart G, Section A of BCAR is responsible for identifying the Pilot-owner tasks according to these basic principles in the maintenance programme and for ensuring that the document is updated in a timely manner.

4. The approval of the maintenance programme has to be carried out in accordance with point BCAR-M.A.302.

(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 as specified in point BCAR-M.A.402(a) and/or;

2. requires the removal of major components or major assembly 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) and/or;

6. is composed of any unscheduled special inspections (e.g. heavy landing check) and/or;

7. is effecting systems essential for the IFR operations and/or;

8. is listed in Appendix VII or is a component maintenance task in accordance with point BCAR-M.A.502.

The criteria 1 to 8 listed above cannot be overridden by less restrictive instructions issued in accordance with "BCAR-M.A.302(d) 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 as specified in point BCAR-M.A.401 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 in accordance with point BCAR-M.A.803(d).

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 in accordance with point BCAR-M.A.305(a).

AMC to Appendix VIII "Limited Pilot Owner Maintenance"

1. The lists here below specify items that can be expected to be completed by an owner who holds a current and valid pilot licence for the aircraft type involved and who meets the competence and responsibility requirements of Appendix VIII to BCAR-M.

2. The list of tasks may not address in a detailed manner the specific needs of the various aircraft categories. In addition, the development of technology and the nature of the operations undertaken by these categories of aircraft cannot be always adequately considered.

3. Therefore, the following lists are considered to be the representative scope of limited Pilot-owner maintenance referred to in BCAR-M.A.803 and Appendix VIII:

   - Part A applies to aeroplanes;
   - Part B applies to rotorcraft;
   - Part C applies to sailplanes and powered sailplanes;
   - Part D applies to balloons and airships.

4. 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 of Parts A to D of this AMC and remains compliant with BCAR-M Appendix VIII basic principles.

   The content of periodic inspections/checks as well as their periodicity is not regulated or standardised in an aviation specification. It is the decision of the manufacturer/Type Certificate Holder (TCH) to recommend a schedule for each specific type of inspection/check.

   For an inspection/check with the same periodicity for different TCHs, the content may differ, and in some cases may be critically safety-related and may need the use of special tools or knowledge and thus would not qualify for Pilot-owner maintenance. Therefore, the maintenance carried out by the Pilot-owner cannot be generalised to specific inspections such as 50 Hrs, 100 Hrs or 6 Month periodicity.

   The Inspections to be carried out are limited to those areas and tasks listed in this AMC to Appendix VIII; this allows flexibility in the development of the maintenance programme and does not limit the inspection to certain specific periodic inspections. A 50 Hrs/6 Month periodic inspection for a fixed wing aeroplane as well as the one-year inspection on a glider may normally be eligible for Pilot-owner maintenance.

Tables

Note: Tasks in Part A or Part B shown with ** exclude IFR operations following Pilot-owner maintenance. For these aircraft to operate under IFR operations, these tasks should be released by an appropriate licensed engineer.

Part A/Pilot-Owner Maintenance Tasks for Powered Aircraft (Aeroplanes)

ATA	Area	Task	Aeroplanes <=2730 kg
09	Towing	Tow release unit and tow cable retraction mechanism – Cleaning, lubrication and tow cable replacement (including weak links).	Yes
		Mirror –Installation and replacement of mirrors.	Yes
11	Placards	Placards, Markings – Installation and renewal of placards and markings required by AFM and AMM.	Yes
12	Servicing	Lubrication – Those items not requiring a disassembly other than of non-structural items such as cover plates, cowlings and fairings.	Yes
20	Standard Practices	Safety Wiring – Replacement of defective safety wiring or cotter keys, excluding those in engine controls, transmission controls and flight control systems.	Yes
		Simple Non-Structural Standard Fasteners – Replacement and adjustment, excluding the replacement of receptacles and anchor nuts requiring riveting.	Yes
21	Air Conditioning	Replacement of flexible hoses and ducts.	Yes
23	Communication.	Communication devices – Remove and replace self contained, instrument panel mount communication devices with quick disconnect connectors, excluding IFR operations.	Yes
24	Electrical power	Batteries – Replacement and servicing, excluding servicing of Ni- Cd batteries and IFR operations.	Yes**
		Wiring – Repairing broken circuits in non critical equipment, excluding ignition system, primary generating system and required communication, navigation system and primary flight instruments.	Yes
		Bonding – Replacement of broken bonding cable.	Yes
		Fuses – Replacement with the correct rating.	Yes

25	Equipment	Safety Belts – Replacement of safety belts and harnesses excluding belts fitted with airbag systems.	Yes
		Seats – Replacement of seats or seat parts not involving disassembly of any primary structure or control system.	Yes
		Non-essential instruments and/or equipment - Replacement of self contained, instrument panel mount equipment with quick disconnect connectors.	Yes
		Oxygen System – Replacement of portable oxygen bottles and systems in approved mountings, excluding permanently installed bottles and systems.	Yes
		ELT – Removal/Reinstallation.	Yes
27	Flight controls	Removal or reinstallation of co-pilot control column and rudder pedals where provision for quick disconnect is made by design.	Yes
28	Fuel System	Fuel Filter elements – Cleaning and/or replacement.	Yes
30	Ice and Rain Protection	Windscreen Wiper – Replacement of wiper blade.	Yes
31	Instruments	Instrument Panel – Removal and reinstallation provided this it is a design feature with quick disconnect connectors, excluding IFR operations.	Yes**
		Pitot Static System – Simple sense and leak check, excluding IFR operations.	Yes**
		Drainage – Drainage of water drainage traps or filters within the Pitot Static system excluding IFR operations.	Yes**
		Instruments – Check for legibility of markings and those readings are consistent with ambient conditions.	Yes

32	Landing Gear	Wheels – Removal, replacement and servicing, including replacement of wheel bearings and lubrication.	Yes
		Servicing – Replenishment of hydraulic fluid	Yes
		Shock Absorber – Replacement of elastic cords or rubber dampers.	Yes
		Shock Struts – Replenishment of oil or air.	Yes
		Skis – Changing between wheel and ski landing gear.	Yes
		Landing skids – Replacement of landing skids and skid shoes.	Yes
		Wheel fairings (spats) – Removal and reinstallation.	Yes
		Mechanical brakes – Adjustment of simple cable operated systems.	Yes
		Brake – Replacement of worn brake pads.	Yes
33	Lights	Lights – Replacement of internal and external bulbs, filaments, reflectors and lenses.	Yes
34	Navigation	Software – Updating self contained, instrument panel mount navigational software databases, excluding automatic flight control systems and transponders.	Yes
		Navigation devices – Removal and replacement of self contained, instrument panel mount navigation devices with quick disconnect connectors, excluding automatic flight control systems, transponders, primary flight control system and IFR operations.	Yes**
		Self contained data logger – Installation, data restoration.	Yes
51	Structure	Fabric patches – Simple patches extending over not more than one rib and not requiring rib stitching or removal of structural parts or control surfaces.	Yes
		Protective Coating – Applying preservative material or coatings where no disassembly of any primary structure or operating system is involved.	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.	Yes
		Fairings – Simple repairs to non-structural fairings and cover plates which do not change the contour.	Yes

52	Doors and Hatches	Doors - Removal and reinstallation	Yes
53	Fuselage	Upholstery, furnishing – Minor repairs which do not require disassembly of primary structure or operating systems, or interfere with control systems.	Yes
56	Windows	Side Windows - Replacement if it does not require riveting, bonding or any special process	Yes
61	Propeller	Spinner – Removal and reinstallation.	Yes
71	Powerplant installation	Cowling – Removal and reinstallation not requiring removal of propeller or disconnection of flight controls.	Yes
		Induction System – Inspection and replacement of induction air filter.	Yes
72	Engine	Chip detectors – Removal, checking and reinstallation provided the chip detector is a self-sealing type and not electrically indicated.	Yes
73	Engine fuel	Strainer or Filter elements – Cleaning and/or replacement.	Yes
		Fuel - Mixing of required oil into fuel.	Yes
74	Ignition	Spark Plugs – Removal, cleaning, adjustment and reinstallation.	Yes
75	Cooling	Coolant - Replenishment of coolant fluid.	Yes
77	Engine Indicating	Engine Indicating – Removal and replacement of self contained, instrument panel mount indicators that have quick-release connectors and do not employ direct reading connections.	Yes
79	Oil System	Strainer or filter elements – Cleaning and/or replacement.	Yes
		Oil – Changing or replenishment of engine oil and gearbox fluid.	Yes

Part B/Pilot-Owner Maintenance Tasks for Rotorcraft

ATA	Area	Task	Single Engine Rotorcraft <=2730 kg
11	Placards	Placards, Markings – Installation and renewal of placards and markings required by AFM and AMM.	Yes
12	Servicing	Fuel, oil, hydraulic, de-iced and windshield liquid replenishment.	Yes
		Lubrication – Those items not requiring a disassembly other than of non-structural items such as cover plates, cowlings and fairings.	Yes
20	Standard Practices	Safety Wiring – Replacement of defective safety wiring or cotter keys, excluding those in engine controls, transmission controls and flight control systems.	Yes
		Simple non-structural standard fasteners – Replacement and adjustment, excluding latches and the replacement of receptacles and anchor nuts requiring riveting.	Yes
21	Air Conditioning	Replacement of flexible hoses and ducts.	Yes
23	Communication	Communication devices – Remove and replace self contained, instrument panel mount communication devices with quick disconnect connectors, excluding IFR operations.	Yes**
24	Electrical power	Batteries – Replacement and servicing, excluding servicing of Ni- Cd batteries and IFR operations.	Yes**
		Wiring – Repairing broken circuits in noncritical equipment, excluding ignition system, primary generating system and required communication, navigation system and primary flight instruments.	Yes
		Bonding – Replacement of broken bonding cable excluding bonding on rotating parts and flying controls.	Yes
		Fuses – Replacement with the correct rating.	Yes

25	Equipment	Safety Belts - Replacement of safety belts and harnesses excluding belts fitted with airbag systems.	Yes
		Seats – Replacement of seats or seat parts not involving disassembly of any primary structure or control system excluding flight crew seats.	Yes
		Removal/installation of emergency flotation gears with quick disconnect connectors.	Yes
		Non-essential instruments and/or equipment - Replacement of self contained, instrument panel mount equipment with quick disconnect connectors.	Yes
		ELT - Removal/Reinstallation.	Yes
30	Ice and rain protection	Windshield wiper replacement	Yes
31	Instruments	Instrument Panel– Removal and reinstallation provided this it is a design feature with quick disconnect connectors, excluding IFR operations.	Yes**
		Pitot Static System – Simple sense and leak check, excluding IFR operations.	Yes**
		Drainage – Drainage of water drainage traps or filters within the Pitot Static system excluding IFR operations.	Yes**
		Instruments – Check for legibility of markings and those readings are consistent with ambient conditions.	Yes
32	Landing Gears	Wheels – Removal, replacement and servicing, including replacement of wheel bearings and lubrication.	Yes
		Replacement of skid wear shoes.	Yes
		Fit and remove snow landing pads.	Yes
		Servicing – Replenishment of hydraulic fluid.	Yes
		Brake – Replacement of worn brake pads.	Yes
33	Lights	Lights – replacement of internal and external bulbs, filaments, reflectors and lenses.	Yes

34	Navigation	Software – Updating self contained, instrument panel mount navigational software databases, excluding automatic flight control systems and transponders.	Yes
		Navigation devices – Remove and replace self contained, instrument panel mount navigation devices with quick disconnect connectors, excluding automatic flight control systems, transponders, primary flight control system and IFR operations.	Yes**
		Self contained data logger – Installation, data restoration.	Yes
51	Structure	Protective Coating – Applying preservative material or coatings where no disassembly of any primary structure or operating system is involved.	Yes
		Surface finish - Minor restoration where no disassembly of any primary structure or operating system is involved, excluding intervention on main and tail rotors. This includes application of signal coatings or thin foils as well as Registration markings.	Yes
		Fairings – Simple repairs to non-structural fairings and cover plates which do not change the contour.	Yes
52	Doors	Doors - Removal and reinstallation.	Yes
53	Fuselage	Upholstery, furnishing – Minor repairs which do not require disassembly of primary structure or operating systems, or interfere with control systems.	Yes
56	Windows	Side Windows - Replacement if it does not require riveting, bonding or any special process.	Yes
62	Main rotor	Removal/installation of main rotor blades that are designed for removal where special tools are not required (tail rotor blades excluded) limited to installation of the same blades previously removed refitted in the original position.	Yes
63 65	Transmission	Chip detectors – Remove, check and replace provided the chip detector is a self-sealing type and not electrically indicated.	Yes
67	Flight control	Removal or reinstallation of co-pilot cyclic and collective controls and yaw pedals where provision for quick disconnect is made by design.	Yes
71	Powerplant installation	Cowlings - Removal and re-fitment.	Yes
72	Engine	Chip detectors –removal, checking and reinstallation provided the chip detector is a self sealing type and not electrically indicated.	Yes
79	Oil System	Filter elements – Replacement, provided that the element is of the “spin on/off” type.	Yes
		Oil - Changing or replenishment of engine oil.	Yes

Part C/Pilot-Owner Maintenance Tasks for Sailplanes and Powered Sailplanes

Abbreviations applicable to this Part:

N/A not applicable for this category

SP sailplane

SSPS self-sustained powered sailplane

SLPS/TM self-launching powered sailplane/touring motor glider

ATA	Area	Task	SP	SSPS	SLPS/ TM
08	Weighing	Recalculation – Small changes of the Trim plan without needing a reweighing.	Yes	Yes	Yes
09	Towing	Tow release unit and tow cable retraction mechanism – Cleaning, lubrication and tow cable replacement (including weak links).	Yes	Yes	Yes
		Mirror - Installation and replacement of mirrors.	Yes	Yes	Yes
11	Placards	Placards, Markings – Installation and renewal of placards and markings required by AFM and AMM.	Yes	Yes	Yes
12	Servicing	Lubrication – Those items not requiring a disassembly other than of non-structural items such as cover plates, cowlings and fairings.	Yes	Yes	Yes
20	Standard Practices	Safety Wiring – Replacement of defective safety wiring or cotter keys, excluding those in engine controls, transmission controls and flight 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 provided by the manufacturer.	Yes	Yes	Yes
21	Air Conditioning	Replacement of flexible hoses and ducts.	Yes	Yes	Yes
23	Communication	Communication devices – Remove and replace self contained, 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 non-required equipment such as electric variometers, flight computers but excluding required communication, navigation systems and engine wiring.	Yes	Yes	Yes
		Wiring – Repairing broken circuits in landing light and any other wiring for non-required equipment such as electrical variometers or flight computers, 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 – This includes soldering and crimping of non-required equipment such as electrical variometers or flight computers, but excluding ignition system, primary generating system and required communication, navigation system and primary flight instruments.	Yes	Yes	Yes
		Fuses – Replacement with the correct rating.	Yes	Yes	Yes
25	Equipment	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 equipment - Replacement of self contained, 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 reinstallation not involving disassembly or modification of any primary structure, control.	Yes	Yes	Yes
		Static Probes – Removal or reinstallation of variometer static and total energy compensation probes.	Yes	Yes	Yes
		Oxygen System – Replacement of portable oxygen bottles and systems in approved mountings, excluding permanently installed bottles and systems.	Yes	Yes	Yes
		Air Brake Chute – Installation and servicing	Yes	Yes	Yes
		ELT – Removal / Reinstallation.	Yes	Yes	Yes
26	Fire Protection	Fire Warning – Replacement of sensors and indicators.	N/A	Yes	Yes

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 reinstallation 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	NO
		Fuel Filter – Cleaning and/or replacement.	N/A	Yes	Yes
31	Instruments	Instrument Panel– Removal and reinstallation 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 filters within the Pitot static system.	Yes	Yes	Yes
		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
		Servicing – Replenishment of hydraulic 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 reinstallation and repair including operating straps.	Yes	Yes	Yes
		Skis – Changing between wheel and ski landing gear.	Yes	Yes	Yes
		Skids – Removal or reinstallation and servicing of main, wing and tail skids.	Yes	Yes	Yes
		Wheels fairing (spats) – Removal and reinstallation.	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 reinstallation 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, instrument panel mount navigational software databases, excluding automatic flight control systems and transponders and including update of non-required instruments/equipment.	Yes	Yes	Yes
		Navigation devices – Removal and replacement of self contained, 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 and 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.	Yes	Yes	Yes
		Surface finish - Minor restoration of paint or coating where the underlying primary structure is not affected. This includes application of signal coatings or thin foils as well as Registration markings.	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 reinstallation.	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 reinstallation and service of lower wing skids or wing roller including spring assembly.	Yes	Yes	Yes
		Water ballast – Removal or reinstallation of flexible tanks.	Yes	Yes	Yes
		Turbulator and sealing tapes – Removal or reinstallation of approved sealing tapes and turbulator tapes.	Yes	Yes	Yes
61	Propeller	Spinner – Removal and reinstallation.	N/A	Yes	Yes
71	Powerplant installation	Removal or installation of Powerplant unit including engine and propeller.	N/A	Yes	NO
		Cowling - Removal and reinstallation not requiring removal of propeller or disconnection of flight controls.	N/A	Yes	Yes
		Induction System – Inspection and replacement of induction air filter.	N/A	Yes	Yes
72	Engine	Chip detectors – Removal, checking and reinstallation provided the chip detector is a self sealing type and not electrically indicated.	N/A	Yes	Yes
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, cleaning, adjustment and reinstallation.	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 instrument panel mount indicators that have quick-release connectors and 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

Part D/Pilot-Owner Maintenance Tasks for Balloons/Airships

Area and Task	Hot Air Airship	Hot Air Balloon	Gas Balloon
A) ENVELOPE			
1. Fabric repairs - excluding complete panels (as defined in, and in accordance with, Type Certificate holders' instructions) not requiring load tape repair or replacement.	Yes	Yes	NO
2. Nose line - Replacement	Yes	N/A	N/A
3. Banners - fitment, replacement or repair (without sewing).	Yes	Yes	Yes
4. Melting link (temperature flag) - replacement.	Yes	Yes	N/A
5. Temperature transmitter and temperature indication cables - removal or reinstallation.	Yes	Yes	N/A
6. Crown line - replacement (where permanently attached to the crown ring).	No	Yes	N/A
7. Scoop or skirt-replacement or repair of (including fasteners).	Yes	Yes	N/A
B) BURNER			
8. Burner - cleaning and lubrication.	Yes	Yes	N/A
9. Piezo igniters - adjustment.	Yes	Yes	N/A
10. Burner jets - cleaning and replacement.	Yes	Yes	N/A
11. Burner frame corner buffers - replacement or reinstallation.	Yes	Yes	N/A
12. Burner Valves - adjustment of closing valve not requiring special tools or test equipment.	Yes	Yes	N/A
C) BASKET AND GONDOLA			
13. Basket/gondola frame trim - repair or replacement.	Yes	Yes	Yes
14. Basket/gondola runners (including wheels) - repair or replacement.	Yes	Yes	Yes
15. External rope handles - repair.	Yes	Yes	Yes
16. Replacement of seat covers - upholsteries and safety belts.	Yes	Yes	Yes
D) FUEL CYLINDER			
17. Liquid valve - replacement of O-rings in the outlet.	Yes	Yes	No

E) INSTRUMENTS AND EQUIPMENT			
18. Batteries - replacement of for self contained instruments and communication equipment.	Yes	Yes	Yes
19. Communication, navigation devices, instruments and/or equipment – Remove and replace self contained, instrument panel mounted communication devices with quick disconnect connectors.	Yes	Yes	Yes
F) ENGINES			
20. Cleaning and Lubrication not requiring disassembly other than removal of non-structural items such as cover plates, cowlings and fairings.	Yes	N/A	N/A
21. Cowling-removal and re-fitment not requiring removal of the propeller	Yes	N/A	N/A
22. Fuel and oil strainers and/or filter elements - Removal, cleaning and/or replacement	Yes	N/A	N/A
23. Batteries - replacing and servicing (excluding servicing of Ni- Cd batteries).	Yes	N/A	N/A
24. Propeller Spinner – removal and installation for inspection.	Yes	N/A	N/A
25. Powerplant - Removal or installation of powerplant unit including engine and propeller.	Yes	N/A	N/A
26. Engine- Chip detectors – remove, check and replace.	Yes	N/A	N/A
27. Ignition Spark Plug – removal or installation and adjustment including gap clearance.	Yes	N/A	N/A
28. Coolant fluid - replenishment.	Yes	N/A	N/A
29. Engine Controls - minor adjustments of non-flight or propulsion controls whose operation is not critical for any phase of flight.	Yes	N/A	N/A
30. Engine instruments - removal and replacement.	Yes	N/A	N/A
31. Lubrication oil – changing or replenishment of engine oil and gearbox fluid.	Yes	N/A	N/A
32. Fuel lines - replacement of prefabricated hoses with self- sealing couplings.	Yes	N/A	N/A
33. Air filters (if installed) – removal, cleaning and replacement.	Yes	N/A	N/A

Appendices to AMCs

Appendix I to AMC M.A.302 - Content of the Maintenance Programme

1. General requirements

1.1 The maintenance programme should contain the following basic information:

1.1.1 The type/model and registration number of the aircraft, engines and, where applicable, auxiliary power units and propellers.

1.1.2 The name and address of the owner, operator or BCAR-M.A. Subpart G approved organisation managing the aircraft airworthiness.

1.1.3 The reference, the date of issue and issue number of the approved maintenance programme.

1.1.4 A statement signed by the owner, operator or BCAR-M.A. Subpart G approved organisation managing the aircraft airworthiness to the effect that the specified aircraft will be maintained to the programme and that the programme will be reviewed and updated as required.

1.1.5 Contents/list of effective pages and their revision status of the document.

1.1.6 Check periods, which reflect the anticipated utilisation of the aircraft. Such utilisation should be stated and include a tolerance of not more than 25%. Where utilisation cannot be anticipated, calendar time limits should also be included.

1.1.7 Procedures for the escalation of established check periods, where applicable and acceptable to BCAA.

1.1.8 Provision to record the date and reference of approved amendments incorporated in the maintenance programme.

1.1.9 Details of pre-flight maintenance tasks that are accomplished by maintenance staff.

1.1.10 The tasks and the periods (intervals/frequencies) at which each part of the aircraft, engines, APU‘s, propellers, components, accessories, equipment, instruments, electrical and radio apparatus, together with the associated systems and installations should be inspected. This should include the type and degree of inspection required.

1.1.11 The periods at which components should be checked, cleaned, lubricated, replenished, adjusted and tested.

1.1.12 If applicable details of ageing aircraft system requirements together with any specified sampling programmes.

1.1.13 If applicable details of specific structural maintenance programmes where issued by the type certificate holder including but not limited to:

(a) Maintenance of structural Integrity by damage Tolerance and Supplemental Structural Inspection Programmes (SSID).

(b) Structural maintenance programmes resulting from the SB review performed by the TC holder.

(c) Corrosion prevention and control.

(d) Repair Assessment.

(e) Widespread Fatigue Damage

1.1.14 If applicable, details of Critical Design Configuration Control Limitations together with appropriate procedures.

1.1.15 If applicable a statement of the limit of validity in terms of total flight cycles/calendar date/flight hours for the structural programme in 1.1.13.

1.1.16 The periods at which overhauls and/or replacements by new or overhauled components should be made.

1.1.17 A cross-reference to other documents approved by the type certificate issuing authority which contain the details of maintenance tasks related to mandatory life limitations, Certification Maintenance Requirements (CMR‘s) and ADs.

Note: To prevent inadvertent variations to such tasks or intervals these items should not be included in the main portion of the maintenance programme document, or any planning control system, without specific identification of their mandatory status.

1.1.18 Details of, or cross-reference to, any required reliability programme or statistical methods of continuous Surveillance

1.1.19 A statement that practices and procedures to satisfy the programme should be to the standards specified in the TC holder‘s Maintenance Instructions. In the case of approved practices and procedures that differ, the statement should refer to them.

1.1.20 Each maintenance task quoted should be defined in a definition section of the programme.

2. Programme basis

2.1 An owner or an BCAR-M Subpart G approved organisation‘s aircraft maintenance programme should normally be based upon the MRB report, where applicable, and the TC holder‘s maintenance planning document or Chapter 5 of the maintenance manual, (i.e. the manufacturer‘s recommended maintenance programme).

The structure and format of these maintenance recommendations may be re-written by the owner or the BCAR-M.A. Subpart G approved organisation to better suit the operation and control of the particular maintenance programme.

2.2 For a newly type-certificated aircraft where no previously approved maintenance programme exists, it will be necessary for the owner or the BCAR-M.A. Subpart G approved organisation to comprehensively appraise the manufacturer‘s recommendations (and the MRB report where

applicable), together with other airworthiness information, in order to produce a realistic programme for approval.

2.3 For existing aircraft types it is permissible for the operator to make comparisons with maintenance programmes previously approved. It should not be assumed that a programme approved for one owner or the BCAR-M.A. Subpart G approved organisation would automatically be approved for another.

Evaluation should be made of the aircraft/fleet utilisation, landing rate, equipment fit and, in particular, the experience of the owner or the BCAR-M.A Subpart G approved organisation when assessing an existing programme.

Where BCAA is not satisfied that the proposed maintenance programme can be used as is, BCAA should request appropriate changes such as additional maintenance tasks or de-escalation of check frequencies as necessary.

2.4 Critical Design Configuration Control Limitations (CDCCL).

If CDCCL have been identified for the aircraft type by the TC/STC holder, maintenance instructions should be developed. CDCCL‘s are characterised by features in an aircraft installation or component that should be retained during modification, change, repair, or scheduled maintenance for the operational life of the aircraft or applicable component or part.

3. Amendments

Amendments (revisions) to the approved maintenance programme should be made by the owner or the BCAR-M.A. Subpart G approved organisation, to reflect changes in the TC holder‘s recommendations, modifications, service experience, or as required by BCAA.

4. Permitted variations to maintenance periods

The owner or the BCAR-M.A. Subpart G approved organisation may only vary the periods prescribed by the programme with the approval of BCAA or through a procedure developed in the maintenance programme and approved by the BCAA.

5. Periodic review of maintenance programme contents

5.1 The owner or the BCAR-M.A. Subpart G approved organisation‘s approved maintenance programmes should be subject to periodic review to ensure that they reflect current TC holder‘s recommendations, revisions to the MRB report if applicable, mandatory requirements and the maintenance needs of the aircraft.

5.2 The owner or the BCAR-M.A. Subpart G approved organisation should review the detailed requirements at least annually for continued validity in the light of operating experience.

6. Reliability Programmes

6.1 Applicability

6.1.1 A reliability programme should be developed in the following cases:

(a) the aircraft maintenance programme is based upon MSG-3 logic.

(b) the aircraft maintenance programme includes condition monitored components.

(c) the aircraft maintenance programme does not contain overhaul time periods for all significant system components.

(d) when specified by the Manufacture's maintenance planning document or MRB.

6.1.2 A reliability Programme need not be developed in the following cases:

(a) the maintenance programme is based upon the MSG-1 or 2 logic but only contains hard time or on condition items.

(b) the aircraft is not a large aircraft according to BCAR-M.

(c) the aircraft maintenance programme provides overhaul time periods for all significant system components.

Note: for the purpose of this paragraph, a significant system is a system the failure of which could hazard the aircraft safety.

6.1.3 Notwithstanding paragraphs 6.1.1 and 6.1.2 above, a BCAR-M.A. Subpart G organisation may however, develop its own reliability monitoring programme when it may be deemed beneficial from a maintenance planning point of view.

6.2 Applicability for BCAR-M Subpart G organisation/operator of small fleets of aircraft

6.2.1 For the purpose of this paragraph, a small fleet of aircraft is a fleet of less than 6 aircraft of the same type.

6.2.2 The requirement for a reliability programme is irrespective of the BCAR-M Subpart G organisation's fleet size.

6.2.3 Complex reliability programmes could be inappropriate for a small fleet. It is recommended that such BCAR-M.A. Subpart G organisations tailor their reliability programmes to suit the size and complexity of operation.

6.2.4 One difficulty with a small fleet of aircraft consists in the amount of available data which can be processed: when this amount is too low, the calculation of alert level is very coarse. Therefore "alert levels" should be used carefully.

6.2.5 A BCAR-M.A. Subpart G organisation of a small fleet of aircraft, when establishing a reliability programme, should consider the following:

(a) The programme should focus on areas where a sufficient amount of data is likely to be processed.

(b) When the amount of available data is very limited, the BCAR-M.A. Subpart G organisation's engineering judgement is then a vital element. In the following examples, careful engineering analysis should be exercised before taking decisions:

- A ''0'' rate in the statistical calculation may possibly simply reveal that enough statistical data is missing, rather that there is no potential problem.
- When alert levels are used, a single event may have the figures reach the alert level. Engineering judgement is necessary so as to discriminate an artefact from an actual need for a corrective action.
- In making his engineering judgement, BCAR-M.A. Subpart G organisation is encouraged to establish contact and make comparisons with other BCAR-M.A. Subpart G organisations of the same aircraft, where possible and relevant. Making comparison with data provided by the manufacturer may also be possible

6.2.6 In order to obtain accurate reliability data, it should be recommended to pool data and analysis with one or more other BCAR-M.A. Subpart G organisation(s). Paragraph 6.6 of this paragraph specifies under which conditions it is acceptable that BCAR-M.A. Subpart G organisations share reliability data.

6.2.7 Notwithstanding the above there are cases where the BCAR-M.A. Subpart G organisation will be unable to pool data with other BCAR-M.A. Subpart G organisation, e.g. at the introduction to service of a new type. In that case BCAA should impose additional restrictions on the MRB/MPD tasks intervals (e.g. no variations or only minor evolution are possible, and with BCAA approval).

6.3 Engineering judgement

6.3.1 Engineering judgement is itself inherent to reliability programmes as no interpretation of data is possible without judgement. In approving the BCAR-M.A. Subpart G organisation's maintenance and reliability programmes, BCAA is expected to ensure that the organisation which runs the programme (it may be the BCAR-M.A. Subpart G organisation, or an BCAR-145 organisation under contract) hires sufficiently qualified personnel with appropriate engineering experience and understanding of reliability concept (see AMC M.A.706)

6.3.2 It follows that failure to provide appropriately qualified personnel for the reliability programme may lead BCAA to reject the approval of the reliability programme and therefore the aircraft maintenance programme.

6.4 Contracted maintenance

6.4.1 Whereas BCAR-M.A.302 specifies that, the aircraft maintenance programme which includes the associated reliability programme-, should be managed and presented by the BCAR-M.A. Subpart G organisation to BCAA, it is understood that the BCAR-M.A. Subpart G organisation may delegate certain functions to the BCAR-145 organisation under contract, provided this organisation proves to have the appropriate expertise.

6.4.2 These functions are:

(a) Developing the aircraft maintenance and reliability programmes,

(b) Performing the collection and analysis of the reliability data,

(c) Providing reliability reports, and

(d) Proposing corrective actions to the BCAR-M.A. Subpart G organisation.

6.4.3 Notwithstanding the above decision to implement a corrective action (or the decision to request from BCAA the approval to implement a corrective action) remains the BCAR-M.A. Subpart G organisation's prerogative and responsibility. In relation to paragraph 6.4.2(d) above, a decision not to implement a corrective action should be justified and documented.

6.4.4 The arrangement between the BCAR-M.A. Subpart G organisation and the BCAR-145 organisation should be specified in the maintenance contract (see appendix XI) and the relevant CAME, and MOE procedures.

6.5 Reliability programme

In preparing the programme details, account should be taken of this paragraph. All associated procedures should be clearly defined.

6.5.1 Objectives

6.5.1.1 A statement should be included summarising as precisely as possible the prime objectives of the programme. To the minimum it should include the following:

(a) to recognise the need for corrective action,

(b) to establish what corrective action is needed and,

(c) to determine the effectiveness of that action.

6.5.1.2 The extent of the objectives should be directly related to the scope of the programme. Its scope could vary from a component defect monitoring system for a small BCAR-M.A. Subpart G organisation, to an integrated maintenance management programme for a big BCAR-M.A. Subpart G organisation. The manufacturer's maintenance planning documents may give guidance on the objectives and should be consulted in every case.

6.5.1.3 In case of a MSG-3 based maintenance programme, the reliability programme should provide a monitor that all MSG-3 related tasks from the maintenance programme are effective and their periodicity is adequate.

6.5.2 Identification of items

The items controlled by the programme should be stated, e.g. by ATA Chapters. Where some items (e.g. aircraft structure, engines, APU) are controlled by separate programmes, the associated procedures (e.g. individual sampling or life development programmes, constructor‘s structure sampling programmes) should be cross referenced in the programme.

6.5.3 Terms and definitions

The significant terms and definitions applicable to the Programme should be clearly identified. Terms are already defined in MSG-3, BCAR-145 and BCAR-M.

6.5.4 Information sources and collection

6.5.4.1 Sources, together with the procedure for collecting and receiving it, should be set out in detail in the CAME or MOE as appropriate.

6.5.4.2 The type of information to be collected should be related to the objectives of the Programme and should be such that it enables both an overall broad based assessment of the information to be made and also allow for assessments to be made as to whether any reaction, both to trends and to individual events, is necessary. The following are examples of the normal prime sources:

(a) Pilots Reports.

(b) Technical Logs.

(c) Aircraft Maintenance Access Terminal / On-board Maintenance System readouts.

(d) Maintenance Worksheets.

(e) Workshop Reports.

(f) Reports on Functional Checks.

(g) Reports on Special Inspections

(h) Stores Issues/Reports.

(i) Air Safety Reports.

(j) Reports on Technical Delays and Incidents.

(k) Other sources: ETOPS, RVSM, CAT II/III.

6.5.4.3 In addition to the normal prime sources of information, due account should be taken of continuing airworthiness and safety information promulgated under BCAR-21

6.5.5 Display of information

Collected information may be displayed graphically or in a tabular format or a combination of both. The rules governing any separation or discarding of information prior to incorporation into these formats should be stated. The format should be such that the identification of trends, specific highlights and related events would be readily apparent.

6.5.5.1 The above display of information should include provisions for “nil returns” to aid the examination of the total information.

6.5.5.2 Where ‘‘standards’’ or ‘’alert levels’’ are included in the programme, the display of information should be oriented accordingly.

6.5.6 Examination, analysis and interpretation of the information.

The method employed for examining, analysing and interpreting the programme information should be explained.

6.5.6.1 Examination.

Methods of examination of information may be varied according to the content and quantity of information of individual programmes. These can range from examination of the initial indication of performance variations to formalised detailed procedures at specific periods, and the methods should be fully described in the programme documentation.

6.5.6.2 Analysis and Interpretation

The procedures for analysis and interpretation of information should be such as to enable the performance of the items controlled by the programme to be measured; they should also facilitate recognition, diagnosis and recording of significant problems. The whole process should be such as to enable a critical assessment to be made of the effectiveness of the programme as a total activity. Such a process may involve:

(a) Comparisons of operational reliability with established or allocated standards (in the initial period these could be obtained from in-service experience of similar equipment of aircraft types).

(b) Analysis and interpretation of trends.

(c) The evaluation of repetitive defects.

(d) Confidence testing of expected and achieved results.

(e) Studies of life-bands and survival characteristics.

(f) Reliability predictions.

(g) Other methods of assessment.

6.5.6.3 The range and depth of engineering analysis and interpretation should be related to the particular programme and to the facilities available. The following, at least, should be taken into account:

(a) Flight defects and reductions in operational reliability.

(b) Defects occurring on-line and at main base.

(c) Deterioration observed during routine maintenance.

(d) Workshop and overhaul facility findings.

(e) Modification evaluations.

(f) Sampling programmes.

(g) The adequacy of maintenance equipment and publications.

(h) The effectiveness of maintenance procedures.

(i) Staff training.

(j) Service bulletins, technical instructions, etc.

6.5.6.4 Where the BCAR-M.A. Subpart G organisation relies upon contracted maintenance and/or overhaul facilities as an information input to the programme, the arrangements for availability and continuity of such information should be established and details should be included.

6.5.7 Corrective Actions

6.5.7.1 The procedures and time scales both for implementing corrective actions and for monitoring the effects of corrective actions should be fully described. Corrective actions shall correct any reduction in reliability revealed by the programme and could take the form of:

(a) Changes to maintenance, operational procedures or techniques.

(b) Maintenance changes involving inspection frequency and content, function checks, overhaul requirements and time limits, which will require amendment of the scheduled maintenance periods or tasks in the approved maintenance programme. This may include escalation or de-escalation of tasks, addition, modification or deletion of tasks.

(c) Amendments to approved manuals (e.g. maintenance manual, crew manual).

(d) Initiation of modifications.

(e) Special inspections of fleet campaigns.

(f) Spares provisioning.

(g) Staff training.

(h) Manpower and equipment planning.

Note: Some of the above corrective actions may need BCAA approval before implementation.

6.5.7.2 The procedures for effecting changes to the maintenance programme should be described, and the associated documentation should include a planned completion date for each corrective action, where applicable.

6.5.8 Organisational Responsibilities

The organisational structure and the department responsible for the administration of the programme should be stated. The chains of responsibility for individuals and departments (Engineering, Production, Quality, Operations etc.) in respect of the programme, together with the information and functions of any programme control committees (reliability group), should be defined. Participation of BCAA should be stated. This information should be contained in the CAME or MOE as appropriate.

6.5.9 Presentation of information to BCAA

The following information should be submitted to BCAA for approval as part of the reliability programme:

(a) The format and content of routine reports.

(b) The time scales for the production of reports together with their distribution.

(c) The format and content of reports supporting request for increases in periods between maintenance (escalation) and for amendments to the approved maintenance programme. These reports should contain sufficient detailed information to enable BCAA to make its own evaluation where necessary.

6.5.10 Evaluation and review

Each programme should describe the procedures and individual responsibilities in respect of continuous monitoring of the effectiveness of the programme as a whole. The time periods and the procedures for both routine and non-routine reviews of maintenance control should be detailed (progressive, monthly, quarterly, or annual reviews, procedures following reliability ‘’standards’’ or ‘’alert levels’’ being exceeded, etc.).

6.5.10.1 Each Programme should contain procedures for monitoring and, as necessary, revising the reliability ‘standards’ or ‘alert levels’. The organisational responsibilities for monitoring and revising the ‘standards’ should be specified together with associated time scales.

6.5.10.2 Although not exclusive, the following list gives guidance on the criteria to be taken into account during the review.

(a) Utilisation (high/low/seasonal).

(b) Fleet commonality.

(c) Alert Level adjustment criteria.

(d) Adequacy of data.

(e) Reliability procedure audit.

(f) Staff training.

(g) Operational and maintenance procedures.

6.5.11 Approval of maintenance programme amendment

BCAA may authorise the BCAR-M.A. Subpart G organisation to implement in the maintenance programme changes arising from the reliability programme results prior to their formal approval by the authority when satisfied that;

(a) the Reliability Programme monitors the content of the Maintenance Programme in a comprehensive manner, and

(b) the procedures associated with the functioning of the 'Reliability Group' provide the assurance that appropriate control is exercised by the Owner/operator over the internal validation of such changes.

6.6 Pooling Arrangements

6.6.1 In some cases, in order that sufficient data may be analysed it may be desirable to 'pool' data: i.e. collate data from a number of BCAR-M.A. Subpart G organisations of the same type of aircraft. For the analysis to be valid, the aircraft concerned, mode of operation, and maintenance procedures applied must be substantially the same: variations in utilisation between two BCAR-M.A. Subpart G organisations may more than anything, fundamentally corrupt the analysis. Although not exhaustive the following list gives guidance on the primary factors which need to be taken into account.

(a) Certification factors, such as: aircraft TCDS compliance (variant) / modification status, including SB compliance.

(b) Operational Factors, such as: operational environment/utilisation, e.g. low/high/seasonal etc. / respective fleet size operating rules applicable (e.g. ETOPS/RVSM/All Weather etc.)/operating procedures/MEL and MEL utilisation.

(c) Maintenance factors, such as: aircraft age maintenance procedures; maintenance standards applicable; lubrication procedures and programme; MPD revision or escalation applied or maintenance programme applicable.

6.6.2 Although it may not be necessary for all of the foregoing to be completely common, it is necessary for a substantial amount of commonality to prevail. Decision should be taken by BCAA on a case by case basis.

6.6.3 In case of a short term lease agreement (less than 6 months) more flexibility against the para 6.6.1 criteria may be granted by BCAA, so as to allow the owner/operator to operate the aircraft under the same programme during the lease agreement effectivity.

6.6.4 Changes by any one of the BCAR-M.A Subpart G organisation to the above, requires assessment in order that the pooling benefits can be maintained. Where a BCAR-M.A Subpart G organisation wishes to pool data in this way, the approval of BCAA should be sought prior to any formal agreement being signed between BCAR-M.A Subpart G organisations.

6.6.5 Whereas this paragraph 6.6 is intended to address the pooling of data directly between BCAR-M.A Subpart G organisations, it is acceptable that the BCAR-M.A Subpart G organisation participates in a reliability programme managed by the aircraft manufacturer, when BCAA is satisfied that the manufacturer manages a reliability programme which complies with the intent of this paragraph.

Appendix II to AMC M.A.201(h)1 - Sub-contracting of Continuing Airworthiness Management Tasks

1. Sub-Contracted Operator's Continuing Airworthiness Management Tasks

1.1 To actively control the standards of the sub-contracted organisation the operator should employ a person or group of persons who are trained and competent in the disciplines associated with BCAR-M.A Subpart G. As such they are responsible for determining what maintenance is required, when it has to be performed and by whom and to what standard, in order to ensure the continued airworthiness of the aircraft being operated.

1.2 The operator should conduct a pre-contract audit to establish that the sub-contracted organisation can achieve the standards required by BCAR-M.A Subpart G in connection with those activities to be sub-contracted.

1.3 The operator should ensure that the sub-contracted organisation has sufficient qualified personnel who are trained and competent in the functions to be subcontracted. In assessing the adequacy of personnel resources the operator should consider the particular needs of those activities that are to be sub-contracted, while taking into account the sub-contracted organisations existing commitments.

1.4 To be appropriately approved to contract out continuing airworthiness management tasks the operator should have procedures for the management control of these arrangements. The operator's continuing airworthiness management exposition should contain relevant procedures to reflect his control of those arrangements made with the sub-contracted organisation.

1.5 Sub-contracted continuing airworthiness management tasks should be addressed in a contract between the operator and the sub-contracted organisation. The contract should also specify that the sub-contracted organisation is responsible for informing the operator who is in turn responsible for notifying the BCAA, of any subsequent changes that affect their ability to support the contract.

1.6 Organisations providing continuing airworthiness management tasks to support commercial air transport operators should use procedures which set out the manner by which the organisation fulfils its responsibility to those sub-contracted activities. Such procedures may be developed by either the sub-contracted organisation or the operator.

1.7 Where the sub-contracted organisation develops its own procedures these should be compatible with the operator's continuing airworthiness management exposition and the terms of the contract. These should be accepted by BCAA as extended procedures of the operator and as such should be cross-referenced from the continuing airworthiness management exposition. One current copy of the sub-contracted organisation's relevant procedures should be kept by the operator and should be accessible to BCAA where needed.

Note: Should any conflict arise between the sub-contracted organisation‘s procedures and those of the operator then the policy and procedures of the continuing airworthiness management exposition will prevail.

1.8 The contract should also specify that the sub-contracted organisation‘s procedures may only be amended with the agreement of the operator. The operator should ensure that these amendments are compatible with their continuing airworthiness management exposition and in compliance with BCAR-M.A Subpart G.

The operator should nominate who will be responsible for continued monitoring and acceptance of the sub-contracted organisation procedures and their amendments. The controls used to fulfil this function should be clearly set out in the amendment section of the continuing airworthiness management exposition detailing the level of operator involvement.

1.9 Whenever any elements of continuing airworthiness management tasks are sub-contracted the operator's continuing airworthiness management personnel should have access to all relevant data in order to fulfil their responsibilities.

Note: The operator retains authority to override where necessary for the continuing airworthiness of their aircraft, any recommendation of the sub-contracted organisation.

1.10 The operator should ensure that the sub-contracted organisation continues to have qualified technical expertise and sufficient resources to perform the subcontracted tasks while in compliance with the relevant procedures. Failure to do so may invalidate the approval of the operators continuing airworthiness management system.

1.11 The contract should provide for BCAA monitoring.

1.12 The contract should address the respective responsibilities to ensure that any findings arising from BCAA monitoring will be closed to the satisfaction of BCAA.

2. Accomplishment

This paragraph describes topics, which may be applicable in such a sub-contract arrangements.

2.1 Scope of work

The type of aircraft and their registrations, engine types and/or component subject to the continuing airworthiness management tasks contract should be specified.

2.2 Maintenance programme development and amendment

The operator may sub-contract the preparation of the draft maintenance programme and any subsequent amendments. However, the operator remains responsible for assessing that the draft proposals meet his needs and obtaining BCAA approval; the relevant procedures should specify these responsibilities. The contract should also stipulate that any data necessary to substantiate the approval of the initial programme or an amendment to this programme should be provided for operator agreement and/or BCAA upon request.

2.3 Maintenance programme effectiveness and reliability

The operator should have in place a system to monitor and assess the effectiveness of the maintenance programme based on maintenance and operational experience. The collection of data and initial assessment may be made by the sub-contracted organisation; the required actions are to be endorsed by the operator.

Where reliability monitoring is used to establish maintenance programme effectiveness, this may be provided by the sub-contracted organisation and should be specified in the relevant procedures. Reference should be made to the operators approved maintenance programme and reliability programme. Participation of the operator‘s personnel in reliability meetings with the sub-contracted organisation should also be specified.

In providing reliability data the sub-contracted organisation is limited to working with primary data/documents provided by the operator or data provided by the operators contracted maintenance organisation(s) from which the reports are derived. The pooling of reliability data is permitted if accepted by BCAA.

2.4 Permitted variations to maintenance programme.

The reasons and justification for any proposed variation to scheduled maintenance may be prepared by the sub-contracted organisation. Acceptance of the proposed variation should be granted by the operator. The means by which the operator acceptance is given should be specified in the relevant procedures. When outside the limits set out in the maintenance programme, the operator is required to obtain approval by BCAA.

2.5 Scheduled maintenance

Where the sub-contracted organisation plans and defines maintenance checks or inspections in accordance with the approved maintenance programme, the required liaison with the operator, including feedback should be defined.

The planning control and documentation should be specified in the appropriate supporting procedures. These procedures should typically set out the operator's level of involvement in each type of check. This will normally involve the operator assessing and agreeing to a work specification on a case by case for base maintenance checks. For routine line maintenance checks this may be controlled on a day-to-day basis by the sub-contracted organisation subject to appropriate liaison and operator controls to ensure timely compliance. This typically may include, but is not necessarily limited to:

- Applicable work package, including job cards,
- Scheduled component removal list,
- ADs to be incorporated,
- Modifications to be incorporated

The associated procedures should ensure that the operator is advised in a timely manner on the accomplishment of such tasks.

2.6 Quality monitoring

The operator's quality system should monitor the adequacy of the sub-contracted continuing airworthiness management task performance for compliance with the contract and BCAR-M.A. Subpart G. The terms of the contract should therefore include a provision allowing the operator to perform a quality surveillance (including audits) upon the sub-contracted organisation. The aim of the surveillance is primarily to investigate and judge the effectiveness of those sub-contracted activities and thereby to ensure compliance with BCAR-M.A Subpart G and the contract. Audit reports may be subject to review when requested by BCAA.

2.7 Access by BCAA

The contract should specify that the sub-contracted organisation should always grant access to BCAA.

2.8 Maintenance data

The maintenance data used for the purpose of the contract should be specified, together with those responsible for providing such documentation and BCAA responsible for the acceptance/approval of such data when applicable. The operator should ensure such data including revisions is readily available to the operator's continuing airworthiness management personnel and those in the sub-contracted organisation who may be required to assess such data. The operator should establish a 'fast track' means of ensuring that urgent data is transmitted to the sub-contractor in a timely manner. Maintenance data may include, but is not necessarily limited to:

- Maintenance programme,
- ADs,
- Service Bulletins,
- Major repairs/modification data,
- Aircraft Maintenance Manual,
- Engine overhaul manual,
- Aircraft IPC,
- Wiring diagrams,
- Troubleshooting manual,

2.9 Airworthiness directives

While the various aspects of AD assessment, planning and follow-up may be accomplished by the sub-contracted organisation, embodiment is performed by a BCAR-145 maintenance organisation. The operator is responsible for ensuring timely embodiment of applicable ADs and is to be provided with notification of compliance. It therefore follows that the operator should have clear policies and procedures on AD embodiment supported by defined procedures which will ensure that the operator agrees to the proposed means of compliance.

The relevant procedures should specify:

- What information (e.g. AD publications, continuing airworthiness records, flight hours/cycles, etc.) the sub-contracted organisation needs from the operator.
- What information (e.g. AD planning listing, detailed engineering order, etc.) the operator needs from the sub-contracted organisation in order to ensure timely compliance with ADs.

To fulfil their above responsibility, operators should ensure that they are in receipt of current mandatory continued airworthiness information for the aircraft and equipment that they operate.

2.10 Service bulletin/modifications

The sub-contracted organisation may be required to review and make recommendations on embodiment of an SB and other associated non-mandatory material based on a clear operator policy. This should be specified in the contract.

2.11 Service life limit controls & component control/removal forecast

Where the sub-contracted organisation performs planning activities, it should be specified that the organisation should be in receipt of the current flight cycles; flight hours; landings and/or calendar controlled details as applicable, at a frequency to be specified in the contract. The frequency should be such that it allows the organisation to properly perform the sub-contracted planning functions. It therefore follows that there will need to be adequate liaison between the operator, the BCAR-145 maintenance organisation(s) and the sub-contracted organisation. Additionally the contract should specify how the operator will be in possession of all current flight cycles, flight hours, etc. in order that the operator may assure the timely accomplishment of the required maintenance.

2.12 Engine health monitoring

If the operator sub-contracts the on wing engine health monitoring, the sub-contracted organisation should be in receipt of all the relevant information to perform this task, including any parameter reading deemed necessary to be supplied by the operator for this control. The contract should also specify what kind of feedback information (such as engine limitation, appropriate technical advice, etc.) the organisation should provide to the operator.

2.13 Defect control

Where the operator has sub-contracted the day-to-day control of technical log deferred defects this should be specified in the contract and should be adequately described in the appropriate procedures. The operator‘s MEL/CDL provides the basis for establishing which defects may be deferred and associated limits. The procedures should also define the responsibilities and actions to be taken for defects such as AOG situations, repetitive defects, and damage beyond type certificate holder‘s limits.

For all other defects identified during maintenance, the information should be brought to the attention of the operator who dependent upon the procedural authority granted by BCAA may determine that some defects can be deferred. Therefore, adequate liaison between the operator, his sub-contracted organisation and contracted BCAR-145 maintenance organisation should be ensured.

The sub-contracted organisation should make a positive assessment of potential deferred defects and consider potential hazards arising from the cumulative effect of any combination of defects. The sub-contracted organisations should liaise with the operator to gain his agreement following this assessment.

Deferment of MEL/CDL allowable defects can be accomplished by a contracted BCAR-145 organisation in compliance with the relevant technical log procedures, subject to the acceptance by the aircraft commander.

2.14 Mandatory occurrence reporting

All incidents and occurrences that fall within the reporting criteria defined in BCAR-M and BCAR-145 should be reported as required by the respective requirements. The operator should ensure adequate liaison exists with the sub-contracted organisation and the BCAR-145 organisation.

2.15 Continuing airworthiness records

These may be maintained and kept by the sub-contracted organisation on behalf of the operator who remains the owner of these documents. However, the operator should be provided with the current status of AD compliance and service life limited components in accordance with agreed procedures. The operator should also be provided with unrestricted and timely access to original records as and when needed. On-line access to the appropriate information systems is acceptable.

The record keeping requirements of BCAR-M should be satisfied. Access to the records by duly authorised members of BCAA should be arranged upon request.

2.16 Check flight procedures

Check Flights are carried out under the control of the operator. Check flight requirements from the sub-contracted organisation or contracted BCAR-145 maintenance organisations should be agreed by the operator.

2.17 Communication between the operator and sub-contracted organisation

2.17.1 To exercise airworthiness responsibility the operator needs to be in receipt of all relevant reports and relevant maintenance data. The contract should specify what information should be provided and when.

2.17.2 Meetings provide one important corner stone whereby the operator can exercise part of its responsibility for ensuring the airworthiness of the operated aircraft. They should be used to establish good communications between the operator, the sub-contracted organisation and, where different to the foregoing, the contracted BCAR-145 organisation. The terms of contract should include whenever appropriate the provision for a certain number of meetings to be held between involved parties. Details of the types of liaison meetings and associated terms of reference of each meeting should be documented. The meetings may include but are not limited to all or a combination of:

A - Contract review

Before the contract is applicable, it is very important that the technical personnel of both parties that are involved in the application of the contract meet in order to be sure that every point leads to a common understanding of the duties of both parties.

B - Work scope planning meeting

Work scope planning meetings may be organised so that the tasks to be performed may be commonly agreed.

C - Technical meeting

Scheduled meetings should be organised in order to review on a regular basis and agree actions on technical matters such as ADs, SBs, future modifications, major defects found during shop visit, reliability, etc.…

D - Quality meeting

Quality meetings should be organised in order to examine matters raised by the operator's quality surveillance and BCAA‘s monitoring activity and to agree upon necessary corrective actions.

E - Reliability meeting

When a reliability programme exists, the contract should specify the operator's and BCAR-145 approved organisation’s respective involvement in that programme, including the participation to reliability meetings. Provision to enable the BCAA participation in the periodical reliability meetings should also be provided.

Appendix III - *Reserved*

Appendix IV to AMC M.A.604 - Maintenance Organisation Manual

1. **Purpose**

The maintenance organisation manual is the reference for all the work carried out by the approved maintenance organisation. It should contain all the means established by the organisation to ensure compliance with BCAR-M according to the extent of approval and the privileges granted to the organisation.

The maintenance organisation manual should define precisely the work that the approved maintenance organisation is authorised to carry out and the subcontracted work. It should detail the resources used by the organisation, its structure and its procedures.

2. **Content**

A typical Maintenance Organisation Manual for a small organisation (less than 10 maintenance staff) should be designed to be used directly on a day to day basis. The working documents and lists should be directly included into the manual. It should contain the following:

Part A - General

- Table of content
- List of effective pages
- Record of amendments
- Amendment procedure
  - Drafting
  - Amendments requiring direct approval by BCAA
  - Approval
- Distribution
  - Name or title of each person holding a copy of the manual
- Accountable manager statement
  - Approval of the manual
  - Statement that the maintenance organisation manual and any incorporated document identified therein reflect the organisation‘s means of compliance with BCAR-M
  - Commitment to work according to the manual
  - Commitment to amend the manual when necessary

Part B - Description

- Organisation's scope of work
  - Description of the work carried out by the organisation (type of product, type of work) and subcontracted work
  - Identification of the level of work which can be performed at each facility.
- General presentation of the organisation
  - Legal name and social status
- Name and title of management personnel
  - Accountable manager
  - Senior managers
  - Duties and responsibilities
- Organisation chart
  - Certifying staff
  - Minimum qualification and experience
  - List of authorised certifying staff their scope of qualification and the personal authorisation reference
- Personnel
  - Technical personnel (number, qualifications and experience)
  - Administrative personnel (number)
- General description of the facility
  - Geographical location (map)
  - Plan of hangars
  - Specialised workshops
  - Office accommodation
  - Stores
  - Availability of all leased facilities.
- Tools, equipment and material

- List of tools, equipment and material used (including access to tools used on occasional basis)
- Test apparatus
- Calibration frequencies

– Maintenance data

- List of maintenance data used in accordance with BCAR-M.A.402, and appropriate amendment subscription information (including access to data used on occasional basis).

Part C - General Procedures

– Organisational review

- Purpose (to insure that the approved maintenance organisation continues to meet the requirements of BCAR-M)
- Responsibility
- Organisation, frequency, scope and content (including processing of authority‘s findings)
- Planning and performance of the review
- Organisational review checklist and forms
- Processing and correction of review findings
- Reporting
- Review of subcontracted work

– Training

- Description of the methods used to ensure compliance with the personnel qualification and training requirements (certifying staff training, specialised training)
- Description of the personnel records to be retained

– Subcontracting of specialised services

- Selection criteria and control
- Nature of contracted work
- List of contractors

- Nature of arrangements
- Assignment of responsibilities for the certification of the work performed

– One time authorisations

- Maintenance checks
- Certifying staff

Part D - Working Procedures

– Work order acceptance

– Preparation and issue of the work package

- Control of the work order
- Preparation of the planned work
- Work package content (copy of forms, work cards, procedure for their use, distribution)
- Responsibilities and signatures needed for the authorisation of the work

– Logistics

- Persons/functions involved
- Criteria for choosing suppliers
- Procedures used for incoming inspection and storage of parts, tools and materials
- Copy of forms and procedure for their use and distribution

– Execution

- Persons/functions involved and respective role
- Documentation (work package and work cards)
- Copy of forms and procedure for their use and distribution
- Use of work cards or manufacturer‘s documentation
- Procedures for accepting components from stores including eligibility check
- Procedures for returning unserviceable components to stores

– Release to Service – Certifying staff

- Authorised certifying staff functions and responsibilities

– Release to Service - Supervision

Detailed description of the system used to ensure that all maintenance tasks, applicable to the work requested of the approved maintenance organisation, have been completed as required.

- Supervision content
- Copy of forms and procedure for their use and distribution
- Control of the work package

– Release to Service – Certificate of release to service

- Procedure for signing the CRS (including preliminary actions)
- Certificate of release to service wording and standardised form
- Completion of the aircraft continuing airworthiness record system
- Completion of BCAA Form 1
- Incomplete maintenance
- Check flight authorisation
- Copy of CRS and BCAA Form 1

– Records

– Special procedures

Such as specialised tasks, disposal of unsalvageable components, re-certification of parts not having a BCAA Form 1, etc.

– Occurrence reporting

- Occurrences to be reported
- Timeframe of reports
- Information to be reported
- Recipients

– Management of indirect approval of the manual

- Amendments content eligible for indirect approval

- Responsibility
- Traceability
- Information to BCAA
- Final validation

Part E – Appendices

- Sample of all documents used.
- List of maintenance locations.
- List of BCAR-145 or BCAR-M.A. Subpart F organisations.
- List of subcontracted specialised services.

3. Approval

   BCAA should approve the manual in writing. This will normally be done by approving a list of effective pages.

   Minor amendments, or amendments to a large capability list, can be approved indirectly, through a procedure approved by BCAA.

4. Continuous compliance with BCAR-M

   When a maintenance organisation manual no longer meets the requirements of this BCAR-M, whether through a change in BCAR-M, a change in the organisation or its activities, or through an inadequacy shown to exist by verification inspections conducted under the organisational review, or any other reason that affects the manuals conformity to requirements, the approved maintenance organisation is responsible to prepare and have approved an amendment to its manual.

5. Distribution

   The manual describes how the organisation works therefore the manual or relevant parts thereof need to be distributed to all concerned staff in the organisation and contracted organisations.

Appendix V to AMC M.A.704 - Continuing Airworthiness Management Organisation Exposition

Continuing Airworthiness Management Exposition

Table of Content

Part 0 General organisation

Part 1 Continuing airworthiness management procedures

Part 2 Quality system

2.1 Continuing airworthiness quality policy, plan and audits procedure.

2.2 Monitoring of continuing airworthiness management activities.

2.3 Monitoring of the effectiveness of the maintenance programme(s).

2.4 Monitoring that all maintenance is carried out by an appropriate maintenance organisation.

2.5 Monitoring that all contracted maintenance is carried out in accordance with the contract, including sub-contractors used by the maintenance contractor.

2.6 Quality audit personnel.

Part 3 Contracted Maintenance

3.1 Maintenance contractor selection procedure.

3.2 Quality audit of aircraft.

Part 4 Airworthiness Review Procedures

- *Reserved.*

Part 5 Appendices

5.1 Sample documents;

5.2 Reserved;

5.3 List of sub-contractors as per AMC M.A.201(h)2 and BCAR-M.A.711(a)3;

5.4 List of approved maintenance organisations contracted;

5.5 Copy of contracts for sub-contracted work (Appendix II to AMC M.A.201(h)2);

5.6 Copy of contracts with approved maintenance organisations.

LIST OF EFFECTIVE PAGES

Page	Revision
1	Original

Page	Revision
2	Original

Page	Revision
3	Original

DISTRIBUTION LIST

(*The document should include a distribution list to ensure proper distribution of the manual and to demonstrate to BCAA that all personnel involved in continuing airworthiness has access to the relevant information. This does not mean that all personnel have to be in receipt of a manual but that a reasonable amount of manuals are distributed within the organisation(s) so that the concerned personnel may have quick and easy access to this manual.*

Accordingly, the continuing airworthiness management exposition should be distributed to:

- *the operator's or the organisation's management personnel and any person at a lower level as necessary; and,*
- *the BCAR-145 or BCAR-M.A. Subpart F contracted maintenance organisation(s); and,*
- *BCAA.*

Part 0 General Organisation

0.1 Corporate Commitment by the Accountable Manager

(The accountable manager's exposition statement should embrace the intent of the following paragraph and in fact this statement may be used without amendment. Any modification to the statement should not alter the intent.)

This exposition defines the organisation and procedures upon which the BCAR-M.A. Subpart G approval of Joe Bloggs under BCAR-M is based.

These procedures are approved by the undersigned and must be complied with, as applicable; in order to ensure that all the continuing airworthiness activities including maintenance for aircraft managed by Joe Bloggs is carried out on time to an approved standard.

It is accepted that these procedures do not override the necessity of complying with any new or amended regulation published by the Bhutan Civil Aviation Authority, from time to time where these new or amended regulations are in conflict with these procedures.

BCAA will approve this organisation whilst BCAA is satisfied that the procedures are being followed. It is understood that BCAA reserves the right to suspend, vary or revoke the BCAR-M.A. Subpart G continuing airworthiness management approval of the organisation, as applicable, if BCAA has evidence that the procedures are not followed and the standards not upheld.

In the case of commercial air transport, suspension or revocation of the approval of the BACR-M.A. Subpart G continuing airworthiness management approval would invalidate the AOC.

0.2 General Information

a) Brief description of the organisation

(This paragraph should describe broadly how the whole organisation [i.e. including the whole operator in the case of commercial air transport or the whole organisation when other approvals are held] is organised under the management of the accountable manager, and should refer to the organisation charts of paragraph 0.4.)

b) Relationship with other organisations

(This paragraph may not be applicable to every organisation.)

1. Subsidiaries / Mother Company

(For clarity purpose, where the organisation belongs to a group, this paragraph should explain the specific relationship the organisation may have with other members of that group - e.g. links between Joe Bloggs Airlines, Joe Bloggs Finance, Joe Bloggs Leasing, Joe Bloggs Maintenance, etc...)

2. Consortiums

(Where the organisation belongs to a consortium, it should be indicated here. The other members of the consortium should be specified, as well as the scope of organisation of the consortium [e.g. operations, maintenance, design (modifications and repairs), production etc...]. The reason for specifying this is that consortium maintenance may be controlled through specific contracts and through consortium's policy and/or procedures manuals that might unintentionally override the maintenance contracts. In addition, in respect of international consortiums, the respective competent authorities should be consulted and their agreement to the arrangement clearly stated. This paragraph should then make reference to any consortium's continuing airworthiness related manual or procedure and to any competent authority agreement that would apply.)

c) Aircraft managed – Fleet composition

(This paragraph should quote the aircraft types and the number of aircraft of each type. The following is given as an example :)

Joe Bloggs PLC manages, as of 28 November 2003, the following:

- 3 B737-400
- 1 A 320-200
- 14 F27 (MK500), etc.

For commercial air transport, the fleet composition reference with the aircraft registrations is given by Joe Bloggs Airlines' current AOC (or else-where e.g. in the Operation Manual, by agreement of BCAA)

(*Depending on the number of aircraft, this paragraph may be updated as follows:*

1. *the paragraph is revised each time an aircraft is removed from or added in the list.*

2. *the paragraph is revised each time a type of aircraft or a significant number of aircraft is removed from or added to the list. In that case the paragraph should explain where the current list of aircraft managed is available for consultation.)*

d) Type of Operation

(This paragraph should give broad information on the type of operations such as: commercial, aerial work, non-commercial, long haul/short haul/regional, scheduled/charter, regions/countries/continents flown, etc.)

0.3 Management Personnel

a) Accountable Manager

(This paragraph should address the duties and responsibilities of the accountable manager as far as BCAR-M.A. subpart G is concerned and demonstrate that he has corporate authority for ensuring that all continuing airworthiness activities can be financed and carried out to the required standard.)

b) Nominated Post Holder for Continuing Airworthiness (for Commercial Air Transport)

(*This paragraph should:*

- *Emphasise that the nominated post holder for continuing airworthiness is responsible to ensure that all maintenance is carried out on time to an approved standard.*

- *Describe the extent of his authority as regards his BCAR-M responsibility for continuing airworthiness.*

This paragraph is not necessary for organisations not holding an AOC)

c) Continuing airworthiness coordination

(*This paragraph should list the job functions that constitute the "group of persons" as required by BCAR-M.A.706(c) in enough detail so as to show that all the continuing airworthiness responsibilities as described in BCAR-M are covered by the persons that constitute that group. In the case of small operators, where the "Nominated Post holder for continuing airworthiness constitutes himself the "group of persons", this paragraph may be merged with the previous one.)*

d) Duties and responsibilities

(This paragraph should further develop the duties and responsibilities of:

- *the personnel listed in paragraphs c): "Continuing airworthiness coordination ",*

– *the quality manager, as regards the quality monitoring of the maintenance system [which includes the approved maintenance organisation(s)]*

e) Manpower resources and training policy

(1) Manpower resources

(*This paragraph should give broad figures to show that the number of people dedicated to the performance of the approved continuing airworthiness activity is adequate. It is not necessary to give the detailed number of employees of the whole company but only the number of those involved in continuing airworthiness. This could be presented as follows :)*

As of 28 November 2003, the number of employees dedicated to the performance of the continuing airworthiness management system is the following:

	Full Time	Part Time in equivalent full time
Quality monitoring	AA	aa = AA’
Continuing airworthiness management	BB	bb = BB’
(Detailed information about the	BB1	bb1 = BB1’
Management group of persons)	BB2	bb2 = BB2’
Other...	CC	cc =CC’
Total	TT	Tt=TT’
Total Man hours	TT+TT’	

(Note: According to the size and complexity of the organisation, this table may be further developed or simplified)

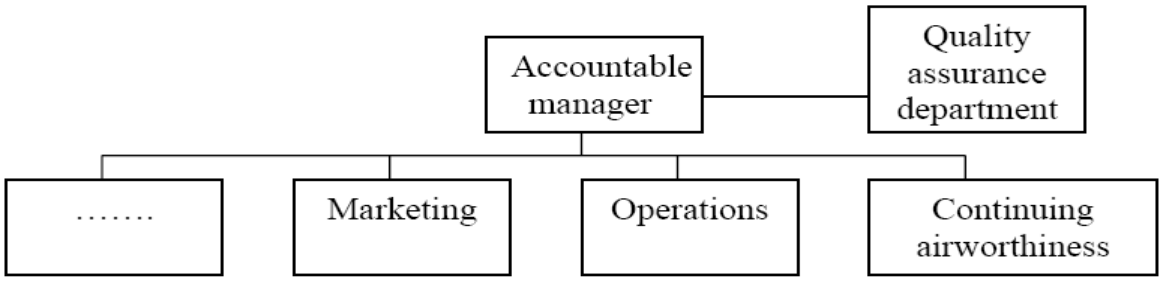
(2) Training policy

(This paragraph should show that the training and qualification standards for the personnel quoted above are consistent with the size and complexity of the organisation. It should also explain how the need for recurrent training is assessed and how the training recording and follow-up is performed)

0.4 Management Organisation Charts

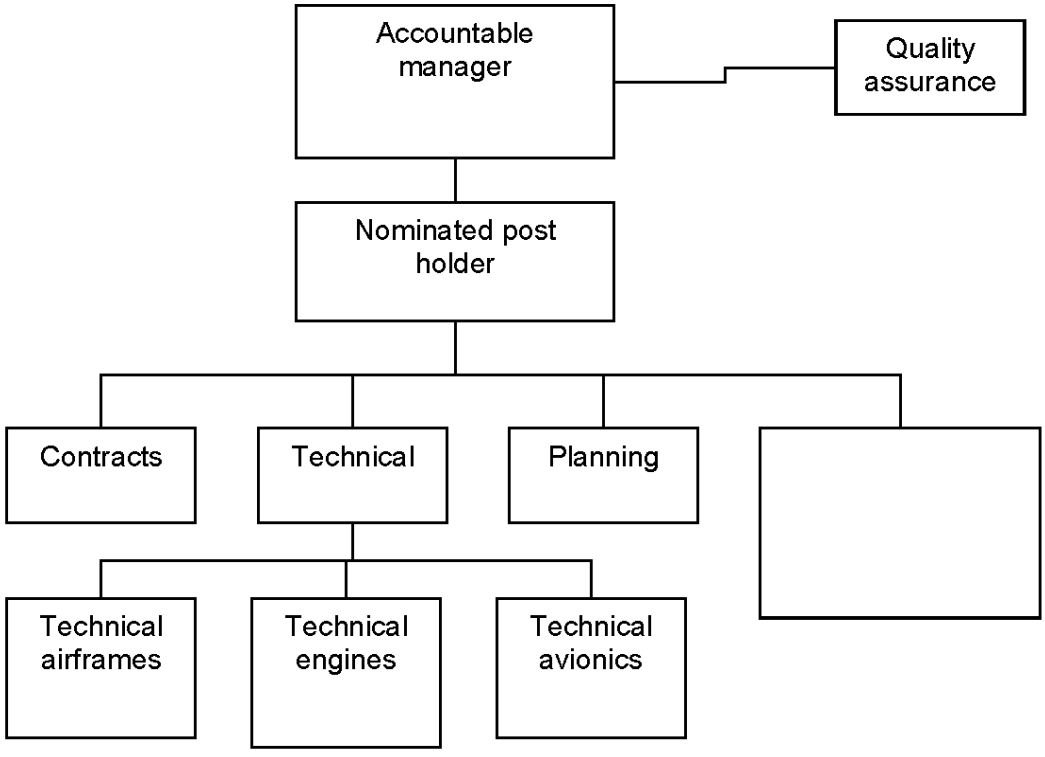
a) General organisation chart

This flow chart should provide a comprehensive understanding of the whole company's organisation. For example in the case of an AOC holder:



b) Continuing airworthiness management organisation chart

This flow chart should give further details on the continuing airworthiness Management system, and should clearly show the independence of the quality monitoring system, including the links between the quality assurance department and the other departments (see example below). This flow chart may be combined with the one above or subdivided as necessary, depending on the size and the complexity of the organisation. For example in the case of an AOC holder:



0.5 Notification procedure to BCAA regarding changes to the organisation's activities/ approval / location / personnel

(This paragraph should explain in which occasion the company should inform the BCAA prior to incorporating proposed changes; for instance:

The accountable manager (or any delegated person such as the engineering director or the quality manager) will notify to BCAA any change concerning:

(1) the company's name and location(s)

(2) the group of person as specified in paragraph 0.3.c)

(3) operations, procedures and technical arrangements, as far as they may affect the approval.

Joe Bloggs will not incorporate such change until the change have been assessed and approved by BCAA.)

0.6 Exposition amendment procedure

(*This paragraph should explain who is responsible for the amendment of the exposition and submission to BCAA for approval. This may include, if agreed by BCAA the possibility for the approved organisation to approve internally minor changes that have no impact on the approval held. The paragraph should then specify what types of changes are considered as minor and major and what the approval procedures for both cases are.)*

Part 1 Continuing Airworthiness Management Procedures

1.1 Aircraft Technical Log Utilisation and MEL Application

or

1.2 Aircraft Continuing Airworthiness Record System Utilisation

a) Aircraft technical log and/or continuing airworthiness record system

1. General

(It may be useful to remind, in this introduction paragraph, the purpose of the aircraft technical log system and/or continuing airworthiness record system, with special care to the options of BCAR-M.A.305 and BCRA-M.A.306. For that purpose, paragraphs of BCAR-M.A.305 and BCAR-M.A.306 may be quoted or further explained.)

2. Instructions for use

(This paragraph should provide instructions for using the aircraft technical log and/or continuing airworthiness record system. It should insist on the respective responsibilities of the maintenance personnel and operating crew. Samples of the technical log and/or continuing airworthiness record system should be included in Part 5 "Appendices" in order to provide enough detailed instructions.)

3. Aircraft technical log approval (For commercial air transport)

(This paragraph should explain who is responsible for submitting the aircraft technical log any subsequent amendment to BCAA for approval and what is the procedure to be followed)

b) M.E.L. application

(Although the MEL is a document that is normally not controlled by the continuing airworthiness management system, and that the decision of whether accepting or not a MEL tolerance normally remains the responsibility of the operating crew, this paragraph should explain in sufficient detail the MEL application procedure, because the MEL is a tool that the personnel involved in maintenance have to be familiar with in order to ensure proper and efficient communication with the crew in case of a defect rectification to be deferred.)

(This paragraph does not apply to those types of aircraft that do not have an MEL or are not used for commercial air transport and that are not required to have one.)

1. General

(This paragraph should explain broadly what a MEL document is. The information could be extracted from the aircraft flight manual.)

2. MEL categories

(Where an owner/operator uses a classification system placing a time constraint on the rectification of such defect, it should be explained here what are the general principles of

such a system. It is essential for the personnel involved in maintenance to be familiar with it for the management of MEL's deferred defect rectification.)

3. Application

(This paragraph should explain how the maintenance personnel identify a MEL limitation to the crew. This should refer to the technical log procedures)

4. Acceptance by the Crew (For commercial air transport)

(This paragraph should explain how the crew notifies his acceptance or non-acceptance of the MEL deferment in the technical log)

5. Management of the MEL time limits

(After a technical limitation is accepted by the crew, the defect must be rectified within the time limit specified in the MEL. There should be a system to ensure that the defect will actually be corrected before that limit. This system could be the aircraft technical log for those [small] operators that use it as a planning document, or a specific follow-up system, in other cases, where control of the maintenance time limit is ensured by another means such as data processed planning systems.)

6. MEL Time Limitation Overrun

(BCAA may grant the owner/operator to overrun MEL time limitation under specified conditions. Where applicable this paragraph should describe the specific duties and responsibilities for controlling these extensions.)

1.2 Aircraft Maintenance Programmes - Development and Amendment

a) General

(This introductory paragraph should remind that the purpose of a maintenance programme is to provide maintenance planning instructions necessary for the safe operation of the aircraft.)

b) Content

(This paragraph should explain what is [are] the format[s] of the company's aircraft maintenance programme[s]. Appendix I to AMC M.A.302(a) should be used as a guideline to develop this paragraph.)

c) Development

1. Sources

(This paragraph should explain what are the sources [MRB, MPD, Maintenance Manual, etc...] used for the development of an aircraft maintenance programme.)

2. Responsibilities

(This paragraph should explain who is responsible for the development of an aircraft maintenance programme)

3. Manual amendments

(This paragraph should demonstrate that there is a system for ensuring the continuing validity of the aircraft maintenance programme. Particularly, it should show how any relevant information is used to update the aircraft maintenance programme. This should include, as applicable, MRB report revisions, consequences of modifications, manufacturers and BCAA recommendations, in service experience, and reliability reports.)

4. Acceptance by the authority

(This paragraph should explain who is responsible for the submission of the maintenance programme to BCAA and what the procedure to follow is. This should in particular address the issue of BCAA approval for variation to maintenance periods. This may include, if agreed by BCAA the possibility for the approved organisation to approve internally certain changes. The paragraph should then specify what types of changes are concerned and what the approval procedures are.)

1.3 Time and Continuing Airworthiness Records, Responsibilities, Retention, Access

a) Hours and cycles recording

(The recording of flight hours and cycles is essential for the planning of maintenance tasks. This paragraph should explain how the continuing airworthiness management organisation has access to the current flight hours and cycle information and how it is processed through the organisation.)

b) Records

(This paragraph should give in detail the type of company documents that are required to be recorded and what are the recording period requirements for each of them. This can be provided by a table or series of tables that would include the following:

- *Family of document [if necessary],*
- *Name of document,*
- *Retention period,*
- *Responsible person for retention,*
- *Place of retention,)*

c) Preservation of records

(This paragraph should set out the means provided to protect the records from fire, floods, etc.. as well as the specific procedures in place to guarantee that the records will not been altered during the retention period [especially for the computer record].)

d) Transfer of continuing airworthiness records

(This paragraph should set out the procedure for the transfer of records, in case of purchase/lease-in, sale/lease-out and transfer to another organisation of an aircraft. In particular, it should specify which records have to be transferred and who is responsible for the coordination [if necessary] of the transfer.)

1.4 Accomplishment and Control of Airworthiness Directives

(This paragraph should demonstrate that there is a comprehensive system for the management of airworthiness directives. This paragraph may for instance include the following Sub-paragraphs :)

a) Airworthiness directive information

(This paragraph should explain what the AD information sources are and who receives them in the company. Where available, redundant sources [e.g. BCAA+ manufacturer or association] may be useful.)

b) Airworthiness directive decision

(This paragraph should explain how and by whom the AD information is analysed and what kind of information is provided to the contracted maintenance organisations in order to plan and to perform the airworthiness directive. This should as necessary include a specific procedure for emergency airworthiness directive management)

c) Airworthiness directive control

(This paragraph should specify how the organisation manages to ensure that all the applicable airworthiness directives are performed and that they are performed on time. This should include a close loop system that allows verifying that for each new or revised airworthiness directive and for each aircraft:

- *the AD is not applicable or,*
- *if the AD is applicable:*
    - *the Airworthiness Directive is not yet performed but the time limit is not overdue,*
    - *the Airworthiness Directive is performed, and any repetitive inspection are identified and performed.*

This may be a continuous process or may be based on scheduled reviews.)

1.5 Analysis of the Effectiveness of the Maintenance Programme

(*this paragraph should show what tools are used in order to analyse the efficiency of the maintenance programme, such as:*

- *PIREPS,*
- *air turn-backs*
- *spare consumption,*
- *repetitive technical occurrence and defect,*
- *technical delays analysis [through statistics if relevant],*
- *technical incidents analysis [through statistics if relevant],*
- *etc...*

The paragraph should also indicate by whom and how these data are analysed, what is the decision process to take action and what kind of action could be taken. This may include:

- *amendment of the maintenance programme,*
- *amendment of maintenance or operational procedures,*
- *etc...)*

1.6 Non-Mandatory Modification Embodiment Policy

(This paragraph should specify how the non-mandatory modification information are processed through the organisation, who is responsible for their assessment against the operator's/owner's own need and operational experience, what are the main criteria for decision and who takes the decision of implementing [or not] a non-mandatory modification)

1.7 Major Repair Modification Standards

(This paragraph should set out a procedure for the assessment of the approval status of any major modification before embodiment. This will include the assessment of the need of BCAA or design organisation approval. It should also identify the type of approval required, and the procedure to follow to have a modification approved by BCAA or design organisation.)

1.8 Defect Reports

(a) Analysis

(This paragraph should explain how the defect reports provided by the contracted maintenance organisations are processed by the continuing airworthiness management organisation. Analysis should be conducted in order to give elements to activities such as maintenance programme evolution and non-mandatory modification policy.)

(b) Liaison with manufacturers and regulatory authorities

(Where a defect report shows that such defect is likely to occur to other aircraft, a liaison should be established with the manufacturer and the certification authority, so that they may take all the necessary action.)

(c) Deferred defect policy

(Defects such as cracks and structural defect are not addressed in the MEL and CDL. However, it may be necessary in certain cases to defer the rectification of a defect. This paragraph should establish the procedure to be followed in order to be sure that the deferment of any defect will not lead to any safety concern. This will include appropriate liaison with the manufacturer.)

1.9 Engineering Activity

(Where applicable, this paragraph should expose the scope of the organisation's engineering activity in terms of approval of modification and repairs. It should set out a procedure for developing and submitting a modification/repair design for approval to BCAA and include reference to the supporting documentation and forms used. It should identify the person in charge of accepting the design before submission to BCAA.

Where the organisation has a DOA capability under BCAR-21, it should be indicated here and the related manuals should be referred to.)

1.10 Reliability Programmes

(This paragraph should explain appropriately the management of a reliability programme. It should at least address the following:

- extent and scope of the operator's reliability programmes,
- specific organisational structure, duties and responsibilities,
- establishment of reliability data,
- analysis of the reliability data,
- corrective action system (maintenance programme amendment),
- scheduled reviews (reliability meetings, the participation of BCAA.)

(This paragraph may be, where necessary, subdivided as follows :

(a) Airframe

(b) Propulsion

(c) Component

1.11 Pre-Flight Inspections

(This paragraph should show how the scope and definition of pre-flight inspection that are usually performed by the operating crew, is kept consistent with the scope of the maintenance performed by the contracted maintenance organisations. It should show how the evolution of the pre-flight inspection content and the maintenance programme are concurrent, each time necessary.)

(The following paragraphs are self-explanatory. Although these activities are normally not performed by continuing airworthiness personnel, these paragraphs have been placed here in order to ensure that the related procedures are consistent with the continuing airworthiness activity procedures.)

(a) Preparation of aircraft for flight

(b) Sub-contracted ground handling function

(c) Security of Cargo and Baggage loading

(d) Control of refuelling, Quantity/Quality

(e) Control of snow, ice dust and sand contamination to an approved standard

1.12 Aircraft weighing

(This paragraph should state in which occasion an aircraft has to be weighed [for instance after a major modification because of weight and balance operational requirements, etc.] who performs it, according to which procedure, who calculates the new weight and balance and how the result is processed into the organisation.)

1.13 Check flight procedures

(The criteria for performing a check flight are normally included in the aircraft maintenance programme. This paragraph should explain how the check flight procedure is established in order to meet its intended purpose [for instance after a heavy maintenance check, after engine or flight control removal installation, etc.], and the release procedures to authorise such a check flight.)

Part 2 Quality System

2.1 Continuing Airworthiness Quality Policy, Plan and Audits Procedure

(a) Continuing airworthiness quality policy

(This paragraph should include a formal Quality Policy statement; that is a commitment on what the Quality System is intended to achieve. It should include at the minimum monitoring compliance with BCAR-M and any additional standards specified by the organisation.)

(b) Quality plan

(This paragraph should show how the quality plan is established. The quality plan will consist of a quality audit and sampling schedule that should cover all the areas specific to BCAR-M in a definite period of time. However, the scheduling process should also be dynamic and allow for special evaluations when trends or concerns are identified. In case of sub-contracting, this paragraph should also address the planning of the auditing of subcontractors at the same frequency as the rest of the organisation.)

(c) Quality audit procedure

(The quality audit is a key element of the quality system. Therefore, the quality audit procedure should be sufficiently detailed to address all the steps of an audit, from the preparation to the conclusion, show the audit report format [e.g. by ref. to paragraph 5.1 "sample of document"], and explain the rules for the distribution of audits reports in the organisation [e.g.: involvement of the Quality Manager, Accountable Manager, Nominated Postholder, etc...].)

(d) Quality audit remedial action procedure

(This paragraph should explain what system is put in place in order to ensure that the corrective actions are implemented on time and that the result of the corrective action meets the intended purpose. For instance, where this system consists in periodical corrective actions review, instructions should be given how such reviews should be conducted and what should be evaluated.)

2.2 Monitoring of Continuing Airworthiness Management Activities

(This paragraph should set out a procedure to periodically review the activities of the maintenance management personnel and how they fulfil their responsibilities, as defined in Part 0.)

2.3 Monitoring of the Effectiveness of the Maintenance Programme(s)

(This paragraph should set out a procedure to periodically review that the effectiveness of the maintenance programme is actually analysed as defined in Part 1.)

2.4 Monitoring that all maintenance is carried out by an Appropriate Maintenance Organisation

(This paragraph should set out a procedure to periodically review that the approval of the contracted maintenance organisations are relevant for the maintenance being performed on the operator's fleet. This may include feedback information from any contracted organisation on any actual or contemplated amendment, in order to ensure that the maintenance system remains valid and to anticipate any necessary change in the maintenance agreements.

If necessary, the procedure may be subdivided as follows:

a) Aircraft maintenance

b) Engines

c) Components)

2.5 Monitoring that all contracted maintenance is carried out in accordance with the contract, including sub-contractors used by the Maintenance Contractor

(This paragraph should set out a procedure to periodically review that the continuing airworthiness management personnel are satisfied that all contracted maintenance is carried out in accordance with the contract. This may include a procedure to ensure that the system allows all the personnel involved in the contract [including the contractors and his subcontractors] to be acquainted with its terms and that, for any contract amendment, relevant information is dispatched in the organisation and at the contractor.)

2.6 Quality Audit Personnel

(This paragraph should establish the required training and qualification standards of auditors. Where persons act as a part time auditor, it should be emphasized that this person must not be directly involved in the activity he/she audits.)

Part 3 Contracted Maintenance

3.1 Maintenance Contractor Selection Procedure

(This paragraph should explain how a maintenance contractor is selected by the continuing airworthiness management organisation. Selection should not be limited to the verification that the contractor is appropriately approved for the type of aircraft, but also that the contractor has the industrial capacity to undertake the required maintenance. This selection procedure should preferably include a contract review process in order to insure that:

- *the contract is comprehensive and that no gap or unclear area remains,*
- *everyone involved in the contract [both at the continuing airworthiness management organisation and at the maintenance contractor] agrees with the terms of the contract and fully understand his responsibility.*
- *that functional responsibilities of all parties are clearly identified.*
- *is signed by the owner/lessee of the aircraft in the case of non-commercial air transport.*

In the case of non-commercial air transport, this activity should be carried in agreement with the owner.)

3.2 Quality Audit of Aircraft

(This paragraph should set out the procedure when performing a quality audit of an aircraft. This procedure may include:

- compliance with approved procedures;
- contracted maintenance is carried out in accordance with the contract;
- continued compliance with BCAR-M.)

Part 4 Airworthiness Review Procedures

- *Reserved*.

Part 5 Appendices

5.1 Sample Documents

(A self-explanatory paragraph)

5.2 List of Airworthiness Review Staff

- *Reserved.*

5.3 List of Sub-contractors as per AMC M.A.201(h)1 and BCAR-M.A.711(a)3.

(A self-explanatory paragraph, in addition it should set out that the list should be periodically reviewed)

5.4 List of Approved Maintenance Organisations ontracted

(A self-explanatory paragraph, in addition it should set out that the list should be periodically reviewed)

5.5 Copy of contracts for sub-contracted work (Appendix II to AMC M.A.201(h)(1))

(A self-explanatory paragraph)

5.6 Copy of contracts with Approved Maintenance Organisations

(A self-explanatory paragraph)

Appendix VI - *Reserved*

Appendix VII - *Reserved*

Appendix VIII to AMC M.A.616 Organisational Review

This is only applicable to organisations with less than 10 maintenance staff members. For larger organisations, the principles and practices of an independent quality assurance system should be used.

Depending on the complexity of the small organisation (number and type of aircraft, number of different fleets, subcontracting of specialised services, etc.), the organisational review system may vary from a system using the principles and practices of a quality system (except for the requirement of independence) to a simplified system adapted to the low complexity of the organisation and the aircraft managed.

As a core minimum, the organisational review system should have the following features, which should be described in the Maintenance Organisation Manual (MOM):

a. Identification of the person responsible for the organisational review programme.

   By default, this person should be the accountable manager, unless he delegates this responsibility to (one of) the BCAR-M.A.606(b) person(s).

b. Identification and qualification criteria for the person(s) responsible for performing the organisational reviews.

   These persons should have a thorough knowledge of the regulations and of the maintenance organisation procedures. They should also have knowledge of audits, acquired through training or through experience (preferably as an auditor, but also possibly because they actively participated in several audits conducted by BCAA).

c. Elaboration of the organisational review programme:

   - Checklist(s) covering all items necessary to be satisfied that the organisation delivers a safe product and complies with the regulation. All procedures described in the MOM should be addressed.

   - A schedule for the accomplishment of the checklist items. Each item should be checked at least every 12 months. The organisation may choose to conduct one full review annually or to conduct several partial reviews.

d. Performance of organisational reviews

   Each checklist item should be answered using an appropriate combination of:

   - review of records, documentation, etc.

   - sample check of aircraft under contract or being maintained under a work order.

   - interview of personnel involved.

- review of discrepancies and difficulty internal reports (e.g. notified difficulties in using current procedures and tools, systematic deviations from procedures, etc.).
- review of complaints filed by customers after delivery.

e. Management of findings and occurrence reports.

- All findings should be recorded and notified to the affected persons.
- All level 1 findings, in the sense of BCAR-M.A.619(a), should be immediately notified to BCAA and all necessary actions on aircraft in service should be immediately taken.
- All occurrence reports should be reviewed with the aim for continuous improvement of the system by identifying possible corrective and preventive actions. This should be done in order to find prior indicators (e.g., notified difficulties in using current procedures and tools, systematic deviations from procedures, unsafe behaviours, etc.), and dismissed alerts that, had they been recognised and appropriately managed before the event, could have resulted in the undesired event being prevented.
- Corrective and preventive actions should be approved by the person responsible for the organisational review programme and implemented within a specified time frame.
- Once the person responsible for the organisational review programme is satisfied that the corrective action is effective, closure of the finding should be recorded along with a summary of the corrective action.
- The accountable manager should be notified of all significant findings and, on a regular basis, of the global results of the organisational review programme.

Following is a typical example of a simplified organisational review checklist, to be adapted as necessary to cover the MOM procedures:

1- Scope of work

Check that:

- All aircraft and components under maintenance or under contract are covered in the BCAA Form 3.
- The scope of work in the MOM does not disagree with the BCAA Form 3.
- No work has been performed outside the scope of the BCAA Form 3 and the MOM.

2- Maintenance data

- Check that maintenance data to cover the aircraft in the scope of work of the MOM are present and up-to-date.

- Check that no change has been made to the maintenance data from the TC holder without being notified.

3- Equipment and Tools

- Check the equipment and tools against the lists in the MOM and check if still appropriate to the TC holder's instructions.
- Check tools for proper calibration (sample check).

4- Stores

- Do the stores meet the criteria in the procedures of the MOM?
- Check by sampling some items in the store for presence of proper documentation and any overdue items."

5- Certification of Maintenance

- Has maintenance on products and components been properly certified?
- Have implementation of modifications/repairs been carried out with appropriate approval of such modifications/repairs (sample check)

6- Relations with the Owners/Operators

- Has maintenance been carried out with suitable work orders?
- When a contract has been signed with an owner/operator, has the obligations of the contracts been respected on each side?

7- Personnel

- Check that the current accountable manager and other nominated persons are correctly identified in the approved MOM.
- If the number of personnel has decreased or if the activity has increased, check that the staff is still adequate to ensure a safe product.
- Check that the qualification of all new personnel (or personnel with new functions) has been appropriately assessed.
- Check that the staff have been trained, as necessary, to cover changes in:
    - regulations,
    - BCAA publications,
    - the MOM and associated procedures,
    - the products in the scope of work,

- maintenance data (significant ADs, SBs, etc.).

8- Maintenance contracted

- Sample check of maintenance records:
  - Existence and adequacy of the work order,
  - Data received from the maintenance organisation:
    - Valid CRS including any deferred maintenance,
    - List of removed and installed equipment and copy of the associated BCAA Form 1 or equivalent.
- Obtain a copy of the current approval certificate (BCAA Form 3) of the maintenance organisations contracted.

9- Maintenance subcontracted

Check that subcontractors for specialised services are properly controlled by the organization.

10- Technical records and record-keeping

- Have the maintenance actions been properly recorded?
- Have the certificates (Form 1 and Conformity certificates) been properly collected and recorded?
- Perform a sample check of technical records to ensure completeness and storage during the appropriate periods.
- Is storage of computerised data properly ensured?

11- Occurrence Reporting Procedures

- Check that reporting is properly performed.
- Actions taken and recorded.

Appendix IX to AMC M.A.602 and AMC M.A.702 BCAA Form 2

འབྲུག་ཞི་བའི་མཁའ་འགྲུལ་དབང་འཛིན། དཔལ་ལྡན་འབྲུག་གཞུང་།
Bhutan Civil Aviation Authority
Royal Government Of Bhutan
Paro : Bhutan

Application for

Bhutan Civil Aviation Authority **Paro, Bhutan**	**BCAR-M Approval** **BCAR-M Subpart F Approval** **BCAR-145 Approval**	--Select-- --Select-- --Select--

1. Registered name of applicant:

2. Trading name (if different):

3. Addresses requiring approval:

4. Tel. …… Fax …… Email ……..

5. Scope of approval relevant to this application: see page 2 for possibilities in the case of a BCAR-145 approval:

6. Position and name of the (proposed) Accountable manager:

……

7. Signature of the (proposed) Accountable manager:

……

8. Place: ……

9. Date: ……

BCAA Form 2 *Page 1 of 2*

SCOPE OF APPROVAL AVIALABLE

CLASS AIRCRAFT	RATING	LIMITATION	BASE	LINE
	A1 Aeroplanes above 5700 kg			
	A2 Aeroplanes 5700 kg and below			
	A3 Helicopters			
	A4 Aircraft other than A1, A2 and A3			
ENGINES	B1 Turbines			
	B2 Piston			
	B3 APU			
COMPONENTS OTHER THAN COMPLETE ENGINES OR APUs	C1 Air Cond & Press			
	C2 Auto Flight			
	C3 Comms and Nav			
	C4 Doors - Hatches			
	C5 Electrical Power & Lights			
	C6 Equipment			
	C7 Engine - APU			
	C8 Flight Controls			
	C9 Fuel			
	C10 Helicopter-Rotors			
	C11 Helicopter- Trans			
	C12 Hydraulic-Power			
	C13 Indicating –Recording System			
	C14 Landing Gear			
	C15 Oxygen			
	C16 Propellers			
	C17 Pneumatic & Vacuum			
	C18 Protection ice/rain/fire			
	C19 Windows			
	C20 Structural			
	C21 Water ballast			
	C22 Propulsion Augmentation			
SPECIALISED SERVICES	D1 Non Destructive Testing			

BCAA Form 2

Page 2 of 2

Appendix X - BCAA Form 4

འབྲུག་གི་གནའ་མཁའ་འགྲུལ་དབང་འཛིན། དཔལ་ལྡན་འབྲུག་གཞུང་།
Bhutan Civil Aviation Authority
Royal Government Of Bhutan
Paro : Bhutan

BHUTAN CIVIL AVIATION AUTHORITY, BHUTAN

Details of Management Personnel required to be accepted as specified in BCAR- 147

1. Name:

2. Position:

3. Qualifications relevant to the item (2) position:

4. Work experience relevant to the item (2) position:

Signature: ..... Date: .....

On completion, please send this form under confidential cover to the Bhutan Civil Aviation Authority (BCAA)

BCAA use only
Name and signature of authorised BCAA staff member accepting this person:

Signature: ..... Date: .....

Name: ..... Office: .....

BCAA Form 4 *Page 1 of 1*

Appendix XI to AMC M.A.708(c) - Contracted Maintenance

1. Maintenance contracts

The following paragraphs are not intended to provide a standard maintenance contract but to provide a list of the main points that should be addressed, when applicable, in a maintenance contract between an Operator and a BCAR-145 approved organisation. As only the technical parts of the maintenance contracts have to be acceptable to BCAA, the following paragraphs only address technical matters and exclude matters such as costs, delay, warranty, etc...

When maintenance is contracted to more than one BCAR-145 approved organisation (for example aircraft base maintenance to X, engine maintenance to Y and line maintenance to Z1, Z2&Z3), attention should be paid to the consistency of the different maintenance contracts.

A maintenance contract is not normally intended to provide appropriate detailed work instruction to the personnel (and is not normally distributed as such). Accordingly there must be established organisational responsibility, procedures and routines in the Operator‘s BCAR-M.A. Subpart G & BCAR-145 organisations to take care of these functions in a satisfactory way such that any person involved is informed about his responsibility and the procedures which apply. These procedures and routines can be included/appended to the operator's CAME and maintenance organisation's MOE or consist in separate procedures. In other words procedures and routines should reflect the conditions of the contract.

2. Aircraft/Engine maintenance

This paragraph subparagraphs may be adapted to a maintenance contract that applies to aircraft base maintenance, aircraft line maintenance and engine maintenance.

Aircraft maintenance also includes the maintenance of the engines and APU while they are installed on the aircraft.

2.1 Scope of work

The type of maintenance to be performed by the BCAR-145 approved organisation should be specified unambiguously. In case of line and/or base maintenance, the contract should specify the aircraft type and, preferably include the aircraft’s registrations.

In case of engine maintenance, the contract should specify the engine type.

2.2 Locations identified for the performance of maintenance/ Certificates held

The place(s) where base, line or engine maintenance, as applicable, will be performed should be specified. The certificate held by the maintenance organisation at the place(s) where the maintenance will be performed should be referred to in the contract. If necessary the contract may address the possibility of performing maintenance at any location subject to the need for such maintenance arising either from the unserviceability of the aircraft or from the necessity of supporting occasional line maintenance.

2.3 Subcontracting

The maintenance contract should specify under which conditions the BCAR-145 approved organisation may subcontract tasks to a third party (whether this third party is BCAR-145 approved or not). At least the contract should make reference to BCAR-145.A.75. Additional guidance is provided by the AMC 145.A.75. In addition the operator may require the BCAR-145 approved organisation to request the operator's approval before subcontracting to a third party. Access should be given to the operator to any information (especially the quality monitoring information) about the BCAR-145 approved organisation's subcontractors involved in the contract.

It should however be noted that under operators responsibility both the operator and BCAA are entitled to be fully informed about subcontracting, although BCAA will normally only be concerned with aircraft, engine and APU subcontracting.

2.4 Maintenance programme

The maintenance programme under which the maintenance has to be performed has to be specified. The operator must have that maintenance Programme approved by BCAA. When the maintenance programme is used by several operators, it is important to remember that it is the responsibility of each operator to have that maintenance programme approved under its own name by BCAA.

2.5 Quality monitoring

The terms of the contract should include a provision allowing the operator to perform a quality surveillance (including audits) upon then BCAR-145 approved organisation. The maintenance contract should specify how the results of the quality surveillance are taken into account by the BCAR-145 approved organisation (See also para.2.22. "Meetings").

2.6 Competent authority involvement

When the operator’s Competent Authority and the BCAR-145 approved organisation’s Competent Authority is not the same, the operator and the BCAR-145 approved organisation have to ensure together with their Competent Authority that the respective Competent Authority’s responsibilities are properly defined and that, if necessary, delegations have been established.

2.7 Airworthiness data

The airworthiness data used for the purpose of this contract as well as the authority responsible for the acceptance/approval should be specified. This may include, but may not be limited to:

- Maintenance Programme,
- Airworthiness directives,
- major repairs/modification data,

- aircraft Maintenance Manual,
- aircraft IPC,
- Wiring diagrams,
- Trouble shooting manual,
- Minimum Equipment List (normally on board the aircraft),
- Operations Manual
- Flight Manual
- Engine maintenance manual,
- Engine overhaul manual

2.8 Incoming Conditions

The contract should specify in which condition the operator should send the aircraft to the BCAR-145 approved organisation. For checks of significance i.e. 'C' checks and above, it may be beneficial that a work scope planning meeting be organised so that the tasks to be performed may be commonly agreed (see also paragraph 7.22: "Meetings").

2.9 Airworthiness Directives and Service Bulletin/Modifications

The contract should specify in which condition the operator is responsible to provide to the BCAR-145 approved organisation, such as the due date of the AD, the selected means of compliance, the decision to embody Service Bulletins (SB's) or modification, etc… In addition the type of information the operator will need in return to complete the control of ADs and modification-status should be specified.

2.10 Hours & Cycles control.

Hours and cycles control is the responsibility of the operator, but there may be cases where the BCAR-145 approved organisation should receive the current flight hours and cycles on a regular basis so that it may update the records for its own planning functions (see also paragraph 2.21: "Exchange of information").

2.11 Service life-limited components

Life Limited Parts control is the responsibility of the operator.

The BCAR-145 approved organisation will have to provide the operator with all the necessary information about the service life-limited components removal/installation so that the operator may update its records (see also paragraph 2.21 "Exchange of information").

2.12 Supply of parts.

The contract should specify whether a particular type of material or component come is supplied by the operator or the contracted BCAR-145 approved organisation, which type of component is pooled, etc. The contract should clearly state that it is the BCAR-145 competence and responsibility to be in any case satisfied that the component in question meets the approved data/standard and to ensure that the aircraft component is in a satisfactory condition for installation. In other words, there is definitely no way for a BCAR-145 organisation to accept whatever is supplied by the operator. Additional guidance is provided by BCAR-145.A.42 for acceptance of components.

2.13 Pool parts at line stations.

If applicable the contract should specify how the subject of pooled parts at line stations should be addressed.

2.14 Scheduled maintenance

For planning scheduled maintenance checks, the support documentation to be given to the BCAR-145 approved organisation should be specified. This may include, but may not be limited to:

- applicable work package, including job cards;
- scheduled component removal list;
- modifications to be incorporated;

When the BCAR-145 approved organisation determines, for any reason, to defer a maintenance task, it has to be formally agreed by the operator. If the deferment goes beyond an approved limit, refer to paragraph 2.17: "Deviation from the maintenance Schedule". This should be addressed, where applicable, in the maintenance contract.

2.15 Unscheduled maintenance/Defect rectification.

The contract should specify to which level the BCAR-145 approved organisation may rectify a defect without reference to the operator. As a minimum, the approval and incorporation of major repairs should be addressed. The deferment of any defect rectification shall be submitted to the operator and, if applicable, to BCAA.

2.16 Deferred tasks.

See paragraphs 2.14 and 2.15 above and AMC 145.A.50(e). In addition, for aircraft line and base maintenance the use of the operator's MEL and the relation with the operator in case of a defect that cannot be rectified at the line station should be addressed.

2.17 Deviation from the maintenance schedule.

Deviations have to be requested by the operator to BCAA or granted by the operator in accordance with a procedure acceptable to BCAA. The contract should specify the support the BCAR-145 approved organisation may provide to the operator in order to substantiate the deviation request.

2.18 Test flight.

If any test flight is required after aircraft maintenance, it should be performed in accordance with the procedures established in the operator's continuing airworthiness management exposition.

2.19 Bench Test

The contract should specify the acceptability criterion and whether a representative of the

operator should witness an engine undergoing test.

2.20 Release to service documentation.

The release to service has to be performed by the BCAR-145 approved organisation in accordance with its MOE procedures. The contract should, however, specify which support forms have to be used (Operator's technical log, BCAR-145 approved organisation's maintenance visit file, etc...) and the documentation the BCAR-145 approved organisation should provide to the operator upon delivery of the aircraft. This may include but may not be limited to:

- Certificate of release to service -mandatory-,
- flight test report,
- list of modifications embodied,
- list of repairs,
- list of AD's incorporated,
- maintenance visit report,
- test bench report.

2.21 Maintenance recording.

The Operator may contract the BCAR-145 approved organisation to retain some of the maintenance records required by BCAR-M Subpart C. It should be ensured that every requirement of BCAR-M Subpart C is fulfilled by either the operator or the BCAR-145 approved organisation. In such a case, free and quick access to the above mentioned records should be given by the BCAR-145 approved organisation to the operator and BCAA. (in case of two

different competent authorities involved, see paragraph 2.6 ‘Competent Authority involvement’).

2.22 Exchange of information.

Each time exchange of information between the operator and the BCAR-145 approved organisation is necessary, the contract should specify what information should be provided and when (i.e. on what occasion or at what frequency), how, by whom and to whom it has to be transmitted.

2.23 Meetings.

For the BCAA may be satisfied that a good communication system exists between the operator and the BCAR-145 approved organisation, the terms of the maintenance contract should include the provision for a certain number of meetings to be held between both parties.

2.23.1 Contract review.

Before the contract is applicable, it is very important for the technical personnel of both parties that are involved in the application of the contract meet in order to be sure that every point leads to a common understanding of the duties of both parties.

2.23.2 Work scope planning meeting.

Work scope planning meetings may be organised so that the tasks to be performed may be commonly agreed.

2.23.3 Technical meeting.

Scheduled meetings may be organised in order to review on a regular basis technical matters such as AD's, SB's, future modifications, major defects found during maintenance check, reliability, etc...

2.23.4 Quality meeting.

Quality meetings may be organised in order to examine matters raised by the operator's quality surveillance and to agree upon necessary corrective actions.

2.23.5 Reliability meeting.

When a reliability programme exists, the contract should specify the operator‘s and BCAR-145 approved organisation's respective involvement in that programme, including the participation to reliability meetings.

Appendix XII to AMC M.A.706(f) - Fuel Tank Safety Training

This appendix includes general instructions for providing training on Fuel Tank Safety (FTS) issues.

A) Effectivity:

- Large aeroplanes as defined in this BCAR.

B) Affected organisations:

- BCAR-M.A. Subpart G approved organisations involved in the continuing airworthiness management of aeroplanes specified in paragraph A).
- BCAA responsible for the oversight of aeroplanes specified in paragraph A) and for the oversight of the BCAR-M.A. Subpart G approved organisations specified in this paragraph B).

C) Persons from affected organisations who should receive training:

Phase 1 only:

- The quality manager and quality personnel.
- Personnel of BCAA responsible for the oversight of aeroplanes specified in paragraph A) and in the oversight of BCAR-M.A. Subpart G approved organisations specified in paragraph B).

Phase 1 + Phase 2 + Continuation training:

- Personnel of the BCAR-M.A. Subpart G organisation involved in the management and review of the continuing airworthiness of aircraft specified in paragraph A);

D) General requirements of the training courses

Phase 1 – Awareness

The training should be carried out before the person starts to work without supervision but not later than 6 months after joining the organisation. The persons who have already attended the Level 1 Familiarisation course in accordance with this appendix are already in compliance with Phase 1.

Type: Should be an awareness course with the principal elements of the subject. It may take the form of a training bulletin, or other self-study or informative session. Signature of the reader is required to ensure that the person has passed the training.

Level: It should be a course at the level of familiarisation with the principal elements of the subject.

Objectives:

The trainee should, after the completion of the training:

1. Be familiar with the basic elements of the fuel tank safety issues.

2. Be able to give a simple description of the historical background and the elements requiring a safety consideration, using common words and showing examples of non-conformities.

3. Be able to use typical terms.

Content: The course should include:

- a short background showing examples of FTS accidents or incidents,
- the description of concept of fuel tank safety and CDCCL,
- some examples of manufacturers documents showing CDCCL items,
- typical examples of FTS defects,
- some examples of TC holders repair data
- some examples of maintenance instructions for inspection.

Phase 2 - Detailed training

A flexible period may be allowed by the BCAA to allow organisations to set the necessary courses and impart the training to the personnel, taking into account the organisation's training schemes/means/practices. This flexible period should not extend beyond 31 December 2010.

The persons who have already attended the Level 2 Detailed training course in compliance with this BCAR either from a BCAR-M.A. Subpart G approved organisation or from a BCAR-147 training organisation are already in compliance with Phase 2 with the exception of continuation training.

Staff should have received Phase 2 training within 12 months of joining the organization.

Type: Should be a more in-depth internal or external course. It should not take the form of a training bulletin or other self-study. An examination should be required at the end, which should be in the form of a multi choice question, and the pass mark of the examination should be 75%.

Level: It should be a detailed course on the theoretical and practical elements of the subject.

The training may be made either:

- in appropriate facilities containing examples of components, systems and parts affected by Fuel Tank Safety (FTS) issues. The use of films, pictures and practical examples on FTS is recommended; or

– by attending a distance course (e-learning or computer based training) including a film when such film meets the intent of the objectives and content here below. An e-learning or computer based training should meet the following criteria:

- A continuous evaluation process should ensure the effectiveness of the training and its relevance;
- Some questions at intermediate steps of the training should be proposed to ensure that the trainee is authorized to move to the next step;
- The content and results of examinations should be recorded;
- Access to an instructor in person or at distance should be possible in case support is needed.

A duration of 8 hours for phase 2 is an acceptable compliance.

When the course is provided in a classroom, the instructor should be very familiar with the data in Objectives and Guidelines. To be familiar, an instructor should have attended himself a similar course in a classroom and made additionally some lecture of related subjects.

Objectives:

The attendant should, after the completion of the training:

– have knowledge of the history of events related to fuel tank safety issues and the theoretical and practical elements of the subject, have an overview of the FAA regulations known as SFAR (Special FAR) 88 of the FAA and of JAA Temporary Guidance Leaflet TGL 47, be able to give a detailed description of the concept of fuel tank system ALI (including Critical Design Configuration Control Limitations CDCCL, and using theoretical fundamentals and specific examples;

– have the capacity to combine and apply the separate elements of knowledge in a logical and comprehensive manner;

– have knowledge on how the above items affect the aircraft;

– be able to identify the components or parts or the aircraft subject to FTS from the manufacturer’s documentation,

– be able to plan the action or apply a Service Bulletin and an Airworthiness Directive.

Content: Following the guidelines described in paragraph E).

Continuation training:

The organisation should ensure that the continuation training is performed in each two years period. The syllabus of the training programme referred to in the Training policy of the

Continuing Airworthiness Management Exposition (CAME) should contain the additional syllabus for this continuation training.

The continuation training may be combined with the phase 2 training in a classroom or at distance.

The continuing training should be updated when new instructions are issued which are related to the material, tools, documentation and manufacturer's or BCAA's directives.

E) Guidelines for preparing the content of Phase 2 courses.

The following guidelines should be taken into consideration when the phase 2 training programme are being established:

a) understanding of the background and the concept of fuel tank safety,

b) how the mechanics can recognise, interpret and handle the improvements in the instructions for continuing airworthiness that have been made or are being made regarding fuel tank systems,

c) awareness of any hazards especially when working on the fuel system, and when the Flammability Reduction System using nitrogen is installed.

Paragraphs a) b) and c) above should be introduced in the training programme addressing the following issues:

i) The theoretical background behind the risk of fuel tank safety: the explosions of mixtures of fuel and air, the behaviour of those mixtures in an aviation environment, the effects of temperature and pressure, energy needed for ignition etc., the 'fire triangle', - Explain 2 concepts to prevent explosions:

(1) ignition source prevention and

(2) flammability reduction,

ii) The major accidents related to fuel tank systems, the accident investigations and their conclusions,

iii) SFAR 88 of the FAA and JAA Interim Policy INT POL 25/12: ignition prevention program initiatives and goals, to identify unsafe conditions and to correct them, to systematically improve fuel tank maintenance),

iv) Explain briefly the concepts that are being used: the results of SFAR 88 of the FAA and JAA INT/POL 25/12: modifications, airworthiness limitations items and CDCCL,

v) Where relevant information can be found and how to use and interpret this information in the various instructions for continuing airworthiness (aircraft maintenance manuals, component maintenance manuals…),

vi) Fuel Tank Safety during maintenance: fuel tank entry and exit procedures, clean working environment, what is meant by configuration control, wire separation, bonding of components etc.,

vii) Flammability reduction systems when installed: reason for their presence, their effects, the hazards of an Flammability Reduction System (FRS) using nitrogen for maintenance, safety precautions in maintenance/working with an FRS,

viii) Recording maintenance actions, recording measures and results of inspections.

The training should include a representative number of examples of defects and the associated repairs as required by the TC / STC holders maintenance data.

F) Approval of training

For BCAR-M.A. Subpart G approved organisations the approval of the initial and continuation training programme and the content of the examination can be achieved by the change of the CAME exposition. The modification of the CAME should be approved as required by BCAR-M.A.704(b). The necessary changes to the CAME to meet the content of this decision should be made and implemented at the time requested by BCAA.

Appendix XIII to AMC M.A.712(f) - Organisational Review

Organisational reviews may replace a full quality system in accordance with the provisions of BCAR-M.A.712(f) and AMC M.A.712(f) and as described in the continuing airworthiness management exposition (CAME)

Depending on the complexity of the small organisation (number and type of aircraft, number of different fleets, privilege to perform airworthiness reviews, etc.), the organisational review system may vary from a system using the principles and practices of a quality system (except for the requirement of independence) to a simplified system adapted to the low complexity of the organisation and the aircraft managed.

As a core minimum, the organisational review system should have the following features, which should be described in the CAME:

a. Identification of the person responsible for the organisational review programme:

   By default, this person should be the accountable manager, unless he delegates this responsibility to (one of) the BCAR-M.A.706(c) person(s).

b. Identification and qualification criteria for the person(s) responsible for performing the organisational reviews:

   These persons should have a thorough knowledge of the regulations and of the continuing airworthiness management organisation (CAMO) procedures. They should also have knowledge of audits, acquired through training or through experience (preferably as an auditor, but also possibly because they actively participated in several audits conducted by BCAA).

c. Elaboration of the organisational review programme:

   - Checklist(s) covering all items necessary to be satisfied that the organisation delivers a safe product and complies with the regulation. All procedures described in the CAME should be addressed.

   - A schedule for the accomplishment of the checklist items. Each item should be checked at least every 12 months. The organisation may choose to conduct one full review annually or to conduct several partial reviews.

d. Performance of organisational reviews:

   Each checklist item should be answered using an appropriate combination of:

   - review of records, documentation, etc.

   - sample check of aircraft under contract.

   - interview of personnel involved.

- review of discrepancies and difficulty internal reports (e.g., notified difficulties in using current procedures and tools, systematic deviations from procedures, etc.).
- review of complaints filed by customers.

e. Management of findings and occurrence reports:

- All findings should be recorded and notified to the affected persons.
- All level 1 findings, in the sense of BCAR-M.A.716(a), should be immediately notified to BCAA and all necessary actions on aircraft in service should be immediately taken.
- All occurrence reports should be reviewed with the aim for continuous improvement of the system by identifying possible corrective and preventive actions. This should be done in order to find prior indicators (e.g., notified difficulties in using current procedures and tools, systematic deviations from procedures, unsafe behaviours, etc.), and dismissed alerts that, had they been recognised and appropriately managed before the event, could have resulted in the undesired event being prevented.
- Corrective and preventive actions should be approved by the person responsible for the organisational review programme and implemented within a specified time frame.
- Once the person responsible for the organisational review programme is satisfied that the corrective action is effective, closure of the finding should be recorded along with a summary of the corrective action.
- The accountable manager should be notified of all significant findings and, on a regular basis, of the global results of the organisational review programme.

Following is a typical example of a simplified organisational review checklist, **to be adapted as necessary to cover the CAME procedures:**

1- Scope of Work

- All aircraft under contract are covered in the BCAA Form 14.
- The scope of work in the CAME does not disagree with the BCAA Form 14.
- No work has been performed outside the scope of the BCAA Form 14 and the CAME.
- Is it justified to retain in the approved scope of work aircraft types for which the organisation has no longer aircraft under contract?

2- Airworthiness situation of the fleet

- Does the continuing airworthiness status (AD, maintenance programme, life limited components, deferred maintenance, Certificate of maintenance review (CMR) validity) show any expired items? If so, are the aircraft grounded?

3- Aircraft Maintenance Programme

- Check that all revisions to the TC/STC holders Instructions for Continuing Airworthiness, since the last review, have been (or are planned to be) incorporated in the maintenance programme, unless otherwise approved by BCAA.
- Has the maintenance programme been revised to take into account all modifications or repairs impacting the maintenance programme?
- Have all maintenance programme amendments been approved at the right level (BCAA or indirect approval)?
- Does the status of compliance with the maintenance programme reflect the latest approved maintenance programme?
- Has the use of maintenance programme deviations and tolerances been properly managed and approved?

4- Airworthiness Directives (and other mandatory measures issued by BCAA)

- Have all ADs issued since the last review been incorporated into the AD status?
- Does the AD status correctly reflect the AD content: applicability, compliance date, periodicity…? (sample check on ADs)

5- Modifications/Repairs

- Are all modifications/repairs listed in the corresponding status approved in accordance with BCAR-M.A.304? (sample check on modifications/repairs)
- Have all the modifications/repairs which have been installed since the last review been incorporated in the corresponding status? (sample check from the aircraft/component logbooks)

6- Relations with the Owners/Operators

- Has a contract (in accordance with BCAR-M) been signed with each external owner/operator, covering all the aircraft whose airworthiness is managed by the CAMO?
- Have the owners/operators under contract fulfilled their obligations identified in the contract? As appropriate:
    - Are the pre-flight checks correctly performed? (interview of pilots)
    - Are the technical log or equivalent correctly used (record of flight hours/cycles, defects reported by the pilot, identification of what maintenance is next due etc.)?
    - Did flights occur with overdue maintenance or with defects not properly rectified or deferred? (sample check from the aircraft records)

- Has maintenance been performed without notifying the CAMO (sample check from the aircraft records, interview of the owner/operator)?

7- Personnel

- Check that the current accountable manager and other nominated persons are correctly identified in the approved CAME.
- If the number of personnel has decreased or if the activity has increased, check that the organisation still has sufficient staff.
- Check that the qualification of all new personnel (or personnel with new functions) has been appropriately assessed.
- Check that the staff has been trained, as necessary, to cover changes in:
  - regulations,
  - BCAA publications,
  - the CAME and associated procedures,
  - the approved scope of work,
  - maintenance data (significant ADs, SBs, ICA amendments, etc.).

8- Maintenance contracted

- Sample check of maintenance records:
  - Existence and adequacy of the work order,
  - Data received from the maintenance organisation:
    - Valid CRS including any deferred maintenance
    - List of removed and installed equipment and copy of the associated BCAA Form 1 or equivalent.

o Obtain a copy of the current approval certificate (BCAA Form 3) of the maintenance organisations contracted.

9- Technical records and record-keeping

- Have the certificates (BCAA Form 1 and Conformity certificates) been properly collected and recorded?
- Perform a sample check of technical records to ensure completeness and storage during the appropriate periods.
- Is storage of computerised data properly ensured?

10- Occurrence Reporting Procedures

- Check that reporting is properly performed,
- Actions taken and recorded.

11- *Reserved*.

Appendix XIV- Framework for a Safety Management System (SMS)

Note 1: Guidance on the implementation of the framework for an SMS is contained in ICAO document 9859.

Note 2: The CAMO's interfaces with other organizations can make a significant contribution to the safety of its services. Guidance on interface management as it relates to SMS is provided in ICAO Document 9859.

Note 3: In the context of this appendix an "accountability" refers to an "obligation" that may not be delegated, and "responsibilities" refers to functions and activities that may be delegated.

1. Scope

This appendix establishes the minimum requirements Safety Management System of Continuing Airworthiness Organisations (CAMO) complying with SARI Part M should meet. The Continuing Airworthiness Maintenance Organization may wish to follow more stringent requirements.

2. Definitions

In the context of this appendix the following definitions apply:

Acceptable level of safety means minimum safety performance that a maintenance organisation should achieve while conducting their core business functions, expressed by a number of safety performance indicators and safety performance targets.

Accountability means obligation or willingness to account for one's actions.

Accountable Manager means a single, identifiable person which might be a Chief Executive Officer, a Chairperson Board of Directors, a partner or a proprietor who has full responsibility for the organization's SMS and have full authority for human resources issues, major financial issues, direct responsibility for the conduct of the organization's affairs, final authority over operations under certificate, and final responsibility for all safety issues.

Consequence means potential outcome(s) of the hazard.

Hazard means condition, object or activity with the potential of causing injuries to personnel, damage to equipment or structures, loss of material, or reduction of ability to perform a prescribed function.

Incident. An occurrence, other than an accident, associated with the operation of an aircraft, which affects or could affect the safety of operation.

Note: The types of incidents, which are of interest for safety-related studies include the incidents listed in Annex 13, Attachment C.

Mitigation means measures to address the potential hazard or to reduce the risk probability or severity.

Predictive means a method that captures system performance as it happens in real-time normal operations.

Proactive means the adoption of an approach, which emphasizes prevention through the identification of hazards, and the introduction of risk mitigation measures before the risk- bearing event occurs and adversely affects safety performance.

Probability means the likelihood that an unsafe event or condition might occur.

Reactive means the adoption of an approach where safety measurement is as a responds to the events that already happened, such as incidents and accidents.

Risk means the assessment, expressed in terms of predicted probability and severity, of the consequence(s) of a hazard taking as reference the worst foreseeable situation.

Risk management means the identification, analysis and elimination, and/or mitigation to an acceptable level of risks that threaten the capabilities of an organization.

Safety means the state in which the risk of harm to persons or property damage is reduced to, and maintained at or below, an acceptable level through a continuing process of hazard identification and risk management.

Safety assessment means a systematic analysis of a proposed change to equipment or procedures to identify and mitigate weaknesses before change is implemented.

Safety assurance means what the maintenance organisation do with regard to safety performance monitoring and measurement.

Safety audit means what the Civil Aviation Authority performs with regard to its safety programme, and the maintenance organisations perform with regard to the SMS.

Safety Management System (SMS) means a systematic approach to managing safety, including the necessary organizational structures, accountabilities, policies and procedures.

Safety manager means a person who is responsible for providing guidance and direction for the operation of the organization's safety management system.

Safety oversight means the activities of Civil Aviation Authority as part of its safety programme, performed with regard to the maintenance organisation SMS, in order to confirm the organization's continuing fulfillment of its corporate safety policy, objectives, goals and standards.

Safety performance indicator means established objectives of a maintenance organisation SMS, linked to major components of a services provider SMS, and expressed in numerical terms.

Safety performance monitoring means the activities of a maintenance organization as part of its SMS, in order to confirm the organization's continuing fulfillment of its corporate safety policy, objectives, goals and standards.

Safety performance target means medium or long-term objectives of a maintenance organisation SMS, determined weighing what is desirable and what is realistic for an individual services provider, and expressed in numerical terms.

Safety policy means a statement reflecting the organization's philosophy of safety management, and become the foundation on which the organization's SMS is built. The safety policy outlines the methods and processes that the organization will use to achieve desired safety outcomes.

Safety programme means an integrated set of regulations and activities aimed at improving safety.

Safety requirement means the operational procedures, technology, systems and programmes to which measures of reliability, availability, performance and/or accuracy can be specified.

Severity means the possible consequences of an unsafe event or condition, taking as reference the worst foreseeable situation.

System means organized set of processes and procedures.

Systematic, means that safety management activities will be conducted in accordance with a pre-determined plan, and applied in a consistent manner throughout the organization.

3. General

A continuing airworthiness management organisations (CAMO) shall establish, maintain and adhere to a Safety Management System (SMS) that is appropriate to the size, nature and complexity of its scope of work and the safety hazards and risks related to it. When the CAMO is integrated within an Air Operator Certificate holder the CAMO SMS should be integrated within the AOC holder SMS.

It specifies the framework for the implementation and maintenance of an SMS. The framework comprises four components and twelve elements as the minimum requirements for SMS implementation:

1. Safety policy and objectives
    1.1. Management commitment
    1.2. Safety accountability and responsibilities
    1.3. Appointment of key safety personnel
    1.4. Coordination of emergency response planning
    1.5. SMS documentation
2. Safety risk management
    2.1. Hazard identification
    2.2. Safety risk assessment and mitigation

3. Safety assurance

3.1. Safety performance monitoring and measurement

3.2. The management of change

3.3. Continuous improvement of the SMS

4. Safety promotion

4.1. Training and education

4.2. Safety communication

4. Safety policy and objectives

4.1. Management commitment

4.1.1. The CAMO shall define its safety policy in accordance with international and national requirement. The safety policy shall:

a) Reflect organisational commitment regarding safety, including the promotion of positive safety culture;

b) Include a clear statement about provision of the necessary resources for the implementation of the safety policy;

c) Include safety reporting procedures

d) Clearly indicate which types and behaviors are unacceptable related to the CAMO's activities and include the circumstances under which disciplinary action would not apply;

e) Be signed by the accountable manager of the organisation;

f) Be communicated, with visible endorsement, throughout the organisation; an

g) Be periodically reviewed to ensure it remains relevant and appropriate to the CAMO;

4.1.2. Taking due account of its safety policy, the CAMO shall define safety objectives. The safety objectives shall:

a) Form the basis for performance monitoring and measurement of the level of safety established by the State;

b) Reflect the CAMO's commitment to maintain or continuously improve the overall effectiveness of the SMS;

c) Be communicated through the organisation; and

d) Be periodically reviewed to ensure they remain relevant and appropriate to the CAMO

Note: Guidance on safety objectives is provided in the Safety Management Manual (SMM) (refer to ICAO Doc 9859).

4.2. Safety accountability and responsibilities

The CAMO shall:

a) Identify the accountable Manager who, irrespective of other functions, is accountable on behalf of the organisation for the implementation and maintenance of an effective SMS;

b) Clearly define lines of safety accountability throughout the organisation, including a direct accountability for safety on the part of senior management;

c) Identify the responsibilities of all members of management, irrespective of other functions, as well as of employees, with respect to safety performance of the organisation;

d) Document and communicate safety accountability, responsibilities and authorities throughout the organisation; and

e) Define the levels of management with authority to make decisions regarding safety risk tolerability.

4.3. Appointment of key safety personnel

The CAMO shall appoint a safety manager who is responsible for the implementation and maintenance of the SMS.

Note: Depending on the size of the CAMO and the complexity of its aviation products or service, the responsibilities for the implementation and maintenance of the SMS may be assigned to one or more persons, fulfilling the role of the safety manager, as their sole function or combined with other duties, provided these do not result in any conflicts of interest.

4.4. Coordination of emergency response planning

The CAMO is required to establish and maintain procedures to interface with emergency response plan for accident and incidents occurring on aircraft for which it is in charge of the continuing airworthiness.

4.5. SMS Documentation

4.5.1. The CAMO shall develop and maintain a Safety Management System Manual (SMSM), in paper or electronic form, that describes its:

(a) Safety policy and objectives;

(b) SMS requirements:

(c) SMS processes and procedures; and

(d) Accountability, responsibilities and authorities for SMS processes and procedures

4.5.2. The CAMO shall develop and maintain SMS operational records as part of its SMS documentation.

Note: Depending on the size of the CAMO and the complexity of its services, the SMSM and SMS operational records may be in the form of stand-alone documents or may be integrated with other organisational documents maintained by the CAMO.

5. Safety risk management

5.1. Hazard identification

(1) The CAMO shall develop and maintain a process to identify hazards associated with its aviation services.

(2) Hazard identification shall be based on a combination of reactive and proactive methods.

5.2. Safety risk assessment and mitigation

The CAMO shall develop and maintain a process that ensures analysis, assessment and control of the safety risks associated with identified hazards.

Note: The process may include predictive methods of safety data analysis.

6. Safety assurance

6.1. Safety performance monitoring and measurement

(1) The CAMO shall develop and maintain means to verify the safety performance of the organisation and to validate the effectiveness of safety risk control.

Note: An internal audit process is one means to monitor compliance with the safety regulation, the foundation upon which SMS is built, and assess the effectiveness of these risk controls and the SMS. Guidance on the scope of the internal audit process is contained in the ICAO doc 9859.

(2) The CAMO's safety performance shall be verified in reference to the safety performance indicators and safety performance targets of the SMS in support of the organisation's safety objectives.

6.2. The management of change

The CAMO shall develop and maintain a process to identify changes, which may affect the level of safety risk associated with its services, and to identify and manage the safety risks that may arise from those changes.

6.3. Continuous improvement of the SMS

The CAMO shall monitor and assess it SMS processes to maintain or continuously improve the overall effectiveness of the SMS and shall ensure that the organization quality policy is consistent with, and supports the fulfillment of the activities of the SMS.

7. Safety promotion

7.1. Training & education

(1) The CAMO shall develop and maintain a safety training programme that ensure that personnel are trained and competent to perform their SMS duties.

(2) The scope of the safety training programme shall be appropriate to each individual's involvement in the SMS.

7.2. Safety communication

The CAMO shall develop and maintain a formal means for safety communication that:

a) Ensures personnel are aware of the SMS to a degree commensurate with their positions;

b) Convey safety-critical information;

c) Explain why particular actions are taken to improve safety; and

d) Explains why safety procedures are introduced or changed.

--------- END ---------