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Maldivian Civil Aviation Regulations

### MCAR-M Continuing Airworthiness Requirements

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**Maldives Civil Aviation Authority  
Republic of Maldives**

**Maldivian Civil Aviation Regulations**

# **MCAR-M Continuing Airworthiness Requirements**

**Issue 2, Amendment 0, 22 October 2015**

## **Foreword**

Maldives Civil Aviation Authority, in exercise of the powers conferred on it under Articles 5 and 6 of the Maldives Civil Aviation Act 2/2012 has adopted this Regulation.

This Regulation shall be cited as MCAR-M Continuing Airworthiness Requirements and shall come in to force on 22 October 2015.

Existing aviation requirements in the field of airworthiness as listed in MCAR-M Approved Maintenance Organisation dated 25 May 2009 will be repealed as from 22 October 2015.

Definitions of the terms and abbreviations used in this regulation, unless the context requires otherwise, are in MCAR-I Definitions and Abbreviations.

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

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







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## **Section A – TECHNICAL REQUIREMENTS**

## **Subpart A — GENERAL**

### **MCAR-M.A.1 Effectivity**

This issue of MCAR-M becomes effective on 22 October 2015.

### **MCAR-M.A.101 Responsibilities**

This Section 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

### MCAR-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 MCAR-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 MCAR 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 MCAR-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 MCAR-M Subpart G. 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 Regulation, for the development of the maintenance programme and its approval in accordance with point 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 MCAR-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 CAA, pursuant to MCAR-M Subpart G for the aircraft it operates; and
  - 2. be approved in accordance with MCAR-145 or contract such an organisation; and
  - 3. ensure that paragraph (a) is satisfied.
- (i) When an operator is requested by the CAA to hold a certificate for commercial operations, other than for commercial air transport, it shall:
  - 1. be appropriately approved, pursuant to 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 M.A. Subpart F or MCAR-145, or contract such organisations; and
  - 3. ensure that paragraph (a) is satisfied.
- (j) The owner/operator is responsible for granting CAA access to the organisation/aircraft to determine continued compliance with this MCAR.

### **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 MCAR-M.A.302(d) and (g). This contract may also entitle the MCAR-M Subpart G organisation to use the indirect approval procedure described in MCAR-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 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 MCAR-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 MCAR-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 MCAR-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)(I) Responsibilities (\*)**

1. An operator only needs to be approved for the management of the continuing airworthiness of the aircraft listed on its AOC. The approval to carry out airworthiness reviews is optional.

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\* See Appendices to MCAR-M – Appendix II to AMC M.A.201(h)

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 M.A. Subpart G approval. The regulatory monitoring is exercised through the operator's M.A. Subpart G approval. The contracts should be acceptable to CAA.
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. MCAR-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 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 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 CAA.
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 organization 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 CAA monitoring of the sub-contracted continuing airworthiness management tasks will be closed to the satisfaction of CAA. 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 CAA. Failure to do so may invalidate CAA 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 CAA on the AOC or CAA 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 MCAR-145 to carry out all maintenance of the aircraft and components;
  - (b) an operator to be approved in accordance with MCAR-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 MCAR-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 the CAA to determine which option may be accepted in each particular case.
  - 2.1. To make this determination CAA 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 – CAA 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



CAA 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 CAA 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 CAA 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. CAA will require an operator to enter into a contract with an appropriately approved MCAR-145 organisation except in those cases where CAA 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 MCAR-M.A.706 to manage the maintenance responsibility whichever option is used.

## **MCAR-M.A.202 Occurrence Reporting**

- (a) Any person or organisation responsible in accordance with point M.A.201 shall report to the competent authority designated by the State of Registry, the organisation responsible for the type design or supplemental type design and, if applicable, the Member State of operator, any identified condition of an aircraft or component which endangers flight safety.
- (b) Reports shall be made in a manner established by the CAA 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.

| MCAR-12 Section 2 provides further guidance on occurrence reporting.

## Subpart C — CONTINUING AIRWORTHINESS

### MCAR-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 M.A.304 and/or point 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 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 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 the CAA,
  - (iv) measures mandated by the competent authority in immediate reaction to a safety problem;
6. the accomplishment of modifications and repairs in accordance with 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. and an assessment to confirm that, as the result of meteorological conditions and de-icing/anti-icing fluids having been previously applied on it, there are no fluid residues that could endanger flight safety. Alternatively to this pre-flight assessment, when the type of aircraft and nature of operations allow for it, the build up of residues may be controlled through scheduled maintenance inspections/cleanings identified in the approved maintenance programme.
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 M.A.712. It should be demonstrated to the competent authority 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 the competent authority.

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 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 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 the CAA.

### **AMC M.A.301-4 Continuing airworthiness tasks**

The operator or the contracted 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 the CAA 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 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, the CAA or the State of Design.

### **MCAR-M.A.302 Aircraft 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 the CAA.
- (c) When the continuing airworthiness of the aircraft is managed by a continuing airworthiness management organisation approved in accordance with M.A. Subpart G, 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 the competent authority responsible for that continuing airworthiness management organisation.
  - (ii) (Reserved).
- (d) The aircraft maintenance programme must establish compliance with:
  - (i) instructions issued by the CAA;
  - (ii) instructions for continuing airworthiness:
    - issued by the holders of the type certificate, restricted type-certificate, supplemental type-certificate, major repair design approval, TSO/ETSO authorisation or any other relevant approval issued under MCAR-21.
  - (iii) additional or alternative instructions proposed by the owner or the continuing airworthiness management organisation once approved in accordance with point 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 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 aircraft maintenance programme shall be subject to periodic reviews and amended accordingly when necessary. These reviews will ensure that the programme continues to be valid in light of the operating experience and instructions from the competent authority 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 MCAR-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 Part-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 the competent authority 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 the competent authority in the following cases:

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† see Appendices to MCAR-M – Appendix I to AMC M.A.302

- in the absence of specific recommendations of the Type Certificate Holder.
  - to provide alternate instructions to those described in the subparagraph I 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 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 the competent authority, 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.

### **MCAR-M.A.303 Airworthiness directives**

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

### **MCAR-M.A.304 Data for modifications and repairs**

Damage shall be assessed and modifications and repairs carried out using data approved by the CAA, in accordance with MCAR-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 technical support from the type certificate holder; or
- CAA approval of the particular repair data in accordance with MCAR-21.

### **MCAR-M.A.305 Aircraft continuing airworthiness record system**

- (a) At the completion of any maintenance, the certificate of release to service required by point M.A.801 or point 145.A.50 shall be entered in the aircraft continuing airworthiness records. Each entry shall be made as soon as practicable but in no case more than 30 days after the day of the 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 point M.A.306 for commercial air transport or by the CAA 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 the CAA 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, CAA Form I 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 M.A.Subpart B, shall control the records as detailed in this paragraph and present the records to the CAA 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 the CAA 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 the competent authority for acceptance. The CAA 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.

**MCAR-M.A.306 Operator's technical log system**

- (a) In the case of commercial air transport, in addition to the requirements of 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 the CAA 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 the CAA.
- (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) Operator's 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 the CAA.

**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 the CAA.
- 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 'MCAR-145 release to service' instead of the full certification statement specified in AMC 145.A.50(b) paragraph I. 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 I.

- 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) Operator’s technical log system**

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

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

**MCAR-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 M.A.305 continuing airworthiness records and, if applicable, 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 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 the CAA 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**

### **MCAR-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 Regulation, applicable maintenance data is:
  - 1. any applicable requirement, procedure, standard or information issued by the CAA,
  - 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 MCAR-21.
  - 4. any applicable data issued in accordance with 145.A.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 regulations and associated AMC's, together with the maintenance related guidance material,
  - (b) all applicable maintenance requirements and notices such as CAA 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.

### **MCAR-M.A.402 Performance of maintenance**

- (a) All maintenance shall be performed by qualified personnel, following the methods, techniques, standards and instructions specified in the M.A.401 maintenance data. Furthermore, an independent inspection shall be carried out after any flight safety sensitive maintenance task unless otherwise specified by MCAR-145 or agreed by the CAA.
- (b) All maintenance shall be performed using the tools, equipment and material specified in the M.A.401 maintenance data unless otherwise specified by MCAR-145. Where necessary, tools and equipment shall be controlled and calibrated to an officially recognised standard.
- (c) The area in which maintenance is carried out shall be well organised and clean in respect of dirt and contamination.
- (d) All maintenance shall be performed within any environmental limitations specified in the M.A.401 maintenance data.
- (e) In case of inclement weather or lengthy maintenance, proper facilities shall be used.
- (f) After completion of all maintenance a general verification must be carried out to ensure the aircraft or component is clear of all tools, equipment and any other extraneous parts and 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 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 Appendix VIII of MCAR-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 CAA or the State of Design or a competent authority acceptable to the CAA. The maintenance standards used should contain methods, techniques and practices acceptable to the CAA 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 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 the CAA.

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.



### **MCAR-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 points M.A.801(b)1, M.A.801(b)2, M.A.801(c), M.A.801(d) or MCAR-145 can decide, using 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 the CAA is used by the pilot; or,
  - 2. aircraft defects are defined as being acceptable by the CAA.
- (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 M.A.305 aircraft maintenance record system or 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 on to worksheets at the next appropriate maintenance check, and any deferred defect which is not rectified during the maintenance check, should be re-entered on to 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**

### **MCAR-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 CAA Form I or equivalent and is marked in accordance with MCAR-21 Subpart Q, unless otherwise specified in MCAR-21, MCAR-145 or Subpart F, Section A of this Regulation.
- (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 MCAR-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 a 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 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 the CAA Form I (see also MCAR-M Appendix II) is to release components after manufacture and to release maintenance work carried out on such components under the approval of the CAA and to allow components removed from one aircraft/component to be fitted to another aircraft/ component.
5. For the purpose of MCAR-M, a document equivalent to an CAA Form I may be:
  - (a) a release document issued by an organisation under the terms of a bilateral agreement signed by the CAA;
  - (b) an EASA Form I;
  - (c) an FAA Form 8130-3;
  - (d) a Transport Canada TCCA 24-0078 or Authorised Release Certificate Form One;
  - (e) reserved;
  - (f) reserved;
  - (g) reserved;
  - (h) reserved;
  - (i) reserved;

6. Any item in storage without a CAA Form I or equivalent cannot be installed on aircraft registered in the Maldives unless a CAA Form I 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 CAA Form I identifies the airworthiness status of an aircraft component. Block 12 'Remarks' on the CAA Form I in some cases contains vital airworthiness related information (see also MCAR-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 M.A.801 or the M.A. Subpart F or MCAR-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 M.A.801 or the M.A. Subpart F or MCAR-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, State of Design, CAA 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 EASA CS 22.1301(b), 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 (EASA CS 22.1303, 22.1305 and 22.1307) 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 ETSO 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. An CAA Form I 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. CAA Form I 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 the CAA or the competent authority of the (S)TC holder 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.

### **MCAR-M.A.502 Component maintenance**

- (a) The maintenance of components shall be performed by maintenance organisations appropriately approved in accordance with Section A, Subpart F of this Regulation or with MCAR-145.
- (b) By derogation from paragraph (a), maintenance of a component in accordance with aircraft maintenance data or, if agreed by the competent authority, in accordance with component maintenance data, may be performed by an A rated organisation approved in accordance with Section A, Subpart F of this Regulation or with MCAR-145 as well as by certifying staff referred to in point 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 an CAA Form I and shall be subject to the aircraft release requirements provided for in point 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 the competent authority, in accordance with component maintenance data, may be performed by a B rated organisation approved in accordance with Section A, Subpart F of this Regulation or with MCAR-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 M.A.801(b)2, maintenance of a component while installed or temporarily removed from an ELA1 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 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 an CAA Form I and shall be subject to the aircraft release requirements provided for in point 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, M.A.502 requirements do not apply to this case.

### **AMC M.A.502(b) and (c) Component maintenance**

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 CAA.

This should only be permitted by the CAA in the case of simple component maintenance, where the competent authority 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 an MCAR-66 aircraft maintenance licence.



### **MCAR-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 point 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.

### **MCAR-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 requirement mandated by the CAA;
  - 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 component. 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 M.A.304.
- (d) Any person or organisation accountable under MCAR-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 MCAR-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. M.A.801(b)(2) and M.A.801(c) certifying staff or the Section A Subpart F / MCAR-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. M.A.801(b)(2) and 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 MCAR-145 for controlled storage, or transfer the custody of the component to the owner itself under the conditions specified in 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 can not 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 the CAA 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**

### **MCAR-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 point M.A.201(g).

### **MCAR-M.A.602 Application**

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

### **AMC M.A.602 Application**

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

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

**MCAR-M.A.603 Extent of approval**

- (a) An organisation involved in activities subject to this Subpart shall not exercise its activities unless approved by the competent authority. Appendix V to this Regulation provides the template certificate for this approval.
- (b) The maintenance organisation's manual referred to in point M.A.604 shall specify the scope of work deemed to constitute approval. Appendix IV to this Regulation 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 - 34
	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 the CAA 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 the CAA, the TC holder, MCAR-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 CAA Form I. 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 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 can not fabricate the part unless the TC/STC-holder gives an approved alternative.
7. Examples of fabrication under the scope of an 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 the competent authority.

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 an M.A. Subpart F approval unless agreed otherwise by the CAA 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.

### **MCAR-M.A.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 MCAR-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 M.A.606(b), and;
  4. an organisation chart showing associated chains of responsibility between the person(s) referred to in 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,
  7. procedures specifying how the maintenance organisation ensures compliance with this Part, and;
  8. the maintenance organisation manual amendment procedure(s).
- (b) The maintenance organisation manual and its amendments shall be approved by the CAA.
- (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 MCAR-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.

### **MCAR-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 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 M.A.402. For complex repairs or component maintenance requiring an CAA Form I, 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 aircraft 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 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 M.A.504 (d) or (e). The person responsible for the implementation of this procedure should be identified.

## **MCAR-M.A.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 Regulation.
- (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 M.A.612 and M.A.613 certificates of release to service for aircraft and components. They shall comply with the requirements of MCAR-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 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, the CAA 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 Part. The aircraft maintenance manager is also responsible for any corrective action resulting from the 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 Regulation and also responsible for any corrective action resulting from the 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 the CAA 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 the CAA 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) MCAR-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 the CAA. This assessment should be recorded.

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

- 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 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) dependant 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. Notwithstanding the general references in EN 4179 to a national aerospace NDI board, all examinations should be conducted by personnel or organisations under the general control of such a board. In the absence of a national aerospace NDI board, examinations should be conducted by personnel or organisations under the general control of the NDI board of a State acceptable to the CAA.
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. 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 M.A.Subpart F are not listed in Appendix IV to MCAR-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 MCAR-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**

- I. For the issue of a limited certification authorisation the commander should hold either a valid air transport pilot license (ATPL), or commercial pilots license (CPL), or a national equivalent acceptable to the competent authority 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 the CAA.

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

### **MCAR-M.A.607 Certifying staff**

- (a) In addition to 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 requirements of point 66.A.20(b) of MCAR-66, and;
  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 three 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 Part 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 the CAA 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 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 are 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. The CAA should be granted access to the records upon request.

### **MCAR-M.A.608 Components, equipment and tools**

- (a) The organisation shall:
  - 1. hold the equipment and tools specified in the maintenance data described in point 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 M.A. Subpart F approval has determined the intended scope of approval for consideration by the CAA, 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 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.

### **MCAR-M.A.609 Maintenance data**

The approved maintenance organisation shall hold and use applicable current maintenance data specified in 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.

### **MCAR-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 log book specifying the defect that needs to be corrected.

### **MCAR-M.A.611 Maintenance standards**

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

### **MCAR-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 M.A.801.

### **MCAR-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 in accordance with point M.A.802. CAA Form I shall be issued except for those components maintained in accordance with points M.A.502(b) or M.A.502(d) and components fabricated in accordance with point M.A.603(c).
- (b) The component certificate release to service document, CAA Form I 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, an CAA Form I 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 MCAR-145, MCAR-M and MCAR-21 and not released on a CAA Form I or equivalent in accordance with 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 an CAA Form I may be issued.

2.1 A CAA Form I may be issued for an aircraft component which has been:

- Maintained before MCAR-145, or MCAR-M became effective or manufactured before MCAR-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.
- Components maintained by an unapproved organisation.

2.2 An appropriately rated M.A Subpart F maintenance organisation may issue an CAA Form I 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 the CAA. The appropriately rated 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 an CAA Form I 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 An CAA Form I 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 the CAA Form I.

## 2.5 New/unused aircraft components

- 2.5.1. Any unused aircraft component in storage without an CAA Form I up to the effective date(s) for MCAR-21 that was manufactured by an organisation acceptable to the CAA at the time may be issued a CAA Form I by an appropriately rated maintenance organisation approved under M.A Subpart F. The CAA Form I 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 M.A Subpart F and not a production release under MCAR-21. It is not intended to bypass the production release procedure agreed by the Member State 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, an CAA Form I 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 Maldivian registered aircraft may be issued an CAA Form I 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 an CAA Form I 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 effect 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, an CAA Form I 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 an aircraft not registered in the Maldives may only be issued an CAA Form I if the components are leased or loaned from the maintenance organisation approved under M.A Subpart F who retains control of the airworthiness status of the components. An CAA Form I

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 Member State registered aircraft withdrawn from service may be issued an CAA Form I by a maintenance organisation approved under 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 M.A. Subpart F, employing procedures approved by the CAA.
  - (b) To be eligible for installation, components removed from such aircraft may be issued with an CAA Form I 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 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 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 M.A Subpart F or MCAR-145.

For used components maintained by a maintenance organisation not approved under M.A.Subpart F or MCAR-145, due care should be taken before acceptance of such components. In such cases an appropriately rated maintenance organisation approved under 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) reassembling and testing as necessary the component,
- (d) completing all certification requirements as specified in M.A.613.

In the case of used components maintained by an EASA Part-145 or EASA M.A. Subpart F organisation or FAA Part-145 repair station (USA) or by TCCA CAR573 approved maintenance organisations (Canada) that does not hold a CAA MCAR-145 or M.A. Subpart F approval, the conditions (a) through (d) described above may be replaced by the following conditions:

- (a) availability of an EASA Form I, an FAA 8130-3 or Transport Canada TCAA 24-0078 / Authorised Release Certificate Form One,
- (b) verification of compliance with all applicable airworthiness directives, and
- (c) verification that the component does not contain repairs or modifications that have not been approved in accordance with MCAR-21,
- (d) inspection for satisfactory condition including in particular damage, corrosion or leakage,
- (e) issuance of a Form I in compliance with paragraphs 2.2, 2.3 and 2.4.

2.9 Used aircraft components removed from an aircraft involved in an accident or incident. Such components should only be issued with an CAA Form I 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 12.

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 the CAA within the scope of the approval.

### **MCAR-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 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, alteration 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 three years shall be distributed to the last owner or customer of the respective aircraft or component or shall be stored as specified by the CAA.

### **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 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 manual, component maintenance manual, parts catalogues etc issued by the TC holder or STC holder. Maintenance records should refer to the revision status of the data used.

### **MCAR-M.A.615 Privileges of the organisation**

The maintenance organisation approved in accordance with Section A, Subpart F of this Regulation, 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 the CAA directly;
- (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 point M.A.612 or point M.A.613.

### **AMC M.A.615(b) Privileges of the organisation**

M.A.615(b) refers to work carried out by another organisation which is not appropriately approved under M.A. Subpart F or MCAR-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 M.A. 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 the CAA (through the approval of the Maintenance Organisation Manual).

“Under the control of the M.A. Subpart F organisation” means that the M.A. 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 M.A. 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 M.A. Subpart F organisation reference. Such staff would normally come from the M.A. Subpart F organisation but may otherwise be a person from the subcontractor who meets the M.A. Subpart F organisation certifying staff standard which itself is approved by the competent authority via the Maintenance Organisation Manual.

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



### **MCAR-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 MCAR-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.

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‡ see also Appendix VIII to AMC M.A.616

### **MCAR-M.A.617 Changes to the approved maintenance organisation**

In order to enable the CAA to determine continued compliance with this Regulation, 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 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 changes 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**

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

### **MCAR-M.A.618 Continued validity of approval**

- (a) Unless the maintenance organisation's approval has previously been surrendered, superseded, suspended, revoked or expired by virtue of exceeding the expiry date specified in the approval certificate, the continued validity of the approval is dependent upon;
  - 1. the organisation remaining in compliance with this Regulation, in accordance with the provisions related to the handling of findings as specified under M.A.619, and;
  - 2. the CAA being granted access to the organisation to determine continued compliance with this Regulation, and;
  - 3. the approval not being surrendered or revoked;
- (b) Upon surrender or revocation, the approval certificate shall be returned to the CAA.

### **MCAR-M.A.619 Findings**

- (a) A level 1 finding is any significant non-compliance with MCAR-M requirements which lowers the safety standard and hazards seriously the flight safety.
- (b) A level 2 finding is any non-compliance with the MCAR-M requirements which could lower the safety standard and possibly hazard the flight safety.
- (c) After receipt of notification of findings raised by the CAA, the holder of the maintenance organisation approval shall define a corrective action plan and demonstrate corrective action to the satisfaction of the competent authority within a period agreed with this authority.

## **Subpart G — CONTINUING AIRWORTHINESS MANAGEMENT ORGANISATION**

### **MCAR-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.

### **MCAR-M.A.702 Application**

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

### **AMC M.A.702 Application**

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

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

### **MCAR-M.A.703 Extent of approval**

- (a) The approval is indicated on a certificate included in Appendix VI issued by the CAA.
- (b) Notwithstanding paragraph (a), for commercial air transport, the approval shall be part of the air operator certificate issued by the CAA, for the aircraft operated.
- (c) The scope of work deemed to constitute the approval shall be specified in the continuing airworthiness management exposition in accordance with point M.A.704.

### **MCAR-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 Regulation 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 points M.A.706(a), M.A.706(c), M.A.706(d) and M.A.706(i);
  - 4. an organisation chart showing associated chains of responsibility between all the person(s) referred to in points M.A.706(a), M.A.706(c), M.A.706(d) and M.A.706(i);
  - 5. a list of the airworthiness staff referred to in point M.A.707, specifying, where applicable, the staff authorised to issue permits to fly in accordance with point M.A.711(c);
  - 6. a general description and location of the facilities, and;
  - 7. procedures specifying how the continuing airworthiness management organisation ensures compliance with this Regulation, 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.
- (b) The continuing airworthiness management exposition and its amendments shall be approved by the CAA.
- (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 the CAA.



## **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 M.A. Subpart G organisation. Compliance with its contents will assure compliance with MCAR-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 Airworthiness review procedures (if applicable)
3. Where a M.A. Subpart G organisation is also approved to another Regulation, the exposition or manual required by the other Regulation may form the basis of the continuing airworthiness management exposition in a combined document. Example for a combined MCAR-145 and M.A. Subpart G organisation:

### *MCAR-145 Exposition (see equivalent paragraphs in AMC 145.A.70 (a))*

- Part 1 Management
- Part 2 Maintenance procedures
- Part L2 Additional line maintenance procedures
- Part 3 Quality system and/or organisational review (as applicable)
- Part 4 Contracts with owners/operators
- Part 5 Appendices (sample of documents)
- Part 7 FAA supplement (if applicable)
- Part 8 TCCA supplement (if applicable)

Part 3 should also cover the functions specified by M.A.712 quality system.

Part 4 should also cover contracted maintenance (for operators) – Management of maintenance (liaison with maintenance organisations in the case of non commercial air transport)

Additional parts should be introduced covering the following (see equivalent paragraphs in Appendix V to AMC M.A.704, which may have a different numbering system):

- Part 0 General organisation
- Part 6 Continuing airworthiness management procedures
- Part 9 Airworthiness review procedures (if applicable)

Example for a combined M.A. Subpart F and M.A. Subpart G organisation:

### *M.A. Subpart F Maintenance Organisation Manual (see equivalent paragraphs in Appendix IV to AMC M.A.604, which have a different numbering system):*

- Part 1 General
- Part 2 Description
- Part 3 General Procedures

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§ see Appendices to MCAR-M – Appendix V to AMC M.A.704

- Part 4 Working Procedures. This Part contains, among other things, procedures for Organisational Reviews.
- Part 5 Appendixes
- Part 4 should also cover the functions specified by M.A.712 quality system (or organisation review, as applicable).

Additional parts should be introduced covering the following:

- Part 0 General organisation
- Part 6 Continuing airworthiness management procedures
- Part 7 Airworthiness review procedures (if applicable)

4. Personnel should be familiar with those parts of the exposition that are relevant to their tasks.
5. The M.A. Subpart G organisation should specify in the exposition who is responsible for the amendment of the document.
6. Unless otherwise agreed by the approving CAA, 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 the CAA. The CAA 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 the CAA.
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 the approving competent authority in a form acceptable to the CAA. 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 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 MCAR-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 Maldives Civil Aviation Authority 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 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 CAA will approve this organisation whilst the CAA is satisfied that the procedures are being followed and the work standard is maintained. It is understood that the CAA reserves the right to suspend, vary or revoke the M.A. Subpart G continuing airworthiness management approval of the organisation or the air operators certificate, as applicable, if the CAA 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 the CAA.

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

### **MCAR-M.A.705 Facilities**

The continuing airworthiness management organisation shall provide suitable office accommodation at appropriate locations for the personnel specified in 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 M.A. Subpart G organisations, the CAA 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.

### **MCAR-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 Regulation.
- (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 MCAR-145 approved organisation under contract to the operator, unless specifically agreed by the CAA.
- (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) For organisations extending airworthiness review certificates in accordance with points M.A.711(a)4 and M.A.901(f), the organisation shall nominate persons authorised to do so, subject to approval by the CAA.
- (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 M.A.706(a), M.A.706(c), M.A.706(d) and 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, airworthiness review and/or quality audits in accordance with a procedure and to a standard agreed by the CAA.

## **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 (general aviation aircraft, corporate aircraft, 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 the CAA 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 the CAA. '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 MCAR-66 Appendix III Level I General Familiarisation and could be imparted by a MCAR-147 organisation, by the manufacturer, or by any other organisation accepted by the CAA.

“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 the CAA. 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 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, the CAA 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. The CAA should only accept that the nominated post holder be employed by the organisation approved under MCAR-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 MCAR-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. CAA guidance is provided for training to Continuing Airworthiness Management Organisations' continuing airworthiness personnel in Appendix XII to AMC to M.A.706(f).

### **AMC M.A.706(i) Personnel requirements**

The approval by the CAA of the exposition, containing in M.A.704(a)3 the list of M.A.706(i) personnel, constitutes their formal acceptance by the CAA and also their formal authorisation by the organisation.

Airworthiness review staff are automatically recognised as persons with authority to extend an airworthiness review certificate in accordance with M.A.711(a)4 and M.A.901(f).

### **AMC M.A.706(k) Personnel requirements**

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

### **MCAR-M.A.707 Airworthiness review staff**

- (a) To be approved to carry out airworthiness reviews and, if applicable, to issue permits to fly, an approved continuing airworthiness management organisation shall have appropriate airworthiness review staff to issue airworthiness review certificates or recommendations referred to in Section A of Subpart I and, if applicable, to issue a permit to fly in accordance with point M.A.711(c):
1. For all aircraft used in commercial air transport, and aircraft above 2730 kg MTOM, except balloons, these staff shall have acquired:
    - (a) at least five years' experience in continuing airworthiness, and
    - (b) an appropriate license in compliance with MCAR-66; and
    - (c) formal aeronautical maintenance training; and
    - (d) a position within the approved organisation with appropriate responsibilities.
    - (e) Notwithstanding points (a) to (d), the requirement laid down in point M.A.707(a)1(b) may be replaced by five years of experience in continuing airworthiness additional to those already required by point M.A.707(a)1(a).
  2. For aircraft not used in commercial air transport of 2730 kg MTOM and below, and balloons, these staff shall have acquired:
    - (a) at least three years' experience in continuing airworthiness; and
    - (b) an appropriate license in compliance with MCAR-66 or an aeronautical degree; and
    - (c) appropriate aeronautical maintenance training; and
    - (d) a position within the approved organisation with appropriate responsibilities;
    - (e) Notwithstanding points (a) to (d), the requirement laid down in point M.A.707(a)2(b) may be replaced by four years of experience in continuing airworthiness additional to those already required by point M.A.707(a)2(a).
- (b) Airworthiness review staff nominated by the approved continuing airworthiness organisation can only be issued an authorisation by the approved continuing airworthiness organisation when formally accepted by the CAA after satisfactory completion of an airworthiness review under supervision.
- (c) The organisation shall ensure that aircraft airworthiness review staff can demonstrate appropriate recent continuing airworthiness management experience.
- (d) Airworthiness review staff shall be identified by listing each person in the continuing airworthiness management exposition together with their airworthiness review authorisation reference.

- (e) The organisation shall maintain a record of all airworthiness review staff, which shall include details of any appropriate qualification held together with a summary of relevant continuing airworthiness management experience and training and a copy of the authorisation. This record shall be retained until two years after the airworthiness review staff have left the organisation.

### **AMC M.A.707(a) Airworthiness review staff**

1. Airworthiness review staff are only required if the M.A. Subpart G organisation wants to be granted M.A.711(b) airworthiness review and, if applicable, M.A.711(c) permit to fly privileges.
2. “experience in continuing airworthiness” means any appropriate combination of experience in tasks related to aircraft maintenance and/or continuing airworthiness management (engineering) and/or surveillance of such tasks.
3. A person qualified to the AMC M.A.706 subparagraph 4.5 should be considered as holding the equivalent to a relevant engineering degree.
4. An appropriate licence in compliance with MCAR-66 is any one of the following:
  - a category B1 licence in the subcategory of the aircraft reviewed, or
  - a category B2 or C licence, or
  - in the case of piston-engine non-pressurised aeroplanes of 2 000 kg MTOM and below, a category B3 licence.

It is not necessary to satisfy the experience requirements of MCAR-66 at the time of the review.

5. To hold a position with appropriate responsibilities means the airworthiness review staff should have a position in the organisation independent from the airworthiness management process or with overall authority on the airworthiness management process of complete aircraft.

Independence from the airworthiness management process may be achieved, among other ways, by:

- Being authorised to perform airworthiness reviews only on aircraft for which the person has not participated in their management. For example, performing airworthiness reviews on a specific model line, while being involved in the airworthiness management of a different model line.
- M.A. Subpart G organisations with MCAR-145/M.A.Subpart F approval, may nominate maintenance personnel from their MCAR-145/M.A.Subpart F organisation as airworthiness review staff, as long as they are not involved in the airworthiness management of the aircraft. These personnel should not have been involved in the release to service of that particular aircraft (other than maintenance tasks performed during the physical survey of the aircraft or performed as a result of findings discovered during such physical survey) to avoid possible conflict of interests.
- Nominating as airworthiness review staff personnel from the Quality Department of the continuing airworthiness management organisation.

Overall authority on the airworthiness management process of complete aircraft may be achieved, among other ways, by:

- Nominating as airworthiness review staff the Accountable Manager or the Maintenance Postholder.
- Being authorised to perform airworthiness reviews only on those particular aircraft for which the person is responsible for the complete continuing airworthiness management process.
- In the case of one-man organisations, this person has always overall authority. This means that this person can be nominated as airworthiness review staff.

### **AMC M.A.707(a)(1) Airworthiness review staff**

For all aircraft used in commercial air transport and any other aircraft, other than balloons, above 2730 kg MTOM, formal aeronautical maintenance training means training (internal or external) supported by evidence on the following subjects:

- Relevant parts of initial and continuing airworthiness regulations.
- Relevant parts of operational requirements and procedures, if applicable.
- The organisation’s continuing airworthiness management exposition.
- 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 MCAR-66 Appendix III Level I General Familiarisation and could be imparted by a MCAR-147 organisation, by the manufacturer, or by any other organisation accepted by the CAA.

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

- Maintenance methods.

### **AMC M.A.707(a)(2) Airworthiness review staff**

For all balloons and any other aircraft of 2730 Kg MTOM and below, not used in commercial air transport:

1. “experience in continuing airworthiness” can be full time or part-time, either as professional or on a voluntary basis.
2. Appropriate aeronautical maintenance training means demonstrated knowledge of the following subjects:
  - Relevant parts of initial and continuing airworthiness regulations.
  - Relevant parts of operational requirements and procedures, if applicable.

- The organisation’s continuing airworthiness management exposition.
- Knowledge of a relevant sample of the type(s) of aircraft gained through training and/ or work experience. Such knowledge should be at least at a level equivalent to MCAR-66 Appendix III Level I General Familiarisation and could be imparted by a MCAR-147 organisation, by the manufacturer, or by any other organisation accepted by the CAA.

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

- Maintenance methods.

This knowledge may be demonstrated by documented evidence or by an assessment performed by the CAA or by other airworthiness review staff already authorised within the organisation in accordance with approved procedures. This assessment should be recorded.

### **AMC M.A.707(b) Airworthiness review staff**

The formal acceptance by the competent authority of the airworthiness review staff is granted through the corresponding CAA Form 4.

An airworthiness review “under supervision” means under the supervision of the CAA. If the organisation has already properly authorised airworthiness review staff, the CAA may accept that the supervision be performed by this existing airworthiness review staff in accordance with an approved procedure. In such case, evidence of the airworthiness review performed under supervision should be provided to the CAA together with the CAA Form 4. If satisfied, the CAA will issue the formal acceptance through the CAA Form 4.

Once the airworthiness review staff has been accepted by the CAA, the inclusion of their name in the exposition (refer to M.A.704(a)5) constitutes the formal authorisation by the organisation.

### **AMC M.A.707(c) Airworthiness review staff**

In order to keep the validity of the airworthiness review staff authorisation, the airworthiness review staff should have either:

- been involved in continuing airworthiness management activities for at least six months in every two year period, or
- conducted at least one airworthiness review in the last twelve month period.

In order to restore the validity of the authorisation, the airworthiness review staff should conduct at a satisfactory level an airworthiness review under the supervision of the CAA or, if accepted by the CAA, under the supervision of another currently valid authorised airworthiness review staff of the concerned continuing airworthiness management organisation in accordance with an approved procedure.

### **AMC M.A.707(e) Airworthiness review staff**

The minimum content of the airworthiness review staff record should be:

- Name,
- Date of Birth,
- Basic Education,
- Experience,
- Aeronautical Degree and/or MCAR-66 qualification and/or nationally-recognised maintenance personnel qualification,
- Initial Training received,
- Type of Training received,
- Continuation Training received,
- Experience in continuing airworthiness and within the organisation,
- Responsibilities of current role in the organisation,
- Copy of the authorisation.

## **MCAR-M.A.708 Continuing Airworthiness Management**

- (a) All continuing airworthiness management shall be carried out according to the prescriptions of M.A 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 the CAA for approval, unless covered by an indirect approval procedure in accordance with point M.A.302(c), and provide a copy of the programme to the owner of aircraft 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 M.A. 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 commercial air transport, when the operator is not appropriately approved to MCAR-145, the operator shall establish a written maintenance contract between the operator and an MCAR-145 approved organisation or another operator, detailing the functions specified under M.A.301-2, M.A.301-3, M.A.301-5 and M.A.301-6, ensuring that all maintenance is ultimately carried out by an MCAR-145 approved maintenance organisation and defining the support of the quality functions of M.A.712(b). The aircraft base, scheduled line maintenance and engine maintenance contracts, together with all amendments, shall be approved by the CAA. However, in the case of:
1. an aircraft requiring unscheduled line maintenance, the contract may be in the form of individual work orders addressed to the MCAR-145 maintenance organisation.



2. component maintenance, including engine maintenance, the contract as referred to in paragraph (c) may be in the form of individual work orders addressed to the MCAR-145 maintenance organisation.

### **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 MCAR-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 MCAR-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 the CAA) 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 the CAA of operator 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 MCAR-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 MCAR-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 MCAR-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, the competent authority should be satisfied that such an arrangement allows the operator to ensure full compliance with responsibilities pursuant to M.A.201.
7. The purpose of M.A.708(c) is to ensure that all maintenance is carried out by properly approved MCAR-145 organisations. This does not preclude a primary maintenance arrangement with an

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\*\* see Appendices to MCAR-M – Appendix XI to AMC M.A.708(c)

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 an MCAR-145 approved organisation and complying with the 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 MCAR-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 MCAR-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 MCAR-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 MCAR-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 M.A.708 functions, and employing the M.A.706 continuing airworthiness management group of persons and staff.

In essence, this does not alter the intent of M.A.201(h) in that it also requires that the operator has to establish a written maintenance contract acceptable to the CAA 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 M.A.706(c) continuing airworthiness management group of persons and quality system as referred to in 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 the CAA, 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 the CAA of operator 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.

### **MCAR-M.A.709 Documentation**

- (a) The approved continuing airworthiness management organisation shall hold and use applicable current maintenance data in accordance with point M.A.401 for the performance of continuing airworthiness tasks referred to in point 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 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 this Regulation. These “baseline” and/or “generic” maintenance programmes however do not preclude the need to establish an adequate Aircraft Maintenance Programme in compliance with point M.A.302 in due time before exercising the privileges referred to in point 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 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 the CAA prior to the initial approval and prior to the extension of the scope of an existing organisation approval. The intent is that the CAA 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 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 M.A.302(c). The indirect approval procedure should include provisions to notify to the competent authority that an aircraft maintenance programme specific for a customer has been created. The reason is that, according to 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.

### **MCAR-M.A.710 Airworthiness review**

- (a) To satisfy the requirement for the airworthiness review of an aircraft referred to in point M.A.901, a full documented review of the aircraft records shall be carried out by the approved continuing airworthiness management organisation in order to be satisfied that:
1. airframe, engine and propeller flying hours and associated flight cycles have been properly recorded; and
  2. the flight manual is applicable to the aircraft configuration and reflects the latest revision status; and
  3. all the maintenance due on the aircraft according to the approved maintenance programme has been carried out; and
  4. all known defects have been corrected or, when applicable, carried forward in a controlled manner; and
  5. all applicable airworthiness directives have been applied and properly registered; and
  6. all modifications and repairs applied to the aircraft have been registered and are in compliance with the MCAR-21; and
  7. all service life limited components installed on the aircraft are properly identified, registered and have not exceeded their approved service life limit; and
  8. all maintenance has been released in accordance with this Regulation; and
  9. the current mass and balance statement reflects the configuration of the aircraft and is valid; and
  10. the aircraft complies with the latest revision of its type design approved by the State of Design; and
  11. if required, the aircraft holds a noise certificate corresponding to the current configuration of the aircraft in compliance with Subpart I of MCAR-21.
- (b) The airworthiness review staff of the approved continuing airworthiness management organisation shall carry out a physical survey of the aircraft. For this survey, airworthiness review staff not appropriately qualified to MCAR-66 shall be assisted by such qualified personnel.
- (c) Through the physical survey of the aircraft, the airworthiness review staff shall ensure that:
1. all required markings and placards are properly installed; and
  2. the aircraft complies with its approved flight manual; and
  3. the aircraft configuration complies with the approved documentation; and

4. no evident defect can be found that has not been addressed according to point M.A.403; and
  5. no inconsistencies can be found between the aircraft and the paragraph (a) documented review of records.
- (d) By derogation to point M.A.901(a), the airworthiness review can be anticipated by a maximum period of 90 days without loss of continuity of the airworthiness review pattern, to allow the physical review to take place during a maintenance check.
- (e) The airworthiness review certificate (CAA Form 15b) or the recommendation for the issue of the airworthiness review certificate (CAA Form 15a) referred to in Appendix III to this Regulation can only be issued:
1. by airworthiness review staff appropriately authorised in accordance with point M.A.707 on behalf of the approved continuing airworthiness management organisation or by certifying staff in cases provided for in point M.A.901(g); and
  2. when satisfied that the airworthiness review has been completely carried out and that there is no non-compliance which is known to endanger flight safety.
- (f) A copy of any airworthiness review certificate issued or extended for an aircraft shall be sent to the CAA within 10 days.
- (g) Airworthiness review tasks shall not be sub-contracted.
- (h) Should the outcome of the airworthiness review be inconclusive, the CAA shall be informed as soon as practicable but in any case within 72 hours of the organisation identifying the condition to which the review relates.

### **AMC M.A.710(a) Airworthiness review**

- I. A full documented review is a check of at least the following categories of documents:
  - registration papers
  - M.A.305 aircraft continuing airworthiness record system
  - M.A.306 operator's technical log system
  - list of deferred defects, minimum equipment list and configuration deviation list if applicable.
  - aircraft flight manual including aircraft configuration
  - aircraft maintenance programme
  - maintenance data
  - relevant work packages
  - AD status
  - modification and SB status
  - modification and repair approval sheets
  - list of service life-limited component
  - relevant CAA Form I or equivalent
  - mass and balance report and equipment list
  - aircraft, engine and propeller TC Data Sheets

As a minimum, sample checks within each document category should be carried out.

2. The M.A. Subpart G organisation should develop procedures for airworthiness review staff to produce a compliance report that confirms the above have been reviewed and found in compliance with MCAR-M.

### **AMC M.A.710(b) and (c) Airworthiness review**

- I. The physical survey could require actions categorised as maintenance (e.g. operational tests, tests of emergency equipment, visual inspections requiring panel opening etc.). In this case, after the airworthiness review a release to service should be issued in accordance with MCAR-M.

When the airworthiness review staff are not appropriately qualified to MCAR-66 in order to release such maintenance, M.A.710(b) requires them to be assisted by such qualified personnel. However, the function of such MCAR-66 personnel is limited to perform and release the maintenance actions requested by the airworthiness review staff, it not being their function to perform the physical survey of the aircraft. As stated in M.A.710(b), the airworthiness review staff shall carry out the physical survey of the aircraft, and this survey includes the verification that no inconsistencies can be found between the aircraft and the documented review of records.

This means that the airworthiness review staff who are going to sign the airworthiness review certificate or the recommendation should be the one performing both the documented review and the physical survey of the aircraft, it not being the intent of the rule to delegate the survey to MCAR-66 personnel who are not airworthiness review staff. Furthermore, the provision of M.A.710(d) allowing a 90 days anticipation for the physical survey provides enough flexibility to ensure that the airworthiness review staff are present.



2. The physical survey may include verifications to be carried out during flight.
3. The M.A. Subpart G organisation should develop procedures for the airworthiness review staff to produce a compliance report that confirms the physical survey has been carried out and found satisfactory.
4. To ensure compliance the physical survey may include relevant sample checks of items.

#### **AMC M.A.710(d) Airworthiness review**

“Without loss of continuity of the airworthiness review pattern” means that the new expiration date is set up one year after the previous expiration date. As a consequence, when the airworthiness review is anticipated, the validity or the airworthiness review certificate is longer than one year (up to 90 days longer).

This anticipation of up to 90 days also applies to the 12 month requirements shown in M.A.901(b), which means that the aircraft is still considered as being in a controlled environment if it has been continuously managed by a single organisation and maintained by appropriately approved organisations, as stated in M.A.901(b), from the date when the last airworthiness review certificate was issued until the date when the new airworthiness review is performed (this can be up to 90 day less than 12 months).

#### **AMC M.A.710(e) Airworthiness review**

A copy of both physical survey and document review compliance reports stated above should be sent to the CAA together with any recommendation issued.

### **MCAR-M.A.711 Privileges of the organisation**

- (a) A continuing airworthiness management organisation approved in accordance with Section A, Subpart G of this Regulation may:
1. manage the continuing airworthiness of aircraft, except those involved in commercial air transport, 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. extend, under the conditions of point M.A.901(f), an airworthiness review certificate that has been issued by the CAA or by another continuing airworthiness management organisation approved in accordance with Section A, Subpart G of this Regulation;
- (b) An approved continuing airworthiness management organisation registered in one of the Member States may, additionally, be approved to carry out airworthiness reviews referred to in point M.A.710 and:
1. issue the related airworthiness review certificate and extend it in due time under the conditions of points M.A.901(c)2 or M.A.901(e)2; and,
  2. issue a recommendation for the airworthiness review to the CAA.
- (c) A continuing airworthiness management organisation whose approval includes the privileges referred to in point M.A.711(b) may additionally be approved to issue a permit to fly in accordance with MCAR-21.A.711(d) of MCAR-21 for the particular aircraft for which the organisation is approved to issue the airworthiness review certificate, when the continuing airworthiness management organisation is attesting conformity with approved flight conditions, subject to an adequate approved procedure in the exposition referred to in point M.A.704.

### **AMC M.A.711(b) Privileges of the organisation**

An organisation may be approved for the privileges of M.A.711(a) only, without the privilege to carry out airworthiness reviews. This can be contracted to another appropriately approved organisation. In such a case, it is not mandatory that the contracted organisation is linked to an AOC holder, being possible to contract an appropriately approved independent continuing airworthiness management organisation which is approved for the same aircraft type

In order to be approved for the privileges of M.A.711(b) for a particular aircraft type, it is necessary to be approved for the privileges of M.A.711(a) for that aircraft type. As a consequence, the normal situation in this case is that the organisation will be performing continuing airworthiness management tasks and performing airworthiness reviews on every aircraft type contained in the approval certificate.

Nevertheless, this does not necessarily mean that the organisation needs to be currently managing an aircraft type in order to be able to perform airworthiness reviews on that aircraft type. The organisation may be performing only airworthiness reviews on an aircraft type without having any customer under contract for that type.

Furthermore, this situation should not necessarily lead to the removal of the aircraft type from the organisation approval. As a matter of fact, since in most cases the airworthiness review staff are not involved in continuing airworthiness management activities, it cannot be argued that these airworthiness review staff are going to lose their skills just because the organisation is not managing a particular aircraft type. The important issue in relation to maintaining a particular aircraft type in the organisation approval is whether the organisation continuously fulfils all the M.A. Subpart G requirements (facilities, documentation, qualified personnel, quality system, etc.) required for initial approval.

### **AMC M.A.711(c)**

The sentence 'for the particular aircraft for which the organisation is approved to issue the airworthiness review certificate' contained in M.A.711(c) means that:

- For aircraft used in commercial air transport, and aircraft above 2730 kg MTOM, except balloons, the permit to fly can only be issued for aircraft which are in a controlled environment and are managed by that M.A. Subpart G organisation.
- For aircraft not involved in commercial air transport of 2730 kg MTOM and below, and for all balloons, the permit to fly can be issued for any aircraft.

## **MCAR-M.A.712 Quality system**

- (a) To ensure that the approved continuing airworthiness management organisation continues to meet 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 M.A. Subpart G activities. It shall at least include the following functions:
  - 1. monitoring that all 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 Part.
- (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 MCAR, the quality system may be combined with that required by the other regulation.
- (e) In case of commercial air transport the 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 the competent authority, except when the organisation issues airworthiness review certificates for aircraft above 2730 kg MTOM other than balloons. In the case where there is no quality system, the organisation shall not contract continuing airworthiness management tasks to other parties.

### **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 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 M.A. Subpart G organisation to ensure airworthy aircraft and to remain in compliance with the MCAR-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 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. It is intended to complement the M.A.902 requirement for an airworthiness review to be satisfied that all aircraft managed by the organisation remain airworthy.
5. The independent audit should ensure that all aspects of 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 the competent authority.

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 the competent authority of approval to show when and how often the activities as required by 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 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 the CAA:

- 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 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

### **MCAR-M.A.713 Changes to the approved continuing airworthiness organisation**

In order to enable the CAA to determine continued compliance with this Regulation, 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 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 MCAR-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 the competent authority during negotiations about any of the specified changes. Without this paragraph the approval would automatically be suspended in all cases.



### **MCAR-M.A.714 Record-keeping**

- (a) The continuing airworthiness management organisation shall record all details of work carried out. The records required by M.A.305 and if applicable M.A.306 shall be retained.
- (b) If the continuing airworthiness management organisation has the privilege referred to in point M.A.711(b), it shall retain a copy of each airworthiness review certificate and recommendation issued or, as applicable, extended, together with all supporting documents. In addition, the organisation shall retain a copy of any airworthiness review certificate that it has extended under the privilege referred to in point M.A.711(a)4.
- (c) If the continuing airworthiness management organisation has the privilege referred to in point M.A.711(c), it shall retain a copy of each permit to fly issued in accordance with the provisions of point 21.A.729 of MCAR-21.
- (d) The continuing airworthiness management organisation shall retain a copy of all records referred to in paragraphs (b) and (c) until two years after the aircraft has been permanently withdrawn from service.
- (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 M.A. Subpart G organisation should ensure that it always receives a complete CRS from the approved maintenance organisation 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 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 the CAA 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.

### **MCAR-M.A.715 Continued validity of approval**

- (a) An approval shall be issued for an unlimited duration. It shall remain valid subject to:
  - 1. the organisation remaining in compliance with this Regulation, in accordance with the provisions related to the handling of findings and;
  - 2. the CAA being granted access to the organisation to determine continued compliance with this Regulation, and;
  - 3. the approval not being surrendered or revoked.
- (b) Upon surrender or revocation, the approval certificate shall be returned to the CAA.

### **MCAR-M.A.716 Findings**

- (a) A level 1 finding is any significant non-compliance with MCAR-M requirements which lowers the safety standard and hazards seriously the flight safety.
- (b) A level 2 finding is any non-compliance with the MCAR-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 the CAA within a period agreed with this authority.

## **Subpart H — CERTIFICATE OF RELEASE TO SERVICE – CRS**

### **MCAR-M.A.801 Aircraft certificate of release to service**

- (a) Except for aircraft released to service by a maintenance organisation approved in accordance with MCAR-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 this Regulation (MCAR-M); or
  - 2. certifying staff in compliance with the requirements laid down in MCAR-66 (independent certifying staff), except for complex maintenance tasks listed in Appendix VII to this Regulation for which point 1 applies; or
  - 3. by the Pilot-owner in compliance with point M.A.803;
- (c) By derogation from point M.A.801(b)2 for ELA1 aircraft not used in commercial air transport, aircraft complex maintenance tasks listed in Appendix VII may be released by certifying staff referred to in point M.A.801(b)2;
- (d) By derogation from point 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 this Regulation or MCAR-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 this Regulation 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 M.A.801(b) or an organisation approved in accordance with Section A, Subpart F of this Regulation, or with MCAR-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 M.A.201(e), or the competent authority 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 M.A.801(b)2 or point 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 this Regulation (MCAR-M) and the certifying staff issuing such a certificate; or
    - ii. in the case of point M.A.801(b)2 or 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 endangers 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 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 MCAR-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 MCAR-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 a 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 the competent authority 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 an 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 M.A.801 (b) means that the maintenance required by the aircraft owner or 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 M.A. Subpart G organisation is responsible for ensuring that all required maintenance has been carried out before flight. Therefore an aircraft owner or M.A. Subpart G organisation should be informed and agree to the deferment of full compliance with 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 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 M.A. Subpart G organisation so that the issue may be discussed and resolved with the aircraft owner or 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.

**MCAR-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 point M.A.502.
- (b) The authorised release certificate identified as CAA Form I constitutes the component certificate of release to service, except when such maintenance on aircraft components has been performed in accordance with point M.A.502(b) or point M.A.502(d) in which case the maintenance is subject to aircraft release procedures in accordance with point 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 CAA Form I may not be necessary depending upon the organisation's internal release procedures, however all the information normally required for the CAA Form I should be adequately detailed in the certificate of release to service.

### **MCAR-M.A.803 Pilot-owner authorisation**

- (a) To qualify as a Pilot-owner, the person must:
1. hold a valid pilot licence (or equivalent) issued or validated by the CAA 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 a certificate of release to service after limited Pilot-owner maintenance as 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 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 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 MCAR-M. 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. An equivalent valid Pilot-owner license may be any document attesting a pilot qualification recognised by the CAA. In such a case, the equivalent certificate or qualification number should be used instead of the pilot's licence number for the purpose of the M.A.801(b)3 (certificate of release to service).

## **Subpart I — AIRWORTHINESS REVIEW CERTIFICATE**

### **MCAR-M.A.901 Aircraft airworthiness review**

To ensure the validity of the aircraft airworthiness certificate an airworthiness review of the aircraft and its continuing airworthiness records shall be carried out periodically.

- (a) An airworthiness review certificate is issued in accordance with Appendix III (CAA Form 15a or 15b) on completion of a satisfactory airworthiness review. The airworthiness review certificate is valid one year;
- (b) An aircraft in a controlled environment is an aircraft
  - (i) continuously managed during the previous 12 months by a unique continuing airworthiness management organisation approved in accordance with Section A, Subpart G, of this Regulation, and
  - (ii) which has been maintained for the previous 12 months by maintenance organisations approved in accordance with Section A, Subpart F of this Regulation, or with MCAR-145. This includes maintenance tasks referred to in point M.A.803(b) carried out and released to service in accordance with point M.A.801(b)2 or point M.A.801(b)3;
- (c) For all aircraft used in commercial air transport, and aircraft above 2730 kg MTOM, except balloons, that are in a controlled environment, the organisation referred to in (b) managing the continuing airworthiness of the aircraft may, if appropriately approved, and subject to compliance with paragraph (k):
  - 1. issue an airworthiness review certificate in accordance with point M.A.710, and;
  - 2. for the airworthiness review certificates it has issued, when the aircraft has remained within a controlled environment, extend twice the validity of the airworthiness review certificate for a period of one year each time;
- (d) For all aircraft used in commercial air transport and aircraft above 2730 kg MTOM, except balloons, that
  - (i) are not in a controlled environment, or
  - (ii) which continuing airworthiness is managed by a continuing airworthiness management organisation that does not hold the privilege to carry out airworthiness reviews, the airworthiness review certificate shall be issued by the CAA upon satisfactory assessment based on a recommendation made by a continuing airworthiness management organisation appropriately approved in accordance with Section A, Subpart G of this Regulation sent together with the application from the owner or operator. This recommendation shall be based on an airworthiness review carried out in accordance with point M.A.710;
- (e) For aircraft not used in commercial air transport of 2730 kg MTOM and below, and balloons, any continuing airworthiness management organisation approved in accordance with Section

A, Subpart G of this Regulation and appointed by the owner or operator may, if appropriately approved and subject to paragraph (k):

1. issue the airworthiness review certificate in accordance with point M.A.710, and;
  2. for airworthiness review certificates it has issued, when the aircraft has remained within a controlled environment under its management, extend twice the validity of the airworthiness review certificate for a period of one year each time;
- (f) By derogation from points M.A.901(c)2 and M.A.901(e)2, for aircraft that are in a controlled environment, the organisation referred to in (b) managing the continuing airworthiness of the aircraft, subject to compliance with paragraph (k), may extend twice for a period of one year each time the validity of an airworthiness review certificate that has been issued by the CAA or by another continuing airworthiness management organisation approved in accordance with Section A, Subpart G of this Regulation;
- (g) By derogation from points M.A.901(e) and M.A.901(i)2, for ELA1 aircraft not used in commercial air transport and not affected by point M.A.201(i), the airworthiness review certificate may also be issued by the CAA upon satisfactory assessment, based on a recommendation made by certifying staff formally approved by the CAA and complying with provisions of MCAR-66 as well as requirements laid down in point M.A.707(a)2(a), sent together with the application from the owner or operator. This recommendation shall be based on an airworthiness review carried out in accordance with point M.A.710 and shall not be issued for more than two consecutive years;
- (h) Whenever circumstances reveal the existence of a potential safety threat, the CAA shall carry out the airworthiness review and issue the airworthiness review certificate itself;
- (i) In addition to paragraph (h), the CAA may also carry out the airworthiness review and issue the airworthiness review certificate itself in the following cases:
1. when the aircraft is managed by a continuing airworthiness management organisation approved in accordance with Section A, Subpart G of this Regulation located outside Maldives;
  2. for all balloons and any other aircraft of 2730 kg MTOM and below, if it is requested by the owner;
- (j) When the CAA carries out the airworthiness review and/or issues the airworthiness review certificate itself, the owner or operator shall provide the CAA with:
1. the documentation required by the CAA; and
  2. suitable accommodation at the appropriate location for its personnel; and
  3. when necessary, the support of personnel appropriately qualified in accordance with MCAR-66 or equivalent personnel requirements laid down in point 145.A.30(j)(1) and (2) of MCAR-145;

- (k) An airworthiness review certificate cannot be issued nor extended if there is evidence or reason to believe that the aircraft is not airworthy.

### **AMC M.A.901 Aircraft airworthiness review**

In order to ensure the validity of the aircraft airworthiness certificate, M.A.901 requires performing periodically an airworthiness review of the aircraft and its continuing airworthiness records, which results in the issuance of an airworthiness review certificate valid for one year.

#### **AMC M.A.901(a) Aircraft airworthiness review**

CAA Form 15a is issued by the CAA while CAA Form 15b is issued by a M.A. Subpart G organisation.

#### **AMC M.A.901(b) Aircraft airworthiness review**

1. If the continuing airworthiness of the aircraft is not managed according to a MCAR-M appendix I arrangement between the owner and the M.A. Subpart G organisation, the aircraft should be considered to be outside a controlled environment. Nevertheless, such arrangement is not necessary when the operator and the M.A. Subpart G organisation are the same organisation.
2. The fact that limited pilot-owner maintenance as defined in M.A.803 (b) is not carried out and released by an approved maintenance organisation does not change the status of an aircraft in a controlled environment providing the M.A. Subpart G organisation under contract has been informed of any such maintenance carried out.

#### **AMC M.A.901(c)(2),(e)(2) and (f) Aircraft airworthiness review**

When the aircraft has remained within a controlled environment, the extension of the validity of the airworthiness review certificate does not require an airworthiness review but only a verification of the continuous compliance with M.A.901 (b).

It is acceptable to anticipate the extension of the airworthiness review certificate by a maximum of 30 days without a loss of continuity of the airworthiness review pattern, which means that the new expiration date is set up one year after the previous expiration date. This anticipation of up to 30 days also applies to the 12 month requirements shown in M.A.901(b), meaning that the aircraft is still considered as being in a controlled environment if it has been continuously managed by a single organisation and maintained by appropriately approved organisations, as stated in M.A.901(b), from the date when the last airworthiness review certificate was issued until the date when the extension is performed (this can be up to 30 days less than 12 months).

It is also acceptable to perform the extension of an airworthiness review certificate after its expiration date, as long as all the conditions for the extension are met. However, this means the following:

- The aircraft could not fly since the airworthiness review certificate expired until it is extended, and
- The new expiration date (after extension) is set one year after the previous expiration date (not one year after the extension is performed).

#### **AMC M.A.901(d) and (g) Aircraft airworthiness review**

The recommendation sent to the CAA should contain at least the items described below.

- (a) General information
  - M.A. Subpart G organisation information
  - owner/lessee information
  - date and place the document review and the aircraft survey were carried out
  - period and place the aircraft can be seen if required by the CAA
- (b) Aircraft information
  - registration
  - type
  - manufacturer
  - serial number
  - flight manual reference
  - weight and centre of gravity data
  - maintenance programme reference
- (c) Documents accompanying the recommendation
  - copy of registration papers
  - copy of the owners request for a new airworthiness review certificate
- (d) Aircraft status
  - aircraft total time and cycles
  - list of persons or organisations having carried out continuing airworthiness activities including maintenance tasks on the aircraft and its components since the last airworthiness review certificate
- (e) Aircraft survey
  - a precise list of the areas of the aircraft that were surveyed and their status
- (f) Findings
  - a list of all the findings made during the airworthiness review with the corrective action carried out
- (g) Statement

A statement signed by the airworthiness review staff recommending the issue of an airworthiness review certificate.

The statement should confirm that the aircraft in its current configuration complies with the following:

- airworthiness directives up to the latest published issue, and;
- type certificate datasheet, and;
- maintenance programme, and;
- component service life limitations, and;
- the valid weight and centre of gravity schedule reflecting the current configuration of the aircraft, and;
- MCAR-21 for all modifications and repairs, and;
- the current flight manual including supplements, and;
- operational requirements.



The above items should clearly state the exact reference of the data used in establishing compliance; for instance the number and issue of the type certificate data sheet used should be stated.

The statement should also confirm that all of the above is properly entered and certified in the aircraft continuing airworthiness record system and/or in the operator's technical log.

### **AMC M.A.901(g) Aircraft airworthiness review**

The words “certifying staff” mean that the personnel meet at the time of the airworthiness review all the MCAR-66 requirements to be certifying staff for the aircraft subject to review (including also continuing experience requirements).

The formal acceptance of the certifying staff by the CAA should only be granted after verification of the qualifications and after the satisfactory performance of an airworthiness review under supervision of the CAA.

The sentence “shall not be issued for more than two consecutive years” means that every three years the airworthiness review has to be performed by the CAA or by an appropriately approved M.A. Subpart G organisation.

### **AMC M.A.901(j) Aircraft airworthiness review**

Suitable accommodation should include:

- (a) an office with normal office equipment such as desks, telephones, photocopying machines etc. whereby the continuing airworthiness records can be reviewed.
- (b) a hangar when needed for the physical survey.

The support of personnel appropriately qualified in accordance with MCAR-66 is necessary when the CAA's airworthiness review staff is not appropriately qualified.

### **MCAR-M.A.902 Validity of the airworthiness review certificate**

- (a) An airworthiness review certificate becomes invalid if:
1. suspended or revoked; or
  2. the airworthiness certificate is suspended or revoked; or
  3. the aircraft is not on the aircraft register of the Maldives; or
  4. the type certificate under which the airworthiness certificate was issued is suspended or revoked.
- (b) An aircraft must not fly if the airworthiness certificate is invalid or if:
1. the continuing airworthiness of the aircraft or any component fitted to the aircraft does not meet the requirements of this Regulation; or
  2. the aircraft does not remain in conformity with the type design approved by the State of Design; or
  3. the aircraft has been operated beyond the limitations of the approved flight manual or the airworthiness certificate, without appropriate action being taken; or
  4. the aircraft has been involved in an accident or incident that affects the airworthiness of the aircraft, without subsequent appropriate action to restore airworthiness; or
  5. a modification or repair is not in compliance with the MCAR-21.
- (c) Upon surrender or revocation, the airworthiness review certificate shall be returned to the CAA.

### **MCAR-M.A.903 (Reserved)**

### **MCAR-M.A.904 Airworthiness review of imported aircraft**

- (a) When importing an aircraft, the applicant shall:
  1. apply to the CAA for the issuance of a new airworthiness certificate in accordance with MCAR-21; and
  2. for aircraft other than new, have an airworthiness review carried out satisfactorily in accordance with point M.A.901; and
  3. have all maintenance carried out to comply with the approved maintenance programme in accordance with point M.A.302.
- (b) When satisfied that the aircraft is in compliance with the relevant requirements, the continuing airworthiness management organisation, if applicable, shall send a documented recommendation for the issuance of an airworthiness review certificate to the CAA.
- (c) The owner shall allow access to the aircraft for inspection by the CAA.
- (d) A new airworthiness certificate will be issued by the CAA when it is satisfied the aircraft complies with the prescriptions of MCAR-21.
- (e) The CAA shall also issue the airworthiness review certificate valid normally for one year unless the CAA has safety reason to limit the validity.

### **AMC M.A.904 (a)(1) Airworthiness reviews of Imported aircraft**

In order to allow for possible participation of authority personnel, the applicant should inform the CAA at least 10 working days in advance of the time and location of the airworthiness review.

### **AMC M.A.904 (a)(2) Airworthiness reviews of Imported aircraft**

1. When performing an airworthiness review of imported aircraft, the aircraft and the relevant records should be reviewed to determine the work to be undertaken to establish the airworthiness of the aircraft.
2. In determining the work to be undertaken during the airworthiness review on the aircraft, the following should be taken into consideration:
  - (a) the information from exporting country authorities such as export certificate of airworthiness, primary authority information;
  - (b) the information on aircraft maintenance history such as continuing airworthiness records, aircraft, engine, propeller, rotor and life limited part log books or cards as appropriate, tech log/flight log/cabin log, list of deferred defects, total flight times and cycles, times and cycles since last maintenance, accident history, former maintenance schedule, former AD compliance status;
  - (c) the information on aircraft such as aircraft, engine and propeller type certificate datasheets, noise and emission certificate data sheets, flight manual and supplements;

- (d) the aircraft continuing airworthiness status such as the aircraft and component AD status, the SB status, the maintenance status, the status of all service life limited components, weight and centre of gravity schedule including equipment list;
  - (e) the modification and repair status of the aircraft detailing elements such as owner/operator designed modifications and repairs, STCs, etc.
  - (f) the aircraft cabin configuration such as emergency equipment fitted, cockpit configuration, placards, instrument limitations, cabin layout;
  - (g) the maintenance needed for import, such as embodiment of modifications needed to comply with the type certificate, bridging check to comply with the new maintenance programme;
  - (h) the avionics such as, but not limited to, radio and navigation equipment, instrument flight rules (IFR) equipment, digital flight data recorder (DFDR)/cockpit voice recorder (CVR) test, emergency locator transmitter (ELT) 406 MHz code and identification;
  - (i) the compass compensation;
  - (j) special operating rules such as extended twin-engine operations (ETOPS)/long range operations (LROPS), reduced vertical separation minima (RVSM), minimum navigation performance specifications (MNPS), all weather operations (AWOPS), area navigation (RNAV);
  - (k) the aircraft survey including verification of conformity with the flight manual and the datasheet, presence of fire proof identification plates, conformity of markings including registration, presence and serviceability of emergency equipment, internal and external lighting systems, and
  - (l) check flight including check of control system/cockpit ground check/engine run up.
3. If there is no M.A. Subpart G organisation approved for the specific aircraft type available, the CAA may carry out the airworthiness review in accordance with this paragraph and the provisions M.A.901(h). In this case, the airworthiness review should be requested to the CAA.

### **AMC M.A.904(b) Airworthiness review of imported aircraft**

The recommendation sent to the CAA should contain at least the items described below.

- (a) All the information set forth by AMC M.A 901(d) & (g)
- (b) Aircraft information
  - aircraft assigned registration
  - state of manufacturer
  - previous registration
  - export certificate number
  - TC and TC data sheet numbers

- noise and emissions TC and TC data sheet numbers
  - comparison of prior maintenance programme with the proposed new maintenance programme.
- (c) Documents accompanying the recommendation
- copy of the application, and;
  - original export certificate, and;
  - copy of the approvals of the flight manual and its supplements, and;
  - list of ADs incorporated up to the latest published issue, and;
  - proposed new maintenance programme, and;
  - status of all service life limited components, and;
  - the valid weight and centre of gravity schedule reflecting the current configuration of the aircraft, and;
  - MCAR-21 approval reference for all modifications and repairs.
- (d) Maintenance
- a copy of the work packages requested by the M.A. Subpart G organisation including details of any bridging check to ensure all the necessary maintenance has been carried out.
- (e) Aircraft check flight
- a copy of the check flight report

### **MCAR-M.A.905 Findings**

- (a) A level 1 finding is any significant non-compliance with MCAR-M requirements which lowers the safety standard and hazards seriously the flight safety.
- (b) A level 2 finding is any non-compliance with the MCAR-M requirements which could lower the safety standard and possibly hazard the flight safety.
- (c) After receipt of notification of findings, the person or organisation accountable referred to in point M.A.201 shall define a corrective action plan and demonstrate corrective action to the satisfaction of the competent authority within a period agreed with this authority including appropriate corrective action to prevent reoccurrence of the finding and its root cause.

## **Section B – PROCEDURE FOR THE CAA**

(INTENTIONALLY LEFT BLANK)



## **APPENDICES TO THE RULES**

## Appendix I Continuing Airworthiness Arrangement

1. When an owner contracts an M.A. Subpart G approved continuing airworthiness organisation in accordance with M.A.201 to carry out continuing airworthiness management tasks, upon request by the CAA a copy of the arrangement shall be sent by the owner to the CAA once it has been signed by both parties.
2. The arrangement shall be developed taking into account the requirements of this Regulation 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,
  - 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 the CAA, 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 CAA within two full weeks.”

5. When an owner contracts an M.A. Subpart G approved continuing airworthiness organisation in accordance with M.A.201 the obligations of each party shall be shared as follows:

### 5.1 Obligations of the approved organisation:

1. have the aircraft 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 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, airworthiness reviews 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 in accordance with MCAR-21 before it is embodied;
  4. organise the approval of any repair to the aircraft in accordance MCAR-21 before it is carried out;
  5. inform the CAA whenever the aircraft is not presented to the approved maintenance organisation by the owner as requested by the approved organisation;
  6. inform the CAA whenever the present arrangement has not been respected;
  7. carry out the airworthiness review of the aircraft when necessary and issue the airworthiness review certificate or the recommendation to the CAA;
  8. send within 10 days a copy of any airworthiness review certificate issued or extended to the CAA;

9. carry out all occurrence reporting mandated by applicable regulations;
10. inform the CAA 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 this regulation;
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 the CAA whenever the present arrangement is denounced by either party;
8. inform the CAA and the approved organisation whenever the aircraft is sold;
9. carry out all occurrence 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 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 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 M.A.305(a).

## Appendix II Authorised Release Certificate CAA Form I

These instructions relate only to the use of the CAA Form I for maintenance purposes. Attention is drawn to MCAR-21 which covers the use of the CAA Form I for production purposes.

### I. PURPOSE AND USE

- I.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)').
- I.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.
- I.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.
- I.4 The Certificate is not a delivery or shipping note.
- I.5 Aircraft are not to be released using the Certificate.
- I.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.
- I.7 A mixture of production released and maintenance released items is not permitted on the same Certificate.

### 2. GENERAL FORMAT

- 2.1 The Certificate must comply with the format attached including block numbers and the location of each block. 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 the Competent Authority.
- 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 A 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 CERTIFICATE BY THE ORIGINATOR

#### **Block 1 Approving Competent Authority/Country**

Enter "Maldives Civil Aviation Authority".

#### **Block 2 CAA Form 1 header**

"AUTHORISED RELEASE CERTIFICATE  
CAA 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 CAA 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 holder's, or equipment manufacturer's instructions for continued airworthiness, or in the data which is approved or accepted by the Authority. 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 (\*).

### **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 CAA 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 this Regulation (MCAR-M), the component certificate of release to service statement referred to in point 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 this Regulation and in respect to that work the item is considered ready for release to service. THIS IS NOT A RELEASE UNDER MCAR-145.”

If printing the data from an electronic CAA Form 1, any appropriate data not fit for other blocks should be entered in this block.

### **Block 13a-13e**

General Requirements for blocks 13a-13e: Not used for maintenance release. Shade, darken, or otherwise mark to preclude inadvertent or unauthorised use.



### **Block I4a**

Mark the appropriate box(es) indicating which regulations apply to the completed work. If the box “other regulations specified in block I2” is marked, then the regulations of the other airworthiness authority(ies) must be identified in block I2. 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 of this Regulation, the box “other regulation specified in block I2” shall be ticked and the certificate of release to service statement made in block I2. 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 this Regulation.
- (c) Where the maintenance was carried out in accordance with a requirement other than that specified in this Regulation. In this case block I2 shall specify the particular national regulation.

For all maintenance carried out by maintenance organisations approved in accordance with Section A of MCAR-I45, the certification statement “unless otherwise specified in block I2” 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 MCAR-I45.
- (c) Where the maintenance was carried out in accordance with a requirement other than that specified in MCAR-I45. In this case block I2 shall specify the particular national regulation.

### **Block I4b Authorised Signature**

This space shall be completed with the signature of the authorised person. Only persons specifically authorised under the rules and policies of the CAA are permitted to sign this block. To aid recognition, a unique number identifying the authorised person may be added.

### **Block I4c Certificate/Approval Number**

Enter the Certificate/Approval number/reference. This number or reference is issued by the CAA.

### **Block I4d Name**

Enter the name of the person signing block I4b in a legible form.

### **Block I4e 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

### **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 I, IT IS ESSENTIAL THAT THE USER/INSTALLER ENSURES THAT HIS/HER AIRWORTHINESS AUTHORITY ACCEPTS ITEMS FROM THE AIRWORTHINESS AUTHORITY SPECIFIED IN BLOCK I.

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.”

<b>2. AUTHORISED RELEASE CERTIFICATE</b> CAA FORM I			
1. Approving Competent Authority/Country: Maldives Civil Aviation Authority		3. Form Tracking Number:	
4. Organisation Name and Address:			
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: <input type="checkbox"/> approved design data and are in a condition for safe operation <input type="checkbox"/> non-approved design data specified in block 12			
13b. Authorised Signature:		14a. <input type="checkbox"/> MCAR-145.A.50 Release to Service <input type="checkbox"/> Other regulations specified 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 MCAR-145 and in respect to that work the items are considered ready for release to service.	
13c. Approval / Authorisation Number:		14b. Authorised Signature:	
13d. Name		14c. Certificate / Approval Ref. no.	
13e. Date (dd/mm/yyyy)		14d. Name	
13f. Date (dd/mm/yyyy)		14e. Date (dd/mm/yyyy)	
<b>USER/INSTALLER RESPONSIBILITIES</b> 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 issued in accordance with the national regulations by the user/installer before the aircraft may be flown.			

## **AMC to Appendix II to MCAR-M Use of the CAA Form I for maintenance**

### **1. The following formats of an issued CAA Form I 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 CAA Form I or equivalent when complying with the following subparagraph 2.

### **2. Electronic signature and electronic exchange of the CAA Form I**

#### **(a) Submission to the CAA**

Any organisation intending to implement an electronic signature procedure to issue CAA Form I and/or to exchange electronically such data contained on the CAA Form I, should document it and submit it to the CAA as part of the documents attached to its exposition.

#### **(b) Characteristics of the electronic system generating the CAA Form I**

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 CAA Form I (recording and record keeping) with suitable security, safeguards and backups;
- be active only at the location where the part is being released with an CAA Form I;
- 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 and/or European requirements may need to be satisfied when operating electronic systems. ~~'Directive 1999/93/EC of the European Parliament and of the Council of 13 December 1999 on a Community framework for electronic signatures', as last amended, may constitute a reference.~~

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 CAA Form I may contain additional data such as;

- Manufacturer code;
- Customer identification code;
- Workshop report;
- Inspection results;
- etc.

(c) Characteristics of the CAA Form I generated from the electronic system

To facilitate understanding and acceptance of the CAA Form I released with an electronic signature, the following statement should be in Block I4b: '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 CAA Form I should meet the general format as specified in Appendix II to MCAR-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 CAA Form I.

Additional information not required by the CAA Form I completion instructions may be added to the printed copies of CAA Form I, as long as the additional data do not prevent a person from filling out, issuing, printing, or reading any portion of the CAA Form I. 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 CAA Form I

The electronic exchange of the electronic CAA Form I should be accomplished on a voluntary basis. Both parties (issuer and receiver) should agree on electronic transfer of the CAA Form I.

For that purpose, the exchange needs to include:

- all data of the CAA Form I, including referenced data required by the CAA Form I completion instructions;
- all data required for authentication of the CAA Form I.

In addition, the exchange may include:

- data necessary for the electronic format;
- additional data not required by the CAA Form I completion instructions, such as manufacturer code, customer identification code.

The system used for the exchange of the electronic CAA Form I 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 CAA Form I 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 CAA Form I.

The receiver should be capable of regenerating the CAA Form I 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 MCAR-M Use of the CAA Form I for maintenance**

### **CAA Form I Block I2 ‘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 I1. 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 – CAA Form 15



**MALDIVES CIVIL AVIATION AUTHORITY**  
**REPUBLIC OF MALDIVES**

بِسْمِ اللّٰهِ الرَّحْمٰنِ الرَّحِیْمِ

**ARC Reference**  
**MV-MI-XXXX Issue X**

#### AIRWORTHINESS REVIEW CERTIFICATE

Pursuant to Civil Aviation Regulations for the time being in force, the Civil Aviation Authority hereby certifies that the following aircraft:

<b>Aircraft manufacturer:</b>	
<b>Manufacturer's designation:</b>	
<b>Aircraft registration:</b>	
<b>Aircraft Serial Number:</b>	

is considered to be airworthy at the time of the review.

<b>Date of Issue</b>		<b>Date of expiry</b>	
<b>Signed</b>		<b>Authorisation No:</b>	

**1st Extension:** The aircraft has remained in a controlled environment according to MCAR-M.901 for the last year. The aircraft is considered to be airworthy of the time of the issue.

<b>Date of Issue</b>		<b>Date of expiry</b>	
<b>Signed</b>		<b>Authorisation No:</b>	
<b>Company name:</b>		<b>Approval reference:</b>	

**2nd Extension:** The aircraft has remained in a controlled environment according to MCAR-M.901 for the last year. The aircraft is considered to be airworthy at the time of the issue.

<b>Date of Issue</b>		<b>Date of expiry</b>	
<b>Signed</b>		<b>Authorisation No:</b>	
<b>Company name:</b>		<b>Approval reference:</b>	

CAA Form 15a (Issue 4, 26 March 2014)

## **Appendix IV Class and Ratings System to be used for the Approval of Maintenance Organisations referred to in this Regulation (MCAR-M) Subpart F and MCAR-145**

1. Except as stated otherwise for the smallest organisations in paragraph 12, the table referred to in point 13 provides the standard system for the approval of maintenance organisation under Subpart F of this Regulation (MCAR-M) and MCAR-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 in point 13, the approved maintenance organisation is required to indicate its scope of work in its maintenance organisation manual/exposition. See also paragraph 11.
3. Within the approval class(es) and rating(s) granted by the CAA, 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 organisations 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 the CAA, 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 the CAA. 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 the CAA, 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 the competent authority. The maintenance organisation exposition scope of work shall reflect such activity where permitted by the CAA.
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 the competent authority. The maintenance organisation exposition scope of work shall reflect such activity where permitted by the CAA.

7. A category D class rating is a self contained class rating not necessarily related to a specific aircraft, engine or other component. The DI – Non Destructive Testing (NDT) rating is only necessary for an approved maintenance organisation that carries out NDT as a particular task for another organisation. A maintenance organisation approved 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 DI class rating.
8. In the case of maintenance organisations approved in accordance with MCAR-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 the CAA 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 may be in accordance with the indirect approval procedure referred to in points M.A.604(c) or 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:

<b>CLASS</b>	<b>RATING</b>	<b>LIMITATION</b>
CLASS AIRCRAFT	RATING A2 AEROPLANES 5700 KG AND BELOW	PISTON ENGINE 5700 KG AND BELOW
CLASS AIRCRAFT	RATING A3 HELICOPTERS	SINGLE PISTON ENGINE

		3175 KG AND BELOW
CLASS AIRCRAFT	RATING A4 AIRCRAFT OTHER THAN A1, A2 AND A3	NO LIMITATION
CLASS ENGINE	RATING B2 PISTON	LESS THAN 450 HP
CLASS COMPONENTS RATING OTHER THAN COMPLETE ENGINES OR APU'S.	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 the CAA in the scope of approval dependent upon the capability of the particular organisation.

13. Table

CLASS	RATING	LIMITATION	BASE	LINE
<b>AIRCRAFT</b>	A1 Aeroplanes above 5700 kg	[Rating reserved to Maintenance Organisations approved in accordance with MCAR-145] [State aeroplane manufacturer or group or series or type and/or the maintenance tasks] <i>Example: Airbus A320 Series</i>	YES <input type="checkbox"/> NO <input type="checkbox"/>	YES <input type="checkbox"/> NO <input type="checkbox"/>
	A2 Aeroplanes 5700 kg and below	[State aeroplane manufacturer or group or series or type and/or the maintenance tasks] <i>Example: DHC-6 Twin Otter Series</i>	YES <input type="checkbox"/> NO <input type="checkbox"/>	YES <input type="checkbox"/> NO <input type="checkbox"/>
	A3 Helicopters	[State helicopter manufacturer or group or series or type and/or the maintenance task(s)] <i>Example: Robinson R44</i>	YES <input type="checkbox"/> NO <input type="checkbox"/>	YES <input type="checkbox"/> NO <input type="checkbox"/>
	A4 Aircraft other than A1, A2 and A3	[State aircraft series or type and/or the maintenance task(s).]	YES <input type="checkbox"/> NO <input type="checkbox"/>	YES <input type="checkbox"/> NO <input type="checkbox"/>
<b>ENGINES</b>	B1 Turbine	[State engine series or type and/or the maintenance task(s)] <i>Example: PT6A Series</i>		
	B2 Piston	[State engine manufacturer or group or series or type and/or the maintenance task(s)]		
	B3 APU	[State engine manufacturer or series or type and/or the maintenance task(s)]		
<b>COMPONENTS OTHER THAN COMPLETE ENGINES OR APUs</b>	C1 Air Cond & Press	[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).] <i>Example: PT6A Fuel Control</i>		
	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			
<b>SPECIALISED SERVICES</b>	D1 Non Destructive Testing	[State particular NDT methods)]		

## Appendix V Maintenance Organisation Approval referred to in MCAR-M Subpart F

بِسْمِ اللّٰهِ الرَّحْمٰنِ الرَّحِیْمِ

 **MALDIVES CIVIL AVIATION AUTHORITY**  
**REPUBLIC OF MALDIVES**

**Reference:**  
**MV.MF.XXXX**

**MAINTENANCE ORGANISATION APPROVAL CERTIFICATE**

Pursuant to Civil Aviation Regulations for the time being in force and subject to the conditions specified below, the Civil Aviation Authority hereby certifies:

[COMPANY NAME]  
[COMPANY ADDRESS]

as a maintenance organisation in compliance with MCAR-M Section A Subpart F, 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 references.

**CONDITIONS**

1. This approval is limited to that specified in the scope of approval section of the approved maintenance organisation manual as referred to in Section A of Subpart F of MCAR-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 MCAR-M.
4. Subject to compliance with the foregoing conditions, this approval shall remain valid for an unlimited duration unless the approval has previously been surrendered, superseded, suspended or revoked.

**Revision Number:**  
**Date of this Revision:**  
**Date of Original Issue:**

**Signed:**  
**For the Civil Aviation Authority**

**MAINTENANCE ORGANISATION APPROVAL SCHEDULE**

Reference: **MV.MF.XXXX**

Organisation: **[COMPANY NAME]**

<b>CLASS</b>	<b>RATING</b>		<b>LIMITATION</b>
AIRCRAFT (**)	(***)		(***)
	(***)		(***)
ENGINES (**)	(***)		(***)
	(***)		(***)
COMPONENTS OTHER THAN COMPLETE ENGINES OR APUs (**)	(***)	(***)	(***)
	(***)	(***)	(***)
	(***)	(***)	(***)
	(***)	(***)	(***)
	(***)	(***)	(***)
	(***)	(***)	(***)
SPECIALISED SERVICES (**)	(***)	(***)	(***)
	(***)	(***)	(***)

This approval is limited to the products, parts and appliances and to the activities specified in the scope of work section of the approved maintenance organisation manual.

**Maintenance Organisation Exposition Reference:**

**Revision Number:**  
**Date of this Revision:**  
**Date of Original Issue:**

**Signed:**  
**For the Civil Aviation Authority**

\*\* Delete as appropriate if the organisation is not approved  
 \*\*\* Complete with the appropriate rating and limitation

**AMC to Appendix V to MCAR-M MCAR-M Subpart F Maintenance Organisation Approval**


The following fields on page 2 “Maintenance Organisation Approval Schedule” of the maintenance organisation approval certificate should be completed as follows:

- Date of original issue: It refers to the date of the original issue of the maintenance organisation manual
- Date of last revision: It refers to the date of the last revision of the maintenance organisation manual affecting the content of the certificate. Changes to the maintenance organisation manual which do not affect the content of the certificate do not require the reissuance of the certificate.
- Revision No: It refers to the revision No of the last revision of the maintenance organisation manual affecting the content of the certificate. Changes to the maintenance organisation manual which do not affect the content of the certificate do not require the reissuance of the certificate.



## Appendix V Continuing Airworthiness Management Organisation Approval referred to in MCAR-M Subpart G

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

 **MALDIVES CIVIL AVIATION AUTHORITY**  
**REPUBLIC OF MALDIVES**

**Reference:**  
**MV.MG.XXXX (REF. AOC.MV.XXXX)**

**CONTINUING AIRWORTHINESS MANAGEMENT ORGANIZATION  
APPROVAL CERTIFICATE**

Pursuant to Civil Aviation Regulations and MCAR-M for the time being in force and subject to the conditions specified below, the Civil Aviation Authority hereby certifies:

**[COMPANY NAME]**  
**[COMPANY ADDRESS]**

as a continuing airworthiness management organisation in compliance with Section A, Subpart G of MCAR-M, approved to manage the continuing airworthiness of the aircraft listed in the attached schedule of approval and, when stipulated, to issue recommendations and airworthiness review certificates after an airworthiness review as specified in point M.A.710 of MCAR-M, and, when stipulated, to issue permits to fly as specified in point M.A.711(c) of MCAR-M

**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 MCAR-M, and
2. This approval requires compliance with the procedures specified in the MCAR-M approved continuing airworthiness management exposition, and
3. This approval is valid whilst the approved continuing airworthiness management organisation remains in compliance with MCAR-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 referred in 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 relations to the aircraft registrations specified in the AOC, unless otherwise explicitly stated by the CAA.
7. Subject to compliance with the previous conditions, this approval shall remain valid for an unlimited duration unless the approval has previously been surrendered, superseded, suspended or revoked.

**Revision No:**  
**Date of this revision:**  
**Date of original issue:**

**Signed:**  
**For the Civil Aviation Authority**

**CONTINUING AIRWORTHINESS MANAGEMENT ORGANIZATION  
 APPROVAL SCHEDULE**

Reference: **MV.MG.XXXX (Ref. AOC.MV.XXXX)**

Organisation: **[COMPANY NAME]**

<b>AIRCRAFT TYPE/SERIES/GROUP</b>	<b>AIRWORTHINESS REVIEW AUTHORISED</b>	<b>PERMITS TO FLY AUTHORISED</b>	<b>ORGANISATION(S) WORKING UNDER THE QUALITY SYSTEM</b>
	[YES / NO] (***)	[YES / NO] (***)	
	[YES / NO] (***)	[YES / NO] (***)	
	[YES / NO] (***)	[YES / NO] (***)	
	[YES / NO] (***)	[YES / NO] (***)	

This approval Schedule is limited to that specified in the scope of approval contained in the approved Continuing Airworthiness Management Exposition section -----

**Continuing Airworthiness Management Exposition reference:** -----

**Revision No:**  
**Date of this revision:**  
**Date of original issue:**

**Signed:**  
**For the Civil Aviation Authority**

\*\*\* Complete with the appropriate rating and limitation

### **AMC to Appendix V to MCAR-M Continuing Airworthiness Management Organisation Approval referred to in MCAR-M Subpart G**

The following fields on page 2 “Continuing Airworthiness Management Organisation Approval Schedule” of the continuing airworthiness management organisation approval certificate should be completed as follows:

- Date of original issue: It refers to the date of the original issue of the continuing airworthiness management exposition
- Date of last revision: It refers to the date of the last revision of the continuing airworthiness management exposition affecting the content of the certificate. Changes to the continuing airworthiness management exposition which do not affect the content of the certificate do not require the reissuance of the certificate.
- Revision No: It refers to the revision No of the last revision of the continuing airworthiness management exposition affecting the content of the certificate. Changes to the continuing airworthiness management exposition which do not affect the content of the certificate do not require the reissuance of the certificate.

## Appendix VII Complex Maintenance Tasks

The following constitutes the complex maintenance tasks referred to in M.A.502(d)3, M.A.801(b)2 and M.A.801(c):

- I. The modification, repair or replacement by riveting, bonding, laminating, or welding of any of the following airframe parts:
  - (a) a box beam;
  - (b) a 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 the CAA.

## Appendix VIII Limited Pilot-Owner Maintenance

In addition to the requirements laid down in this regulation, 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 this regulation) 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 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 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 equipments 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 points M.A.502(a), (b), (c) or (d).

The criteria 1 to 8 listed above can not be overridden by less restrictive instructions issued in accordance with “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 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 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 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 MCAR-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 Pilotowner maintenance referred to in 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 MCAR-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,	Yes

ATA	Area	Task	Aeroplanes ≤2730 kg
		excluding permanently installed bottles and systems.	
		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
32	Landing Gear	Wheels – Removal, replacement and servicing, including replacement of wheel bearings and lubrication.	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,	Yes**

ATA	Area	Task	Aeroplanes ≤2730 kg
		excluding automatic flight control systems, transponders, primary flight control system and IFR operations.	
		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	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

ATA	Area	Task	Aeroplanes ≤2730 kg
		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

ATA	Area	Task	Single Engine Rotorcraft <=2730 kg
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

ATA	Area	Task	Single Engine Rotorcraft <=2730 kg
		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 motorglider

ATA	Area	Task	SP	SSPS	SLPS / TM
8	Weighing	Recalculation – Small changes of the Trim plan without needing a reweighing.	Yes	Yes	Yes
9	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,	Yes	Yes	Yes

ATA	Area	Task	SP	SSPS	SLPS / TM
		flight computers but excluding required communication, navigation systems and engine wiring.			
		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 equipments – 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

ATA	Area	Task	SP	SSPS	SLPS / TM
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

ATA	Area	Task	SP	SSPS	SLPS / TM
		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/equipments.	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	Yes	Yes	Yes

ATA	Area	Task	SP	SSPS	SLPS / TM
		or operating systems, or interfere with control systems.			
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	Hot Air Airship	Hot Air Balloon	Gas Balloon
<b>A) ENVELOPE</b>			
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>B) BURNER</b>			
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
<b>C) BASKET AND GONDOLA</b>			
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
<b>D) FUEL CYLINDER</b>			
17- Liquid valve – replacement of O-rings in the outlet.	Yes	Yes	No
<b>E) INSTRUMENTS AND EQUIPMENT</b>			
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
<b>F) ENGINES</b>			
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

<b>Area</b>	<b>Hot Air Airship</b>	<b>Hot Air Balloon</b>	<b>Gas Balloon</b>
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 THE AMC's**



## **Appendix I to AMC M.A.302 Content of the maintenance programme**

### **I. General requirements**

- I.1 The maintenance programme should contain the following basic information.
  - I.1.1. The type/model and registration number of the aircraft, engines and, where applicable, auxiliary power units and propellers
  - I.1.2. The name and address of the owner, operator or M.A Subpart G approved organisation managing the aircraft airworthiness.
  - I.1.3. The reference, the date of issue and issue number of the approved maintenance programme.
  - I.1.4. A statement signed by the owner, operator or 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.
  - I.1.5. Contents/list of effective pages and their revision status of the document.
  - I.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.
  - I.1.7. Procedures for the escalation of established check periods, where applicable and acceptable to the CAA.
  - I.1.8. Provision to record the date and reference of approved amendments incorporated in the maintenance programme.
  - I.1.9. Details of pre-flight maintenance tasks that are accomplished by maintenance staff.
  - I.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.
  - I.1.11. The periods at which components should be checked, cleaned, lubricated, replenished, adjusted and tested.
  - I.1.12. If applicable details of ageing aircraft system requirements together with any specified sampling programmes.
  - I.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
  - b. Structural Inspection Programmes (SSID).
  - c. Structural maintenance programmes resulting from the SB review performed by the TC holder.
  - d. Corrosion prevention and control.
  - e. Repair Assessment.
  - f. 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 Agency 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 M.A 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 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 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 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 M.A Subpart G approved organisation when assessing an existing programme.

Where the competent authority is not satisfied that the proposed maintenance programme can be used as is, the competent authority 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 M.A Subpart G approved organisation, to reflect changes in the TC holder's recommendations, modifications, service experience, or as required by the CAA.

### **4. Permitted variations to maintenance periods**

The owner or the M.A Subpart G approved organisation may only vary the periods prescribed by the programme with the approval of the competent authority or through a procedure developed in the maintenance programme and approved by the competent authority.

### **5. Periodic review of maintenance programme contents**

- 5.1 The owner or the 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 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 Manufacturer'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 MCAR-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, an 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 M.A.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 M.A.Subpart G organisation's fleet size.

6.2.3. Complex reliability programmes could be inappropriate for a small fleet. It is recommended that such 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. An 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 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 than 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, an M.A.Subpart G organisation is encouraged to establish contact and make comparisons with other 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 M.A.Subpart G organisation(s). Paragraph 6.6 of this paragraph specifies under which conditions it is acceptable that M.A.Subpart G organisations share reliability data.
- 6.2.7. Notwithstanding the above there are cases where the M.A.Subpart G organisation will be unable to pool data with other M.A.Subpart G organisation, e.g. at the introduction to service of a new type. In that case the competent authority should impose additional restrictions on the MRB/MPD tasks intervals (e.g. no variations or only minor evolution are possible, and with the competent authority 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 M.A.Subpart G organisation’s maintenance and reliability programmes, the

competent authority is expected to ensure that the organisation which runs the programme (it may be the M.A.Subpart G organisation, or an MCAR-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 the competent authority to reject the approval of the reliability programme and therefore the aircraft maintenance programme.

#### 6.4 Contracted maintenance

- 6.4.1. Whereas M.A.302 specifies that, the aircraft maintenance programme – which includes the associated reliability programme-, should be managed and presented by the M.A.Subpart G organisation to the competent authority, it is understood that the M.A.Subpart G organisation may delegate certain functions to the MCAR-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 M.A.Subpart G organisation.

- 6.4.3. Notwithstanding the above decision to implement a corrective action (or the decision to request from the competent authority the approval to implement a corrective action) remains the 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 M.A.Subpart G organisation and the Part-145 organisation should be specified in the maintenance contract (see appendix II) 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 M.A.Subpart G organisation, to an integrated maintenance management programme for a big 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, MCAR-145 and MCAR-M.

#### 6.5.4. Information sources and collection.

6.5.4.1. Sources of information should be listed and procedures for the transmission of information from the 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 MCAR-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 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 the CAA 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 the CAA should be stated. This information should be contained in the CAME or MOE as appropriate.

#### 6.5.9. Presentation of information to the CAA.

The following information should be submitted to the CAA 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 the CAA 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

The CAA may authorise the 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 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 should be substantially the same: variations in utilisation between two 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.

- 1 Certification factors, such as: aircraft TCDS compliance (variant)/modification status, including SB compliance.
- 2 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.
- 3 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 the CAA on a case by case basis.

6.6.3. In case of a short term lease agreement (less than 6 month) more flexibility against the para 6.6.1 criteria may be granted by the CAA, 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 M.A.Subpart G organisation to the above, requires assessment in order that the pooling benefits can be maintained. Where an M.A.Subpart G organisation wishes to pool data in this way, the approval of the competent authority should be sought prior to any formal agreement being signed between M.A.Subpart G organisations.
- 6.6.5. Whereas this paragraph 6.6 is intended to address the pooling of data directly between M.A.Subpart G organisations, it is acceptable that the M.A.Subpart G organisation participates in a reliability programme managed by the aircraft manufacturer, when the CAA is satisfied that the manufacturer manages a reliability programme which complies with the intent of this paragraph.

## **Appendix II to M.A.201(h)(I) Sub-contracting of continuing airworthiness management tasks**

### **I. SUB-CONTRACTED OPERATOR'S CONTINUING AIRWORTHINESS MANAGEMENT TASKS**

- I.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 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.
- I.2 The operator should conduct a pre-contract audit to establish that the sub-contracted organisation can achieve the standards required by M.A Subpart G in connection with those activities to be sub-contracted.
- I.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.
- I.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 subcontracted organisation.
- I.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 respective CAA, of any subsequent changes that affect their ability to support the contract.
- I.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.
- I.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 the CAA 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 the CAA 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 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 CAA monitoring.

- 1.12 The contract should address the respective responsibilities to ensure that any findings arising from the CAA monitoring will be closed to the satisfaction of the CAA.

## **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 CAA 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 CAA 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 the CAA.

### 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 the CAA.

### 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 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 M.A Subpart G and the contract. Audit reports may be subject to review when requested by the CAA.

## 2.7 Access by the competent authority

The contract should specify that the sub-contracted organisation should always grant access to the CAA.

## 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 the CAA 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,

- Trouble shooting 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 Part-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, his MCAR-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 dependant upon the procedural authority granted by the CAA may determine that some defects can be deferred. Therefore, adequate liaison between the operator, his sub-contracted organisation and contracted MCAR-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 MCAR-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 MCAR-M and MCAR-145 should be reported as required by the respective requirements. The operator should ensure adequate liaison exists with the sub-contracted organisation and the MCAR-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 MCAR-M should be satisfied. Access to the records by duly authorised members of the CAA 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 MCAR-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 MCAR-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 the CAA'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 MCAR-145 approved organisation's respective involvement in that programme, including the participation to reliability meetings. Provision to enable the CAA 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 MCAR-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 the CAA
  - 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 MCAR-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 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 MCAR-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 subcontracted work
  - List of subcontractors
  - 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 CAA Form I
  - Incomplete maintenance
  - Check flight authorisation
  - Copy of CRS and CAA Form I
- **Records**
- **Special procedures**

Such as specialised tasks, disposal of unsalvageable components, re-certification of parts not having an CAA Form I, 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 the CAA
- Final validation

Part E – Appendices

- **Sample of all documents used.**
- **List of maintenance locations.**
- **List of MCAR-145 or M.A. Subpart F organisations.**
- **List of subcontracted specialised services.**

**3. Approval**

The CAA 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 CAA.

**4. Continuous compliance with MCAR-M**

When a maintenance organisation manual no longer meets the requirements of this MCAR-M, whether through a change in MCAR-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 exposition**

### **Continuing airworthiness management exposition**

#### **TABLE OF CONTENT**

<b>Part 0</b>	<b>General organisation</b>
0.1	Corporate commitment by the accountable manager.
0.2	General information.
0.3	Management personnel.
0.4	Management organisation chart.
0.5	Notification procedure to the CAA regarding changes to the organisation's activities / approval / location / personnel.
0.6	Exposition amendment procedures.
<b>Part 1</b>	<b>Continuing airworthiness management procedures</b>
1.1	Aircraft technical log utilisation and MEL application (commercial air transport). Aircraft continuing airworthiness record system utilisation (non commercial air transport).
1.2	Aircraft maintenance programmes – development amendment and approval.
1.3	Time and continuing airworthiness records, responsibilities, retention, access.
1.4	Accomplishment and control of airworthiness directives.
1.5	Analysis of the effectiveness of the maintenance programme(s).
1.6	Non mandatory modification embodiment policy.
1.7	Major modification standards.
1.8	Defect reports.
1.9	Engineering activity.
1.10	Reliability programmes.
1.11	Pre-flight inspections.
1.12	Aircraft weighing.
1.13	Check flight procedures.
<b>Part 2</b>	<b>Quality system</b>
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.
<b>Part 3</b>	<b>Contracted Maintenance</b>
3.1	Maintenance contractor selection procedure.
3.2	Quality audit of aircraft.
<b>Part 4</b>	<b>Airworthiness review procedures</b>
4.1	Airworthiness review staff.
4.2	Review of aircraft records.
4.3	Physical survey.

- 4.4 Additional procedures for recommendations to CAA for the import of aircraft.
- 4.5 Recommendations to the CAA for the issue of ARC.
- 4.6 Issuance of ARC.
- 4.7 Airworthiness review records, responsibilities, retention and access.

**Part 4B Permit to fly procedures**

- 4B.1 Conformity with approved flight conditions;
- 4B.2 Issue of permit to fly under the CAMO privilege;
- 4B.3 Permit to fly authorised signatories;
- 4B.4 Interface with the local authority for the flight;
- 4B.5 Permit to fly records, responsibilities, retention and access.

**Part 5 Appendices**

- 5.1 Sample documents.
- 5.2 List of airworthiness review staff.
- 5.3 List of subcontractors as per AMC M.A.201(h) 1 and M.A.711(a)3.
- 5.4 List of approved maintenance organisations contracted.
- 5.5 Copy of contracts for subcontracted work (Appendix II to AMC M.A.201(h) 1).
- 5.6 Copy of contracts with approved maintenance organisations.

**LIST OF EFFECTIVE PAGES**

Page	Revision
1	Original
2	Original

Page	Revision
3	Original
4	Original

Page	Revision
5	Original
.....	.....

**DISTRIBUTION LIST**

*(The document should include a distribution list to ensure proper distribution of the manual and to demonstrate to the competent authority 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 MCAR-145 or M.A. Subpart F contracted maintenance organisation(s); and,*
- *the CAA.)*

## **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 M.A. Subpart G approval of Joe Bloggs under MCAR-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 CAA from time to time where these new or amended regulations are in conflict with these procedures.

The CAA will approve this organisation whilst the CAA is satisfied that the procedures are being followed. It is understood that the CAA reserves the right to suspend, vary or revoke the M.A. Subpart G continuing airworthiness management approval of the organisation, as applicable, if the CAA 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 MCAR-M 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 B737-300
- 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 the CAA*)

*(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 Part 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 Part 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 M.A.706(c) in enough detail so as to show that all the continuing airworthiness responsibilities as described in Part 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

**(I) 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'	

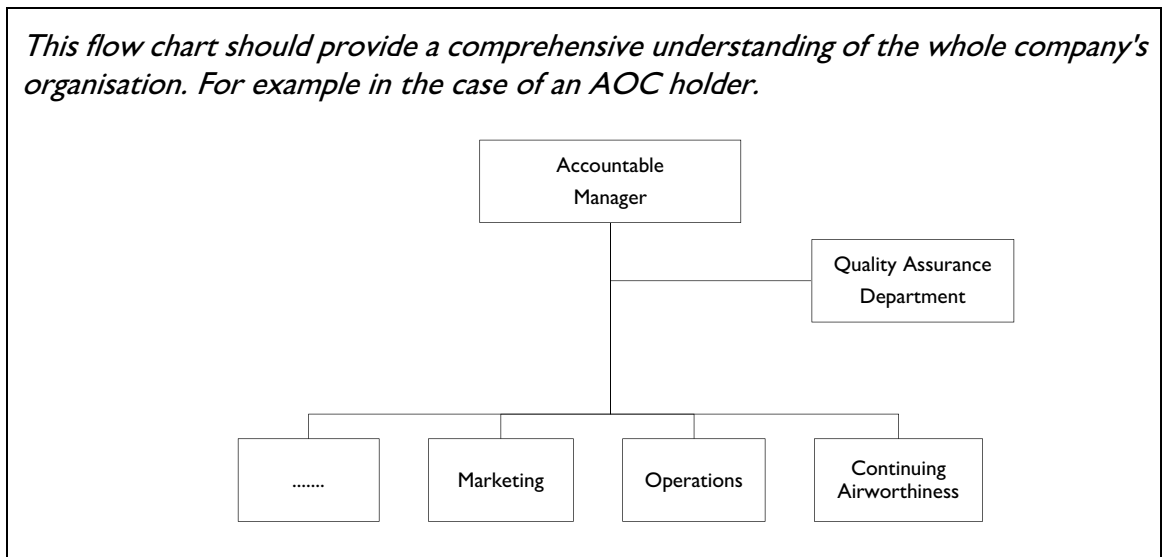
*(Note: According to the size and complexity of the organisation, this table may be further developed or simplified)*

**(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)*

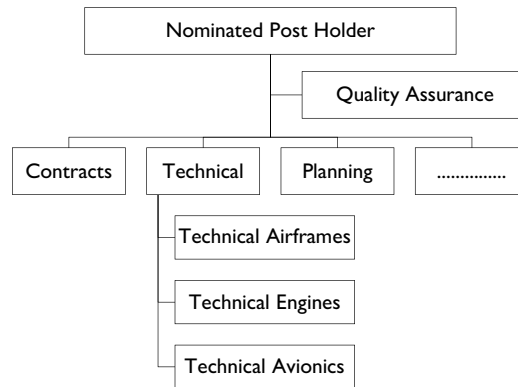
**0.4 Management organisation charts**

**a) General organisation chart**



**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 the CAA regarding changes to the organisation’s activities / approval / location / personnel**

*(This paragraph should explain in which occasion the company should inform the CAA 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 the CAA 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 the CAA.)*

**0.6 Exposition amendment procedure**

*(This paragraph should explain who is responsible for the amendment of the exposition and submission to the CAA for approval. This may include, if agreed by the CAA 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 I CONTINUING AIRWORTHINESS MANAGEMENT PROCEDURES**

### **I.1 Aircraft technical log utilisation and MEL application**

**or**

### **I.1 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 M.A.305 and M.A.306 For that purpose, paragraphs of M.A.305 and 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 the CAA 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**

*(The competent authority 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.)*

**I.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

**(I) 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 CAA 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 the CAA and what the procedure to follow is. This should in particular address the issue of the CAA approval for variation to maintenance periods. This may include, if agreed by the CAA 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.)*

**I.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 be 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.)*

#### **I.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. agency+ competent authority + 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.)*

#### **I.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 CAA or design organisation approval. It should also identify the type of approval required, and the procedure to follow to have a modification approved by the CAA 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 competent 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 the Agency and include reference to the supporting documentation and forms used. It should identify the person in charge of accepting the design before submission to the Agency or the CAA.*

*Where the organisation has a DOA capability under Part 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 the CAA.)*

*(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 refueling, Quantity/Quality
- e) Control of snow, ice, residues from de-icing or anti-icing operations, dust and sand contamination to an approved standard

**I.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.)*

**I.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 MCAR-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 Part 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 feed back 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,*
- *every one 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. It should set out the differences between an airworthiness review and quality audit. This procedure may include:*

- *compliance with approved procedures;*
- *contracted maintenance is carried out in accordance with the contract;*
- *continued compliance with MCAR-M. )*

## **PART 4 AIRWORTHINESS REVIEW PROCEDURES**

### **4.1 Airworthiness review staff**

*(This paragraph should establish the working procedures for the assessment of the airworthiness review staff. The assessment addresses experience, qualification, training etc. A description should be given regarding the issuance of authorisations for the airworthiness review staff and how records are kept and maintained.)*

### **4.2 Review of aircraft records**

*(This paragraph should describe in detail the aircraft records that are required to be reviewed during the airworthiness review. The level of detail that needs to be reviewed should be described and the number of records that need to be reviewed during a sample check.)*

### **4.3 Physical survey**

*(This paragraph should describe how the physical survey needs to be performed. It should list the topics that need to be reviewed, the physical areas of the aircraft to be inspected, which documents onboard the aircraft that need to be reviewed etc. )*

### **4.4 Additional procedures for recommendations to CAA for the import of aircraft**

*(This paragraph should describe the additional tasks regarding the recommendation for the issuance of an airworthiness review certificate in the case of an import of an aircraft. This should include: communication with the CAA, additional items to be reviewed during the airworthiness review of the aircraft, specification of maintenance required to be carried out, etc. )*

### **4.5 Recommendations to the CAA for the issue of airworthiness review certificates**

*(This paragraph should stipulate the communication procedures with the CAA in case of a recommendation for the issuance of an airworthiness review certificate. In addition the content of the recommendation should be described.)*

### **4.6 Issuance of airworthiness review certificates**

*(This paragraph should set out the procedures for the issuance of the ARC. It should address record keeping, distribution of the ARC copies etc. This procedure should ensure that only after an airworthiness review that has been properly carried out, an ARC will be issued. )*

#### **4.7 Airworthiness review records, responsibilities, retention and access**

*(This paragraph should describe how records are kept, the periods of record keeping, location where the records are being stored, access to the records and responsibilities.)*

### **PART 4B PERMIT TO FLY PROCEDURES**

#### **4B.1 Conformity with approved flight conditions**

*(The procedure should indicate how conformity with approved flight conditions is established, documented and attested by an authorised person.)*

#### **4B.2 Issue of the permit to fly under the CAMO privilege**

*(The procedure should describe the process to prepare the CAA Form 20b (see Appendix IV to MCAR-21) and how compliance with 21A.711(d) and (e) is established before signature of the permit to fly. It should also describe how the organisation ensures compliance with 21A.711(g) for the revocation of the permit to fly )*

#### **4B.3 Permit to fly authorised signatories**

*(The person(s) authorised to sign the permit to fly under the privilege of M.A.711(c) should be identified (name, signature and scope of authority) in the procedure, or in an appropriate document linked to the CAME.)*

#### **4B.4 Interface with the local authority for the flight**

*(The procedure should include provisions describing the communication with the local authority for flight clearance and compliance with the local requirements which are outside the scope of the conditions of 21A.708(b) (see MCAR 21A.711(e))*

#### **4B.5 Permit to fly records, responsibilities, retention and access**

*(This paragraph should describe how records are kept, the periods of record keeping, location where the records are being stored, access to the records and responsibilities.)*

### **PART 5 APPENDICES**

#### **5.1 Sample documents**

*(A self explanatory paragraph)*

#### **5.2 List of airworthiness review staff**

*(A self explanatory paragraph)*

**5.3 List of sub-contractors as per AMC M.A.201(h) 1 and 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 contracted**

*(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

**This is only applicable to organisations with less than 10 maintenance staff members. For larger organisations, the principles and practices of an independent quality 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 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 the CAA).

- 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 I findings, in the sense of M.A.619(a), should be immediately notified to the competent authority 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 CAA Form 3.
- The scope of work in the MOM does not disagree with the CAA Form 3.
- No work has been performed outside the scope of the CAA 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 are 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,
  - competent authority 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 CAA Form I or equivalent.
- Obtain a copy of the current approval certificate (CAA Form 3) of the maintenance organisations contracted.

**9 – Maintenance subcontracted**

- Check that subcontractors for specialised services are properly controlled by the organisation.

**10 – Technical records and record-keeping**

- Have the maintenance actions been properly recorded?
- Have the certificates (CAA Form I 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 CAA Form 2



CAA Form 2

TYPE OF APPLICATION			
<input type="checkbox"/> MCAR-145 Approval	<input type="checkbox"/> Initial grant	<input type="checkbox"/> Change	<input type="checkbox"/> Renewal
<input type="checkbox"/> MCAR-M Subpart F Approval	<input type="checkbox"/> Initial grant	<input type="checkbox"/> Change	<input type="checkbox"/> Renewal
<input type="checkbox"/> MCAR-M Subpart G Approval	<input type="checkbox"/> Initial grant	<input type="checkbox"/> Change	

APPLICANT DETAILS		
1. Registered name of applicant: _____		
1a. Company Registration No: _____	1b. CAA Approval Ref (if known): _____	
2. Trading Name (if different): _____		
3.1. Primary address requiring approval:		
Name/ No & Street Name: _____		
Town/City: _____	Telephone: _____	
Country: _____	Fax: _____	
Corporate E-mail: _____		
3.2. Other address requiring approval: (please use additional paper if required)		
Name/ No & Street Name: _____		
Town/City: _____	Telephone: _____	
Country: _____	Fax: _____	
4. Contact Details:		
Name: _____	Position: _____	
Tel: _____	Fax: _____	
E-mail(s): _____		
5. Scope of Approval relevant to this application (see page 2 for details):		
<b>Rating(s):</b>	<b>Limitation(s):</b>	
1. _____	_____	
2. _____	_____	
3. _____	_____	
6. Does the company hold approvals from other regulatory bodies? <input type="checkbox"/> Yes <input type="checkbox"/> No. If yes please provide details:		
<b>Approval Ref:</b>	<b>Regulator:</b>	<b>Rating(s):</b>
1. _____	_____	_____
2. _____	_____	_____
3. _____	_____	_____
7. Name and position of the (proposed*) Accountable Manager: _____		
8. Signature of the (proposed*) Accountable Manager: _____		
9. Place: _____		
10. Date: _____		
*proposed* applicable only in the case of new applicant		

SUBMISSION AND CHARGES	
Please submit the completed application form to Maldives Civil Aviation Authority, 11 <sup>th</sup> Floor Velaanaage, Ameeru Ahmed Magu, Male', 20096, Republic of Maldives together with MRF/US\$ ..... being the fee payable in accordance with MCAR-187.	
Invoice/ Receipt No: _____	Date: _____
<b>CAA use only</b>	

SCOPE OF APPROVAL AVAILABLE				
CLASS AIRCRAFT	RATING	LIMITATION	BASE	LINE
	A1 Aeroplanes above 5700 kg	[Rating reserved to Maintenance Organisations approved in accordance with MCAR-145] [State aeroplane manufacturer or group or series or type and/or the maintenance tasks] Example: Airbus A320 Series	YES <input type="checkbox"/> NO <input type="checkbox"/>	YES <input type="checkbox"/> NO <input type="checkbox"/>
	A2 Aeroplanes 5700 kg and below	[State aeroplane manufacturer or group or series or type and/or the maintenance tasks] Example: DHC-6 Twin Otter Series	YES <input type="checkbox"/> NO <input type="checkbox"/>	YES <input type="checkbox"/> NO <input type="checkbox"/>
	A3 Helicopters	[State helicopter manufacturer or group or series or type and/or the maintenance task(s)] Example: Robinson R44	YES <input type="checkbox"/> NO <input type="checkbox"/>	YES <input type="checkbox"/> NO <input type="checkbox"/>
	A4 Aircraft other than A1, A2 and A3	[State aircraft series or type and/or the maintenance task(s).]	YES <input type="checkbox"/> NO <input type="checkbox"/>	YES <input type="checkbox"/> NO <input type="checkbox"/>
<b>ENGINES</b>	B1 Turbine	[State engine series or type and/or the maintenance task(s)] Example: PT6A Series		
	B2 Piston	[State engine manufacturer or group or series or type and/or the maintenance task(s)]		
	B3 APU	[State engine manufacturer or series or type and/or the maintenance task(s)]		
<b>COMPONENTS OTHER THAN COMPLETE ENGINES OR APUs</b>	C1 Air Cond & Press	[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).] Example: PT6A Fuel Control		
	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			
<b>SPECIALISED SERVICES</b>	D1 Non Destructive Testing	[State particular NDT methods]		



## Appendix X to AMC M.B.602(a) and AMC M.B.702(a) CAA Form 4



**Civil Aviation Authority  
Republic of Maldives**

**CAA Form 4**

This form can be completed online, then printed and signed. If filled in by hand, please use black or dark blue ink.

Details of Nominated Personnel required to be accepted as specified in:	
1. Details of Management Personnel required to be accepted as specified in MCAR-	<input type="text"/>
2. Title / Name:	<input type="text"/>
3. Position within the Organisation:	<input type="text"/>
4. Qualifications relevant to the item (3) position:	<input type="text"/>
5. Work experience relevant to the item (3) position:	<input type="text"/>
6. Organisation	<input type="text"/>
7. Approval Number relevant to the item (1):	<input type="text"/>
Signature: <input type="text"/>	Date: <input type="text"/>

CAA use only:	
Name(s) and signature(s) of authorised competent authority staff member(s) accepting this person:	
<b><u>Flight Operations</u></b>	<b><u>Airworthiness</u></b>
Signature <input type="text"/>	Signature <input type="text"/>
Name <input type="text"/>	Name <input type="text"/>
Date <input type="text"/>	Date <input type="text"/>
<i>Once authorised, a copy of the completed CAA Form 4 must be returned to the nominee.</i>	

## **Appendix XI to AMC to 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 MCAR-145 approved organisation. As only the technical parts of the maintenance contracts have to be acceptable to the CAA, the following paragraphs only address technical matters and exclude matters such as costs, delay, warranty, etc...

When maintenance is contracted to more than one MCAR-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 should be established organisational responsibility, procedures and routines in the operator's M.A.Subpart G & MCAR-145 organisations to take care of these functions in a satisfactory way such that any person involved is informed about his/her 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**

The following 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 MCAR-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 MCAR-145 approved organisation may subcontract tasks to a third party (whether this third party is MCAR-145 approved or not). At least the contract should make reference to 145.A.75. Additional guidance is provided by the AMC 145.A.75. In addition the operator may require the MCAR-145 approved organisation to obtain 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 MCAR-145 approved organisation's subcontractors involved in the contract. It should however be noted that under operators responsibility both the operator and its competent authority are entitled to be fully informed about subcontracting, although the competent authority 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 should have that maintenance programme approved by the CAA. 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 the CAA.

### **2.5. Quality monitoring**

The terms of the contract should include a provision allowing the operator to perform a quality surveillance (including audits) upon the MCAR-145 approved organisation. The maintenance contract should specify how the results of the quality surveillance are taken into account by the MCAR-145 approved organisation (See also paragraph 2.22. 'Meetings').

### **2.6. (Reserved)**

### **2.7. Airworthiness data**

The airworthiness data used for the purpose of this contract 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),
- operators 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 MCAR-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 2.23: 'Meetings').

## **2.9. Airworthiness Directives and Service Bulletin/Modifications**

The contract should specify what information the operator is responsible to provide to the MCAR-145 approved organisation, such as the due date of the airworthiness directives (ADs), the selected means of compliance, the decision to embody Service Bulletins (SBs) 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 MCAR-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 2.22: 'Exchange of information').

## **2.11. Service life-limited components**

Service life-limited components control is the responsibility of the operator. The MCAR-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 2.22 'Exchange of information').

## **2.12. Supply of parts**

The contract should specify whether a particular type of material or component is supplied by the operator or by the contracted MCAR-145 approved organisation, which type of component is pooled, etc. The contract should clearly state that it is the MCAR-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 MCAR-145 organisation to accept whatever is supplied by the operator. Additional guidance is provided by 145.A.42 for acceptance of components.

## **2.13. Pooled 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 MCAR-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 MCAR-145 approved organisation determines, for any reason, to defer a maintenance task, it has to be formally agreed with 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 MCAR-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 should be submitted to the operator and, if applicable, to the CAA.

#### **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 its competent authority or granted by the operator in accordance with a procedure acceptable to its competent authority. The contract should specify the support the MCAR-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 MCAR-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, MCAR-145 approved organisation's maintenance visit file, etc.) and the documentation the MCAR-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 ADs incorporated,
- maintenance visit report,
- test bench report.

### **2.21. Maintenance recording**

The operator may contract the MCAR-145 approved organisation to retain some of the maintenance records required by MCAR-M Subpart C. It should be ensured that every requirement of MCAR-M Subpart C is fulfilled by either the operator or the MCAR-145 approved organisation.

In such a case, free and quick access to the above-mentioned records should be given by the MCAR-145 approved organisation to the operator and its competent authority (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 MCAR-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 CAA to be satisfied that a good communication system exists between the operator and the MCAR-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 to 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 ADs, SBs, 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 MCAR-145 approved organisation's respective involvement in that programme, including the participation in reliability meetings.

## Appendix XII to AMC to M.A.706(f)

### Fuel Tank Safety training

This appendix includes general instructions for providing training on Fuel Tank Safety issues.

A) Effectivity:

- Large aeroplanes as defined in MCAR-I.

B) Affected organisations:

- M.A. Subpart G approved organisations involved in the continuing airworthiness management of aeroplanes specified in paragraph A).
- CAA when responsible for the oversight of aeroplanes specified in paragraph A) and for the oversight of the M.A. Subpart G approved organisations specified in this paragraph B).

C) Persons from affected organisations who should receive training:

Phase I only:

- The quality manager and quality personnel.
- Personnel of the competent authorities responsible for the oversight as per M.B.704 of aeroplanes specified in paragraph A) and in the oversight of M.A. Subpart G approved organisations specified in paragraph B).

Phase I + Phase 2 + Continuation training:

- Personnel of the 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 I – 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 I Familiarisation course in compliance with ED decision 2007/001/R Appendix XII are already in compliance with Phase I.

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 CAA 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 ED decision 2007/001/R Appendix XII either from a M.A. Subpart G approved organisation or from a Part-147 training organisation are already in compliance with Phase 2 with the exception of continuation training.

Staff should have received Phase 2 training by 31 December 2010 or within 12 months of joining the organization, whichever comes later.

**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 of 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 CAA'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 behavior 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 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 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 the CAA.

## Appendix XIII to AMC M.A.712(f)

**Organisational reviews may replace a full quality system in accordance with the provisions of 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 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 the CAA).

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 I findings, in the sense of M.A.716(a), should be immediately notified to the CAA 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 CAA Form 14.
- The scope of work in the CAME does not disagree with the CAA Form 14.
- No work has been performed outside the scope of the CAA 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, ARC 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 the CAA.
- 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 (CAA 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 the CAA)**

- 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 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 Annex I to Part 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,
  - competent authority 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 CAA Form I or equivalent.
- Obtain a copy of the current approval certificate (CAA Form 3) of the maintenance organisations contracted.

## **9 – Technical records and record-keeping**

- Have the certificates (CAA Form I 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 – Airworthiness review**