

APPROVAL OF MAINTENANCE PROGRAMME

1. Introduction

- 1.1 This notice is issued to identify the DCA requirements of MCAR Part M, M 302 and the respective means of compliance and to provide some further clarifications and guidance in complying with the requirements.
- 1.2 These interpretations, clarifications and instructions shall be referred to by Owners, Operators and Continuing Airworthiness Management Organizations (CAMO) when developing and presenting for DCA approval of specific maintenance programmes.
- 1.3 MCAR Part M, M 302 requires that Aircraft Maintenance Programmes (AMPs), must establish compliance with the instructions issued by the DCA or State of Registry and the instructions for continuing airworthiness issued by the holders of Type Certificate (TC), Restricted Type Certificate (RTC), Supplemental Type Certificate (STC), major repair design approval and any other relevant approvals.
- 1.4 It also requires that AMPs and any amendments shall be approved by the State of Registry. AMC to M 302 describes the acceptable means which may be used by aircraft Owners/Operators in order to achieve compliance with the requirements of M 302.
- 1.5 It also describes the maximum limits that maintenance periods may be varied (when acceptable to DCA) if the maintenance programme or the appropriate exposition includes detailed procedures of when and how to deviate from the prescribed intervals.
- 1.6 Owners/ Operators/ CAMO must take into account the principles of Human Factors when designing and applying the maintenance programme.

2. AMP Development Responsibilities

- 2.1 For the aircraft operated by AOC holder, the operator's CAMO is responsible for the AMP. The AMP development may be contracted to another organization under the control of the operator's CAMO.
- 2.2 In the case of large aircraft that is operated by other than AOC holder; the Owner/ Operator shall ensure the tasks associated with continuing airworthiness are performed by an approved CAMO. When the operator is not approved as CAMO it shall conclude a written contract as regards the performance of those tasks in accordance with Appendix-I to Part-M with an organization approved as CAMO. It includes the responsibility for the AMP and AMP development.

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- 2.3 In the case of an aircraft that is operated for the purposes of commercial operations other than commercial air transport such as aerial work, the Owner/Operator shall be responsible for the continuing airworthiness are performed by an approved CAMO. This means that Owner/CAMO is responsible for the AMP. When the owner is not approved as CAMO, it shall conclude a written contract as regards the performance of those tasks in accordance with Appendix-I to Part-M with an organization approved as CAMO. This means that the AMP development may be contracted by the owner to another CAMO.
- 2.4 For any other aircraft not included in paragraph 2.1, 2.2 and 2.1 above, Owner/Operator shall be responsible for the continuing airworthiness are performed by an approved CAMO. The owner shall attribute the continuing airworthiness tasks referred to in point M 301 to a CAMO through a written contract concluded in accordance with Appendix I to Part M which includes the development of the AMP. When the owner takes responsibility for the continuing airworthiness management of the aircraft, he shall (still) contract the tasks of the development of and the processing of the approval of the AMP, only if those tasks are performed by an approved CAMO a limited contract concluded in accordance with point M 302.

3. General Principles

- 3.1 The maintenance programmes developed and presented for DCA approval shall be based on the Instructions for Continuing Airworthiness (ICA) issued by the DCA or State of Registry and the instructions for continuing airworthiness issued by the holders of Type Certificate (TC), Restricted Type Certificate (RTC), Supplemental Type Certificate (STC), airworthiness limitations as appropriate. In some cases, specific maintenance tasks may not be covered by the ICA, Maintenance Review Board Report (MRBR) or Maintenance Planning Document (MPD) issued by the TC or STC holders.
- 3.2 Other modifications (not involving the STC process) and some repairs may also necessitate development of maintenance tasks to be integrated in the maintenance programme.
- 3.3 DCA or State of Registry may issue mandatory information in the form of Airworthiness Directives or Operating Directives, which in some cases may necessitate introduction of certain maintenance tasks in the AMP affected by the associated AD or OD.
- 3.4 Any aircraft shall only be maintained to one maintenance programme at a given point in time. In case an Owner/Operator or a CAMO wished to change from one approved maintenance programme to another, a bridging check or inspection may

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need to be performed in order to implement to change.

- 3.5 New or modified applicable mandatory requirements on which the programme is based (e.g. TC/STC holders MRB report, MPD, ATA AMM Chapter 05, ALI's, Life limitations, Overhaul Service Bulletins and Letters, ICA and competent authority instructions, including ones introduces through Airworthiness Directives) shall be incorporated in the programmes as soon as possible not later than 6 months.
- 3.6 In any case, the maintenance programme details shall be reviewed at least annually with, as a minimum, a review of all of the documents on which the programme is based.
- 3.7 For aircraft used for commercial air transport, the programme shall also be monitored for its effectiveness in accordance with approved procedures in the Continuing Airworthiness Management Exposition (CAME). The system principles shall be briefly described in the maintenance programme's introduction section with more detailed description to be provided in the associated CAME.
- 3.8 In developing the maintenance programme, Owners/ Operators/ CAMO shall take into account the aircraft anticipated utilization and the nature of operation, e.g. VFR or IFR flights, low flying, saline or sandy conditions, anticipated flight hours to flight cycles ratio, predominant weather conditions at the place the aircraft will be based and/or operated, specific airspace requirements (e.g. RVSM, EDTO, AWO, PBN approvals etc.) or airport conditions.
- 3.9 In cases whereby manufacturer recommendations are developed assuming specific aircraft annual utilization and substantially different utilization is anticipated for the aircraft to which the programme applies, the programme tasks shall be assessed and intervals modified as appropriate.

4. Maintenance Programme Content

- 4.1 MCAR Part M, M 302 (e) requires that the maintenance programme shall contain details, including frequency, of all maintenance to be carried out, including any specific tasks linked to specific operations. This means that all maintenance tasks to which the aircraft, its engine(s), propeller(s), systems and equipment shall be subjected during its whole operational life shall be listed, together with their brief description and intervals (frequencies) at which they should be performed. AMC M 302 points 4, 5 and Appendix I to AMC 302 provide description and details about the maintenance programme content.
- 4.2 Maintenance programmes shall normally be based on documents such as: maintenance review board (MRB) report, where applicable; maintenance planning document (MPD); relevant ATA chapters of the maintenance manual; service

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- manual or any other supplemental maintenance data/ICA issued by the TC/STC holder, DOA or equipment manufacturer containing maintenance scheduling.
- 4.3 When an aircraft is maintained in accordance with a maintenance programme based on a MRB report process, any associated programme for the continuing surveillance of the reliability, or health monitoring of the aircraft should be considered as part of the aircraft maintenance programme.
- 4.4 In all cases, the documents which form the basis on which the programme had been developed shall be identified in the programme's introduction section together with their current revision/amendment status. Individual tasks should bear reference to the source document from which they were derived plus any additional information specific to the tasks, e.g. MRBR, MPD, Low Utilization MPD, AMM Chapter 05, AD, ALI, CMR*, CMR**, CPCP, CDCCL, EZAP, EWIS, STC ICA, AMMS, RVSM, ETOPS (EDTO), CAT II AWO, DCA recommendations etc.
- 4.5 The aircraft to which the maintenance programme relates shall be identified in the introductory section by: manufacturer designation (type and series), manufacturer serial No, Registration Marks. Engine, propeller and APU types shall be identified as applicable.
- 4.6 Tasks intervals/frequencies permitted variations, tasks escalation and adjustment procedures should be included in the programme's Introduction Section.

5. Structure of Aircraft Maintenance Programme (AMP)

The structure of AMP submitted to the DCA shall be produced in the following manner:

- 5.1 The AMP shall be produced in hard copy (recommend for A4 format) provided in a binder with section dividers.
- 5.2 Two copies of the proposed AMP (may be one complete document and one LEP pages with Record of Amendments) shall be submitted for approval to Airworthiness Division.
- 5.3 The list of effective pages (LEPs), which covers all pages of the whole manual and their current revision; there should be enough space for placing the approval of the manual by the DCA. Approval box must contain at least Name, Designation and Signature of the person who recommend the manual for DCA approval and the date.
- 5.4 If AMP contains several LEPs, then on each of them, there shall be the approval box as mentioned above.
- 5.5 Record of Amendment or Revision - a table where all revisions of the AMP are listed by column and also inscribe the submission date to DCA and DCA approval column. Marking the revisions of the manual might look like these examples:
- if first issue: Issue 1, Revision 0;

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- if first change: Issue 1, Revision 1;
- if re-issue: Issue 2, Revision 0;

5.6 Pages must be marked, enabling the determination of amendment of the manual it belongs and numbered and all the written language must be in English.

6. Engine Health Monitoring

- 6.1 For those engines whose life limit is defined as 'On Condition' or 'Condition Monitoring' an Engine Health Monitoring Programme as defined by the TC Holder / OEM shall be in place.
- 6.2 The Maintenance Programme shall define the type of recommended ECTM programme that is in place, and the method of collection of engine parameters to be followed as per manufacturer recommendations.
- 6.3 All mandatory parameters to be recorded shall be included in the AMP considering also the different phases of flight. The frequency of the engine data collection shall also be specified. The AMP should also list the manufacturer recommended parameters for the operational approval as listed on their AOC (such as EDTO).
- 6.4 The maximum number of Engine EGT exceedances and in what zone before the engine is sent for overhaul shall also be covered in the AMP.

7. Corrosion Prevention & Control Programme

- 7.1 The Corrosion Prevention and Control Programme (CPCP) is part of the AMP and is required for all primary aircraft structures and a baseline is developed during the MRB process. It applies to damage tolerant and safe-life structures.
- 7.2 For those aircraft whose maintenance schedule is not based on an MRB process this is covered in a separate document.
- 7.3 The Baseline Programs recognize three levels of corrosion that are used to assess CPCP effectiveness. Level 1 Corrosion found during the accomplishment of the numbered Corrosion Tasks indicates an effective program. Level 2 Corrosion indicates that program adjustments are necessary. Level 3 Corrosion is an urgent airworthiness concern requiring expeditious action on the part of the operator to protect its entire model fleet.
- 7.4 Operators may either develop CPCP's tailored to their operations based on the manufacturer's Baseline Programme or adopt the manufacturer's programme in total. Early implementation, especially on older airplanes, of a CPCP is necessary to ensure that pre-existing unsafe levels of corrosion are removed from an operator's fleet.
- 7.5 DCA shall be notified immediately through the occurrence reporting system upon

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determination of Level 3 Corrosion. Level 2 and Level 3 Corrosion findings must be reported to the manufacturer for evaluation and possible Baseline Program adjustment. The mechanism to report to DCA shall follow Airworthiness Notice A/14.

- 7.6 Although the CPCP is initially based on the baseline programme recommended by the TC Holder, the operator shall monitor the effectiveness of the inspection programme. Inspection findings and operating/storage conditions may dictate de-escalation/ adjustment of the inspection intervals and/or more intensive inspections.

8. Aircraft Storage Programme

The AMP shall make reference to an aircraft storage programme which has procedures for placing the aircraft (airframe and engines) in various levels of preservation that shall be put in place during periods of inactivity, and for de-preserving the aircraft when placing it back in service. Procedures shall also be in place for documenting these actions.

(Recommendations are usually found in AMM ATA10, 71 and Engine ESM.)

9. Flight Recorders

- 9.1 The AMP shall make provisions for the instructions for continued airworthiness including inspection and analysis of any installed Flight Data Recorder (FDR) and/or Cockpit Voice Recorder (CVR) in accordance with instruction as mentioned in applicable Airworthiness Notices.
- 9.2 FDR and CVR malfunction occurrences, recurrent reliability issues and recording quality deficiencies should be reported to the DCA and to the TC or STC Holder.
- 9.3 Dispatch with any known recording failure of the CVR or of FDR required parameter(s) shall not be authorized; unless it is done in accordance with the provisions of the operator's approved Minimum Equipment List.

10. Permitted Variations

- 10.1 Where acceptable to the DCA, the operator may vary the maintenance periods as described below:

<u>Period Involved</u>	<u>Maximum Variation of the Prescribed Period</u>
(a) Items controlled by flight hours:	
(i) 5000 flying hours or less	10%
(ii) More than 5000 flying hours	500 flying hours

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- (b) Items controlled by calendar time:
 - (i) 1 year or less 10% or 1 month, whichever is lesser
 - (ii) More than 1 year but not 2 months exceeding 3 years
 - (iii) More than 3 years 3 months
- (c) Items controlled by Landing/Cycles:
 - 500 landing/cycles or less: 10% or 25 FC, whichever is the lesser
 - More than 500 landing/cycles: 10% or 500 FC, whichever is the lesser
- (d) When an item is controlled by more than one limit, then the more restrictive limit shall be applied.

10.2 Those variations shall be permitted only when the periods prescribed by the Maintenance Programme cannot be complied with, due to circumstances which could not reasonably have been foreseen by the operator.

10.3 The variations permitted above do not apply to:

- (a) Those components for which an ultimate (scrap) or retirement life has been prescribed (e.g. primary structure, components with limited fatigue lives, and high energy rotating parts for which containment is not provided). Details concerning all items of this nature are included in the Type Certificate holder's documents or manuals, and are included in the preface pages to the Maintenance Programme.
- (b) Those tasks included in the Maintenance Programme which have been classified as mandatory by the Type Certificate holder or the DCA.
- (c) Certification Maintenance Requirements (CMR) unless specifically approved by the manufacturer and agreed by the DCA.

10.4 The tolerances shall be of non-cumulative basis, i.e. the next compliance time shall be determined from the initial due date.

11. Review of the AMP

11.1 The aircraft maintenance programme shall be reviewed at least annually.

11.2 This review of the maintenance programme shall be performed by the contracted organization managing the continuing airworthiness of the aircraft in those cases where the review of the maintenance programme is not performed in conjunction with an airworthiness review.

11.3 If the review shows discrepancies on the aircraft linked to deficiencies in the content of the maintenance programme, the person performing the review shall inform the DCA or State of Registry and the owner shall amend the maintenance programme as agreed with DCA or State of Registry.

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- 11.4 The annual review should take into consideration:
- (i) results from performed maintenance;
 - (ii) results from the airworthiness review, changes to TC Holders recommendations;
 - (iii) ALIs from TC Holders;
 - (iv) changes, repairs and AD's; and
 - (v) the declared operator fleet type utilization and that actually flown. If there is more than $\pm 25\%$ delta, then the Maintenance Programme must be re-evaluated in respect of its effectiveness.
- 11.5 The operator shall have in place a system to monitor and assess the effectiveness of the maintenance programme based on maintenance and operational experience.

12. Application of Maintenance Programme for Approval & Revision

- 12.1 Owners/Operators and CAMOs shall submit aircraft maintenance programmes or amendments/revisions thereof for DCA approval accompanied by a cover letter.
- 12.2 The cover letter shall contain a statement on how compliance with the respective Part-M requirements and the provisions of this Airworthiness Notice was achieved.
- 12.3 The copies of respective documentation used, on which the programme development was based (electronic format may be acceptable) shall also be attached.
- 12.4 If there is(are) any difference(s) between tasks and intervals with those described in MRBR, MPD or any other documents provided by manufacturer as the instruction for Continued Airworthiness or previous operator's maintenance program for used aircraft, the difference(s) must be stated with review and recommendation of appropriate qualified personnel.
- 12.5 The List of Effective Pages (LEPs) shall cover all pages included in the whole document with the recommendation of appropriate qualified personnel including Head of Quality Department.
- 12.6 The programme shall be subject to a periodical revision, at least annually. It shall also be amended/revised within 6 months of any applicable amendments/revisions to the manufacturer's continuing airworthiness data.
- 12.7 All revisions must be submitted to the DCA for approval.
- 12.8 The revision submission shall include, cover letter including a summary of changes, the revised List of Effective Pages, all affected pages, on which all changes will be identified.
- 12.9 After satisfactory review, DCA will return a signed LEPs and approval letter to the applicant. Following the approval of the maintenance programme, copies of the document have to be distributed as per distribution list.

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SAMPLE CERTIFICATION STATEMENT

(As required by 1.1.4 of Appendix I to AMC M.302 MCAR Part-M)

In the preparation of this Aircraft Maintenance Programme to meet the requirements of MCAR Part-M, the recommendations made by the airframe constructors and engine, APU, propeller and equipment manufacturers have been evaluated and, where appropriate, have been incorporated.

This Maintenance Programme lists the tasks and identifies the practices and procedures, which form the basis for the scheduled maintenance of the aeroplane(s)/helicopter(s). The MCAR Part-M Subpart G Organization/Owner* undertakes to ensure that the Aeroplane(s)/ Helicopter(s) will continue to be maintained in accordance with this programme.

The data contained in this programme will be reviewed for continued validity at least annually in the light of operating experience and instructions from the DCA whilst taking into account new and/or modified maintenance instructions promulgated by the type certificate and supplementary type certificate holders and any other organization that publishes such data in accordance with MCAR Part 21.

It is accepted that this programme does not prevent the necessity for complying with any new or amended regulation published by DCA from time to time where these new or amended regulations may override elements of this programme. It is understood that compliance with this programme alone does not discharge the operator from ensuring that the programme reflects the maintenance needs of the aircraft, such that continuing safe operation can be assured. It is further understood that the DCA reserves the right to suspend, vary or cancel approval of the Maintenance Programme if the DCA has evidence that the requirements of the Aircraft Maintenance Programme are not being followed or that the required standards of airworthiness are not being maintained.

Name.....Position.....

Signed.....

For and on behalf of the Part-M Subpart G Organization / Owner*:

Date:

NOTE: The post holder identified above is the Head of CAMO for an AOC operator's MCAR Part-M subpart G organization, a nominated post holder within the MCAR Part-M subpart G organization when the aircraft's continuing airworthiness is contracted to an approved organization or the aircraft owner when the aircrafts continuing airworthiness is not contracted to an approved organization.