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1.0 PURPOSE

This Advisory Circular (AC) is issued to provide guidance information on preparing and submitting an Air Operators Maintenance Control Manual (MCM) to the Authority for approval in accordance with the Ethiopian Civil Aviation (Air Operator Certification and Administration) Rules and Standards 2013.

Maintenance Control Manual sets out the applicant's intentions and procedures with regard to maintaining the airworthiness of the aircraft used, during their operational life. This applies whether or not the applicant for an AOC also intends to apply for approval as an Approved Maintenance Organization (AMO) or intends to contract out maintenance to an AMO.

2.0 REFERENCES

- 2.1 Part 9 of the Ethiopian Civil Aviation (Air Operator Certification and Administration) Rules and Standards 2013.
- 2.2 Part 8 of the Ethiopian Civil Aviation (Operation of Aircraft) Rules and Standards, 2013.


3.0 GUIDANCE AND PROCEDURES

3.1 General Information

- 3.1.1 The MCM is an air operator's manual for use and guidance by maintenance and operational personnel on maintenance issues. It states the organization management team and the organization commitment to comply with the regulatory requirement and to maintain the standards established during the Approval certification process.
- 3.1.2 It explains in detail the operator's maintenance responsibilities, functions and obligations. It further explains the regulatory processes, methods, procedures and capabilities the operator employs to satisfy these regulatory requirements.
- 3.1.3 The MCM defines the operator's aircraft maintenance structure, quality system management, maintenance activity coordination, duties, responsibilities, qualification and training requirements of technical personnel.

Notes:

- (i) *The MCM is normally presented with all other required manuals during the Formal Application phase of the Air Operator Certification.*
- (ii) *The MCM provides the reference datum by which the Authority conducts the operator's approval inspection, the compliance surveillance and audit functions.*


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(iii) *The general procedure, guidance and information that may be used to develop manuals in a format acceptable to the Authority are explained in the Development and Preparation of Manuals Advisory Circular No. ECAA-AC-GEN002.*


3.2 MCM Development and Preparation

3.2.1 As a minimum an AOC holder's MCM shall include the following information which may be issued in one volume or separate parts depending on the size and capacity of the operators maintenance activities –

- a) A description of the administrative agreements between the AOC holder and an AMO;
- b) A procedure for preparing maintenance release, the circumstances under which this release is issued and personnel authorized to sign it.
- c) A procedure to ensure that required maintenance or inspections are handled by appropriately trained and certificated /licensed personnel.
- d) The responsibilities, authorities and names of personnel appointed to conduct inspections
- e) Airworthiness certification and inspection standards and procedures for aircraft, parts and components.
- f) Details of the maintenance system to be followed, including procedures for performing routine and non routine maintenance inspections, alterations, repairs and servicing.
- g) Details of the reliability program.
- h) A description of the procedures to ensure each aircraft an AOC holder operates is in an airworthy condition;
- i) Methods, technique and practices for accomplishing preventive maintenance and alterations;
- j) Procedures to assess the cause and any potentially hazardous effects of defects or combination of defects, and to analyse occurrences in order to initiate any necessary further investigation and analysis. Please refer to first schedule of the Ethiopian Civil Aviation (Operation of Aircraft) Rules and Standards 2013 concerning mandatory occurrence reporting of incidents/ accidents to Ethiopian CAA.
- k) Procedure to prevent the personnel who performed maintenance work on aircraft from also conducting required inspections of such work

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- l) Procedure to ensure that work interruptions do not adversely affect maintenance work and required inspections
- m) Methods used for designating critical items requiring inspection
- n) Procedure to ensure that inspections are completed satisfactorily before aircraft are released into service
- o) Procedure for refueling and defueling aircraft
- p) Fire precaution procedures during refueling and defueling
- q) Procedure for preventing or eliminating fuel contamination
- r) Methods for servicing and maintenance prescribed by, or requiring the approval of, the chief of Maintenance.
- s) A description of the procedures to ensure the operational emergency equipment for each flight is serviceable;
- t) The names and duties of the operations and maintenance person or persons required to ensure that all maintenance is carried out in accordance with the MCM;
- u) A reference to the maintenance programme required by the Ethiopian Civil Aviation (Operation of Aircraft) Rules and Standards 2013.
- v) A description of the methods for completion and retention of the operator's maintenance records required by the Ethiopian Civil Aviation (Operation of Aircraft) Rules and Standards.
- w) A description of the procedures for monitoring, assessing and reporting maintenance and operational experience;
- x) A description of the procedures for obtaining and assessing continued airworthiness information and implementing any resulting actions from the organisation responsible for the type design, and shall implement any other actions considered necessary by the State of Registry;
- y) A system of ensuring that any fault, malfunctions, defects and other occurrences that cause or might cause adverse effects on the continuing airworthiness of aircraft shall be transmitted to the organization responsible for the type design of that aircraft and in accordance with the Civil Aviation Rules and Standards;

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- z) A description of the procedures for implementing mandatory continuing airworthiness information as required by the Ethiopian Civil Aviation (Airworthiness) Rules and Standards 2013.
- aa) A description of establishing and maintaining a system of analysis and continued monitoring of the performance and efficiency of the maintenance programme in order to correct any deficiency in that programme as required by the Ethiopian Civil Aviation (Operation of Aircraft) Rules and Standards 2013.
- bb) A description of aircraft types and models to which the manual applies;
- cc) A description of procedures for ensuring that un-serviceability affecting airworthiness are recorded and rectified;
- dd) A description of the procedures for reporting to the State of Registry and the state of the operator of significant in- service occurrences; and
- ee) A description of the operator's safety management system as required by the Ethiopian Civil Aviation (Air Operator Certification and Administration) Rules and Standards 2013.

3.2.2 As a minimum, the following should be covered in the manual in respect of each type and model of aircraft used:

- a) frequency schedules of each check, overhaul or inspection of airframes, engines, propellers (where applicable), equipment, instruments and component systems;
- b) procedures and standards for maintenance, inspection and servicing;
- c) approved service life, where applicable, for various components, parts, accessories, etc.;
- d) list of approved permissible unserviceabilities (configuration deviation list (CDL), if available, and minimum equipment list (MEL));
- e) arrangements whereby personnel or organizations other than the applicant's can be approved to perform maintenance and/or inspections of aircraft;
- f) time limits between required inspections;
- g) procedures for maintaining the aircraft mass and centre of gravity report;
- h) procedures and standards for acceptance or rejection of items requiring inspection;
- i) procedures for preventive maintenance and servicing;

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- j) time limitations for replacing instruments, components, appliances, etc.;
- k) procedures to ensure that certain aircraft systems and navigation equipment are fully serviceable for the appropriate special authorizations in the operations specifications;
- l) procedures for the procurement and sourcing of replacement parts;
- m) procedures to ensure that appropriate maintenance, records and inspection have been complied with; and
- n) Details of performing various inspection tests, checks, etc.

Note: An AOC holder shall not provide for use of its personnel in commercial air transport, a Maintenance Control Manual or its part that has not been reviewed and approved by the Authority.

3.3 The MCM Content Format


- 3.3.1 An AOC holder or applicant for an AOC shall submit and maintain a Maintenance Control Manual containing at least the information set out in Appendix 1 of this Advisory Circular.
- 3.3.2 The manual may be put together in one volume or separate subject user volumes provided all applicable subjects are covered as indicated in Appendix 1.

3.4 MCM Approval

- 3.4.1 The MCM should be submitted to the Authority for approval (this is normally during the Formal Application phase of the AOC certification). It should be submitted with the Statement of Compliance document which identifies in what section of the MCM the applicable requirements of the Rules and Standards have been complied with.
- 3.4.2 If discrepancies are found the Authority will notify the air operator or applicant in writing about the observed discrepancies and recommendations, outlining what will be required to correct the discrepancies. If it becomes apparent that the amendment of the manuals is likely to delay commencement of the inspection as indicated in the Schedule of Events, the applicant is notified.

Note: Normally the certification process cannot proceed until the Authority is satisfied and has accepted the MCM.

- 3.4.3 When the Authority is satisfied that the MCM meets the requirements all pages of the manual will be stamped approved by the Authority and returned to the operator. A copy of the approved MCM will be retained by the Authority

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3.5 Amendments to the Approved MCM

3.5.1 The operator shall submit all proposed amendments to the MCM to the Authority for approval before implementation.

3.5.2 The Authority will review all amendments to the manuals. The Authority shall not limit this review to the amendments alone but also the impact of the changes on the overall manual system.


3.5.3 Continuous review of the manuals by the operator is necessary because both the aviation environment and the operations are constantly changing.

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APPENDIX 1

MAINTENANCE CONTROL MANUAL

1. Each air operator certificate (AOC) applicant and AOC holder shall submit and maintain a maintenance control manual containing at least the information set forth below.
2. The manual may be put together in any subject order and subjects combined so long as all applicable subjects are covered.


1.0 Administration and Control of the Maintenance Control Manual

1.1 Introduction

- (a) A statement that the manual complies with all applicable Authority Rules and Standards and requirements and with the terms and conditions of the applicable Air Operator Certificate.
- (b) A statement that the manual contains maintenance and operational instructions that are to be complied with by the relevant personnel in the performance of their duties.
- (c) A list and brief description of the various Maintenance Control Manual parts, their contents, applicability and use.
- (d) Explanations and definitions of terms and words used in the manual.


1.2 System of Amendment and Revision

- (a) A Maintenance Control Manual shall describe who is responsible for the issuance and insertion of amendments and revisions.
- (b) A record of amendments and revisions with insertion dates and effective dates is required.
- (c) A statement that hand-written amendments and revisions are not permitted except in situations requiring immediate amendment or revision in the interest of safety.
- (d) A description of the system for the annotation of pages and their effective dates.
- (e) A list of effective pages and their effective dates.
- (f) Annotation of changes (on text pages and as practicable, on charts and diagrams).
- (g) A system for recording temporary revisions.

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- (h) A description of the distribution system for the manuals, amendments and revisions.
- (i) A statement of who is responsible for notifying the Authority of proposed changes and working with the Authority on changes requiring Authority approval.

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2.0 General Organisation

2.1 Corporate commitment by the air operators certificate

2.2 General information:

- a) Brief description of organization
- b) Relationship with other organizations
- c) Fleet composition - Type of operation
- d) Line station locations

2.3 Maintenance management personnel:

- a) Accountable Manager
- b) Nominated Post holder
- c) Maintenance co-ordination
- d) Duties and responsibilities
- e) Organization chart(s)
- f) Manpower resources and training policy

2.4 Notification procedure to the Authority regarding changes to the maintenance arrangements locations, personnel, activities, or approval.

3.0 Maintenance Procedures

3.1 Aircraft logbook utilization and minimum equipment list application

3.2 Aircraft maintenance programme - development and amendment.

3.3 Time and maintenance records, responsibilities, retention

3.4 Accomplishment and control of mandatory continued airworthiness information

(Airworthiness Directives)

3.6 Analysis of the effectiveness of the maintenance programme


3.6 Non-mandatory modification embodiment policy

3.7 Major modification standards

3.8 Defect reports

- a) Analysis
- b) Liaison with manufacturers and Regulatory Authorities
- c) Deferred defect policy

3.9 Engineering activity

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3.10 Reliability programmes

- a) Airframe
- b) Propulsion
- c) Components

3.11 Pre-flight inspection

- a) Preparation of aircraft for flight
- b) Sub-contracted Ground handling functions
- c) Security of Cargo and Baggage loading
- d) Control of refueling, Quantity/Quality
- e) Control of snow, ice, dust and sand contamination to an approved aviation standard.

3.12 Aircraft weighing

3.13 Flight test procedures

3.14 Sample of documents, tags and forms used

3.15 Appropriate portions of the air operators certificate holder's operations manual

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