



EAC

No. 121_8

Maintenance program manual

(a) General

- (1) The Egyptian Civil Aviation Regulations (ECARs) ECAR121-374 requires operators to prepare and keep current maintenance program for each operating aircraft. This EAC provides general manual information and guidance on the development of required manual.
- (2) Review of Manuals: Operators must continually review their manuals to ensure they contain adequate content and are in compliance with applicable regulations and airworthiness data sources (MPD or equivalent, MRB, ALI, CMR, TC data sheet --- etc) The interval between MPD or equivalent issuance date and updated maintenance program submission to ECAA must not exceed 3 months . The production and development of an acceptable manual is solely the responsibility of the operator.
- (3) Format/Style of Manuals: Each page of a manual must include its most recent revision date. In general, manuals should be easy to use and understand, and in a format that can be easily revised. The following manual elements are required:
 - (i) Preface Page: The first page of a manual should be a preface page containing a brief statement of the manual's purpose and intended user. The preface page should also contain a statement which emphasizes that the manual is an approved document.
 - (ii) Revision Control: Each manual should be easy to revise. Also, each manual should contain a revision control page from which the user can readily determine whether the manual is current. This page should preferably follow the preface page. The control date of the most recent revision must appear on each page.
- (4) Elements of Style: Manuals should be clear, concise, and easy to understand. The following suggestions will assist an operator during manual development:
 - (i) Whenever possible, short, common words should be used.
 - (ii) When a word has more than one meaning, the most common meaning should be used.
 - (iii) Operators should standardize terminology whenever practical.
 - (iv) Descriptions in the manual should not be overly complex and difficult to understand.
 - (v) Long and detailed sentences should be avoided.
- (5) The operator should ensure that manual contents are consistent with the following:
 - (i) ECARs
 - (ii) ECAA guidance
 - (iii) Manufacturer documents
 - (iv) Airworthiness directives
 - (v) CAA of Type Certificate requirements
- (6) The manual is issued in English language and A4 paper size Page formats as following:-
 - (i) Header contains the following
 - (ii) Company name to the left
 - (iii) (Maintenance program) at the middle
 - (iv) Airplane type to the right
- (7) Footer contains the following
 - (i) Revision number or date to the left
 - (ii) Section number and / or title at the middle
 - (iii) Page number to the right
- (8) Procedure for temporary revisions issued and approved by the operator in special cases must be issued at operator MCM. these cases may include:-
 - (i) Mandatory items which have to be carried out within 4 months
 - (ii) Language corrections
 - (iii) Other accepted by ECAA

(b) Regulatory frame

(1) LAW 28 requirements Article: 33

The maintenance of the airplane or aircraft

The investor of any airplane or aircraft registered in the Republic shall not be entitled to operate it in commercial air transport or air works, unless maintenance had been provided to the airplane or aircraft inclusive of its engines, equipment and instruments, as per the maintenance handbook which shall be approved by the Civil Aviation Authorities, and the rules that shall be set down to this effect.

(2) Requirements in ECAR 121.374 Certificate holder's aircraft maintenance program

- (i) A certificate holder must ensure that the aircraft is maintained in accordance with the certificate holder's aircraft maintenance program. The program must contain details, including frequency, of all maintenance required to be carried out. The program will be required to include a continuing analysis and surveillance program and a reliability program when the ECAA determines that such a reliability program is necessary.
- (ii) The certificate holder's aircraft maintenance program and any subsequent amendments must be approved by the ECAA. After the amendments are approved, the certificate holder must promptly distribute the amendments to all holders of the aircraft maintenance program.
- (iii) The maintenance program shall observe: Human Factors principles.

(c) Manual contents

The manual will contain the following

Section 0 Foreword :

This chapter contains the following (as applicable)

- (1) ECAA approval page
- (2) List of effective pages table contains (page number – revision number and/or date) and must contains approval of chief inspector and ACA-Administrator
- (3) Revision highlights to clarify the revised items
- (4) Revision log
- (5) Transmittal letter contains at least
 - (i) Reasons for issuance
 - (ii) Instructions for updating the manual
 - (iii) Approval by the company
- (6) A statement signed by the operator to the effected that
 - (i) The specified aero planes will be maintained according to the program
 - (ii) The program will be reviewed and updated annually or with any revision of any main source
- (7) Table of Contents: Each manual should have a table of contents containing lists of major topics with their respective page numbers.
- (8) Distribution list

Section 1 Introduction :

This chapter contains the following (as applicable)

- (1) Applicability :- Airplanes for which this program issued (serial number , registration marks , type/model , engine type/model , APU type/model ,propeller type/model and power transmutation type/model)
- (2) Utilization rate of airplane operation (at least flight hours/day and flight hours/cycles)
- (3) References used for issue and development the program (with revision number /revision date) such as:-
 - (i) ECARs
 - (ii) MRBR (maintenance review board report)
 - (iii) ALI (airworthiness limitations)
 - (iv) CMR (maintenance certification requirement)
 - (v) Manufacturer documents (MPD , AMM ,CMM ----etc)
- (4) Task interval framework which contains the following:-
 - (i) Definition of the measuring units used such as FH ,FC , CY ---
 - (ii) Inspection intervals such as A , B , C , PHASE (general lay out of program)

- (5) Glossary (description of special words or combination of words used)
- (6) Abbreviations

Section 2 Maintenance checks

This chapter contains the following

PART 1 (LINE CHECKS)

It is required by ECAR 121-367(a1) to perform Pre Departure Check (PDC) before each departure so the operator shall establish PDC even it is not required by manufacturer or type certification documents

That part contains the following:-

- (1) All line checks intervals
- (2) List for each check contains at least the following:-
 - (i) Item number
 - (ii) Description of required maintenance action
 - (iii) Reference (MPD, MRBR, ALI, CMR, ECAR or operator requirements)
 - (iv) Technical support data (AMM, NDT, AD, SB, SIL...)

PART 2 (BASE CHECKS)

General requirements as a guide for preparation of that part

- (1) That part shall contain
 - (i) The tasks and the periods (intervals/frequencies) at which each part of aero plane , engines , APU , propeller , components , accessories , equipment , instruments , electrical and radio apparatus ,and associated systems and installations should be inspected , together with the type and degree of inspection
 - (ii) The periods at which items as appropriate , should be checked , cleaned , lubricated , replenished , adjusted and tested
 - (iii) Details of specific structural inspections or sampling programs , when applicable
 - (iv) Details of corrosion control program , when applicable
 - (v) CPCP or aging program , when applicable
- (2) It is not acceptable to put open items such as (if installed , as required by vendor , as engine maintenance manual ----)
- (3) This section will cover the following requirements in the following sequence according to its mandatory
 - (i) ADs
 - (ii) CMR and ALI
 - (iii) MRBR
 - (iv) MPD
 - (v) other

This part contains the following:-

- (1) General layout of the program (inspection matrix) describes the periodic inspections intervals and the interval check task lists which will be done during each one. that may be done by a table with vertical coulomb for periodic inspections (A1 , A2 , A3 ---OR C1 , C2 , C3----- OR PHASE1 , PHASE2-----) and horizontal raw for assigned check task lists
- (2) Out of phase inspection cards
- (3) Instructions or notes relate to cards
- (4) Implementation period for any new card for operating a/c
- (5) List of every check task lists with description of list design with details of every coulomb contains at least the following:-
 - (i) Task number
 - (ii) Description
 - (iii) Threshold/interval
 - (iv) Reference of card
 - (v) Reference for airworthiness data
 - (vi) Zone and access
 - (vii) Man-hour data
 - (viii) Applicability (for the program covers more than one a/c)
 - (ix) Special requirements (RII – AD ---)

Section 3 Time controlled/life limited items

This chapter contains the following (as applicable)

- (1) Time controlled items
 - (i) Introduction to explain what is meant by time controlled and action taken
 - (ii) Definitions of measuring units (flight hour – landing – cycle)
 - (iii) Time controlled item table include at least the following :
 - (A) Task number
 - (B) Part description
 - (C) Description of the maintenance action required
 - (D) Part number
 - (E) Vendor code and/or CMM part number
 - (F) Number of units per airplane
 - (G) Reference for maintenance action (AMM – CMM --)
 - (H) Interval (number and unites used) for task (refer to part manufacturer if required (I) reference of card
 - (J) Applicability
- (2) life limits
 - (i) Introduction to explain what is meant by life limits and action taken
 - (ii) Definitions for measuring units (flight hour – landing – cycle)
 - (iii) Life limited item table (for landing gear , engine , APU and main rotor -- etc)include at least the following
 - (A) Task number
 - (B) Item description
 - (C) Part number
 - (D) Life limit interval
 - (E) Source of task
 - (F) Applicability

Section 4 Airworthiness Limitation Section (ALS)

- (1) This chapter contains the following (as applicable)
 - (i) Part 1 (safe life airworthiness limitation items SL ALI)
 - (ii) Part 2 (damage-tolerant airworthiness limitation items DT ALI)
 - (iii) Part 3 (certification maintenance requirements CMRs)
 - (vi) Part 4 (ageing systems maintenance ASM)
 - (v) Part 5 (fuel airworthiness limitation FAL)
- (2) Every part contains
 - (i) General description
 - (ii) Guidance data and notes
 - (iii) List of cards