



# **CAR AIR**

## **CONTINUING AIRWORTHINESS (GENERAL AVIATION OPERATIONS)**

**FOREWORD**

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## FOREWORD

- (a) The Civil Aviation and Maritime Navigation Authority (L'Autorità per l'Aviazione Civile e la Navigazione Marittima) of the Republic of San Marino is known in these regulations as the “Authority”
- (b) [CAR AIR addresses continuing airworthiness for all aeroplanes and helicopters operated under CAR OPS 2 (General Aviation Operations) and remoted piloted aircraft operated under CAR OPS 4.]
- (c) The editing practices used in this document are as follows:
  - (a) ‘Shall’ is used to indicate a mandatory requirement.
  - (b) ‘Should’ is used to indicate a recommendation.
  - (c) ‘May’ is used to indicate discretion by the Authority, the industry or the applicant, as appropriate.
  - (d) ‘Will’ indicates a mandatory requirement.

*Note: The use of the male gender implies the female gender and vice versa.*

- (d) Paragraphs and sub-paragraphs with new, amended and corrected text will be enclosed within brackets until a subsequent “amendment” is issued.



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**REVISION RECORD**

<b>REVISION NO.</b>	<b>EFFECTIVE DATE</b>	<b>ENTERED BY</b>
Initial Issue (Rev 00)	01 March 2013	
Rev 01	01 August 2014	
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**SUBPART A****GENERAL****AIR.1 Purpose**

- (a) [This Subpart details the requirements governing aircraft operating in accordance with CAR OPS 2 and CAR OPS 4 and any aeronautical product associated with those aircraft.]

*Note: The holder of an air operator certificate must refer to CAR OPS 1/3, Subpart M for continuing airworthiness regulations.*

- (b) The owner or operator of an aircraft not being used for commercial air transport shall have arrangements for continued airworthiness management acceptable to the Authority.
- (c) These regulations cover the standards of continuing airworthiness necessary for the Authority's acceptance of the arrangements for:
- (1) the management of continuing airworthiness
  - (2) maintenance programmes
  - (3) aircraft records
  - (4) the accomplishment of defect rectification, Line and Base Maintenance

**AIR.3 Definitions**

Definitions, in the context of these regulations shall have the meanings listed in CAR DEF – Definitions



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**SUBPART B****CONTINUED AIRWORTHINESS MANAGEMENT****AIR.51 Management personnel**

The owner or operator of an aircraft registered in San Marino, to whom these regulations apply, shall appoint a person acceptable to the Authority and known as the Airworthiness Co-ordinator who will ensure that appropriate arrangements for continued airworthiness management required by these regulations are in place.

**AIR.53 General continued airworthiness arrangements**

- (a) The owner or operator of an aircraft shall have arrangements for continued airworthiness management to the requirements of these CAR AIR regulations.
- (b) The Airworthiness Co-ordinator identified in paragraph AIR.51 shall ensure that suitable arrangements for continued airworthiness management are established and are acceptable to the Authority.
- (c) A change in the nominated Airworthiness Co-ordinator shall be advised to the Authority at the earliest opportunity.

**AIR.55 Management responsibilities**

The personnel identified in paragraph AIR.51 are responsible for ensuring that the certificate of airworthiness continues to remain valid by suitable arrangements made in accordance with paragraph AIR.53 that also ensure that;

- (a) the aircraft, including its airframe, engines(s), propellers, appliances, emergency equipment and operational equipment, is maintained in an airworthy condition; and
- (b) all scheduled maintenance is performed in accordance with a maintenance programme accepted by the Authority; and
- (c) appropriate contracted maintenance arrangements are made acceptable to the Authority; and
- (d) no person certifies maintenance on the aircraft other than as prescribed in CAR GEN; and
- (e) any defects and unserviceabilities are rectified or deferred prior to flight or, are rectified, repaired or, where approved data so provides, the equipment/instrument is removed; and
  - (1) as applicable, for aircraft subject to reliability analysis, a verification of the associated aircraft system's functional reliability is undertaken to ensure the certification basis of the MEL/CDL is not compromised; and
  - (2) repetitive defects are identified and controlled; and
  - (3) procedures are in place for the notification of any MEL/CDL limitations to the operating crew; and
  - (4) procedures are established for the subsequent control of required rectification intervals; and



- (f) applicable mandatory continued airworthiness requirements are complied with within the prescribed period; and
- (g) for all aircraft:
  - (1) there are suitable arrangements for the receipt of all relevant continued airworthiness information published by the Type Design Organisation's for the aircraft, equipment and any applicable accomplished major design change; and
  - (2) any required technical and reliability assessments are undertaken and reports of aircraft continued airworthiness status are made; and
  - (3) applicable continued airworthiness data is reviewed for the determination of any required actions to be taken and records of such reviews are maintained; and
- (h) repairs are carried out and approved in accordance with CAR 21, Subpart M; and
- (i) design changes are carried out and approved in accordance with CAR 21, Subpart C and any continued airworthiness requirements arising from them are incorporated in the aircraft maintenance programme; and
- (j) suitable arrangements are made for the regular development of the maintenance programme to ensure effective continued airworthiness of the applicable aircraft; and
- (k) any applicable continued airworthiness data is made available to those involved in the maintenance of the aircraft; and
- (l) procedures prescribed in any applicable maintenance control manual are complied with; and
- (m) any required technical despatch procedures for special operations approved by the Authority are complied with; and
- (n) for any aircraft having systems utilising Field Loadable Software and Database Field Loadable Data, controlling procedures are in place to ensure that:
  - (1) Field Loadable Software uploads are accomplished in accordance with the approval requirements of CAR 21 Subpart C; and
  - (2) Database Field Loadable Data is controlled and transferred in accordance with the equipment manufacturer's instructions; and
- (o) continuing airworthiness records are maintained in accordance with Subpart D of these regulations; and
- (p) occurrence reporting is accomplished to the requirements of the appropriate CAR GEN, Subpart F and appropriate investigations are undertaken to safeguard the aircraft and that of any other, records of such investigations any actions taken shall be reported as required; and
- (q) up-to-date mass and balance records are maintained that reflect the approved configuration of the aircraft; and
- (r) arrangements are made for technical liaison with applicable type design organisations, operators and maintenance organisations to address any airworthiness issues such as; faults, malfunctions,



defects, any required inspection task reporting and inaccurate/misleading airworthiness data; and

- (s) liaison meetings are held in compliance with any applicable reliability monitoring programme requirement.

#### **AIR.57 General maintenance arrangements**

- (a) Aircraft with a certificate of airworthiness issued prior to 01 October, 2015 for a period of 36 months arrangements for the maintenance of aircraft shall be established by a suitable contract;
  - (1) with appropriately validated licensed aircraft engineers for minor defect rectification and Line Maintenance and an appropriately approved CAR 145 maintenance organisation for Base Maintenance; or
  - (2) with an appropriately approved CAR 145 maintenance organisation for defect rectification, Line and Base Maintenance.
- (b) Aircraft with a certificate of airworthiness issued after 01 October, 2015 for a period of 24 months, arrangements for the maintenance of aircraft shall be established by a suitable contract with an approved continuing airworthiness management organisation acceptable to the Authority. Such contracts must be for a minimum of twelve months duration and submitted to the Authority with the Airworthiness Review Declaration in accordance with CAR GEN.161(d).
- (c) For aircraft with a certificate of airworthiness issued for a period of 12 months or less, suitable contracts must be established with an approved maintenance organisation prior to any maintenance being performed.
- (d) The maintenance contracts required by CAR AIR.55(c) and CAR AIR.57(b) shall specify:
  - (1) a clear description of the work required of the maintenance organisation or person that takes account of human factors; and
  - (2) the applicable Maintenance Control Manual including any operator specific maintenance control procedures that are to be followed; and
  - (3) the operator contact information; and
  - (4) details of any supplied maintenance data including its revision status and applicability.
- (e) Persons signing a Certificate of Release to Service shall be appropriately authorised in accordance with the requirements specified in CAR GEN Subpart C.

#### **AIR.59 Maintenance Control Manual**

- (a) [The Maintenance Control Manual (MCM), where required by CAR OPS 2.620 or CAR OPS 4,702, shall be in the English language, the content shall be representative of the organisation and address compliance in accordance with CAR OPS 2.810 or CAR OPS 4.804, as applicable.]
- (b) The Maintenance Control Manual shall contain the necessary procedures for applicable continued airworthiness management functions prescribed in paragraph AIR.55 and AIR.57 to ensure the continued airworthiness of the managed aircraft and ensure the continued validity of the Certificates of Airworthiness.



- (c) Procedures shall be established for a regular review of the Maintenance Control Manual to ensure that it remains effective in maintaining aircraft in an airworthy condition.
- (d) All amendments shall be made in a timely manner and the amendment status of each document shall be readily identifiable by personnel. Obsolete material shall be removed promptly from all points of issue or use, and controls shall be in place to preclude the use by personnel of superseded material.

**SUBPART C****INSPECTION REQUIREMENTS****AIR.61 Maintenance programme**

- (a) Every aircraft to which this regulation applies shall be maintained in accordance with a maintenance programme accepted by the Authority, which shall be periodically reviewed and amended accordingly by the owner/operator.
- (b) The maintenance programme must establish compliance with:
- (1) instructions for continuing airworthiness issued by Type Certificate and Supplementary Type Certificate Holders. or;
  - (2) instructions issued by the Authority, if they differ from subparagraph (1) or in the absence of specific recommendations, or;
  - (3) instructions defined by the owner or the operator and accepted by the Authority if they differ from subparagraphs (1) and (2).
- (c) The maintenance programme shall contain details, including frequency, of all maintenance to be carried out, including any specific tasks linked to specific operations.
- (d) The owner/operator is to ensure that all amendments to the maintenance programme are furnished promptly to all organisations or persons to whom the maintenance programme has been issued.
- (e) The periods prescribed by the Authority's accepted maintenance programme may be varied by the owner/operator provided that such variations are within the limits specified in AIR.61(f). Variations are only permitted when the periods prescribed by the maintenance programme, or documents in support of the maintenance programme, cannot be complied with due to circumstances which could not reasonably have been foreseen by the owner/lessee. Particulars of every variation so made shall be entered in the appropriate aircraft records. The variations permitted do not include:
- (1) Those components for which an ultimate, finite or retirement life has been prescribed.
  - (2) Those tasks that have been classified as mandatory by the Authority or Type Certificate holder.
  - (3) Certification Maintenance Requirements.
- (f) The permitted variations to the maintenance programme in accordance with AIR.61(e) are:
- (1) Items Controlled by Flying Hours:  
5000 flying hours or less; 10%  
More than 5000 flying hours; 500 flying hours
  - (2) Items Controlled by Calendar Time:  
1 year or less 10% or 1 month, whichever is the lesser  
More than 1 year but not exceeding 3 years; 2 months



More than 3 years; 3 months

(3) Items Controlled by Landing/Cycles:

500 landings/cycles or less; 10% or 25 landings/cycles, whichever is the lesser

(4) For items controlled by more than one limit, e.g. items controlled by flying hours and calendar time or flying hours and landings/cycles, the more restrictive limit shall be applied.

**AIR.65 Condition monitored and reliability maintenance programmes**

- (a) Where the manufacturer of aircraft, engines and propellers prescribe condition monitoring, reliability programmes or health and usage monitoring systems these shall form part of the maintenance programme accepted by the Authority.
- (b) Appropriate procedures shall be established for any applicable condition monitoring or reliability or health and usage monitoring systems referred to in paragraph AIR.65(a).

**AIR.67 Airworthiness Directives applicability**

- (a) Except as provided for in paragraph AIR.67(b), the airworthiness directives applicable under these regulations are those airworthiness directives or equivalent mandatory continued airworthiness requirements:
  - (1) prescribed for that aircraft or product by the State of type certification on which Type Acceptance Certification rests; and
  - (2) any prescribed by the state of certification of an applicable approved design change.
- (b) Compliance with alternative or additional airworthiness directives may be required as a condition of issue or continuity of the Type Acceptance Certificate.

**AIR.69 Airworthiness Directives compliance**

An aircraft shall not be released to service unless for each applicable airworthiness directive:

- (a) compliance can be demonstrated with the specified compliance criteria; or
- (b) an alternative means of compliance has been approved under paragraph AIR.71.

**AIR.71 Alternative means of compliance with mandatory continued airworthiness requirements**

An alternative means of compliance for mandatory continued airworthiness requirements may be proposed for the Authority's approval provided that the Regulatory Authority of the State that issued the original requirement has accepted the alternative compliance proposal.



**SUBPART D****AIRCRAFT RECORDS****AIR.73 Maintenance and continued airworthiness records**

- (a) The owner or operator of an aircraft shall make provision for the retention of aircraft, engine and propeller log books recording at least the following:
- (1) maintenance records; and
  - (2) airworthiness records of compliance with airworthiness directives and scheduled maintenance requirements; and
  - (3) records of modifications and repairs; and
  - (4) life component records.
- (b) Maintenance records shall be of sufficient detail to establish the full content of the maintenance activity undertaken and shall include all relevant supporting information, such as component replacement service life records.
- (c) Records shall be in the English language and of sufficient detail to demonstrate the airworthiness status of the aircraft at all times and shall include:
- (1) a description of maintenance tasks including references to the applicable approved technical data; and
  - (2) the date of completion of all scheduled maintenance tasks and reference to the approved maintenance programme; and
  - (3) the signature, and authorisation reference of the person certifying the aircraft for return to service; and
  - (4) the total time in service by the specified time control basis of the airframe, each engine, each propeller, each rotor and installed equipment; and
  - (5) the current status of lifed parts/components of each airframe, engine, propeller, rotor and appliance with referenced to the specified time interval basis required by paragraph AIR.61(h)(3); and
  - (6) the time since last overhaul of all items installed on the aircraft which are required to be overhauled on a specified time basis; and
  - (7) the current maintenance status of the aircraft, including the time since the last inspection required by the maintenance programme under which the aircraft is maintained; and
  - (8) the current status of each applicable airworthiness directive including:
    - (i) the airworthiness directive number; and
    - (ii) the revision date; and



- (iii) the means of compliance; and
  - (iv) and if the airworthiness directive involves recurring action, the time and date when the next action is required; and
- (9) a list of all design changes and repairs to each airframe, engine, propeller, rotor and appliance including substantiation data required by CAR 21.73(c); and
  - (10) a record of all airframe damage that shows each damage site with a reference to a certified assessment to approved data supporting continued aircraft operation; and
  - (11) a record of any defects or maintenance activities requiring rectification action to restore the aircraft to an airworthy condition.
- (d) The records shall be kept in hard copy form or in electronic coded form provided that this form allows for the preservation and retrieval of information in a manner acceptable to the Authority.
  - (e) Any additional worksheets, documents, technical logs or other documentation associated with the maintenance of the aircraft shall be referenced in the relevant log books and will become part of the maintenance records for retention of records purposes.

#### **AIR.75 Retention of records**

- (a) The owner or operator of an aircraft shall retain maintenance and continued airworthiness records as follows:
  - (1) for a minimum period of 12 months after the unit to which they refer has been permanently withdrawn from service:
    - (i) the total time in service (hours, calendar time and cycles, as appropriate) of the aircraft and all life-limited components; and
    - (ii) the current status of compliance with all mandatory continuing airworthiness information; and
    - (iii) appropriate details of modifications and repairs; and
    - (iv) the time in service (hours, calendar time and cycles, as appropriate) since the last overhaul of the aircraft or its components that are subject to an overhaul life; and
    - (v) the current status of the aircraft's compliance with the maintenance programme.
  - (2) for all detailed maintenance records in respect of the aircraft and any service life-limited component fitted thereto, not less than 24 months after the aircraft been released to service in respect of that maintenance or until the information contained therein is superseded by new information equivalent in scope and detail, whichever is the longer time.
  - (3) the current status of compliance with the 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.



- (b) The owner or operator required by paragraph CAR AIR.79 (a) to provide a Technical Log shall ensure that arrangements are established for the subsequent transmittal of sector record pages to the Airworthiness Co-ordinator responsible for the continued airworthiness of the aircraft.

**AIR.77 Transfer of maintenance records**

- (a) Each holder of a San Marino Certificate of Registration for an aircraft shall when transferring the aircraft to another owner or operator, transfer to that person all relevant maintenance records and records of continued airworthiness.
- (b) In the event of a temporary change of operator, the relevant maintenance records and records of continued airworthiness shall be made available to the new operator.

**AIR.79 Technical log**

- (a) The owner or operator of a large or turbo-jet aircraft as defined in CAR OPS 2, Part II shall provide a technical log for the aircraft which has provision for recording:
- (1) the name of the operator; and
  - (2) the registration and designation of the aircraft; and
  - (3) record of aircraft utilisation including total time (daily, hours, cycles sectors) as applicable including those cycles, such as landings, pressure cycles, engine power ranges, which affect the life of an aircraft or component; and
  - (4) the time when ground de-icing and/or anti-icing was started and the type of fluid applied, including fluid/water mixture ratio; and
  - (5) records of fuel and oil; and
  - (6) the maintenance status of the aircraft, the identity of the next scheduled inspection, including date/hours/cycles at which any other out of phase maintenance/inspection is required; and
  - (7) any defects or abnormal occurrences found by the pilot during or following a flight; and details of rectification of defects occurring between scheduled inspections including the certificate of release to service for any rectification; and
  - (8) details of any deferred rectification including any inoperative equipment with which the aircraft is permitted to be flown under the applicable CARs relating to the operation of the aircraft; and
  - (9) records for special operations such as AWO and ETDO; and
  - (10) the information required by the applicable CARs relating to the operation of the aircraft; and
  - (11) Any necessary maintenance support information for the pilot; and
  - (12) the pre-flight inspection signature; and



- (13) the time spent in particular engine power ranges where the use of such engine power affects the life of the engine, engine component or engine module; and
  - (14) the number of landings where landings affect the life of an aircraft or aircraft component; and
  - (15) the flight pressure cycles where such cycles affect the life of an aircraft or aircraft component.
- (b) The content of the Technical Log may be altered from that in paragraph AIR.79(a) if alternative methods of recording this data acceptable to the Authority are used.
  - (c) The Technical Log shall be kept in hard copy form or in electronic coded form provided that this form allows for the preservation and retrieval of information.

### **AIR.81      Mass and Balance**

- (a) Aircraft are to be weighed at intervals not exceeding 5 years; or
  - (1) where the aircraft is part of a fleet weighing programme specified by the type certificate holder and accepted by the Authority, at intervals specified by that programme; and
  - (2) whenever alterations affecting mass and balance of the aircraft are made that exceed the limits for computed mass and balance changes advised by the aircraft type certificate holder.
- (b) Records of aircraft mass and balance shall be maintained in a manner acceptable to the Authority and reflect the modification and repair status by:
  - (1) calculations where approved data is available for incorporated design changes; and
  - (2) by periodic weighing of aircraft as prescribed in the applicable approved aircraft maintenance programme.
- (c) The basic record of aircraft empty mass shall be that defined by the Type Certificate holder and any approved configuration.
- (d) Any item installed not forming part of the Type Design shall be entered in an equipment list with its associated weight and moment and shall constitute part of the aircraft's mass and balance report.
- (e) Following any change made to the empty mass of the aircraft or its centre of gravity, an entry shall be made in the aircraft log book or other aircraft record acceptable to the Authority before the next flight and shall include details of:
  - (1) the change; and
  - (2) the effective date of the change; and
  - (3) the weight and moment arm of each item installed or removed.
- (f) Subject to the requirement of paragraph AIR.81(b) the particulars of any changes to the empty mass of the aircraft shall be transcribed into the aircraft's empty weight and balance report.

**AIR.83 Alternative configurations**

Where an aircraft is operated in more than one configuration, a separate mass and balance report shall be provided for each configuration and shall contain:

- (a) details of the differences from the basic aircraft configuration; and
- (b) the empty mass and centre of gravity for the configuration; and
- (c) the approved modification details supporting the configuration.

**AIR.85 Certification**

- (a) All mass and balance reports shall be certified by the person responsible for compiling the report.
- (b) Alternative configurations and changes made to the aircraft empty mass shall be certified with an appropriate maintenance release recording:
  - (1) where applicable the specific configuration; and
  - (2) details of the approved modification; and
  - (3) the amendment made to the aircraft's empty mass and balance report.



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