

CHAPTER 8. AEROPLANE MAINTENANCE

Note 1.— For the purpose of this chapter, “aeroplane” includes: powerplants, propellers, components, accessories, instruments, equipment and apparatus including emergency equipment.

Note 2.— Reference is made throughout this chapter to the requirements of the State of Registry. When the State of the Operator is not the same as the State of Registry, it may be necessary to consider any additional requirements of the State of the Operator.

Note 3.— Guidance on continuing airworthiness requirements is contained in the Airworthiness Manual (Doc 9760).

8.1 Operator’s maintenance responsibilities

8.1.1 Operators shall ensure that, in accordance with procedures acceptable to the State of Registry:

- a) each aeroplane they operate is maintained in an airworthy condition;
- b) the operational and emergency equipment necessary for an intended flight is serviceable;
- c) the Certificate of Airworthiness of each aeroplane they operate remains valid.

8.1.2 An operator shall not operate an aeroplane unless it is maintained and released to service by an organization approved in accordance with 8.7, or under an equivalent system, either of which shall be acceptable to the State of Registry.

8.1.3 When the State of Registry accepts an equivalent system, the person signing the maintenance release shall be licensed in accordance with Annex 1.

8.1.4 An operator shall employ a person or group of persons to ensure that all maintenance is carried out in accordance with the maintenance control manual.

8.1.5 The operator shall ensure that the maintenance of its aeroplanes is performed in accordance with the maintenance programme.

8.2 Operator’s maintenance control manual

8.2.1 The operator shall provide, for the use and guidance of maintenance and operational personnel concerned, a maintenance control manual, acceptable to the State of Registry, in accordance with the requirements of 11.2. The design of the manual shall observe Human Factors principles.

Note.— Guidance material on the application of Human Factors principles can be found in the Human Factors Training Manual (Doc 9683).

8.2.2 The operator shall ensure that the maintenance control manual is amended as necessary to keep the information contained therein up to date.

8.2.3 Copies of all amendments to the operator’s maintenance control manual shall be furnished promptly to all organizations or persons to whom the manual has been issued.

8.2.4 The operator shall provide the State of the Operator and the State of Registry with a copy of the operator’s maintenance control manual, together with all amendments and/or revisions to it and shall incorporate in it such mandatory material as the State of the Operator or the State of Registry may require.

8.3 Maintenance programme

8.3.1 The operator shall provide, for the use and guidance of maintenance and operational personnel concerned, a maintenance programme, approved by the State of Registry, containing the information

required by 11.3. The design and application of the operator's maintenance programme shall observe Human Factors principles.

Note.— Guidance material on the application of Human Factors principles can be found in the Human Factors Training Manual (Doc 9683).

8.3.2 Copies of all amendments to the maintenance programme shall be furnished promptly to all organizations or persons to whom the maintenance programme has been issued.

8.4 Maintenance records

8.4.1 An operator shall ensure that the following records are kept for the periods mentioned in 8.4.2:

- a) the total time in service (hours, calendar time and cycles, as appropriate) of the aeroplane and all life limited components;
- b) the current status of compliance with all mandatory continuing airworthiness information;
- c) appropriate details of modifications and repairs;
- d) the time in service (hours, calendar time and cycles, as appropriate) since the last overhaul of the aeroplane or its components subject to a mandatory overhaul life;
- e) the current status of the aeroplane's compliance with the maintenance programme; and
- f) the detailed maintenance records to show that all requirements for the signing of a maintenance release have been met.

8.4.2 The records in 8.4.1 a) to e) shall be kept for a minimum period of 90 days after the unit to which they refer has been permanently withdrawn from service, and the records in 8.4.1 f) for a minimum period of one year after the signing of the maintenance release.

8.4.3 In the event of a temporary change of operator, the records shall be made available to the new operator. In the event of any permanent change of operator, the records shall be transferred to the new operator.

Note.— In the context of 8.4.3, a judgement on what should be considered as a temporary change of operator will need to be made by the State of Registry in the light of the need to exercise control over the records, which will depend on access to them and the opportunity to update them.

8.5 Continuing airworthiness information

8.5.1 The operator of an aeroplane over 5 700 kg maximum certificated take-off mass shall monitor and assess maintenance and operational experience with respect to continuing airworthiness and provide the information as prescribed by the State of Registry and report through the system specified in Annex 8, Part II, 4.2.3 f) and 4.2.4.

8.5.2 The operator of an aeroplane over 5 700 kg maximum certificated take-off mass shall obtain and assess continuing airworthiness information and recommendations available from the organization responsible for the type design and shall implement resulting actions considered necessary in accordance with a procedure acceptable to the State of Registry.

Note.— Guidance on the interpretation of "the organization responsible for the type design" is contained in the Airworthiness Manual (Doc 9760).

8.6 Modifications and repairs

All modifications and repairs shall comply with airworthiness requirements acceptable to the State of Registry. Procedures shall be established to ensure that the substantiating data supporting compliance with the airworthiness requirements are retained.

8.7 *Approved maintenance organization*

8.7.1 Issue of approval

8.7.1.1 The issue of a maintenance organization approval by a State shall be dependent upon the applicant demonstrating compliance with the requirements of 8.7 for such organizations.

8.7.1.2 The approval document shall contain at least the following:

- a) organization's name and location;
- b) date of issue and period of validity;
- c) terms of approval.

8.7.1.3 The continued validity of the approval shall depend upon the organization remaining in compliance with the requirements of 8.7 for an approved maintenance organization.

8.7.2 Maintenance organization's procedures manual

8.7.2.1 The maintenance organization shall provide for the use and guidance of maintenance personnel concerned a procedures manual which may be issued in separate parts containing the following information:

- a) a general description of the scope of work authorized under the organization's terms of approval;
- b) a description of the organization's procedures and quality or inspection system in accordance with 8.7.4;
- c) a general description of the organization's facilities;
- d) names and duties of the person or persons required by 8.7.6.1;
- e) a description of the procedures used to establish the competence of maintenance personnel as required by 8.7.6.3;
- f) a description of the method used for the completion and retention of the maintenance records required by 8.7.7;
- g) a description of the procedures for preparing the maintenance release and the circumstances under which the release is to be signed;
- h) the personnel authorized to sign the maintenance release and the scope of their authorization;
- i) a description, when applicable, of the additional procedures for complying with an operator's maintenance procedures and requirements;
- j) a description of the procedures for complying with the service information reporting requirements of Annex 8, Part II, 4.3.5 and 4.3.8; and
- k) a description of the procedure for receiving, assessing, amending and distributing within the maintenance organization all necessary airworthiness data from the type certificate holder or type design organization.

8.7.2.2 The maintenance organization shall ensure that the procedures manual is amended as necessary to keep the information contained therein up to date.

8.7.2.3 Copies of all amendments to the procedures manual shall be furnished promptly to all organizations or persons to whom the manual has been issued.

8.7.3 Safety management

8.7.3.1 States shall establish a safety programme in order to achieve an acceptable level of safety in the maintenance of aircraft.

8.7.3.2 The acceptable level of safety to be achieved shall be established by the State(s) concerned.

Note.— Guidance on safety programmes and on defining acceptable levels of safety is contained in Attachment E to Annex 11 and in the Safety Management Manual (SMM) (Doc 9859).

8.7.3.3 Recommendation.— States should require, as part of their safety programme, that a maintenance organization implement a safety management system acceptable to the State that, as a minimum:

- a) identifies safety hazards;
- b) ensures that remedial action necessary to maintain an acceptable level of safety is implemented;
- c) provides for continuous monitoring and regular assessment of the safety level achieved; and
- d) aims to make continuous improvement to the overall level of safety.

8.7.3.4 From 1 January 2009, States shall require, as part of their safety programme, that a maintenance organization implement a safety management system acceptable to the State that, as a minimum:

- a) identifies safety hazards;
- b) ensures that remedial action necessary to maintain an acceptable level of safety is implemented;
- c) provides for continuous monitoring and regular assessment of the safety level achieved; and
- d) aims to make continuous improvement to the overall level of safety.

8.7.3.5 A safety management system shall clearly define lines of safety accountability throughout a maintenance organization, including a direct accountability for safety on the part of senior management.

Note.— Guidance on safety management systems is contained in the Safety Management Manual (SMM) (Doc 9859).

8.7.4 Maintenance procedures and quality assurance system

8.7.4.1 The maintenance organization shall establish procedures, acceptable to the State granting the approval, which ensure good maintenance practices and compliance with all relevant requirements of this chapter.

8.7.4.2 The maintenance organization shall ensure compliance with 8.7.4.1 by either establishing an independent quality assurance system to monitor compliance with and adequacy of the procedures, or by providing a system of inspection to ensure that all maintenance is properly performed.

8.7.5 Facilities

8.7.5.1 The facilities and working environment shall be appropriate for the task to be performed.

8.7.5.2 The maintenance organization shall have the necessary technical data, equipment, tools and material to perform the work for which it is approved.

8.7.5.3 Storage facilities shall be provided for parts, equipment, tools and material. Storage conditions shall be such as to provide security and prevent deterioration of and damage to stored items.

8.7.6 Personnel

8.7.6.1 The maintenance organization shall nominate a person or group of persons whose responsibilities include ensuring that the maintenance organization is in compliance with the requirements of 8.7 for an approved maintenance organization.

8.7.6.2 The maintenance organization shall employ the necessary personnel to plan, perform, supervise, inspect and release the work to be performed.

8.7.6.3 The competence of maintenance personnel shall be established in accordance with a procedure and to a level acceptable to the State granting the approval. The person signing a maintenance release shall be qualified in accordance with Annex 1.

8.7.6.4 The maintenance organization shall ensure that all maintenance personnel receive initial and continuation training appropriate to their assigned tasks and responsibilities. The training programme established by the maintenance organization shall include training in knowledge and skills related to human performance, including coordination with other maintenance personnel and flight crew.

Note.— Guidance material to design training programmes to develop knowledge and skills in human performance can be found in the Human Factors Training Manual (Doc 9683).

8.7.7 Records

8.7.7.1 The maintenance organization shall retain detailed maintenance records to show that all requirements for the signing of a maintenance release have been met.

8.7.7.2 The records required by 8.7.7.1 shall be kept for a minimum period of one year after the signing of the maintenance release.

8.8 Maintenance release

8.8.1 A maintenance release shall be completed and signed to certify that the maintenance work performed has been completed satisfactorily and in accordance with approved data and the procedures described in the maintenance organization's procedures manual.

8.8.2 A maintenance release shall contain a certification including:

- a) basic details of the maintenance carried out including detailed reference of the approved data used;
- b) the date such maintenance was completed;
- c) when applicable, the identity of the approved maintenance organization; and
- d) the identity of the person or persons signing the release.