Australian Government

Civil Aviation Safety Authority

I, JOHN FRANCIS McCORMICK, Director of Aviation Safety, on behalf of CASA, make this instrument under regulation 42.020 of the *Civil Aviation Safety Regulations 1998*.

**[Signed John F. McCormick]**
John F. McCormick
Director of Aviation Safety

16 February 2011

## Part 42 Manual of Standards Instrument 2011

### 1 Name of instrument

This instrument is the *Part 42 Manual of Standards Instrument 2011*.

### 2 Commencement

This instrument commences on 27 June 2011.

### 3 Part 42 Manual of Standards (*MOS*)

Schedule 1 makes the Part 42 MOS.

## Schedule 1 Part 42 Manual of Standards (*MOS*)

## Chapter 1

## Requirements for CAMO

### 1.1 Introduction

1.1.1 Paragraph 42.020 (2) (n) and 42.020 (4) (b) of the *Civil Aviation Safety Regulations 1998* (***CASR 1998***) provide that the Part 42 MOS may specify requirements for a continuing airworthiness management organisation (***CAMO***).

1.1.2 This Chapter sets out certain requirements to be met by a CAMO for the issue and continuation of an approval to provide continuing airworthiness management services for aircraft.

1.1.3 This Chapter also sets out requirements in relation to writing of procedures, by a CAMO, for carrying out maintenance.

1.1.4 In this Chapter, the mention of a "Commission Regulation" in the heading of a section is a cross-reference to a similar provision in Part M of the *European Commission Regulation on the continuing airworthiness of aircraft and aeronautical products, parts and appliances, and on the approval of organisations and personnel involved in these tasks*. It is for information only.

## 1.2 Continuing airworthiness management exposition [Commission Regulation M.A.704]

1.2.1 The CAMO must have an exposition that contains at least the following information:

(a) a statement signed by the accountable manager to confirm that the CAMO will provide continuing airworthiness management services in accordance with Part 42 of CASR 1998, this MOS and its exposition at all times;

(b) detailed scope of the continuing airworthiness management services the CAMO is approved to provide;

(c) the names of the individuals occupying the following positions:

(i) accountable manager;

(ii) continuing airworthiness manager;

(iii) responsible manager;

(iv) quality manager;

(d) a chart showing the CAMO's structure and associated chains of responsibility of individuals within the CAMO;

(e) a description of the CAMO's facilities and equipment at each location as required under section 1.3;

(f) a list of airworthiness review employees as required under section 1.9;

(g) a list of maintenance program approval employees as required under section 1.10;

(h) procedures for making changes to the exposition;

(i) procedures that specify how the CAMO ensures compliance with Part 42 of CASR 1998 and any requirement in this MOS.

## 1.3 Facility and equipment [Commission Regulation M.A.705]

1.3.1 The CAMO must have appropriately equipped facilities for providing the continuing airworthiness management services it is approved to provide, including:

(a) office accommodation for all employees providing continuing airworthiness management services; and

(b) facilities for the completion and retention of records and documents in accordance with the requirements of Part 42 of CASR 1998 and this MOS.

1.3.2 The office accommodation must be of a standard that will ensure employees can perform their duties without undue distraction or discomfort.

## 1.4 Accountable manager [Commission Regulation M.A.705]

1.4.1 The CAMO must appoint an individual as the accountable manager who is ultimately responsible for ensuring:

(a) that the CAMO complies with CASR 1998, this MOS, its approval and its exposition; and

(b) that the CAMO has adequate resources to provide continuing airworthiness management services in accordance with its exposition.

1.4.2 If the CAMO is an air transport air operator's certificate (***AOC***) holder, the accountable manager for the CAMO must be an individual who has the corporate authority for managing and financing the operation under the AOC.

1.4.3 If the CAMO is not an air transport AOC holder, the accountable manager must be an individual who has the corporate authority for managing and financing the CAMO.

## 1.5 **Responsible manager** [Commission Regulation M.A.705]

1.5.1 The CAMO must appoint at least 1 individual as the responsible manager, responsible for ensuring that the CAMO complies with CASR 1998, this MOS and the CAMO's exposition.

*Note* The CAMO may appoint more than 1 individual as the responsible manager. However, each appointee is responsible for ensuring that the CAMO complies with CASR 1998, this MOS and the CAMO's exposition.

1.5.2 If the CAMO appoints more than 1 responsible manager, each responsible manager must be responsible for ensuring that the CAMO complies with CASR 1998, this MOS and the CAMO's exposition in relation to matters for which he or she is responsible.

1.5.3 If the CAMO is not an air transport AOC holder, each responsible manager must be responsible to the accountable manager unless he or she is also the accountable manager.

1.5.4 If the CAMO is an air transport AOC holder, each responsible manager whose responsibility includes ensuring the CAMO's compliance with CASR 1998, this MOS and the CAMO's exposition in relation to providing continuing airworthiness management services for an aircraft authorised to operate under the AOC, must be responsible to the continuing airworthiness manager unless he or she is the continuing airworthiness manager.

1.5.5 A responsible manager must have:

(a) at least 5 years experience in matters for which he or she is responsible; or

(b) at least 2 years experience in matters for which he or she is responsible provided he or she has at least 3 years experience in civil aircraft maintenance.

1.5.6 A responsible manager must have a comprehensive knowledge of:

(a) the regulations and standards; and

(b) the CAMO's exposition;

relating to matters for which he or she is responsible.

1.5.7 A responsible manager, whose responsibility includes ensuring the CAMO's compliance with CASR 1998, this MOS and the CAMO's exposition in relation to providing continuing airworthiness management services for an aircraft, must have a comprehensive knowledge of the following:

(a) the aircraft's certification basis;

(b) the aircraft's structure and systems;

(c) if applicable, the relevant parts of the AOC holder's operations manual that has continuing airworthiness implications.

1.5.8 The CAMO must keep copies of all documents that demonstrate each responsible manager has the appropriate qualifications, experience and knowledge required under this section, for 2 years after the responsible manager ceases to be a responsible manager.

## 1.6 **Continuing airworthiness manager** [Commission Regulation M.A.705]

1.6.1 If a CAMO is an air transport AOC holder, the CAMO must appoint an individual as the continuing airworthiness manager who is responsible for ensuring that the CAMO complies with CASR 1998, this MOS and the CAMO's exposition in relation to providing continuing airworthiness management services for the aircraft authorised to operate under the AOC.

1.6.2 The continuing airworthiness manager must report directly to the accountable manager of the CAMO unless he or she is also the accountable manager.

1.6.3 The continuing airworthiness manager must:

(a) hold, or have held, an aircraft engineer licence in category B1, B2 or C; or

(b) hold, or have held, a licence that is equivalent to a licence in category B1, B2 or C; or

(c) have a formal qualification in aircraft maintenance at least at Certificate IV level; or

(d) hold an engineering qualification at least at diploma level in any of the following engineering disciplines:

(i) aeronautical;

(ii) mechanical;

(iii) electrical;

(iv) electronics.

1.6.4 The continuing airworthiness manager must have at least 3 years experience in continuing airworthiness management of aircraft.

1.6.5 The continuing airworthiness manager must have a comprehensive knowledge of the following:

(a) the regulations and standards applicable to airworthiness and the operation of aircraft;

(b) the CAMO's exposition;

(c) the relevant parts of the AOC holder's operation manual that has continuing airworthiness implications;

(d) the CAMO's quality system.

1.6.6 The continuing airworthiness manager must have knowledge of the following for the aircraft authorised to operate under the AOC:

(a) the aircraft's certification basis;

(b) the aircraft's structure and systems.

1.6.7 The CAMO may nominate an individual to be an acting continuing airworthiness manager who may perform the role of the continuing airworthiness manager in his or her temporary absence.

1.6.8 The acting continuing airworthiness manager must meet the requirements of this section in relation to qualifications, experience and knowledge of a continuing airworthiness manager.

1.6.9 If a CAMO is an air transport AOC holder, the continuing airworthiness manager must not be a responsible manager for a maintenance organisation that provides maintenance services for the aircraft that are authorised to operate under the air transport AOC.

1.6.10 The CAMO must keep copies of all documents that demonstrate the continuing airworthiness manager has the appropriate qualifications, experience and knowledge required under this section, for 2 years after the continuing airworthiness manager ceases to be the continuing airworthiness manager.

## 1.7 **Quality manager** [Commission Regulation M.A.712]

1.7.1 A CAMO that is required to have a quality system under section 1.13 must nominate a quality manager with responsibility for implementing and managing the quality system.

1.7.2 The quality manager must report directly to the accountable manager in relation to his or her responsibilities under this MOS.

1.7.3 The quality manager must not be a responsible manager of the CAMO.

1.7.4 The quality manager must have:

(a) comprehensive knowledge of the CAMO's exposition; and

(b) knowledge of Part 42 of CASR 1998 and this MOS; and

(c) a formal qualification in quality management; and

(d) at least 2 years experience in quality management.

## 1.8 **Continuing airworthiness management employees** [Commission Regulation M.A.705]

1.8.1 The CAMO must have a sufficient number of appropriately qualified employees to provide the continuing airworthiness management services it is approved to provide including:

(a) airworthiness review employees required under section 1.9; and

(b) maintenance program approval employees required under section 1.10.

1.8.2 The CAMO must keep written records of the qualifications of all employees involved in providing continuing airworthiness management services, for 2 years after the employees cease to be employees of the CAMO.

## 1.9 **Airworthiness review employee** [Commission Regulation M.A.707]

1.9.1 A CAMO that provides continuing airworthiness management services for large aircraft or aircraft operated under an AOC must have airworthiness review employees to carry out airworthiness reviews and issue airworthiness review certificates in accordance with Subpart 42.I of CASR 1998.

1.9.2 The airworthiness review employee must be authorised by the CAMO, in writing, to carry out an airworthiness review and to issue an airworthiness review certificate on behalf of the CAMO.

1.9.3 The authorisation must include the following information:

(a) name of the employee;

(b) an authorisation reference number;

(c) the date the authorisation is given;

(d) the type and model of aircraft for which the authorisation is given;

(e) the scope and limitations of the authorisation;

(f) the duration (if applicable) of the authorisation.

1.9.4 The airworthiness review employee must:

(a) have at least 5 years experience in continuing airworthiness management activities; or

(b) have at least 2 years experience in continuing airworthiness management activities, provided he or she holds or has held:

(i) a maintenance certification licence in category B1, B2 or C; or

(ii) a licence that is equivalent to a licence in category B1, B2 or C.

1.9.5 An airworthiness review employee must have a comprehensive knowledge of Part 42 of CASR 1998 and other regulations applicable to the airworthiness and operation of the aircraft.

1.9.6 An airworthiness review employee must have comprehensive knowledge of the following for the aircraft for which the employee is authorised:

(a) the aircraft's certification basis;

(b) the aircraft's structure and systems.

1.9.7 The CAMO must keep a list of airworthiness review employees which contains the information mentioned in subsection 1.9.3.

1.9.8 The CAMO must keep copies of all documents that demonstrate each airworthiness review employee has the appropriate qualifications, experience and knowledge required under this section, for 2 years after the airworthiness review employee ceases to be an airworthiness review employee.

1.9.9 The CAMO must keep a copy of the authorisation for 2 years after the authorisation ceases to be in force.

## 1.10 Maintenance program approval employee

1.10.1 The CAMO that has privilege under Subpart 42.G of CASR 1998 to approve aircraft maintenance programs, or variations to an approved maintenance program, must have maintenance program approval employees to approve a maintenance program or variations to an approved maintenance program in accordance with Subpart 42.J of CASR 1998.

1.10.2 The maintenance program approval employees must be authorised by the CAMO, in writing, to approve a maintenance program and variations to a maintenance program on behalf of the CAMO.

1.10.3 The authorisation must include the following information:

(a) name of the employee;

(b) an authorisation reference number;

(c) the date the authorisation is given;

(d) the type and model of aircraft for which the authorisation is given;

(e) the scope and the limitations of the authorisation;

(f) the duration (if applicable) of the authorisation.

1.10.4 The maintenance program approval employee must:

(a) hold, or have held, an aircraft engineer licence in category B1, B2 or C; or

(b) hold, or have held, a licence that is equivalent to a licence in category B1, B2 or C; or

(c) have a formal qualification in aircraft maintenance at least at Certificate IV level; or

(d) hold an engineering qualification at least at diploma level in any of the following engineering disciplines:

(i) aeronautical;

(ii) mechanical;

(iii) electrical;

(iv) electronics.

1.10.5 The maintenance program approval employee must have at least 3 years experience in the development and management of a maintenance program for aircraft that are the same, or of a similar type, as the aircraft for which the employee is authorised.

1.10.6 The maintenance program approval employee must have a comprehensive knowledge of the following:

(a) the regulations and standards applicable to maintenance program;

(b) maintenance requirements related to operational approvals, if applicable;

(c) aircraft reliability programs, if applicable;

(d) regular maintenance requirements included in the instruction for continuing airworthiness for the aircraft for which the employee is authorised.

1.10.7 The maintenance program approval employee must have knowledge of:

(a) Part 42 of CASR 1998 and other regulations applicable to airworthiness and operation of aircraft; and

(b) if applicable, the specifications and standards that have been used by the type certificate holder to develop regular maintenance requirements for the aircraft for which the employee is authorised.

1.10.8 The maintenance program approval employee must have knowledge of the following for the aircraft for which the employee is authorised:

(a) the aircraft's certification basis;

(b) the aircraft's structure and systems.

1.10.9 The CAMO must keep a list of maintenance program employees which contains the information mentioned in subsection 1.10.3.

1.10.10 The CAMO must keep copies of all documents that demonstrate each maintenance program employee has the appropriate qualifications, experience and knowledge required under this section, for 2 years after the maintenance program employee ceases to be a maintenance program employee.

1.10.11 The CAMO must keep a copy of the authorisation for 2 years after the authorisation ceases to be in force.

## 1.11 Instructions for continuing airworthiness [Commission Regulation M.A.709]

1.11.1 The CAMO must have current instructions for continued airworthiness for the aircraft for which the CAMO is approved to provide continuing airworthiness management services.

1.11.2 The CAMO must ensure that an employee providing continuing airworthiness management services for an aircraft has access to instructions for continuing airworthiness that relate to the employee's duties.

## 1.12 Maintenance data

1.12.1 The CAMO may approve new procedures, or changes to existing procedures, for carrying out particular maintenance on an aircraft or an aeronautical product, if:

(a) the maintenance is included, or is to be included, in the maintenance program for an aircraft for which the CAMO provides continuing airworthiness management services; and

(b) there is no existing maintenance data that includes the procedure for carrying out the maintenance, or the procedure in the existing maintenance data is inadequate or inappropriate for the maintenance; and

(c) the CAMO's approval permits it to approve the maintenance program, or a variation to the maintenance program, for the aircraft or product; and

(d) the new procedures, or changes to existing procedure do not make any damage or wear limits, or any inspection or test parameters, less restrictive than those included in the existing maintenance data for the aircraft or the aeronautical product, unless the relevant existing maintenance data was originally created by the CAMO.

1.12.2 The maintenance procedure must be approved as part of the maintenance program, or changes to the maintenance program, for the aircraft in accordance with Part 42 and Subpart 42.J of CASR 1998.

1.12.3 The CAMO must ensure that the maintenance program employee, who approves the maintenance program, has assessed the procedure to ensure that it provides for safe maintenance practice, airworthy aircraft and serviceable aeronautical product.

1.12.4 The CAMO must ensure the new or changed procedure is:

(a) clearly identified as maintenance data created, or changed, by the CAMO; and

(b) traceable to the approval under which the data is created or changed.

## 1.13 Quality system and internal review [Commission Regulation M.A.712]

1.13.1 A CAMO that provides continuing airworthiness management services for large aircraft and aircraft operated under an AOC must have a written quality system that requires:

(a) carrying out of independent audits to monitor:

(i) the CAMO's compliance with Part 42 of CASR 1998, this MOS and its exposition; and

(ii) the adequacy of the CAMO's procedures in providing continuing airworthiness management services in accordance with Part 42 of CASR 1998 and this MOS; and

(iii) the standard of maintenance being carried out on the aircraft meets the requirements of Part 42 and Part 145 of CASR 1998; and

(b) the recording of all audit findings; and

(c) the reporting of the audit findings to the accountable manager and the responsible manager; and

(d) the implementation of corrective and preventative actions for any deficiencies identified in the audit findings; and

(e) the provision of feedback to the quality manager about the corrective and preventative action implemented.

1.13.2 The audit must be carried out in accordance with a documented plan which ensures all items to be audited under subsection 1.13.1 are audited once every 12 months.

1.13.3 The audits must be carried out by individuals who are independent of the items being audited and who:

(a) have comprehensive knowledge of the CAMO's exposition, Part 42 of CASR 1998 and this MOS; and

(b) hold a formal qualification in quality audit.

1.13.4 A CAMO must ensure any corrective and preventative action, in relation to deficiencies identified in the audit findings, is implemented in a timely manner.

1.13.5 A CAMO must keep records containing the following information in relation to the audit:

(a) the scope and contents of the audit;

(b) when the audit was carried out;

(c) the identity of each individual performing the audit;

(d) the findings of the audit;

(e) details of preventive and corrective actions implemented for any deficiencies identified in the findings of the audit.

1.13.6 The records mentioned in subsection 1.13.5 must be kept for at least 2 years from the date the audit was conducted.

## 1.14 **Internal review** [Commission Regulation M.A.712]

1.14.1 A CAMO that provides continuing airworthiness management services for aircraft, other than large aircraft and aircraft operated under an AOC, must:

(a) have a quality system in accordance with section 1.13; or

(b) carry out internal reviews in accordance with this section to ensure the CAMO's compliance with its exposition, Part 42 of CASR 1998 and this MOS.

1.14.2 The reviews must be carried out in accordance with a documented plan which ensures all items to be reviewed under this section are reviewed once every 12 months.

1.14.3 Each review must be carried out by individuals who:

(a) have comprehensive knowledge of the CAMO's exposition, Part 42 of CASR 1998 and this MOS; and

(b) hold a formal qualification in quality audit or have experience in performing internal review of a CAMO.

1.14.4 The findings of the review must be recorded and reported to the accountable manager and the responsible manager.

1.14.5 A CAMO must ensure any corrective and preventative actions, in relation to deficiencies identified in the review, are implemented in a timely manner.

1.14.6 A CAMO must keep records containing the following information in relation to the review:

(a) the scope and contents of the review;

(b) when the review was conducted;

(c) the identity of the individual(s) performing the review;

(d) the findings of the review;

(e) details of preventive and corrective actions implemented for any deficiencies identified in the findings of the review.

1.14.7 The records mentioned in subsection 1.14.6 must be kept for 2 years from the date the review was carried out.

## 1.15 **Records** [Commission Regulation M.A.714]

1.15.1 A CAMO must ensure records kept under this MOS are kept:

(a) in a system that allows the record to be retrieved; and

(b) in a manner that ensures records are protected from damage, unintended alteration and loss.

## Chapter 2

## Requirements for a maintenance program for large aircraft and aircraft operated under an AOC

### 2.1 Introduction

2.1.1 This Chapter specifies for paragraph 42.020 (2) (j) of CASR 1998, the requirements for a maintenance program for the following:

(a) a large aircraft;

(b) an aircraft operated under an AOC.

*Note* Under regulation 42.140 of CASR 1998, the person responsible for continuing airworthiness for each aircraft mentioned in paragraph 2.1.1 (a) and (b) must ensure that there is an approved maintenance program for the aircraft.

### 2.2 General requirements

2.2.1 The maintenance program must:

(a) be in writing; and

(b) define the meaning of any unique terms or acronyms used in the program; and

(c) contain the records of approval of:

(i) the program; and

(ii) any subsequent variations to the program.

### 2.3 Identification and applicability of the program

2.3.1 The maintenance program must contain the following information:

(a) the type, model, serial number and registration mark of the aircraft covered by the program;

(b) the type and model of each engine fitted to the aircraft;

(c) the type and model of each propeller fitted to the aircraft (if applicable);

(d) the type and model of each auxiliary power unit fitted to the aircraft (if applicable);

(e) the name and address of the registered operator of the aircraft;

(f) the name and approval certificate reference number of the CAMO responsible for the program.

### 2.4 Instructions for continuing airworthiness

2.4.1 The maintenance program must identify, by their latest revision date, the instructions for continuing airworthiness (***ICA***) on which the program is based, including if applicable:

(a) the aircraft type certificate holder's maintenance review board (***MRB***) report; and

(b) the aircraft type certificate holder's maintenance planning document; and

(c) the aircraft maintenance manual.

### 2.5 Aircraft utilisation limitations affecting the validity of the program

2.5.1 The maintenance program must state any limitations that may affect the effectiveness of the program, or part of the program, for example in relation to:

(a) total flying hours or total number of flights;

(b) annual flying hours or annual number of flights;

(c) average duration of flights.

## 2.6 Schedule of maintenance

2.6.1 The maintenance program must include 1 or more schedules that set out:

(a) the maintenance to be regularly carried out on the aircraft or an aeronautical product for the aircraft in accordance with the requirements mentioned in section 2.8; and

(b) any other the maintenance to be regularly carried out on the aircraft or an aeronautical product for the aircraft to ensure the continuing airworthiness and safe operation of the aircraft.

2.6.2 Each schedule must set out the following for the maintenance mentioned in it:

(a) a description of the maintenance;

(b) the interval for the maintenance;

(c) the source of the requirement for the maintenance, for example, a requirement of the MRB, a specific airworthiness directive (***AD***) requirement, an extended diversion time operation (***EDTO***) approval requirement, a company requirement;

(d) the maintenance data for the maintenance, or a reference to the maintenance data contained in another document;

(e) if the maintenance program applies to more than 1 aircraft — information that shows how the maintenance applies to each aircraft;

(f) if the maintenance is required by or under the approved design for the aircraft or an aeronautical product — information that shows that the maintenance is required by or under the approved design.

## 2.7 Schedule of life limited parts

2.7.1 The maintenance program for an aircraft with life-limited parts fitted to it must include a separate schedule containing the following:

(a) a description of the parts;

(b) the location of the parts on the aircraft;

(c) the appropriate interval for removal of the parts.

## 2.8 Maintenance requirements

2.8.1 For paragraph 2.6.1 (a), the maintenance requirements are:

(a) either:

(i) the requirements in the ICA for the aircraft or an aeronautical product for the aircraft; or

(ii) requirements in another means of compliance with ICA mentioned in subsection 2.9.2; and

(b) either:

(i) the requirements in the ADs for the aircraft or an aeronautical product for the aircraft; or

(ii) requirements in the means of compliance with the ADs as mentioned in paragraph 39.002 (c) or (d) of CASR 1998; and

(c) the requirements (if any) of the following approvals:

(i) an EDTO approval under Civil Aviation Order (***CAO***) 82.0;

(ii) an RVSM operational approval under regulation 181M of the *Civil Aviation Regulations 1988* (***CAR 1988***);

(iii) a navigation authorisation under Subpart 91.U of CASR 1998.

*Note* ***EDTO*** has the meaning given by paragraph 2.1 of CAO 82.0. ***RVSM operational approval*** has the meaning given by regulation 181E of CAR 1988.

## 2.9 Compliance with ICA

2.9.1 The maintenance program for an aircraft complies with the requirements in the ICA for the aircraft and aeronautical products for the aircraft that relate to maintenance to be regularly carried out on the aircraft and aeronautical products if:

(a) the maintenance is set out in the schedule mentioned in section 2.6; and

(b) the scope and extent of the maintenance set out in the schedule is not less than the scope and extent of the maintenance in the ICA; and

(c) the maintenance interval set out in the schedule is not less restrictive than the maintenance interval in the ICA; and

(d) the maintenance data set out or referred to in the schedule:

(i) are the same as the procedures in the ICA for carrying out the maintenance; or

(ii) have been approved in accordance with section 1.12 of this MOS or paragraphs 145.A.45 (b) or (d) in the Part 145 MOS.

2.9.2 CASA may approve a proposed maintenance program, or a variation to an approved maintenance program, that does not comply with a requirement in the ICA that relates to maintenance to be regularly carried out on the aircraft and aeronautical product if:

(a) the program provides another means of compliance with the requirement in the ICA; or

(b) non-compliance with the requirement is supported by technical justification including data derived from an approved reliability program for the aircraft; or

(c) CASA is satisfied that non-compliance with the requirement will have no adverse effect on the continuing airworthiness of the aircraft.

## 2.10 One-off extension to maintenance task interval

2.10.1 If the ICA for the aircraft or an aeronautical product provide for a one-off extension to the interval for certain maintenance in the maintenance program, the maintenance program may provide for a one-off extension to the interval in accordance with the ICA.

2.10.2 If the ICA do not provide for a one-off extension to the interval for certain maintenance in the maintenance program, the maintenance program may provide for a one-off extension to the interval but only in accordance with the following criteria:

(a) for intervals expressed in calendar time such as days, months or years — the maximum permitted extension is 10% of the interval or 3 months, whichever is lesser;

(b) for intervals expressed in units other than calendar time — the maximum permitted extension is 10% of the interval, or 200 units of the interval, whichever is lesser.

*Note* For example, if the interval for a particular maintenance is 3000 cycles, the maximum permitted extension is 200 cycles and not 10% of the interval which amounts to 300 cycles.

2.10.3 A one-off extension is not permitted under this section for any of the following:

(a) maintenance required by or under the approved design for the aircraft or aeronautical product, for example airworthiness limitation, certification maintenance requirement;

(b) maintenance required by an AD;

(c) replacement of life-limited parts.

2.10.4 An extension under this section to the interval for certain maintenance in the maintenance program must not extend the subsequent occurrence of the maintenance.

*Note* For example, if as a result of an extension, certain maintenance having an interval of 1 000 hours is carried out at 1 050 hours, the maintenance must next be carried out no later than 950 hours after the previous maintenance, to preserve the 1 000 hour interval.

## Chapter 3

## Requirements for approved reliability program

### 3.1 Introduction

3.1.1 This Chapter specifies for paragraph 42.020 (2) (k) of CASR 1998, the requirements for a reliability program for an aircraft that requires a reliability program under regulation 42.155 of CASR 1998.

### 3.2 General requirements

3.2.1 The reliability program must:

(a) be in writing; and

(b) define the meaning of any unique terms or acronyms used in the program; and

(c) contain the records of approval of:

(i) the program; and

(ii) any subsequent variations to the program.

*Note* Common terms used throughout the industry need not be defined as long as the same meaning is intended.

### 3.3 Identification and applicability of the program

3.3.1 The reliability program must contain the following information:

(a) the type, model, serial number and registration mark of the aircraft controlled by the program;

(b) the name and address of the registered operator of the aircraft controlled by the program;

(c) the name and approval certificate reference number of the CAMO responsible for the program.

### 3.4 Objective of the program

3.4.1 The objective of the reliability program must be described in the program.

3.4.2 The applicable instructions for continuing airworthiness must be followed to establish the objective of the program.

3.4.3 As a minimum, the reliability program must provide a means of ensuring maintenance program tasks are effective and their periodicity is adequate for continuing airworthiness of the aircraft.

### 3.5 Identification of items controlled by the program

3.5.1 The aircraft parts, systems and structural elements controlled by the reliability program must be clearly defined and identified in the program.

3.5.2 The maintenance program tasks controlled by the program must be clearly identified in the program.

3.5.3 Where some items, such as aircraft structure, engines, and auxiliary power units, are controlled by a separate program, such as a manufacturer structural sampling or life development program, this must be referenced in the program.

### 3.6 Administration of the program

3.6.1 The individuals responsible for the administration of the reliability program must be identified and their responsibility must be described in the program.

## 3.7 Data collection

3.7.1 A description of the data collection system for the items controlled by the reliability program must be included in the program. Such a description must include the following:

(a) identification of sources of data;

(b) procedures for transmission and receiving of data from each source;

(c) steps of data development from source to analysis;

(d) organisational responsibilities for each step of data development.

3.7.2 The data collected must be:

(a) obtained from items functioning under operational conditions; and

(b) accurate and factual to support a high degree of confidence in any derived conclusion; and

(c) directly related to the established levels of performance.

3.7.3 Examples of sources of data include the following:

(a) pilot reports;

(b) unscheduled removals;

(c) confirmed failures;

(d) sampling inspections;

(e) workshop findings;

(f) functional checks;

(g) bench checks.

*Note* All of the above sources may not necessarily be covered in each and every program. The scope and objective of the program, and items controlled by the program, will dictate the nature and source of data.

## 3.8 Performance standards

3.8.1 The reliability program must include a performance standard expressed in mathematical terms for each item covered by the program that defines the acceptable level of reliability for the item. The following are some of the commonly used performance standards:

(a) premature removal rates for an item;

(b) confirmed failure rates for an item;

(c) in-flight shutdown rates for engine;

(d) flight delays or cancellation rates due to defect in, or failure of, an item;

(e) internal leakage rates for an item.

3.8.2 Upper and lower limits may be used to express performance standards. This represents a reliability band or range by which the reliability is interpreted.

3.8.3 The program must describe the methods and data to be used for establishment of the performance standard.

3.8.4 The performance standard must be responsive and sensitive to the level of reliability experienced. It must not be so high that even abnormal variations would not cause an alert, or so low that it is constantly exceeded in spite of corrective action measures.

3.8.5 The performance standards must be based on the operator's own operating experience with the exceptions mentioned in subsection 3.8.6. The period of experience will be dependent on fleet size and utilisation.

3.8.6 If the operator's operating experience of an aircraft type or model is non-existent or limited, performance standards may be based on 1 or more of the following as applicable:

(a) the experience of other operators of the same or a similar aircraft type or model;

(b) the operator's own experience of a similar aircraft type or model;

(c) the performance of a similar product or system on another aircraft type or model;

(d) the expected in-service reliability values used in the design of the aircraft.

*Note* For paragraph (d), the values are normally quoted in terms of mean time between unscheduled removals or mean time between failure, for both individual product and complete systems.

3.8.7 The program must contain procedures for monitoring and reviewing performance standards at regular intervals to reflect the operating experience, product improvement and changes in procedures.

3.8.8 The program must provide for the review of the performance standards set in accordance with subsection 3.8.6, after the operator has gained sufficient operating experience.

## 3.9 Display of information

3.9.1 The reliability program must provide for a format of display that allows easy identification of trends, events and when performance standards are exceeded.

3.9.2 The display may be in graphical or in a tabular format or a combination of both.

3.9.3 The rules governing any separation or discarding of information before incorporation into the display must be stated in the program.

3.9.4 The display of information must include provision for "nil returns" to aid the examination of the total information.

## 3.10 Analysis and interpretation of information

3.10.1 The reliability program must provide for the regular analysis and interpretation of information generated by the program.

3.10.2 The method employed for analysing and interpreting the information must be explained in the program.

3.10.3 The methods used must:

(a) enable the performance of the items controlled by the program to be measured; and

(b) facilitate recognition, diagnosis and recording of significant problems.

## 3.11 Investigation and corrective action

3.11.1 The program must provide for an active investigation and, if applicable, implementation of corrective action when a performance standard is exceeded.

3.11.2 If upper and lower limits are used to express performance standards, the follow up requirements for each limit must be fully described in the program.

3.11.3 The procedures for implementing corrective actions and for monitoring the effectiveness of the corrective actions must be described in the program.

3.11.4 The procedures must include provision of periodic feedback to the individual responsible for taking the corrective action until such time as performance has reached an acceptable level.

3.11.5 Corrective actions must correct any reduction in reliability revealed by the program and may take the form of 1 or more of the following:

(a) changes to maintenance, operational procedures or techniques;

(b) changes to maintenance program tasks, including escalation or de-escalation of tasks, addition, modification or deletion of tasks;

(c) one-time special maintenance for the fleet;

(d) initiation of modifications to aircraft and aeronautical products;

(e) changes to provisioning of spare parts for maintenance;

(f) changes to manpower and equipment planning for maintenance;

(g) training of maintenance personnel.

3.11.6 Where applicable, each corrective action must include a planned completion date.

## 3.12 Evaluation and review of the program

3.12.1 The reliability program must provide for continuous monitoring of the effectiveness of the program as a whole and identify each individual who is responsible for this monitoring.

3.12.2 The program must contain procedures for implementing changes to the program and identify the individual responsible for proposing and preparing the changes.

*Note* There may be more than 1 responsible individual.

## 3.13 Pooling of data

3.13.1 For a reliability program for a small fleet of aircraft, it is permitted to "pool" data, that is, to collate data from a number of operators of the same type of aircraft.

3.13.2 For this section, a small fleet of aircraft is a fleet of less than 6 aircraft of the same type.

3.13.3 For the analysis to be valid, the following things for the aircraft from which data is pooled must be substantially the same:

(a) aircraft configuration;

(b) aircraft age and utilisation rate;

(c) type of operation and operating environment;

(d) maintenance program and maintenance procedures.

3.13.4 The program must describe the pooling arrangement and the types and extent of data to be pooled.

## Chapter 4

## This Chapter is reserved for future use.

## Chapter 5

## This Chapter is reserved for future use.

## Chapter 6

## This Chapter is reserved for future use.

## Chapter 7

## This Chapter is reserved for future use.

## Chapter 8

## This Chapter is reserved for future use.

## Chapter 9

## Aviation industry standards

### 9.1 Introduction

9.1.1 Paragraph 42.020 (2) (l) of CASR 1998, provides that the Part 42 MOS may specify that a document is an aviation industry standard.

9.1.2 This Chapter specifies the documents that are aviation industry standards for the definition of ***maintenance data*** in the CASR dictionary.

### 9.2 Aviation industry standards

9.2.1 The following list specifies the documents that are aviation industry standards for the definition of ***maintenance data*** in the CASR dictionary:

**LIST**

1. Federal Aviation Administration Advisory Circular AC 43.13 1B, *Acceptable Methods, Techniques, and Practices — Aircraft Inspection and Repair*.
2. Federal Aviation Administration Advisory Circular AC 43.13 2B, *Acceptable Methods, Techniques, and Practices — Aircraft Alterations*.
3. Federal Aviation Administration Advisory Circular AC 65-9A [Large AC], *Airframe & Powerplant Mechanics General Handbook*.
4. Federal Aviation Administration Advisory Circular FAA AC-65-15A [Large AC], *Airframe & Powerplant Mechanics Airframe Handbook*.
5. Federal Aviation Administration Advisory Circular AC 65-12A [Large AC], *Airframe & Powerplant Mechanics Powerplant Handbook*.

## Chapter 10

## Aeroplanes and helicopters of particular type and model that are specified as large aircraft

### 10.1 Introduction

10.1.1 Paragraph 42.020 (2) (c) of CASR 1998, provides that the Part 42 MOS may specify that a particular type and model of aeroplane is a large aircraft for the definition of ***large aircraft*** in the CASR dictionary.

10.1.2 Paragraph 42.020 (2) (d) of CASR 1998, provides that the Part 42 MOS may specify that a particular type and model of helicopter is a large aircraft for the definition of ***large aircraft*** in the CASR dictionary.

10.1.3 This Chapter specifies the type and model of aeroplanes and helicopters that are large aircraft for the definition of ***large aircraft*** in the CASR dictionary.

### 10.2 Aeroplanes and helicopters that are large aircraft

10.2.1 Aeroplanes specified in Table 1 are ***large aircraft*** for the definition of ***large aircraft*** in the CASR dictionary.

10.2.2 Helicopters specified in Table 2 are ***large aircraft*** for the definition of ***large aircraft*** in the CASR dictionary

**Table 1**

| **Aeroplane type certificate holder** | **Aeroplane type and model designator** |
|---|---|
| Nil | |

**Table 2**

| **Helicopter type certificate holder** | **Helicopter type and model designator** |
|---|---|
| Nil | |

## Chapter 11

## Aeroplanes and helicopters of particular type and model that are specified as small aircraft

### 11.1 Introduction

11.1.1 Paragraph 42.020 (2) (e) of CASR 1998, provides that the Part 42 MOS may specify that a particular type and model of aeroplane is a small aircraft for the definition of ***small aircraft*** in the CASR Dictionary.

11.1.2 Paragraph 42.020 (2) (f) of CASR 1998, provides that the Part 42 MOS may specify that a particular type and model of helicopter is a small aircraft for the definition of ***small aircraft*** in the CASR Dictionary.

11.1.3 This Chapter specifies the type and model of aeroplanes and helicopters that are small aircraft for the definition of ***small aircraft*** in the CASR dictionary.

### 11.2 Aeroplanes and helicopters that are small aircraft

11.2.1 Aeroplanes specified in Table 1 are ***small aircraft*** for the definition of ***small aircraft*** in the CASR dictionary.

11.2.2 Helicopters specified in Table 2 are ***small aircraft*** for the definition of ***small aircraft*** in the CASR dictionary.

**Table 1**

| Aeroplane type certificate holder | Aeroplane type and model designator |
|---|---|
| Air Tractor | 400<br>500<br>800 |

**Table 2**

| Helicopter type certificate holder | Helicopter type and model designator |
|---|---|
| Nil | |

## Chapter 12

## Documents issued under the law of a foreign country that are authorised release certificates

### 12.1 Introduction

12.1.1 Paragraphs 42.020 (2) (a) and (b) of CASR 1998, provide that the Part 42 MOS may specify that a specified kind of document issued under the law of a specified foreign country is an authorised release certificate within the meaning of paragraphs (b) and (d) of the definition of ***authorised release certificate*** in the CASR Dictionary.

12.1.2 This Chapter specifies the kind of documents issued under the law of a foreign country that are authorised release certificates within the meaning of paragraphs (b) and (d) of the definition of ***authorised release certificate*** in the CASR Dictionary.

### 12.2 Documents that are authorised release certificates

12.2.1 Column 1 of the following Table specifies the foreign country and column 2 specifies the documents that are issued under the law of the foreign country that are authorised release certificates for paragraphs (b) and (d) of the definition of ***authorised release certificate*** in the CASR Dictionary.

**Table**

| **Country** | **Document** |
|---|---|
| Brazil | *Authorised Release Certificate/Airworthiness Approval Tag* (Brazilian Civil Aviation Authority Form SEGVOO 003) |
| Canada | *Authorised Release Certificate* (Transport Canada Form One) |
| European Aviation Safety Agency (***EASA***) Member See Note | *Authorised Release Certificate* (European Aviation Safety Agency Form 1) |
| New Zealand | *Authorised Release Certificate* (Civil Aviation Authority of New Zealand Form One) |
| Singapore | 1. For aeronautical product released by a Civil Aviation Authority of Singapore approved distributor — an *Authorised Release Certificate* (Civil Aviation Authority of Singapore Form CAAS (AW) 96)<br>2. For aeronautical products, other than those released by an approved distributor — an *Authorised Release Certificate* (Civil Aviation Authority of Singapore Form CAAS (AW) 95) |
| United States of America | *Authorised Release Certificate/Airworthiness Approval Tag* (Federal Aviation Administration Form 8130-3) |

*Note* The membership of EASA is subject to change. If in doubt, the inclusion of a country in EASA should be confirmed. As at 1 January 2011, EASA member countries are as follows: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungry, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Monaco, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

## Chapter 13

## This Chapter is reserved for future use.

## Chapter 14

## This Chapter is reserved for future use.

## Chapter 15

## Maintenance for items 4 and 5 of Table 42.300 of CASR 1998

### 15.1 Introduction

15.1.1 Paragraph 42.020 (2) (i) of CASR 1998 provides that the Part 42 MOS may specify maintenance for items 4 and 5 of Table 42.300 of CASR 1998.

15.1.2 Regulation 42.300 of CASR 1998 provides that an individual mentioned in an item of the Table 42.300 of CASR 1998 is permitted to carry out maintenance on an Australian aircraft to which Part 42 applies subject to the conditions mentioned in the table for the item.

15.1.3 Items 4 and 5 of the table 42.300 of CASR 1998 mentions that a pilot licence holder or a flight engineer, may carry out maintenance on a large aircraft or an aircraft authorised to operate under an AOC if:

(a) the pilot licence holder or the flight engineer is a member of the aircraft's flight crew; and

(b) the pilot licence holder or the flight engineer is authorised under regulation 42.630 of CASR 1998 to carry out the maintenance; and

(c) the maintenance is specified in the Part 42 MOS for items 4 and 5 of Table 42.300 of CASR 1998.

15.1.4 This Chapter sets out maintenance for items 4 and 5 of Table 42.300 of CASR 1998.

### 15.2 Maintenance for items 4 and 5 of Table 42.300 of CASR 1998

15.2.1 The following list specifies the maintenance for items 4 and 5 of Table 42.300 of CASR 1998.

**LIST**

1. A pre-flight or daily inspection or an inspection that is equivalent to a pre-flight or daily inspection in the aircraft maintenance program.
2. Replacement of bulbs and lights.
3. Replacement of seats, if the replacement does not involve disassembly of any part of the primary structure of the aircraft.
4. Replenishment of a system fluid other than a gas.
5. Maintenance that is required for the application of a minimum equipment list if the maintenance does not involve any of the following:
   (a) removal or disassembly of parts;
   (b) disassembly of control systems;
   (c) the use of special tools or equipment.
6. Maintenance required by an airworthiness directive, if the airworthiness directive permits a pilot licence holder or a flight engineer to carry out the maintenance.