



**Australian Government**  
**Civil Aviation Safety Authority**

**Part 145 Manual of Standards (MOS) (as amended)**

made under regulations 145.005 and 145.015 of the *Civil Aviation Safety Regulations 1998*.

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**145.A.01 Name of instrument**

- (a) This instrument is the *Part 145 Manual of Standards*.
- (b) This instrument may also be cited as the Part 145 MOS.

**145.A.02 Commencement**

This instrument commences on 27 June 2011.

#### **145.A.05 Applicability of this MOS**

- (a) This is the MOS for Part 145 of the *Civil Aviation Safety Regulations 1998 (CASR 1998)*.
- (b) Unless otherwise defined in this MOS, words and phrases have the same meaning as in Part 145 of CASR 1998.
- (c) This MOS sets out the requirements to be met by an organisation approved under Part 145 of CASR 1998 to perform maintenance of aircraft and aeronautical products and provide training and assessment of employees of the organisation.

#### **145.A.10 Scope of the AMO**

An AMO's exposition must include a clear description of its line maintenance and base maintenance capabilities at each location at which the AMO intends to provide maintenance services.

#### **145.A.12 Definitions**

In this MOS:

***AEL*** means an aircraft engineer licence as defined in the CASR 1998 Dictionary.

***aircraft surface finishing*** means creation of an appropriate presentation finish on the exterior surface of an aircraft or an aeronautical product (the ***surface***) without interfering with any operational part of the aircraft or aeronautical product except its exterior presentation surface and includes all of the following:

1. preparation of the surface;
2. stripping off previous finishes from the surface;
3. removal of light corrosion that is present only on the surface;
4. pre-treatment of the alloy surface of the aircraft or aeronautical product for other surface finishing;
5. application of paint and other specialist surface finishes to the surface;
6. sealing aircraft and aeronautical product exterior structural seams;
7. application of aircraft registration markings, national markings, organisational logos, decals or stencils;
8. polishing the surface.

***AMO*** means a Part 145 organisation as defined in the CASR 1998 Dictionary.

***author of design data*** means a type certificate holder, supplementary type certificate holder or the author of any design data relating to repairs or modification of an aircraft or aeronautical product issued under Part 21 of CASR 1998.

***complex maintenance***, for paragraph 145.A.45 (e), means maintenance by an AMO for which the competency required is held by more than 1 AMO employee.

***human factors principles***, in relation to maintenance, means principles that deal with the interaction between human performance and maintenance system components that are applied to improve safety of air navigation.

***human performance***, in relation to maintenance, means the human capabilities and limitations that have an effect on the safety of air navigation, such as fitness, health, stress, fatigue, drugs and alcohol, and work environment.

***ICAO Annex 1 aircraft maintenance licence*** means a licence of a type mentioned in Chapter 4 of Annex 1, Personnel Licensing, to the Chicago Convention.

**main location**, for an AMO, means each of the following locations:

1. except for the purpose of fitting a non-standard part to an aircraft in accordance with regulation 42.440 of CASR 1998 — a location that is permanently occupied by the AMO for the provision of maintenance services;
2. a location at which the AMO provides base maintenance services;
3. any other location stated by the AMO in its exposition to be a main location.

**on-wing engine maintenance** means aircraft engine maintenance (the **maintenance**) that meets each of the following requirements:

1. the engine remains fitted to the aircraft during the maintenance;
2. the maintenance is only carried out within the scope of the maintenance services that may be provided by an AMO with a category B rating;
3. the maintenance is not such that the AMO considers that the engine must be removed from the aircraft for the maintenance to be safely carried out;
4. the maintenance is only provided for in the maintenance data of the holder of the type certificate, foreign type certificate, supplemental type certificate or foreign supplemental type certificate.

*Note* For AMO category ratings, see Appendix I.

**a single maintenance event** means that maintenance required for an aircraft that has been grounded because it had an unforeseen defect.

**SMS implementation plan** means an AMO's written plan:

1. for full implementation of the SMS:
  - (i) by a specified date; and
  - (ii) at all levels of the organisation; and
  - (iii) in accordance with the safety policy and objectives; and
2. containing at least the following:
  - (i) the specific goals to be met to achieve full SMS implementation by the specified date;
  - (ii) the timetable for meeting each of the specific goals;
  - (iii) the steps to be taken to achieve each of the specific goals;
  - (iv) the timetable for meeting each of the steps;
  - (v) details of the following, as agreed by CASA in writing for this subparagraph:
    - (A) the specified date for full implementation of the SMS;
    - (B) each specific goal, and its timetable, to achieve full SMS implementation by the specified date;
    - (C) each step to be taken, and its timetable, to achieve each of the specific goals within its timetable.

*Note* Under the definition of an **SMS implementation plan**, adjustments to dates, goals, steps or timetables must also be the subject of CASA's written agreement to ensure that the plan as a whole is always one agreed to by CASA.

**specialist maintenance** means that maintenance which is described in paragraph 145.A.30 (f).

## 145.A.25 Facility requirements

(aa) In this section:

***airborne*** means:

1. present in, or carried on, the air; or
2. propelled through the air by the wind, or by propellers, exhaust systems, ventilation systems, fans, brooms or similar equipment, systems, mechanisms or devices.

***contamination*** includes any of the following foreign bodies:

1. moisture in any form;
2. dust, ash, soot and similar particulates;
3. any other matter in particulate form that could adversely affect the proper operation of an aircraft or an aeronautical product.

(a) An AMO must have facilities for the provision of maintenance services that are appropriate for carrying out maintenance of the kind that is being carried out in the facilities. In particular, the facilities must be to a standard that provides an environment that:

1. is appropriate to the weather conditions that prevail at the time that the maintenance is carried out; and
2. allows maintenance to be carried out:
  - (i) at a comfortable temperature; and
  - (ii) with appropriate levels of lighting; and
  - (iii) without undue noise distraction; and
3. segregates specialised workshops and bays to avoid environmental and work area contamination; and
4. keeps airborne contamination to a level that does not result in visible aircraft or aeronautical product surface contamination; and
5. for base maintenance of aircraft, provides aircraft hangars that are both available and large enough to accommodate aircraft on planned base maintenance; and
6. for aeronautical product maintenance, provides workshops that are large enough to accommodate the product on planned maintenance.

(ab) Wherever maintenance is carried out, including in the open air, if the facilities mentioned in paragraph (a) cannot provide an environment of the kind mentioned in subparagraph (a) 4 because of weather or other environmental conditions (***adverse conditions***), subparagraph (a) 4 does not apply provided the AMO has, and acts upon, written procedures that:

1. for subparagraph 145.A.65 (b) 3, have been specifically approved by CASA, in writing, as appropriate for adverse conditions; and
2. ensure that aircraft systems and aeronautical products whose proper operation could be affected by airborne contamination during the maintenance:
  - (i) are sealed before the airborne contamination results in visible surface contamination; and
  - (ii) remain sealed until there is no risk of visible surface airborne contamination.

(b) An AMO must provide office accommodation for the management of planned maintenance services and for certifying employees. The facility provided must be to a

- standard that enables employees to perform their duties without undue noise distraction.
- (c) If maintenance instructions for a maintenance task require the existence of specific environmental conditions, then the AMO must ensure that such conditions exist when carrying out the maintenance.
  - (d) An AMO must provide storage facilities for aeronautical products, equipment and tools, which:
    - 1. segregate serviceable aeronautical products, equipment and tools from unserviceable aeronautical products, equipment and tools; and
    - 2. comply with manufacturers' instructions for keeping the equipment, tools or products in a serviceable condition; and
    - 3. provide an appropriate level of security to prevent unauthorised access to the storage facilities.
  - (e) An AMO approved to carry out base maintenance on an aircraft must have aircraft hangars that are appropriate for the type of aircraft for which base maintenance is approved. The organisation must have an aircraft hangar visit plan mentioned in its exposition, which sets out the proposed usage of the facility and a process for updating the plan.

#### **145.A.30 Personnel requirements**

##### **Accountable manager**

- (a) An AMO must appoint an accountable manager who has corporate authority to ensure that all maintenance required by its customers can be financed and carried out to the standard required by the AMO's approved exposition, this MOS and CASR 1998. The accountable manager must:
  - 1. ensure that the AMO is able to finance, and has adequate resources available to enable it to provide maintenance services in accordance with its exposition, and that all necessary resources are available to carry out maintenance in accordance with paragraph 145.A.65 (b); and
  - 2. establish and promote the safety and quality management policies required by paragraph 145.A.65 (a); and
  - 3. have and maintain an understanding of this MOS and the AMO's exposition; and
  - 4. ensure that the AMO complies with its exposition, its approval rating and CASR 1998.

##### **Responsible manager**

- (b) An AMO must nominate 1 or more individuals as a responsible manager, to be responsible to the accountable manager. The nominated individual's qualifications must be submitted to CASA in a form and manner approved by CASA and the individual must demonstrate to CASA knowledge of, and experience relevant to, the provision of maintenance services for which they are to be responsible and a working knowledge of this MOS. A responsible manager must ensure that, for his or her area of responsibility, the AMO complies with the requirements of this MOS and its exposition.

## Quality and safety managers

- (c) The accountable manager must nominate an individual or individuals for the positions of:
  - 1. quality manager, who must:
    - (i) have a direct line of corporate accountability to the accountable manager; and
    - (ii) ensure that the accountable manager is kept properly informed on quality and compliance matters; and
    - (iii) have the responsibility for monitoring the AMO's quality system as required by paragraph 145.A.65 (c); and
    - (iv) have the responsibility and authority for issuing and revoking certification authorisations on behalf of the AMO. The quality manager may nominate other persons to carry out this function in accordance with a procedure specified in the AMO's exposition.
  - 2. Safety manager, who must:
    - (i) have a direct line of corporate accountability to the accountable manager; and
    - (ii) ensure that the accountable manager is kept properly informed on safety matters; and
    - (iii) have responsibility for the safety management system as required by paragraph 145.A.65 (d) of this MOS.

## Man-hour plan

- (d) An AMO must have a maintenance man-hour plan in its exposition, showing how the AMO has sufficient employees to plan, perform, supervise, inspect and certify for maintenance and audit the AMO for compliance in accordance with the quality system required by paragraph 145.A.65 (c) of this MOS. The plan must include a procedure to reassess work intended to be carried out when actual employee availability is less than the planned staffing level for any particular work shift or period.

## Employee qualifications

- (e) An AMO must specify standards (including, but not limited to, qualifications and experience) in its exposition for the competence of individuals involved in any maintenance, maintenance training, management or quality audit task and must ensure these individuals meet the standards for a task that they are authorised to perform. The AMO must also ensure these individuals have an understanding of the application of human factors and human performance issues appropriate to that individual's function in the AMO.

## Requirements for certifying employees

- (f) An AMO may authorise employees under subparagraph 145.A.35 (b) 3 for specialist maintenance tasks if:
  - 1. the AMO's exposition includes standards and procedures for:
    - (i) qualifying the employee within a specialist field; and
    - (ii) training and authorisation of the employee in accordance with the requirements of this MOS; and

2. the specialist maintenance is 1 or more of the following, and is specifically approved for the AMO in writing by CASA:
  - (i) non-destructive testing (*NDT*) (other than NDT that is a colour contrast dye penetrant inspection, carried out by a person who is qualified in accordance with paragraph 145.A.30 (k) to carry out the inspection);
  - (ii) welding;
  - (iii) sheet metal, wood, fabric or composite repairs;
  - (iv) aircraft surface finishing;
  - (v) specialist software management of an in-flight entertainment system;
  - (vi) on-wing engine maintenance;
  - (vii) borescope inspections;
  - (viii) general interior furnishing, trim and decor, including seat upholstery, seat cushions, seat trim, curtains, carpets, and panelling but not including:
    - (A) any structural or electrical maintenance; or
    - (B) any maintenance to seat mechanisms, seat floor fittings, seat tables or in-flight entertainment equipment; or
    - (C) any maintenance or matter otherwise mentioned in this subparagraph;
  - (ix) other maintenance approved as specialist maintenance by CASA for this sub-subparagraph.
- (g) Except where stated otherwise in paragraph 145.A.30 (l), an AMO must have for line maintenance:
  1. a sufficient number of employees appropriately type rated and licensed, in accordance with paragraph 145.A.30 (k), as Category B licence holders, and authorised by the AMO under section 145.A.35 to perform maintenance certifications and issue certificates of release to service for aircraft maintenance; and
  2. where applicable, a sufficient number of aircraft certifying employees qualified, in accordance with paragraph 145.A.30 (k), as Category A licence holders who must be trained for line maintenance of a specific aircraft type, and authorised by the AMO for that line maintenance and aircraft type under section 145.A.35 to:
    - (i) carry out minor scheduled line maintenance and simple defect rectification in accordance with Appendix II to this MOS; and
    - (ii) to perform maintenance certification and issue certificates of release to service under the scope of the approval; and
  3. where applicable, a sufficient number of specialist maintenance employees qualified in accordance with paragraph 145.A.30 (f) as specialist maintenance employees and authorised by the AMO under section 145.A.35 to perform maintenance certification for that maintenance before the Category B certifying employee issues the certificate of release to service; and
  4. a register of certifying employees.

- (h) An AMO must have for base maintenance of large aircraft:
  1. a sufficient number of aircraft type rated certifying employees licensed in accordance with paragraph 145.A.30 (k) as Category C licence holders, and authorised under section 145.A.35, who must:
    - (i) ensure that compliance with subparagraphs 145.A.30 (h) 2 and (h) 3 have been met, and that all work required by the customer has been accomplished during the particular base maintenance check or work package; and
    - (ii) assess the impact of any work that is required and that is not carried out to determine either:
      - (A) if it is necessary to complete the work; or
      - (B) if the work may be deferred and if the registered operator has agreed to defer the work to another specified check or time; and
  2. a sufficient number of aircraft type rated certifying employees licensed in accordance with paragraph 145.A.30 (k) as Category B licence holders and authorised by the AMO under section 145.A.35 to perform maintenance certification before a Category C licence holder certifying employee issues a certificate of release to service; and
  3. where applicable, a sufficient number of specialist maintenance employees qualified in accordance with paragraph 145.A.30 (f) as specialist maintenance employees and authorised by the AMO under section 145.A.35 to perform maintenance certification for that maintenance before the Category C certifying employee issues the certificate of release to service; and
  4. a register of certifying employees.
- (i) An AMO must have for base maintenance of small aircraft:
  1. a sufficient number of employees appropriately qualified and type rated, in accordance with paragraph 145.A.30 (k), as Category B licence holders authorised by the AMO under section 145.A.35 to perform maintenance certifications and issue certificates of release to service; and
  2. where applicable, a sufficient number of specialist maintenance employees qualified in accordance with paragraph 145.A.30 (f) as specialist maintenance employees and authorised by the AMO under section 145.A.35 to perform maintenance certification for that maintenance before the Category B certifying employee issues the certificate of release to service; and
  3. a register of certifying employees.
- (j) Aeronautical product certifying employees must be authorised by an AMO under section 145.A.35 before issuing an aeronautical product certificate of release to service.
- (k) For subparagraphs 145.A.30 (g) 1, 145.A.30 (g) 2, 145.A.30 (h) 1, 145.A.30 (h) 2 and subparagraph 145.A.30 (i) 1, and subject to Appendix III and the provisions of this MOS, an AMO may only authorise an individual to perform maintenance certification and issue certificates of release to service for aircraft maintenance under the following circumstances:
  1. for a person who holds an AEL — the authorisation is limited by:
    - (i) the licence category or subcategory; and
    - (ii) any aircraft/engine combination specified in the licence;



2. for a person employed by an AMO in an AMO location outside Australian territory, to certify at that location:
  - (i) the person holds an ICAO Annex 1 Aircraft Maintenance Licence that has been issued by:
    - (A) the NAA for the location where the person is employed; or
    - (B) if there is more than 1 NAA for the country of the location where the person is employed — any NAA of the country; or

*Note* The Peoples' Republic of China has 3 official NAAs, including the Civil Aviation Department of the Hong Kong Special Administrative Region.

- (C) the NAA for the AMO's main location; and
- (ii) one of the following applies:
  - (A) the licence includes the applicable aircraft/engine combination or rating; or
  - (B) for a specific aircraft — the person has the type-specific training and experience required for the person's licence to cover a certification privilege that is equivalent to the certification privilege which, following requisite training and experience, would be added, in the form of a type rating for the specific aircraft, to a licence issued under Part 66 of CASR 1998, but which cannot be added to the person's licence in the form of an aircraft/engine combination or rating because:
    - (1) the licence is an airframes and powerplants licence, which lists airframes and powerplants, and aircraft systems or components, under broad categories as described in Chapter 4 of Annex 1 to the Chicago Convention; or
    - (2) the aircraft/engine combination is not listed on the National Register of licences and ratings for the country where the location is.
- (l) If an aircraft is grounded at a location that is not an AMO's main location, or that is an AMO's main location but one which does not normally provide maintenance services for the aircraft type, and there is no appropriately qualified certifying staff available, an AMO may authorise any of the following persons, in writing, to perform maintenance certification and issue certificates of release to service for aircraft maintenance for a single maintenance event:
  1. an employee of the AMO who holds an equivalent type authorisation on aircraft of similar technology, construction and systems;
  2. a person with not less than 5 years' maintenance experience who holds a valid aircraft maintenance licence issued by an ICAO Contracting State rated for the aircraft type requiring certification, provided there is no other AMO with the necessary approval at that location and the AMO obtains and retains evidence of the experience and the licence of that person.
- (m) Within 7 days of issuing an authorisation for any limited certification authorisations mentioned in paragraph (l), an AMO must give CASA a copy of the authorisation.
- (n) An AMO must, after issuing the certification authorisation for the single maintenance event, identify any maintenance required to be carried out subsequent to the single maintenance event as soon as practicable after the single maintenance event has occurred.

*Note* For an authorisation based on Part 61 qualifications of flight crew, for the certification of repetitive pre-flight airworthiness directives, or for the certification of aircraft operating away from a supported location, refer to Part 42.G.

### **145.A.35 Issuing certification authorisations**

- (a) Subject to paragraph (aa), before the issue or reissue of a certification authorisation, an AMO must ensure that a certifying employee has an adequate understanding of the aircraft and/or aeronautical products referred to in their certification authorisation and the AMO's procedures and exposition.
- (aa) Before the issue or reissue of a certification authorisation to an employee for specialist maintenance tasks, an AMO must ensure that the employee has:
  - 1. if the maintenance task is for 1 or more of the matters mentioned in sub-subparagraphs 145.A.30 (f) 2. (i) to (iv), or (ix) if CASA so determines — an adequate understanding of:
    - (i) either:
      - (A) aircraft and aeronautical products generally referred to in their certification authorisation as being the subject of the certification authorisation; or
      - (B) the particular aircraft and aeronautical products referred to in their certification authorisation as being the subject of the certification authorisation; and
    - (ii) the AMO's procedures and exposition; or
  - 2. if the maintenance task is for 1 or more of the matters mentioned in sub-subparagraphs 145.A. 30 (f) 2. (v) to (viii), or (ix) if CASA so determines — an adequate understanding of:
    - (i) the particular aircraft and aeronautical products referred to in their certification authorisation as being the subject of the certification authorisation; and
    - (ii) the AMO's procedures and exposition.
- (b) Except where paragraph 145.A.30 (l) applies, an AMO may only issue a certification authorisation to the following employees if the authorisation is expressed to be subject to a condition that it remain in force for a maximum period of 2 years and only while the employee continues to hold any qualification that was the basis of the issue of the authorisation:
  - 1. for the purposes of subparagraphs 145.A.30 (g) 1 and (g) 2 and subparagraphs 145.A.30 (h) 1 and (h) 2 and subparagraph 145.A.30 (i) 1, an employee meeting the criteria in paragraph 145.A.30 (k) to perform maintenance certifications and issue certificates of release to service for:
    - (i) aircraft maintenance of any particular aircraft types and ratings if listed on the employee's licence and subject to any limitations or exclusions applicable to the licence or ratings held; or
    - (ii) where sub-subparagraph 145.A.30 (k) 2 (ii) applies to a person for a specific aircraft type — maintenance of that particular aircraft type, subject to any limitations or exclusions that apply to the person's licence;
  - 2. for the purposes of paragraph 145.A.30 (j), an employee who is appropriately qualified and competent for the scope of work for which he or she is to be authorised, to issue a certificate of release to service for maintenance of aeronautical products;
  - 3. for the purposes of paragraph 145.A.30 (f), a specialist maintenance certifying employee under paragraph 145.A.30 (f) on condition that the AMO is satisfied that the specialist maintenance certifying employee is trained, assessed and

- qualified in accordance with standards and procedures included within the AMO's exposition and has an adequate understanding of:
- (i) the aircraft or aeronautical products to be maintained; and
  - (ii) airworthiness implications and requirements relevant to any maintenance (including access and egress for performance of the maintenance) for which he or she is to certify; and
  - (iii) the AMO's procedures; and
  - (iv) the regulations under which he or she will be providing maintenance services.
4. for paragraph 145.A.30 (f) — a specialist maintenance certifying employee under paragraph 145.A.30 (f) who does not meet the requirements of sub-subparagraphs 3. (i) to (iii), on condition that:
- (i) the maintenance is a stage of maintenance in accordance with subparagraph 145.A.45 (e) 6; and
  - (ii) the employee's certification authorisation is expressed to be for 1 or more of the stages; and
  - (iii) the AMO is satisfied that the employee is trained, assessed and qualified for the stage in accordance with standards and procedures included within the AMO's exposition; and
  - (iv) the employee has an adequate understanding of the regulations under which he or she will be providing the stage of maintenance; and
  - (v) the AMO's procedures ensure that all of the other stages are certified by persons holding appropriate certification authorisations for those stages.
- (c) An AMO must ensure that any employee holding a certification authorisation has at least 6 months of relevant aircraft or aeronautical product maintenance experience in any preceding 2 year period. The experience must be in aircraft or aeronautical product maintenance, carrying out maintenance on at least some of the aircraft type systems or aeronautical products specified in the employee's certification authorisation and/or exercising certification privileges and responsibilities specified in the authorisation.
- (d) An AMO must ensure that each of its employees that performs maintenance services on behalf of the AMO has up-to-date knowledge of the following, relevant to the employee's duties:
1. technology relevant to the person's functions in the AMO;
  2. the AMO's procedures;
  3. human factors principles.
- (e) An AMO must have in its exposition a program for continuation training for employees who perform maintenance services on behalf of the AMO, as follows:
1. an employee must be trained before he or she certifies for maintenance on behalf of the AMO;
  2. at least once every 24 months following commencement of performance of maintenance services for the AMO.
- (f) Except where paragraph 145.A.30 (l) has application, an AMO must assess all certifying employees for their competence, qualification and capability to carry out their intended certifying duties in accordance with a procedure specified in its exposition prior to the issue or reissue of a certification authorisation by the AMO.

- (g) When the requirements of paragraphs 145.A.35 (a), (b), (d), (f) and, where applicable, paragraph (c) of this MOS have been met, an AMO may issue a certification authorisation that specifies the scope and limits of such an authorisation.
- (h) If an AMO gives an employee a certification authorisation, it must give to the employee, in writing, the following details:
  1. information, in a readily understood form, about the scope and the limitations of the certification authorisation;
  2. the date when the authorisation was issued and the date it expires;
  3. a reference number for the authorisation;
  4. the name of the employee.
- (i) An AMO must give the quality manager referred to in subparagraph 145.A.30 (c) 1, the responsibility and authority for issuing and revoking certification authorisations on behalf of the AMO. The quality manager may appoint other persons to carry out this function in accordance with a procedure specified in the AMO's exposition.
- (j) An AMO must:
  1. maintain a record of all certifying employees including particulars of:
    - (i) the employee's training history with the AMO; and
    - (ii) any certification authorisation issued, including each authorisation number, scope and the limitations of the authorisation; and
    - (iii) licence, qualification, experience and authorisation details for individuals issued with certification authorisations issued for the purposes of section 145.A.30; and
  2. keep records of certifying employees in a secure manner for at least 2 years after the employee ceases to hold a certification authorisation issued by the AMO; and
  3. upon a request by a certifying employee, provide to the employee a copy of records of the employee held under this provision.
- (k) An AMO must provide to a certifying employee, access to his or her certification authorisation in a documented or electronic form.
- (l) An AMO or certifying employee must produce copies of any certification authorisation to a CASA authorised person within 24 hours of receiving a request from that person to produce it.
- (m) An AMO must not issue a certification authorisation to an employee unless the employee is at least 21 years of age.
- (n) The holder of a category A aircraft maintenance licence may only be issued with a certification authorisation for the exercise of certification privileges for a specific type of aircraft if he or she has satisfactorily completed the relevant category A aircraft task training for the type, carried out by a Part 145 organisation or a maintenance training organisation. This training must include practical hands-on training, and theoretical training, as appropriate for each task authorised. Satisfactory completion of training must be demonstrated by an examination or by workplace assessment carried out by the organisation.

- (o) Subject to paragraph (r), the holder of a category B2 aircraft maintenance licence may only be issued with a certification authorisation for the exercise of the certification privileges described in sub-sub-subparagraph 66.A.20 (a) 6 (ii) (C) of the Part 66 Manual of Standards and in Appendix II of this MOS, for a specific aircraft type, if he or she:
  - 1. holds a category B2 aircraft maintenance engineer licence for the aircraft type; and
  - 2. has satisfactorily completed the relevant category A aircraft task training for the type; and
  - 3. has satisfactorily completed 6 months of documented practical experience for the type covering the scope of the tasks for which the authorisation is to be issued.
- (p) For paragraphs (n) and (o), the relevant category A aircraft task training must include practical hands-on training, and theoretical training, appropriate for each task authorised. Satisfactory completion of task training must be demonstrated by an examination, workplace assessment or recognition of prior learning. The task training, examination, assessment or recognition of prior learning must be carried out by the AMO issuing the certification authorisation, or by a maintenance training organisation on behalf of the AMO.
- (q) For paragraph (p), *recognition of prior learning* means acceptance that previous learning through practical hands-on and theoretical training has delivered knowledge and competency at least equivalent to the knowledge and competency that must otherwise be demonstrated through examination or workplace assessment.
- (r) If an AMO has issued an employee with a certification authorisation for category A tasks on a specific aircraft type in compliance with paragraph (o), the AMO may issue the employee with a new certification authorisation for new or additional category A tasks on the same type in compliance with paragraph (o) but as if the requirement in subparagraph (o) 3 does not apply.

### **145.A.37 Training and assessment**

#### Description in exposition

- (a) An AMO that provides training and assessment for certifying employees must describe in its exposition how it meets the relevant requirements for that training and assessment.

#### Permitted training

- (b) If an employee of an AMO is the holder of an aircraft engineer licence, and:
  - 1. that licence:
    - (i) does not have a rating for a type rated aircraft type specified in a Manual of Standards for paragraph 66.015 (2) (e) of CASR 1998 endorsed on it; or
    - (ii) is endorsed with a rating issued subject to an exclusion under Part 66 of CASR 1998 or Subpart 202.CG of CASR 1998; and
  - 2. for an aircraft type, aircraft system or subset of an aircraft system specified in a Manual of Standards for paragraph 66.015 (2) (o) of CASR 1998 — CASA has decided under subparagraph 66.100 (a) (ii) of CASR 1998 that the training and assessment necessary for the removal of an exclusion is of a kind that may be provided by a AMO; and

3. the employee's AMO has an exposition that includes the provision of the particular kind of training and assessment mentioned in subparagraph 2; then the AMO may issue to the employee a certification authorisation for maintenance covered by the particular rating or exclusion once and only for a period of 6 months, if the AMO trains and assesses the employee in accordance with its exposition procedure.

#### Permitted training — manufacturer's training for a rating

- (c) If an employee of an AMO is the holder of an aircraft engineer licence and:
  1. the employee does not have a particular rating specified in a Manual of Standards for paragraph 66.015 (2) (e) of CASR 1998 endorsed on his or her licence; and
  2. CASA has specified in a Manual of Standards for paragraph 66.015 (2) (p) an aircraft type, and decided that manufacturer's training and assessment may be provided by an AMO for the rating;

then the AMO may issue the employee a Certification Authorisation for maintenance covered by the rating once and only for a period of 6 months, if the employee has been trained and assessed in accordance with the AMO's exposition.

*Note* The training mentioned in paragraphs 145.A.37 (b) and (c) comes within the definition of **permitted training** in clause 1, Part 3 of the CASR 1998 Dictionary.

#### Notice of completion of training and assessment

- (d) Subject to paragraph (da), the AMO must issue a notice of completion of training and assessment under paragraphs (b) and (c) in the form approved by CASA to the employee and provide a copy to CASA, if the employee:
  1. successfully completes the training and assessment; and
  2. provides maintenance services that include the performing of maintenance certifications or issuing of certificates of release to service for maintenance under his or her certification authorisation for a period of 6 months after commencement of the authorisation.

#### Provisional notice of completion of training and assessment

- (da) An AMO is taken to comply with paragraph (d) if:
  1. not later than 5 months after commencement of the employee's certification authorisation, the AMO gives the employee and CASA an electronic copy of the notice of completion of training and assessment under paragraphs (b) and (c) in a provisional form approved by CASA; and
  2. not earlier than 3 working days before the day that is 6 months after commencement of the employee's certification authorisation, the AMO gives the employee and CASA an electronic copy of a confirmation of completion notice in a form approved by CASA.

*Note* This procedure will give CASA time to make any appropriate changes to the employee's aircraft engineer licence, and return the licence to the employee on or before the 6 month period expires. This will allow the employee to continue to provide maintenance services that include the performing of maintenance certifications or the issuing of certificates of release to service for the same maintenance as under his or her expired certification authorisation.

#### Category A licence training syllabus, training and assessment

- (e) An AMO may provide aircraft type specific training and assessment for line maintenance of an aircraft to an employee holding a Category A licence in accordance with paragraph 145.A.30 (k), for authorisation to perform maintenance certification

and to issue a Certificate of release to service in accordance with section 66.A.20 of the Part 66 MOS, for maintenance described in Appendix II to this MOS, if details of the training syllabus and training and assessment procedures are set out in the AMO's exposition.

#### Flight crew maintenance training syllabus, training and assessment

- (f) An AMO may provide training to a pilot or flight engineer to perform maintenance services in relation to the tasks set out in the Part 42 MOS, if details of the training syllabus and training and assessment procedures are set out in the AMO's exposition.

#### **145.A.40 Tools, equipment and material**

- (a) An AMO must have tools, equipment and materials to enable it to provide maintenance services for which the AMO has an approval rating and:
  - 1. where the maintenance data specifies a particular tool or equipment must be used in the maintenance of the aircraft or aeronautical product, the AMO must use that tool or equipment, unless the use of alternative tooling or equipment is approved by alteration of maintenance data in accordance with subparagraph 145.A.45 (d) 3; and
  - 2. the tooling and equipment must be permanently available or, where a tool or equipment is infrequently used, a method of access to that tool or equipment must be described in the AMO's exposition; and
  - 3. sufficient aircraft access equipment and inspection platforms or docks to properly carry out its approved scope of maintenance.
- (b) An AMO must ensure that all tools, equipment and, particularly, test equipment that requires calibration, are controlled and calibrated at a periodicity to ensure serviceability and accuracy in accordance with the procedures set out in the AMO's exposition, and:
  - 1. the tool or equipment manufacturer's recommendations; or
  - 2. a nationally recognised standard.
- (c) An AMO must ensure that, on the day of calibration, it or the other organisation making the calibration makes and retains:
  - 1. records of the calibrations of each item of equipment or tools that requires calibration; and
  - 2. a record of the standard of calibration used.
- (d) An AMO must have a procedure in its exposition for managing an aircraft or aeronautical product released to service after maintenance has been performed using a tool or equipment that is subsequently found to have been outside of tolerances specified for the tool or equipment at the time the work was performed.

#### **145.A.42 Acceptance of aeronautical products**

- (a) An AMO must classify and segregate all aeronautical products for use or intended for use in the maintenance of aircraft or of aeronautical products in accordance with Subpart 42.E of CASR 1998.
- (b) The AMO must keep copies of documents that establish that the aeronautical products mentioned in paragraph (a) meet the conformity and traceability requirements of Subpart 42.E.

- (c) The AMO must keep documents mentioned in paragraph (b) for 2 years after the aeronautical product has been used in, or fitted to, an aircraft or another aeronautical product.

#### **145.A.43 Fabrication in the course of maintenance**

- (a) An AMO may fabricate an aeronautical product in accordance with the procedures in its exposition if:
  - 1. the product is fabricated and used during maintenance by the AMO; and
  - 2. the AMO is able to comply with the design data for the product being fabricated, including:
    - (i) the dimensions, materials, processes and any special technique for fabricating the product; and
    - (ii) the assembly, inspection and test procedures for the product; and
    - (iii) the identification and marking of the product; and
  - 3. the AMO has the necessary facilities, tools, equipment and employees for fabricating, inspecting and testing the product; and
  - 4. the completed product complies with the design data mentioned in subparagraph 145.A.43 (a) 2; and
  - 5. unless impractical to do so because of the product's size, the product is:
    - (i) marked with a part and serial number as required by the design data; and
    - (ii) marked to identify the AMO.
- (b) An AMO must make and retain a record for each aeronautical product fabricated by it, including the following information:
  - 1. a description of the product;
  - 2. the part number and serial number of the product;
  - 3. the type of aircraft or aeronautical product the product will be fitted to or used in;
  - 4. the design data used for fabricating the product;
  - 5. identification of the parts and materials used to fabricate the product and the results of inspections and tests carried out on the product;
  - 6. a certification that the product has been fabricated in accordance with, and meets the requirements of, the design data for each of the following as applicable:
    - (i) assembly of the product;
    - (ii) inspection of the product;
    - (iii) testing of the product;
    - (iv) marking of the product.
- (c) An AMO must keep the record required by paragraph (b) for the earlier of 2 years or the aeronautical product having been permanently removed from service.
- (d) If an AMO uses the aeronautical product it has fabricated for, or fits it to an aircraft, it must include in the maintenance record for the aircraft:
  - 1. a note that the product was fabricated by the AMO; and
  - 2. a cross-reference to the record required by paragraph (b).
- (e) If an AMO uses the aeronautical product it has fabricated for, or fits it to a second aeronautical product, it must include on the certificate of release to service for the second product:
  - 1. the product description and part number; and



2. a cross-reference to the record required by paragraph (b).

**145.A.45 Instructions for continuing airworthiness, including maintenance data**

- (a) An AMO must:
  1. subject to subparagraph (a) 4, hold current maintenance data applicable to any specific aircraft, aeronautical product or process listed on the AMO's approval class rating schedule for the performance of maintenance; and
  2. ensure current applicable maintenance data is used when performing any maintenance, including modifications and repairs; and
  3. if the AMO arranges for another person to provide the applicable maintenance data, ensure that procedures for maintaining the currency and appropriateness of the maintenance data are included in the AMO's exposition; and
  4. where another person provides the applicable maintenance data, hold and use the data for the entire duration of the performance of the maintenance and in accordance with the records provisions in paragraph 145.A.55 (c).
- (b) An AMO may generate maintenance data for its own use, if:
  1. there is no existing maintenance data covering the particular maintenance; and
  2. the generation of a new maintenance data does not involve the creation of wear limits; and
  3. the generation of the maintenance data is made in accordance with a procedure specified in the AMO's exposition that:
    - (i) includes a process for approval of the data by the AMO's quality manager or a person nominated by the quality manager after the new procedure has been assessed and found to result in a safe standard of maintenance; and
    - (ii) ensures that the person responsible for continuing airworthiness of the aircraft or aeronautical product is notified and agrees, in writing, with the use of the generated maintenance data for the aircraft or aeronautical product; and
    - (iii) includes a process for notification of the details of the new maintenance data to a manufacturer, TC holder, STC holder or holder of the design or repair approval where applicable; and
    - (iv) includes the provision for a paper, or an electronic traceability of the complete process of the data generation; and
    - (v) ensures that the new maintenance data clearly identifies:
      1. the source of the data; and
      2. the approval process used for the data; and
      3. currency or revision status of the data; and
    - (vi) the exposition procedure describes the provision for retention and control of the maintenance data.
- (c) An AMO must have procedures in its exposition to ensure that:
  1. if any procedure, practice, information, or maintenance instruction for an aircraft or an aeronautical product, as contained in the *Instructions for Continuing Airworthiness (relevant ICA content)* for use by the AMO, is identified as, or is reasonably believed to be, inaccurate, incomplete or ambiguous, then:
    - (i) the relevant ICA content is not used for maintenance until it is corrected or clarified through communications under this paragraph; and

- (ii) the relevant ICA content is recorded, and communicated for correction or clarification to:
  - (A) the person identified in the ICA as the author of the relevant ICA content; or
  - (B) the continuing airworthiness management organisation (*CAMO*) responsible for the continuing airworthiness of the aircraft; and
- 2. the AMO keeps a record of all communications under sub-sub-paragraph 1 (ii) (A) or 1 (ii) (B) until the person or CAMO has corrected or clarified the relevant ICA content.

*Note Instructions for Continuing Airworthiness* is defined in clause 10 of Part 3 of the CASR 1998 Dictionary.

- (d) An AMO may only alter maintenance data for its own use, if:
  - 1. the maintenance can be carried out in a more practical or efficient manner; or
  - 2. the maintenance data cannot be complied with by following the existing maintenance instructions; or
  - 3. the alteration of the maintenance data is for the use of tools or equipment not specified in the data; and

the alteration of the maintenance data is made in accordance with a procedure specified in the AMO's exposition that:

  - 4. includes a process for approval of the alteration by the AMO's quality manager or a person nominated by the quality manager after assessment establishes that the alteration provides an equivalent or improved maintenance standard; and
  - 5. ensures that the person responsible for continuing airworthiness of the aircraft or aeronautical product is notified and agrees with the use of the altered maintenance data for the aircraft; and
  - 6. includes a process for notification of the details of the alteration to the person identified in the maintenance data as author of the maintenance data; and
  - 7. includes provision for a paper or an electronic traceability of the complete process of the alteration; and
  - 8. ensures that the altered maintenance data clearly identifies:
    - (i) the source of the altered data; and
    - (ii) the approval process used for the alteration; and
    - (iii) currency or revision status of the data; and
  - 9. the exposition procedure describes the provision for retention and control of the altered data.
- (e) An AMO must comply with the following requirements:
  - 1. the AMO must have an appropriate means of recording maintenance tasks, for example, on work sheets, work cards, or otherwise (*maintenance records*);
  - 2. if the AMO provides maintenance services to a registered operator who requires records of maintenance to be made on the registered operator's own maintenance records — the AMO must ensure correct completion of the operator's maintenance records;
  - 3. the AMO must ensure that maintenance data applicable to maintenance tasks is accurately recorded in the AMO's maintenance records, or the maintenance records must provide precise reference to maintenance tasks detailed in the maintenance data;

4. if the AMO's maintenance records involve use of a system of computer-generated work cards or work sheets — the AMO must ensure that the system includes a back-up electronic database that is updated within 24 hours after any entry is made to the original electronic database;
  5. the AMO must ensure that:
    - (i) complex maintenance tasks are divided into stages; and
    - (ii) the maintenance records separately record the maintenance that is carried out in relation to each stage; and
    - (iii) each stage is covered by an appropriate maintenance certification by the person who is competent for the stage, whether the certification is for the stage, for groups of stages or for all stages;
  6. for subparagraph 145.A.35 (b) 4 — the AMO must ensure that maintenance tasks involving specialist maintenance, for which the competency required is held by more than 1 employee, are divided into separate stages, and that:
    - (i) the maintenance records separately record the maintenance that is carried out in relation to each stage; and
    - (ii) the maintenance certification of each stage is by the person who is competent for the stage;
  7. the AMO's exposition must set out procedures to ensure compliance with each of the requirements in subparagraphs 1 to 6.
- (f) An AMO must ensure that all applicable *Instructions for Continuing Airworthiness* are readily available for use when required by maintenance personnel.
- (g) An AMO must have a procedure in its exposition to ensure that *Instructions for Continuing Airworthiness* that it controls are kept up-to-date and for data provided by another person under subparagraph 145.A.45 (a) 3, the AMO must:
1. have written confirmation from the other person that all the *Instructions for Continuing Airworthiness* that it provides and controls are up-to-date; or
  2. have work orders specifying the amendment status of the *Instructions for Continuing Airworthiness* to be used for that work; or
  3. be able to show that the data is on the operator or customer's *Instructions for Continuing Airworthiness* amendment list.

#### **145.A.47 Production planning**

- (a) An AMO must have, at any time, sufficient employees to provide the maintenance services it is approved to provide and a system of production planning detailed in its exposition, which is appropriate to the volume and complexity of maintenance services that it provides.
- (b) The production planning system must include:
  1. forecasting of maintenance work to ensure availability of employees, tools, equipment, maintenance data and facilities to carry out the maintenance; and
  2. consideration of human performance limitations when planning maintenance tasks and scheduling shifts or maintenance teams to ensure maintenance can be completed without undue haste and within the limitations of human performance; and
  3. procedures for the communication of information to employees about the progress of maintenance when there is a shift changeover or change of individual employees performing a maintenance task.

#### **145.A.50 Certification of maintenance**

- (a) An AMO must issue a certificate of release to service for an aircraft or aeronautical product for which it provides maintenance services in accordance with Part 42 of CASR 1998.
- (b) The AMO must issue a certificate of release to service for an aircraft before flight at the completion of any maintenance.
- (c) An AMO must, in writing, on the continuing airworthiness record, notify a person responsible for continuing airworthiness of an aircraft or aeronautical product of:
  - 1. any new defect identified during the carrying out of maintenance; and
  - 2. particulars of any requested maintenance work that was not completed at the time the certificate of release to service for the maintenance was issued and the reasons why it was not completed.
- (d) An AMO must issue a certificate of release to service for an aeronautical product, following maintenance on the product, while the aeronautical product is not fitted to an aircraft:
  - 1. in the form approved by CASA as the *Form 1 Authorised Release Certificate*; or
  - 2. in a form specified in the AMO's exposition for an approved in-house release document for the release and control of aeronautical products, if the aeronautical product is maintained for its own use.
- (e) If an AMO is unable to complete all the maintenance of an aircraft requested by a registered operator at the time the certificate of release to service is issued for the maintenance, the certificate of release to service must only be issued in accordance with the provisions of regulation 42.745 of CASR 1998.
- (f) An AMO's exposition procedures must ensure that if an aeronautical product (the first product) is fitted to an aircraft or a second aeronautical product where the first product has not been released from maintenance under an Authorised Release Certificate or the AMO's in-house release document, the first product is fitted in accordance with regulation 42.440 of CASR 1998.

#### **145.A.55 Maintenance records**

- (a) An AMO must record, in writing, details of maintenance that are sufficient to show that all requirements of this MOS, the AMO's approval rating, and exposition which pertain to the maintenance services provided, have been complied with including:
  - 1. details of maintenance carried out on an aircraft or aeronautical product for which a certifying employee of the AMO has issued a certificate of release to service; and
  - 2. details of calibrated tooling or test equipment used for the maintenance to provide the traceability required for compliance to paragraph 145.A.40 (d).
- (b) An AMO must give:
  - 1. to the person responsible for continuing airworthiness of any aircraft for which the AMO has provided maintenance services, the maintenance record of that maintenance in accordance with regulation 42.405 of CASR 1998; and
  - 2. if the AMO issued a certificate of release to service for an aeronautical product, that certificate to the person to whom the aeronautical product is released for use in an aircraft or another aeronautical product.

- (c) The AMO must keep:
  1. a copy of all aircraft maintenance records, for 2 years and in accordance with regulation 42.410; and if the records are kept in electronic form, a back-up electronic record of the information must be kept in a location separate to the original; and
  2. a copy of all certificates for release to service issued for aircraft, for 1 year in accordance with regulation 42.770; and
  3. a copy of all certificates of release to service issued for aeronautical products, for 2 years in accordance with regulation 42.825 of CASR 1998.
- (d) If an AMO ceases to be an AMO, the organisation must dispose of the records in accordance with a procedure in its exposition or in a manner approved by CASA.

*Note* Subparagraph 145.A.45 (e) 4 requires a specific procedure in the exposition where the AMO uses a registered operator's workcard or worksheet system.

### **145.A.60 Occurrence and major defect reporting**

- (a) An AMO must have an internal occurrence reporting, investigation and feedback system set out in its exposition, which utilises fair, open and effective reporting principles and which it will follow for reporting and following up on maintenance and safety issues that are found during the carrying out of maintenance on an aircraft or aeronautical product. The procedures must include procedures for:
  1. collecting and evaluating individual maintenance difficulty and safety reports; and
  2. identifying adverse trends in all of the AMO's occurrence reports; and
  3. identifying systemic deficiencies; and
  4. taking corrective action to address systemic deficiencies; and
  5. following up and monitoring corrective action to ensure maintenance and safety issues have been adequately addressed; and
  6. distributing information about the occurrence reports, their evaluation and follow-up action.
- (b) An AMO may use the internal occurrence reporting system to identify and report any major defect of an aircraft or aeronautical product maintained by the AMO in accordance with regulations 42.380 and 42.385 of CASR 1998.
- (c) An AMO must submit major defect reports referred to in paragraph (b) within 2 days of identifying the condition to which the report relates in accordance with regulation 42.390 of CASR 1998.
- (d) For paragraph (a), utilising *fair, open and effective reporting principles* means that the AMO has a formal written policy (the *policy*) and an invariable practice that, subject to paragraph (e), a person who reports an internal occurrence which arose directly or indirectly from the person's *behaviour* will not be punished or otherwise treated adversely because of the internal occurrence or the person's reporting of it.
- (e) for paragraph (d):
  1. *behaviour* means any action, omission or decision of the person that:
    - (i) is commensurate with his or her experience and training; and
    - (ii) does not involve gross negligence, wilful violation of any rule, requirement or practice of the AMO, or a destructive act; and
  2. the report must be made as soon as required under the policy, and to the appropriate person in accordance with the policy; and

3. a requirement by the AMO that the person undergo training in relation to the internal occurrence is not adverse treatment.

**145.A.65 Safety and quality policy, maintenance procedures and management systems**

- (a) An AMO's exposition must contain safety and quality policies which:
  1. show safety as the overriding consideration at all times; and
  2. encourage employees to report to the AMO maintenance-related incidents and errors; and
  3. require all employees to:
    - (i) comply with quality and safety standards and procedures; and
    - (ii) co-operate with requests from independent quality auditors relating to maintenance services the employees provide.
- (b) An AMO must have procedures in its exposition that ensure good maintenance practices and compliance with this MOS, including procedures for the following:
  1. taking into account human factors principles and human performance limitations; and
  2. maintaining documents and forms that ensure aircraft and aeronautical products are released to service in accordance with section 145.A.50; and
  3. ensuring compliance to the requirements of section 145.A.25; and
  4. covering all aspects of the provision of maintenance services; and
  5. setting out the standards, including process standards and employee competency standards to which the AMO will work; and
  - 5A. the training and assessment of an employee who is to receive any training and assessment mentioned in section 145.A.37, including training and assessment that is not provided by the AMO itself;
  6. ensuring that any employee does not perform any work in relation to maintenance of an aircraft or aeronautical product, if that employee's capacity to perform the work is significantly impaired; and
  7. ensuring that any damage is assessed and modifications and repairs are carried out using a design approval approved, or deemed approved, under Subpart 21M of CASR 1998; and
  8. for aircraft maintenance:
    - (i) capturing maintenance errors; and
    - (ii) ensuring that maintenance is appropriately allocated to employees to avoid 1 employee simultaneously performing similar tasks on more than 1 system on the same aircraft; and
    - (iii) where the requirements in sub-subparagraph (ii) cannot be met because only 1 individual is available, ensuring an additional inspection stage by the individual after he or she has completed the maintenance.

- (c) An AMO must have in its exposition, and comply with, a written quality management system that includes:
1. the requirement for independent surveillance and quality audits to be conducted at intervals of not more than every 12 months after the issue of a Part 145 approval under the control of an individual that is not a responsible manager of the AMO, to ensure that:
    - (i) all aspects of regulatory compliance are checked; and
    - (ii) required aircraft or aeronautical product maintenance standards are met; and
    - (iii) the AMO's procedures are adequate to meet the requirement of sub-subparagraph 145.A.65 (c) 1 (ii); and
  2. a system of remedial corrective and preventative action and feedback that:
    - (i) communicates audit findings to individuals mentioned in paragraph 145.A.30 (b) and to the accountable manager; and
    - (ii) ensures timely corrective action is taken in response to reports resulting from the independent audits required by subparagraph 145.A.65 (c) 1; and
  3. control processes for identification, legibility, storage, protection, archiving, retrieval and retention of all records associated with the requirements of this MOS; and
  4. a system for regular review of the quality management system to ensure its continuing suitability, adequacy and effectiveness, including assessment of opportunities for improvement and the need for changes to the system; and
  5. if an AMO uses a Maintenance Services Subcontractor under the provisions of paragraph 145.A.75 (a), the AMO's quality system, or subcontract control procedures, also includes:
    - (i) procedures for performance of pre-contract auditing of the Maintenance Services Subcontractor's work to determine whether the Maintenance Services Subcontractor is able to provide services to a standard that will enable the AMO to meet its obligations under this MOS; and
    - (ii) performance and recording of sample audits of services provided by the Maintenance Services Subcontractor for the AMO and a record of when the Maintenance Services Subcontractor is used; and
    - (iii) a corrective action follow-up plan that includes termination of the arrangements with the Maintenance Services Subcontractor if services provided by the Maintenance Services Subcontractor do not meet the AMO's standards.
- (d) An AMO must have in its exposition, and comply with, a written safety management system (**SMS**) for the AMO, which must, as a minimum, include:
1. a statement of the AMO's safety policy and objectives, including documented details of the following:
    - (i) the management commitment to, and responsibility for, safety risk management;
    - (ii) the safety accountabilities of managers;
    - (iii) the appointment of key safety personnel;
    - (iv) an SMS implementation plan;

*Note* See the definition in section 145.A.12.

  - (v) the relevant third party relationships and interactions;

- (vi) the coordination of the emergency response plan; and
- 2. a safety risk management plan, including documented details of the following:
  - (i) hazard identification processes;
  - (ii) risk assessment and mitigation processes, including procedures for the remedial, corrective and preventative actions for the mitigation of risk associated with identified hazards; and
- 3. a safety assurance system, including documented procedures for:
  - (i) safety performance monitoring and measurement; and
  - (ii) the management of change; and
  - (iii) communication of safety findings to individuals mentioned in paragraph 145.A.30 (b), to the accountable manager and to authors of safety reports; and
  - (iv) continuous improvement, including regular reviews, of the SMS; and
- 4. a safety promotion system, including documented details of the following:
  - (i) training and education;
  - (ii) safety communication to all employees of the AMO; and
- 5. an internal reporting system and associated investigation process which must:
  - (i) regularly record and analyse safety data received from the AMO's internal reporting system required under section 145.A.60 and from operators or third parties mentioned in sub-subparagraph 145.A.65 (d) 1 (v) and from the hazard identification and reporting processes mentioned in sub-subparagraph 145.A.65 (d) 2 (i); and
  - (ii) be integrated into the safety assurance system mentioned in subparagraph 145.A.65 (d) 3.

#### **145.A.70 AMO exposition**

- (a) An AMO must have an exposition that includes all of the following:
  - 1. a statement signed by the accountable manager confirming that the exposition and any referenced associated documents demonstrate how the AMO will comply with this MOS;
  - 2. the titles and names of individuals specified in paragraph 145.A.30 (b);
  - 3. the duties and responsibilities of individuals nominated under paragraph 145.A.30 (b), including matters for which they may deal directly with CASA;
  - 4. an organisation chart showing chains of responsibility of managers under paragraph 145.A.30 (b);
  - 5. a procedure to show, when and who can deputise for any responsible manager under paragraph 145.A.30 (b) in the case of a lengthy absence of that responsible manager;
  - 6. a list of certifying employees;
  - 7. a description of available human resources;
  - 8. the address of each location that is a main location, and a description of the facilities at the location;

*Note* See the definition of **main location** in section 145.A.12.



9. a description of maintenance on an aircraft that is line or base maintenance for the AMO;
  10. a statement of the capability of the AMO to perform a maintenance service for which it is approved under Appendix I and the main and other locations at which it can perform those services;
  11. the AMO's procedure for seeking CASA approval of significant changes to the AMO mentioned in Part 145 of CASR 1998;
  12. the AMO's procedure for making changes to the exposition;
  13. the AMO's:
    - (i) quality and safety management systems; and
    - (ii) procedures established to meet all the requirements of this MOS;
  14. names of registered operators of passenger transport aircraft to whom the AMO will provide maintenance services;
  15. addresses and descriptions of line stations as specified in paragraph 145.A.75 (c);
  16. names of contracted organisations, including those engaged under section 145.A.75;
  17. procedures as to how the AMO will comply with any requirement in this MOS that is not set out above.
- (b) An AMO must ensure its exposition is amended to remain up-to-date.

#### **145.A.73 Privileges of an AMO**

For regulation 145.040 of CASR 1998, the privileges of an AMO include:

1. providing maintenance services for an aircraft or an aeronautical product for which the AMO is approved in accordance with Appendix I, at a location described in its exposition; and
2. for an aircraft or an aeronautical product mentioned in subparagraph 1 — issuing a certificate of release to service for completion of maintenance in accordance with section 145.A.50.

#### **145.A.75 Additional privileges of an AMO**

In addition to the privileges of an AMO set out in regulation 145.040 of CASR 1998, an AMO may do the following things:

1. arrange for maintenance services to be carried out on behalf of the AMO by a Maintenance Services Subcontractor approved under Part 145 of CASR 1998 as an AMO for the maintenance services (*approved*); and
- 1A. for maintenance services for which the AMO is approved — arrange for the maintenance services to be carried out by a Maintenance Services Subcontractor that is not approved under the control of the quality system of the AMO, provided:
  - (i) the Maintenance Services Subcontractor's facilities, personnel and procedures, meet the relevant requirements of Part 145 and this MOS for the contracted work; and
  - (ii) the arrangement is in accordance with procedures set out in the AMO's exposition designed to ensure that:
    - (A) the AMO confirms that the Maintenance Services Subcontractor meets the necessary standards for the maintenance; and

- (B) any maintenance is carried out in accordance with Instructions for Continuing Airworthiness; and
  - (C) the AMO's procedures apply to the Maintenance Services Subcontractor; and
  - (D) any limitations on the kind of work that the Maintenance Services Subcontractor may perform are complied with; and
- (iii) the maintenance services provided by the Maintenance Services Subcontractor do not include:
- (A) a base maintenance check as set out in the maintenance program for an aircraft; or
  - (B) a complete workshop maintenance check or overhaul of an engine, engine module, or propeller.
2. at a location, other than a line station described in the AMO's exposition, provide maintenance services for an aircraft that is unserviceable or requires line maintenance, but only if:
- (i) the maintenance services are services for which the AMO is approved in accordance with Appendix I; and
  - (ii) the location is capable of supporting the required maintenance; and
  - (iii) the location has been identified and approved by the AMO as an appropriate temporary location for the maintenance in accordance with procedures set out in the AMO's exposition.
3. provide maintenance services for line maintenance of an aircraft for which the AMO is approved in accordance with Appendix I, at any location identified under subparagraph 145.A.70 (a) 10 as capable of supporting line maintenance and the AMO's exposition both authorises the activity and lists the location.
4. for maintenance services mentioned in this section — issue a certificate of release to service for completion of maintenance in accordance with section 145.A.50.

## Appendix I

### Organisations approval class and ratings system

- 1 Except for small AMOs referred to in clause 2, Table 1 outlines the full extent of approval possible under Part 145 in a standardised form. An AMO may be granted an approval ranging from a single class and rating with limitations to multiple classes and ratings with limitations. The approval class, rating and limitations sections of an approval certificate specify the scope of maintenance approved for a Part 145 AMO to provide maintenance services for aircraft, aeronautical products or specialist maintenance.
- 2 An AMO that employs only 1 person to both plan and carry out all maintenance can only hold a limited scope of approval ratings. The maximum permissible limits are as shown in Table 2.
- 3 In addition to the ratings and limitations listed on the certificate, the organisation is required by subparagraph 145.A.70 (a) 10 to set out the scope of the approval in its exposition, showing particularly the locations at which the AMO conducts maintenance as specified on the approval certificate. This statement of capability must conform to, and not exceed the rating limitations specified on, the approval certificate.
- 4 In addition to the statement of capability required under clause 3 above, an AMO may have a capability list and management procedure as part of its procedures under subparagraph 145.A.70 (a) 13 to manage a detailed capability list. The scope of work specified in the capability list further defines the exact limits of approval. The capability list must not specify work that falls outside of class and rating limitations specified on the approval certificate. When a capability list is used, amendment will be in accordance with a procedure approved by CASA in the AMO's exposition. The procedure will have to address the issues of who is responsible for capability list amendment control and the actions that need to be taken for amendment. Such actions include ensuring compliance with Part 145 of CASR 1998 for products or services added to the list.
- 5 The category A rating means that the AMO may carry out aircraft maintenance, as specified in its approval certificate, in accordance with maintenance data for the aircraft. A category A rating also permits the AMO to provide maintenance services that are specialist maintenance, for aircraft for which it is approved under the category A rating, if the specialist maintenance is carried out in accordance with the relevant procedures set out in the AMO's exposition. Category A ratings are subdivided into base maintenance, or line maintenance, and the AMO may be approved for either base maintenance, or line maintenance, or both.
- 6 The category B rating means that the AMO may provide maintenance services, as specified in its approval certificate, which involve carrying out maintenance on an aeronautical product that is an engine, or an Auxiliary Power Unit (*APU*), in accordance with maintenance data for the engine or the APU. A category B rating also permits the AMO to provide maintenance services that are specialist maintenance, for an engine or an APU for which it is approved under the category B rating, if the specialist maintenance is carried out in accordance with the relevant procedures set out in the AMO's exposition.
- 7 The category C rating means that the AMO may provide maintenance services as specified in its approval certificate, which involve carrying out maintenance on an aeronautical product, other than an engine or an APU, in accordance with the maintenance data for the aeronautical product. A category C rating also permits the AMO to provide maintenance services that are specialist maintenance, for an

aeronautical product for which it is approved under the category C rating, if the specialist maintenance is carried out in accordance with the relevant procedures set out in the AMO's exposition.

- 8 The category D rating means that the AMO may provide maintenance services on an aircraft or an aeronautical product without holding a category A rating for aircraft maintenance or a category B or C rating for aeronautical product maintenance, but only if the maintenance services are:
  - (a) for specialist maintenance of the kind described in sub-subparagraphs 145.A. 30 (f) 2. (i) to (iv), or (ix) if CASA so determines; and
  - (b) specified in the AMO's approval certificate for the category D rating
- 9 ***Carrying out maintenance on an aircraft*** and ***carrying out maintenance on an aeronautical product*** have the meanings given by Part 3 of the CASR 1998 Dictionary.
- 10 The limitations section of the approval certificate is intended to give CASA maximum flexibility to customise the approval to a particular AMO. The limitations sections of Table 1 and Table 2 describe the possible forms of limitations that CASA may apply to each rating to customise the approval for a particular AMO. In some cases, CASA may limit an organisation's approval rating to particular types of maintenance. For example, a rating A may be limited to avionic systems maintenance only or a rating B1 may be limited to maintenance other than complete overhaul of the engine.
- 11 Where the limitations sections in Table 1 and Table 2 make reference to series, model and group for A and B ratings, they have the following meaning:
  - (a) ***series*** means a series of models with similar design covered by a single type certificate such as Boeing 737 series aircraft which include B737-300, 400, 500, 600, 700, 800 and 900 etc. or GE CF6-80 engines which include all CF6-80A and CF6-80C2 models etc.
  - (b) ***model*** means a specific model of aircraft or engine as designated in the type certificate such as Airbus A320-231 aircraft or IAE V2500-A1 engine.
  - (c) ***group*** means group of aircraft or engines from the same manufacturer or having similar configuration and technology. Examples of groups are Cessna single piston engine aircraft or Lycoming non-supercharged piston engines etc.

For an A1 category rating, the limitation may specify an aircraft by series or model; or both the aircraft and engine by series or model, for example, A320 Series/IAE V2500 or B747-400 Series/RB211-524G2.

*Note* An AMO may be further limited by CASA in the scope of approval dependent upon the capability of the particular organisation.

- 12 For an AMO with a rating mentioned in an item in a column headed "Rating" in Table 1 or Table 2 of this Appendix, reference in the corresponding item in the column headed "Limitation" to particular types of maintenance, NDT methods, welding processes, specialist maintenance functions, aeronautical products, processes or functions, means that the AMO's maintenance approval is limited to the particular maintenance, methods, processes, functions, or products that are specified in the AMO's approval certificate for the rating.

**Table 1**

<b>CLASS</b>	<b>RATING</b>	<b>LIMITATION</b>	<b>BASE</b>	<b>LINE</b>
Aircraft	A1 Large Aircraft – Aeroplanes	<ul style="list-style-type: none"> <li>• Aircraft and Engine manufacturer or model series</li> <li>• Particular types of maintenance.</li> </ul>		
	A2 Small Aircraft – Aeroplanes	<ul style="list-style-type: none"> <li>• Aircraft manufacturer, model, series or group</li> <li>• Particular types of maintenance.</li> </ul>		
	A3 Helicopters	<ul style="list-style-type: none"> <li>• Aircraft manufacturer, model, series or group</li> <li>• Particular types of maintenance.</li> </ul>		
	A4 Aircraft other than A1, A2 and A3	<ul style="list-style-type: none"> <li>• Aircraft model or series</li> <li>• Particular types of maintenance.</li> </ul>		
Engines	B1 Turbine	<ul style="list-style-type: none"> <li>• Engine model or series</li> <li>• Particular types of maintenance.</li> </ul>		
	B2 Piston	<ul style="list-style-type: none"> <li>• Engine manufacturer, model, series or group</li> <li>• Particular types of maintenance.</li> </ul>		
	B3 APU	<ul style="list-style-type: none"> <li>• APU manufacturer, model or series</li> <li>• Particular types of maintenance.</li> </ul>		
<b>CLASS</b>	<b>RATING</b>	<b>ATA CHAPTERS</b>	<b>LIMITATION</b>	
Aeronautical products other than complete engines or APUs	C1 Air Conditioning and Pressurisation	21	<ul style="list-style-type: none"> <li>• Aircraft manufacturer, model, series or group</li> <li>• Engine or APU manufacturer, model, series or group</li> <li>• Aeronautical products manufacturer</li> <li>• Particular aeronautical product</li> <li>• Particular types of maintenance</li> <li>• Cross reference to the AMO's Capability List.</li> </ul>	
	C2 Auto Flight Systems	22		
	C3 Communications and Navigation	23, 34		
	C4 Doors and Hatches	52		
	C5 Electrical Power	24, 33		
	C6 Equipment and Furnishings	25, 38, 44, 45, 46		
	C7 Engine and APU system products	49, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83		
	C8 Flight Control systems	27, 55, 57.40, 57.50, 57.60, 57.70		
	C9 Fuel Systems	28		
	C10 Helicopter Rotors	62, 64, 66, 67		
	C11 Helicopter Transmissions	63, 65		
	C12 Hydraulic Systems	29		
	C13 Instruments	31		
	C14 Landing Gear Systems	32		
	C15 Oxygen Systems	35		
	C16 Propellers	61		
	C17 Pneumatic Systems	36, 37, 47		
	C18 Protection Ice/Rain/Fire	26, 30		
	C19 Windows	56		
	C20 Structural Repairs and Modifications	53, 54, 57.10, 57.20, 57.30		
<b>CLASS</b>	<b>RATING</b>	<b>LIMITATION</b>		
Specialist Maintenance	D1 Non-Destructive Testing	Particular NDT method(s)		
	D2 Welding	Particular Welding process(es)		
	D3 Other Specialist Maintenance	Particular specialist maintenance function(s)		

**Table 2**

CLASS	RATING	LIMITATION
Aircraft	A2 Small Aircraft – Aeroplanes Piston Engined	<ul style="list-style-type: none"> <li>• Line or Base</li> <li>• Aircraft manufacturer, model, series or group</li> <li>• Particular types of maintenance.</li> </ul>
	A2 Small Aircraft – Aeroplanes Turbine Engined	<ul style="list-style-type: none"> <li>• Line maintenance</li> <li>• Aircraft manufacture, model, series or group</li> <li>• Particular types of maintenance.</li> </ul>
	A3 Small Aircraft – Helicopters	<ul style="list-style-type: none"> <li>• Line or Base</li> <li>• Aircraft manufacturer, model, series or group</li> <li>• Particular types of maintenance.</li> </ul>
	A4 Aircraft other than A1, A2 and A3	<ul style="list-style-type: none"> <li>• Aircraft model or series</li> <li>• Particular types of maintenance.</li> </ul>
Engine	B2 Piston Engine less than 450 HP	<ul style="list-style-type: none"> <li>• Engine manufacturer, model, series or group</li> <li>• Particular types of maintenance.</li> </ul>
Aeronautical products rating other than complete engines or APUs	C1 to C20	<ul style="list-style-type: none"> <li>• Aircraft manufacturer, model, series or group</li> <li>• Engine or APU manufacturer, model, series or group</li> <li>• Aeronautical products manufacturer</li> <li>• Particular aeronautical product</li> <li>• Particular types of maintenance.</li> </ul>
Specialist Maintenance	D1 Non-destructive testing ( <i>NDT</i> )	<ul style="list-style-type: none"> <li>• Particular NDT method.</li> </ul>
	D2 Welding	<ul style="list-style-type: none"> <li>• Particular welding processes.</li> </ul>
	D3 Other specialist maintenance	<ul style="list-style-type: none"> <li>• Particular processes or functions approved.</li> </ul>

## Appendix II

### Category A licence tasks

#### ***Maintenance activities — authority in subcategory A1, A2, A3 or A4***

This Appendix lists category A licence tasks.

- 1 Minor scheduled line maintenance, including a scheduled inspection or check, up to and including a weekly check:
  - (a) specified in the registered operator's approved aircraft maintenance program; or
  - (b) if not specified in the registered operator's approved aircraft maintenance program, which CASA considers is equivalent to a weekly check and lists in Part 66 guidance material.
- 2 Minor maintenance, including a pre-flight, transit or overnight check, ground handling, APU running and minimum equipment list (**MEL**) implementation as allowed by paragraph 3 (p).
- 3 Minor scheduled line maintenance or simple defect rectification tasks:
  - (a) replacement of wheel assemblies; and
  - (b) replacement of wheel brake units; and
  - (c) replacement of emergency equipment; and
  - (d) replacement of ovens, boilers and beverage makers; and
  - (e) replacement of internal and external lights, filaments and flash tubes; and
  - (f) replacement of windscreen wiper blades; and
  - (g) replacement of passenger or cabin crew seats, seat belts and harnesses; and
  - (h) closing of cowlings and refitment of quick access inspection panels; and
  - (i) replacement of toilet system components, other than gate valves; and
  - (j) simple repair and replacement of internal compartment doors and placards, other than doors forming part of a pressure structure; and
  - (k) simple repair and replacement of overhead storage compartment doors and cabin furnishing items; and
  - (l) replacement of static wicks; and
  - (m) replacement of aircraft main and APU batteries; and
  - (n) replacement of in-flight entertainment system components, other than public address; and
  - (o) routine lubrication and replenishment of system fluids and gases; and
  - (p) implementation of a registered operator's MEL, including deactivation of subsystems and aircraft components as permitted by the MEL, if doing what the MEL requires as part of its application process is a task listed in the AMO's exposition as a simple task for this paragraph, and approved as such by CASA at the time CASA approves the exposition; and
  - (q) any other line maintenance task for an aircraft type, if the task is:
    - (i) specified in Appendix IV of this MOS as being a simple task for this paragraph; and
    - (ii) listed in the AMO's exposition as a simple task for this paragraph, and approved as such by CASA at the time CASA approves the exposition; and

- (r) For a helicopter only:
  - (i) removal or installation of the following:
    - (A) simple medical equipment carried inside a helicopter used for emergency medical services;
    - (B) external cargo provisions (for example, external hook, mirrors), excluding the hoist;
    - (C) quick release external cameras and search lights;
    - (D) emergency float bags, excluding the bottles;
    - (E) external doors fitted with quick release attachments;
    - (F) snow pads, skid wear shoes or slump protection pads; and
  - (ii) removal, inspection and re-installation of chip detectors, including on inspection “go” or “no go” decision on chip or fuzz or swarf; and
  - (iii) folding or deploying rotor blades if:
    - (A) handling instructions permit folding for storage; and
    - (B) ground support equipment is available; and
  - (iv) visual inspection or tap test of rotor blades; and
  - (v) minor repairs, including stop drilling and bonding, to acrylic or Perspex windscreens.



## Appendix III

### Conditions for the use of employees not qualified to Part 66 of CASR 1998 in accordance with paragraph 145.A.30 (k)

Certifying employees complying with the following conditions will meet the requirements of paragraph 145.A.30 (k):

- (a) the individual must hold an appropriate licence issued by an NAA under the country's national regulations that is an ICAO Annex 1 aircraft maintenance licence;
- (b) the scope of work of the individual must not exceed the scope of work defined by the national licence;
- (c) the individual must have received training on human factors and airworthiness regulations equivalent to that detailed in Part 66 of CASR 1998;
- (d) the individual must demonstrate:
  - (i) for authorisation as a line maintenance certifying employee:
    - (A) 5 years' maintenance experience; or
    - (B) for an individual whose authorised tasks do not exceed those of a category A certifying employee for subparagraph 145.A.30 (g) 2 of the Part 145 MOS — 3 years' maintenance experience; and
  - (ii) for authorisation as a base maintenance certifying employee:
    - (A) 5 years' maintenance experience; or
    - (B) for an individual whose authorisation is to permit the issue of a Certificate of Release to Service from base maintenance under subparagraph 145.A.30 (h) 1 of the Part 145 MOS — 8 years' maintenance experience;
- (e) each maintenance certifying employee authorised under paragraph 145.A.30 (k) must receive type training at a level corresponding to Appendix III of the Part 66 MOS, for every aircraft on which he or she is authorised to make certification. However, those individuals whose authorised tasks do not exceed those of a Part 66 Category A certifying employee may receive task training in lieu of complete type training.

*Note* Specialist maintenance certifying employees are dealt with under paragraph 145.A.30 (f) and subparagraph 145.A.35 (b) 3.

**Appendix IV**

**Simple tasks for paragraph 3 (q) of Appendix II**

[Reserved]

## Note to Part 145 Manual of Standards (MOS)

The Part 145 Manual of Standards (MOS) (in force under the *Civil Aviation Safety Regulations 1998*) as shown in this compilation comprises *Manual of Standards Part 145 Instrument 2011* amended as indicated in the Tables below.

### Table of Manual of Standards and Amendments

Year and number	Date of registration on FRLI	Date of commencement	Application, saving or transitional provisions
MOS 145 2011	18 February 2011 (see F2011L00281)	27 June 2011	
MOS 145 2011 Amendment No. 1	22 June 2011 (see F2011L01192)	27 June 2011	—
MOS 145 2012 Amendment No. 1	5 April 2012 (see F2012L00794)	6 April 2012	—
MOS 145 2012 Amendment No. 2	25 June 2012 (see F2012L01326)	26 June 2012	—
MOS 145 2014 Amendment No. 1	2 October 2014 (see F2014L01316)	3 October 2014	—

### Table of Amendments

ad. = added or inserted   am. = amended   rep. = repealed   rs. = repealed and substituted

Provision affected	How affected
s. 1	rs. MOS 145 2011 No. 1
s. 2	am. MOS 145 2011 No. 1
s. 3	rep. MOS 145 2011 No. 1
Schedule heading	rep. MOS 145 2011 No. 1
MOS title	rep. MOS 145 2011 No. 1
s. 145.A.01	am. MOS 145 2014 No. 1
s. 145.A.05	am. MOS 145 2011 No. 1
s. 145.A.12	am. MOS 145 2011 No. 1, MOS 145 2012 No. 2, MOS 145 2014 No. 1
s. 145.A.25	am. MOS 145 2014 No. 1
s. 145.A.30	am. MOS 145 2011 No. 1, MOS 145 2012 No. 1, MOS 145 2012 No. 2, MOS 145 2014 No. 1
s. 145.A.35	am. MOS 145 2011 No. 1, MOS 145 2012 No. 2, MOS 145 2014 No. 1
s. 145.A.37	am. MOS 145 2011 No. 1, MOS 145 2012 No. 1, MOS 145 2014 No. 1
s. 145.A.40	am. MOS 145 2011 No. 1, MOS 145 2012 No. 1
s. 145.A.42	am. MOS 145 2014 No. 1
s. 145.A.45	am. MOS 145 2011 No. 1, MOS 145 2014 No. 1
s. 145.A.55	am. MOS 145 2011 No. 1
s. 145.A.60	am. MOS 145 2011 No. 1, MOS 145 2014 No. 1
s. 145.A.65	am. MOS 145 2014 No. 1
s. 145.A.70	am. MOS 145 2012 No. 2, MOS 145 2014 No. 1
s. 145.A.75	am. MOS 145 2014 No. 1
Appendix I	am. MOS 145 2011 No. 1, MOS 145 2012 No. 1, MOS 145 2014 No. 1
Appendix II	am. MOS 145 2011 No. 1, MOS 145 2012 No. 2, MOS 145 2014 No. 1
Appendix III	am. MOS 145 2011 No. 1, MOS 145 2014 No. 1
Appendix IV	ad. MOS 145 2014 No. 1