

Annex A to Summary of Consultation

Policy decision summary - Part 43 - maintenance of general aviation and aerial work aircraft

1 Part 43 of CASR - Maintenance of aircraft

1.1 Background - how we got here

As part of the Regulatory Reform Program, CASA is committed to introduce a modernised set of maintenance regulations for the Private and Aerial Work sectors. The new rule set would be simplified, proportionate to the industry sector being regulated and based on an existing international rule set that meets industry expectations for Australia.

Note: This project does not cover aircraft used in air transport operations (including current charter operations, and those aircraft in future Part 121, 133 and 135 operations) – a separate project is underway that will develop continuing airworthiness policies for those aircraft in parallel with this project.

In August 2018, CASA consulted with industry on which international rule set should be used as the basis for the new Australian regulations. Responses to that consultation showed a strong preference for a ruleset based on the US-FARs with minimal changes. This preference was supported by the Part 43 Technical Working Group (TWG) established by the Aviation Safety Advisory Panel (ASAP).

CASA analysed the US-FARs and found that it would be a suitable regulatory system, with appropriate safety outcomes and adequate compatibility with the various other elements of the Australian regulatory framework. CASA then developed a detailed policy proposal that would integrate the relevant provisions of the US-FARs (primarily FAR Part 43 and some provisions of FAR Parts 65 and 91) into the Australian regulatory system.

In December 2018 CASA published that detailed policy proposal for consultation. CASA received 205 responses to the consultation, of which 99 respondents supported the proposals. 63 respondents expressed concerns with various aspects and 46 respondents did not indicate a position (full details of the submissions and CASAs resulting actions can be seen at the Summary of Consultation).

1.2 This document

This document provides a detailed, plain English explanation of the final policy outcomes arising out of that consultation. These policies will be the basis of new legislation that will be drafted and consulted in 2020.

Part 1 of this document provides an overview of the key policy outcomes and some explanatory notes.

Part 2 provides a more detailed breakdown, presenting each relevant FAR, followed by a shaded box that provides clarification text as required, and an explanation of any proposed changes.

2 Part 1 - Overview

2.1 Applicability

CASR Part 43 will be the default continuing airworthiness and maintenance regulations for all aircraft in the broader private and aerial work sectors, including: private flying, community service flights, photography, aerial surveying, mustering, aerial application, agricultural, firefighting, towing, emergency services, search and rescue, and flying training.

These regulations will also cover maintenance of Australian aircraft in the private and aerial work sectors outside Australian territory.

The policies described in this document do not apply to aircraft carrying out air transport operations (i.e. currently charter and regular public transport operations). The future continuing airworthiness policies for the current charter sector, and transition of the air transport sectors into the new flight operations Parts, will be developed under a separate project being run in parallel with this project.

2.2 Basis of the new policies

These policies are based on the US-FARs. That decision was made based on consultation with industry and a detailed assessment of the US-FARs against factors including appropriate safety outcomes, an established system that is compatible with the wider Australian regulatory framework and the international region, proportionate standards that are suitable for the Australian operating environment, and reducing regulatory costs on industry where possible.

Some variations have been made to the US-FARs, primarily to adapt the US-FARs to the Australian regulatory framework and some in response to industry comments. Those variations and the reasons they have been made are explained in this document.

2.3 Key polices

2.3.1 Proportionate, risk-based standards

CASR Part 43 policies are not one size fits all. The standards covering the key continuing airworthiness policy areas: who may carry out maintenance, what maintenance must be carried out, and continuing airworthiness management, are proportionate to the kind of operation and the size and complexity of the aircraft. The requirements within Part 43 are proportionate to the size and complexity of the aircraft and the kind of operation – the requirements for small, simple aircraft in private operations are not the same as the requirements for large, complex aircraft in commercial operations where maintenance organisation approvals and formal continuing airworthiness management are required.

2.3.2 Safety through inspection

CASR Part 43 will be an inspection-based safety assurance system, with the primary safety basis being periodic inspections to ensure ongoing conformity to the aircraft's type certificate and applicable airworthiness directives.

The inspection framework is structured so that the level of inspection is proportional to the size, complexity, type of operation and certification basis of an aircraft.

Small, simple aircraft must be inspected in accordance with a checklist that meets minimum standards, and the inspection criteria are determined according to the certification basis of the aircraft and applicable airworthiness directives (see Appendix D of FAR 43 as set out in subpart C of this document for the minimum inspection requirements). Larger and more complex aircraft will be required to use a manufacturer's inspection schedule.

All turbine engines will be required to be inspected in accordance with a progressive inspection schedule or an annual inspection checklist provided by the engine manufacturer.

Transport category aircraft will be required to have the scheduled inspections carried out by an approved maintenance organisation (AMO).

Aircraft engaged in aerial work, flying training and community service flights will be required to undergo inspections at 100-hourly intervals in addition to the annual inspections.

2.3.3 Introduction of Inspection Authorisation

This is a new authorisation that is required to ensure the new inspection-based system achieves the intended level of safety. The competency foundation for the Inspection Authorisation (IA) will be a Part 66 licence with the relevant scope. That foundation is augmented with:

- stipulated minimum experience
- an additional assessment to ensure that the licence holder has demonstrated a competency in the theory covering aircraft type certification (i.e. the basis of the periodic inspection)
- ongoing currency.

The IA will be responsible for carrying out or overseeing annual and progressive inspections and inspecting major repairs and modifications for conformity to the approved data.

There will be two kinds of IA:

- A general IA based on the B1 licence that covers:
 - annual and progressive inspections
 - major repairs and modifications, excluding major avionics work.
- An avionics IA based on the B2 licence that covers major avionics modifications and repairs.

2.3.4 Reduced need for organisational approvals

The new rule set will provide proportionately greater flexibility for LAMEs to use their licences to certify maintenance.

The regulations will continue to require the use of competent, appropriately licensed personnel and appropriate tools, data, facilities and equipment, but a CASA maintenance organisation approval, and the associated administrative costs, will not be required for a wider range of maintenance services for small, simple aircraft.

Maintenance organisation approvals will continue to be required for complex maintenance, such as scheduled maintenance of transport category aircraft (i.e. aircraft certificated under Part 25 (aeroplanes) or Part 29 (helicopters) of CASR).

2.4 How these rules will affect existing CAR 30 approval holders

The regulation reform program means the transition of all of CAR to CASR. This means that the regulations that underpin the current CAR 30 maintenance organisation approvals are being progressively phased out.

Under the proposed CASR Part 43, many businesses that currently hold a CASA maintenance organisation approval and who only provide maintenance services for small, simple aircraft in private and aerial work and do not carry out scheduled maintenance on transport category aircraft will no longer need that certificate.

Those businesses will be able to continue providing maintenance services under Part 43, with the employed LAMEs using their licence privileges to certify the maintenance and return to service of the aircraft or component. Those businesses will still need to use appropriate tools, data, facilities and equipment, but will no longer be required to have CASA approve a procedures manual and quality assurance system. There will also be increased freedom for those businesses to expand into new services and new locations without the need to apply to CASA for approval.

2.5 How these rules will affect the registered operator

The new regulations will not change the registered operator's responsibilities.

The RO will remain responsible for ensuring that an aircraft is not made available for a flight unless the aircraft is airworthy, its certificate of airworthiness remains valid and all required inspections and rectifications have been properly carried out and released to service.

2.5.1 Record Keeping

The RO will be required to keep a system of records that includes:

- for the aircraft, a record of total flight time is kept up to date
- for each airframe, engine and adjustable propeller, a maintenance record is kept
- records of all maintenance carried out
- certifications for completion of all maintenance
- details of inspection requirements and records of completion of inspections

2.6 How these rules will affect the LAME

2.6.1 General

The new regulations will not introduce a new aircraft maintenance engineer licensing system – CASR Part 66 will remain the Australian licensing system. The USA has a different maintenance engineer licensing system, so some adjustments are necessary to introduce FAR-based maintenance rules.

The new regulations will not change the LAME's core responsibilities.

The new regulations will:

- increase scope for LAMEs to certify maintenance on small, simple aircraft without needing to also hold a CASA maintenance organisation approval
- provide simpler means for LAMEs to demonstrate expand their maintenance certification scope, particularly for tasks on type rated aircraft
- increase scope for LAMEs to certify certain kinds of maintenance depending on their licence training.

Additional scope gained under the Part 43 regulations may only be used on aircraft being maintained under the Part 43 regulations. Aircraft being maintained under CAR Part 4A or CASR Part 42 must be maintained in accordance with those regulations.

2.6.2 Maintenance performance rules

A LAME may not carry out or supervise maintenance of an aircraft or aeronautical product unless he or she understands the current instructions of the manufacturer, and the [maintenance manuals](#), for the specific operation concerned.

A person performing maintenance would be required to use:

- methods, techniques and practices set out in appropriate maintenance instructions
- tools, equipment and test apparatus necessary to ensure that the work is completed in accordance with accepted industry practice
- if an ICA requires the use of a particular tool or test equipment, the maintainer is required to use that item or an alternative tool that ensures the equivalent airworthiness outcome
- carry out inspections and repairs in such a manner to ensure that the aircraft, engine, propeller, or aeronautical product being worked on will be at least equal to its originally certificated or properly modified condition.

2.6.3 Inspections

A maintainer who carries out an annual or a 100-hour inspection would be required to use a checklist that meets the requirements set out in subpart C of the detailed policy document. The minimum inspection standards for small, simple aircraft are set out in Appendix D of FAR Part 43.

2.6.4 Altimeter, transponder and static system tests

A maintainer carrying out a test of static pressure systems, altimeters and transponders would be required to carry out the tests in accordance with [Appendix E and F of FAR Part 43](#) (which will be included in the new CASR Part 43) .

2.6.5 Modifications

A maintainer who carries out a modification would be **required** to:

- carry out the modification ensuring compliance with the relevant approved or acceptable data as applicable

- enter details of the data used in the aircraft maintenance records. The details should provide sufficient information for another person to identify the actual data that was used for the work
- if a modification requires a change to the aircraft flight manual or additional altered maintenance practices, ensure that the RO is advised of the requirements
- minor repairs and modifications do not require a specific Part 21 modification/repair design approval. A LAME may use a range of acceptable data (see [Annex A](#)) to carry out a minor repair or modification subject to approval by the RO
- major modifications and repairs are defined in subpart C of the detailed policy document. The definitions are based on [Appendix A of FAR Part 43](#). Anything not fitting the definitions are by default a minor repair or modification.

2.6.6 Type rated aircraft

The new regulations will introduce a simpler and more accessible, task supervision-based means for LAMEs to expand their maintenance certification scope for tasks on type rated aircraft.

Many maintenance tasks that are carried out on a type rated aircraft do not require specialised knowledge or skills. Many maintenance aspects of mechanical systems, structures and powerplant systems are common to non-type rated aircraft and can therefore be safely performed by any LAME who has demonstrated familiarity with the task or completed similar work on other aircraft types.

If a maintenance task is unique to a type rated aircraft, a LAME who does not hold the relevant aircraft type rating may carry out the maintenance task provided that the maintenance is within the scope of their licence, and they have:

- previously satisfactorily performed the task in accordance with regulations in force at the time
- been trained in the task by an appropriately qualified person
- or
- satisfactorily performed the task under the supervision of another LAME who meets one of these requirements.

Notes:

1. If a LAME has exclusions applied to his or her licence, some task supervision-based provisions will not be available. The restrictions can be found in subpart A of the detailed policy document that follows.
2. A LAME who carries out a maintenance task under the above provisions, is required at all times to be able to provide evidence of their compliance with these requirements to CASA, or an RO for whom the work is being performed.

2.7 Engine overhauls

The new regulations will provide greater flexibility for piston engine overhauls for small, simple aircraft to be carried out by competent, authorised personnel without the need for a CASA maintenance organisation approval. In all cases the normal maintenance performance rules apply, i.e. the appropriate tools, data, facilities and equipment must be used, but it will no longer be required to have CASA approve a procedures manual and quality assurance system to overhaul engines for small, simple aircraft.

A LAME will be able to overhaul piston engines for small, simple aircraft provided the LAME has:

- the relevant engine subcategory on their licence (e.g. B1.2 for aeroplane piston engines)
- demonstrated familiarity with the methods, techniques and practices specific to the engine (see section 65.81 for more information).

An authorised Aircraft maintenance technician (AMT) may overhaul engines listed on the AMT certificate (AMTC). The AMTC essentially replicates the current maintenance authority scheme – it provides a proportionate pathway for CASA to transition existing small CAR 30 engine maintenance organisations into the new regulations. See Subpart A for more detailed information on AMTCs.

Engines for transport category aircraft and turbine engines must be overhauled by an AMO.

2.8 Weld repairs

A LAME will be permitted to return an aircraft to service after welding work was carried out if the work is a minor repair or modification. A LAME does not need to hold a dedicated welding qualification in addition to their licence to carry out a weld repair.

An AMT 1 (aviation welding) would be permitted to certify for weld repairs of an aircraft or component.

The AMT essentially replicates the current welding authority scheme – it provides a proportionate pathway for CASA to transition existing welding authority holders into the new regulations. See Subpart A for more detailed information on AMTs.

If the weld repair is a major repair or modification, the work could only be released to service by the holder of an IA or an AMO.

2.9 Repairs and modifications to propellers

Major repairs and modifications to propellers could only be supervised and returned to service by an AMO or an AMT 1 (propellers).

The AMT essentially replicates the current maintenance authority scheme and provides a proportionate pathway for CASA to transition existing small CAR 30 propeller maintenance organisations into the new regulations. See Subpart A for more detailed information on AMTs.

2.10 Repairs and modifications to aircraft instruments

Repairs and modifications to instruments could only be carried out under the control of an AMO, an AMTC 1 (aircraft instruments) or a B2 LAME.

This provides an increase in scope for B2 LAMEs and AMTs to carry out instrument work without the need to have a CASA approved maintenance organisation. In all cases the normal maintenance performance rules apply, i.e. the appropriate tools, data, facilities and equipment must be used, but it will no longer be a requirement to have CASA approve a procedures manual and quality assurance system to maintain instruments for Part 43 aircraft.

It also provides for individuals who had a CAR 30 instrument overhaul facility, to continue their business under their AMTC.

2.11 Releasing an aircraft or component to service after maintenance or inspections

A B1 LAME may release an aircraft to service after 100-hour inspections, minor repairs and minor modifications.

A B2 LAME may release an aircraft to service after avionics maintenance including minor repairs and modifications that have not disturbed a mechanical, powerplant or primary structure system.

An AMT may release an aircraft or a component to service after completing maintenance that is specified on the AMTC.

A B1 LAME holding an IA may:

- return an aircraft to service after an annual, 100 hour or progressive inspection
- return an aircraft to service after a major repair or modification, other than a major avionics repair or modification.

A B2 LAME with an avionics IA may return an avionics component or system to service after a major repair or modification. If the work has not involved altering a primary structural component or disturbed a mechanical, or powerplant system, the B2 IA may also release the aircraft to service.

An AMO may carry out all Part 43 maintenance and inspections within the AMO's approved scope.

Only an AMO may release a transport category aircraft to service after scheduled maintenance or a major modification or repair.

2.12 Recording maintenance

A person who carries out maintenance on an aircraft, engine or propeller, must make a record in the logbook that states:

- the date of the maintenance
- aircraft, engine or propeller total time in service, as applicable
- what maintenance has been done including as applicable:
 - details of component changes
 - details of any life-limited component changes including part/serial no., as applicable
 - if a life-limited component is changed, details of when the replacement component will be required to be removed from service
 - if a modification is involved, details of the data used
- a statement that the aircraft is released to service
- the name of the person who is authorising release to service
- the authorisation details of the person authorising release to service
- the signature of the person authorising the aircraft engine or propeller for release to service.

2.13 How these rules will affect CASA oversight

The new regulations introduce new policies and approvals that will necessitate some changes to the current CASA oversight methods. In particular, CASA is preparing new methods for oversight of Part 43 that will be more focussed on product-based safety outcomes and less reliant on organisation documentation and systems.

3 Part 2 – Detailed explanation of Part 43 policies

3.1 Notes to reader

Reference to a subpart means subpart A, B or C of this document.

Reference to an Appendix means an Appendix at the end of subpart C.

The FAA rules are generally presented in this document in their original format in which the male gender is used when describing persons. The equivalent CASR Part 43 provisions will be drafted in accordance with Australian gender-neutral guidelines.

3.2 Definitions used in this Part

Consensus standard means, for the purpose of certificating light-sport aircraft, an industry-developed consensus standard that applies to aircraft design, production, and airworthiness. It includes, but is not limited to, standards for aircraft design and performance, required equipment, manufacturer quality assurance systems, production acceptance test procedures, operating instructions, maintenance and inspection procedures, identification and recording of major repairs and major modifications, and continued airworthiness.

Current when used in regard to instructions for continuing airworthiness, has the dictionary meaning: “belonging to the time actually passing” or “of the time”.

Large aircraft means aircraft of more than 12,500 pounds (5700kg), maximum certificated take-off weight.

Maintenance means inspection, overhaul, repair, preservation, and the replacement of parts, but excludes preventive maintenance.

Major modification means a modification not listed in the aircraft, aircraft engine, or propeller specifications:

- (1) That might appreciably affect weight, balance, structural strength, performance, powerplant operation, flight characteristics, or other qualities affecting airworthiness; or
- (2) That is not done according to accepted practices or cannot be done by elementary operations.

Major defect means:

- (1) in relation to an aeronautical product that is not fitted to an aircraft—a defect of such a kind that the aeronautical product, if fitted to an aircraft, may affect the safety of the aircraft or cause the aircraft to become a danger to persons or property; and
- (2) in relation to an aircraft—a defect of such a kind that it may affect the safety of the aircraft or cause the aircraft to become a danger to persons or property.

Major repair means a repair:

- (1) That, if improperly done, might appreciably affect weight, balance, structural strength, performance, powerplant operation, flight characteristics, or other qualities affecting airworthiness; or

- (2) That is not done according to accepted practices or cannot be done by elementary operations.

Minor modification means a modification other than a major modification.

Minor repair means a repair other than a major repair.

Preventive maintenance means simple or minor preservation operations and the replacement of small standard parts not involving complex assembly operations.

primary builder means: a person who has fabricated and assembled the major portion of an amateur-built aircraft

Small aircraft means aircraft of 12,500 pounds (5700kG) or less, maximum certificated take-off weight.

Supervision means: The person supervising must personally observe the work to the extent necessary to ensure that the work has been carried out properly and be readily available in person for consultation during the maintenance.

Transport category aircraft means an aircraft for which a type certificate is in force in the transport category (e.g. an aeroplane certified under Part 25 of CASR or a helicopter certified under Part 29 of CASR).

Note: Regardless of type certification basis, an aircraft for which a special certificate of airworthiness is in force, is not a transport category aircraft.

4 Subpart A – maintenance personnel

4.1 What this subpart does

This subpart sets out:

- (1) the additional scope of maintenance that may be performed or supervised and released to service by a holder of a B1 or B2 licence
- (2) requirements for issue or renewal of an Inspection Authorisation (IA)
- (3) privileges and limitations applicable to an IA
- (4) conditions applying to individuals performing maintenance and releasing aircraft to service under this Part
- (5) the requirements for issue of aircraft maintenance technician certificates
- (6) privileges and limitations of aircraft maintenance technician certificates.

4.2 What this subpart does not do

This subpart does not apply to persons performing maintenance on aircraft that are subject to the Civil Aviation Regulations 1988 (CAR), or Part 42 of the Civil Aviation Safety Regulations 1998 (CASR).

This subpart does not provide expanded licence privileges to a Licenced Aircraft Maintenance Engineer (LAME) that may be exercised under Part 42/145 maintenance rules.

65.81 - B1 LAME in Part 43

The B1 LAME is permitted to carry out repairs, inspections and modifications on any system of an aeroplane or helicopter. Restrictions will apply with regard to powerplants, helicopter flight controls and some avionics maintenance.

The restrictions are:

- (1) Subject to (3) to (10) a holder of a B1.1 or B1.3 may certify for all maintenance of an aeroplane or helicopter except maintenance of a piston engine.
- (2) Subject to (3) to (10) a holder of a B1.2 or B1.4 may certify for all maintenance of an aeroplane or helicopter except maintenance of a turbine engine.
- (3) A holder of a B1.1 or B1.2 who does not hold a credit for CASA basic examination FR (Helicopter controls and systems) or MEA 308 (Remove and install rotary wing rotor and flight control systems and components) may not certify for maintenance of helicopter rotor systems and flight controls.
- (4) A B1 LAME may not:
 - a. carry out repairs to aircraft instruments. This does not prevent the B1 LAME from testing instruments and systems or carrying out maintenance on instrument systems in an aircraft.
 - b. carry out major repairs or modifications to aircraft propellers
 - c. carry out or certify for completion of major repairs or modifications to avionics systems or components

- d. carry out maintenance to a turbine engine that is beyond the limits recommended in the manufacturer's maintenance manual or service instructions for service in the field
 - e. overhaul a turbine engine or turbine engine components and accessories that are essential to the operation of an engine
- (5) If a B1 LAME has a powerplant (E3) exclusion, they may not:
- a. hold an Inspection Authorisation, or
 - b. certify maintenance on an engine or associated systems.
- Note:** For Part 43, an E3 exclusion will not have effect if a LAME holds the engine basic examination credits GA and GB (piston engines) or GG and GH (turbine engines) or a pass in EASA module 15 or 16 as applicable.
- (6) A B1 LAME may not certify a maintenance task unless the task is:
- a. a privilege of their licence, or
 - b. one that they have been trained to perform in a course acceptable to CASA, or
 - c. one that they have satisfactorily carried out under supervision of a LAME who may certify for the maintenance.
- (7) A LAME who carries out a maintenance task under the above provisions, is required at all times to be able to provide evidence of their compliance with these requirements to CASA, or an RO for whom the work is being performed.
- (8) A B1 LAME may not return an aircraft to service after an annual inspection, a stage of a progressive inspection, a major repair or a major modification unless he or she holds an Inspection Authorisation issued under 61.91
- (9) A B1 LAME may not carry out maintenance unless they use, and understand, the relevant manufacturer's current instructions for performing the maintenance, and they are required to use the techniques practices and standards specified in the instructions, or other methods techniques, practices and standards acceptable to CASA.
- (10) If any tools (including test equipment) are called for in the instructions, the LAME performing the work is required to use those tools or a substitute tool that will provide the same airworthiness outcome and is in accordance with accepted industry standards. This means that a person carrying out work such as welding to the same standard that would be expected of a person who holds a recognised qualification to do the work.

65.81 - Changes made by CASA

It has been necessary to make various changes to 65.81 in order to provide for differences between the USA A&P privileges and those under the Australian Part 66 licensing system.

The effect of this regulation is to provide for a B1 LAME who is not subject to an E3 exclusion to have the same privileges as would an A&P mechanic under the FARs when carrying out maintenance under Part 43 (with the exception of major repairs or modifications to avionics systems or components).

CASR Part 43 will not introduce a new Part 66 licence category/subcategory or an A&P-style licence.

B1 and B2 licence privileges will remain unchanged for use outside of Part 43.

What this regulation means

A B1 LAME may perform all maintenance of aircraft, airframes, engines, propellers and appliances but excluding maintenance of instruments or major repairs or modifications to propellers and avionics systems and components.

Maintenance includes inspection, repairs and modifications; however, the LAME must hold an Inspection Authorisation to return an aircraft to service after an annual inspection, a stage of a progressive inspection or major repairs or modifications.

A holder of subcategory of B1 who is subject to an E3 (powerplant) exclusion, may perform maintenance on:

- (1) a piston engine if the LAME holds a credit for passing either the CASA basic examinations GA and GB, or EASA module 16
- (2) a turbine engine if the LAME holds a credit for passing either the CASA basic examinations GG and GH, or EASA module 15.

A LAME may expand their scope of certification privileges on a task by task basis under supervision of a LAME who may certify the task.

Recording of task supervisions

A LAME must at all times, if performing a maintenance task on a type rated aircraft, or outside their part 66 licence subcategory, be able to demonstrate that he or she has either been trained in the task being carried out or has demonstrated competency to the satisfaction of a LAME who is permitted to certify for the task.

65.82 B2 - LAME in Part 43

- (1) A holder of a category B2 licence is permitted to perform and certify all maintenance and modifications of avionics equipment and systems.
- (2) The exercise of the licence will not be affected by aircraft type ratings.
- (3) A B2 LAME may release an aircraft to service after avionics maintenance, repairs or modifications that are not major repairs or modifications (only an IA holder will be permitted to return an aircraft to service after major repairs or modifications).
- (4) If a B2 LAME carries out avionics maintenance that involves work on a primary structural component or disturbance of a mechanical, or powerplant system, he or she may certify for the work however the aircraft may only be released to service by a B1 LAME.
- (5) If a B2 LAME has certified for work carried out as part of a larger maintenance task being carried out by a B1 LAME, the certification by the B2 LAME may be taken as compliance with the requirement of FAR 43.9(3) to name the persons who have performed work.
- (6) Involvement of a B2 LAME in annual or 100-hour inspections under Part 43 is at the discretion of the B1 LAME or IA holder who would be releasing the aircraft to service.
- (7) If a B2 LAME completes an inspection of the avionics system of an aircraft during an annual or 100-hour inspection and makes an entry with a certification for completion of the inspection, the certifying B1 or IA holder may rely on that certification when releasing the aircraft to service.
- (8) If an avionics component (appliance) maintenance task is not covered by the scope of the B2 licence, the B2 LAME is permitted to carry out or supervise the task and return the component to service if the LAME has either:

- a. Previously carried out the task in accordance with the regulations in force at the time,
 - b. Been successfully trained in the task by an appropriately qualified person, or
 - c. Satisfactorily carried out the task under the supervision of a B2 LAME who may certify for the maintenance
- (9) A B2 LAME who holds an avionics IA may certify conformity of a major repair or modification to an avionics system or component.
- (10) A holder of an avionics IA may not release an aircraft to service after a major repair or modification if the work has involved disturbance of a primary structural component, or mechanical system or component.

A B2 LAME who carries out a maintenance task under these provisions, is required at all times to be able to provide evidence of their compliance with these requirements to CASA, or an RO for whom the work is being performed.

65.82 What is it?

65.82 does not exist under the FARs. It is a new provision that CASA has drafted to preserve and expand the certification privileges of a B2 LAME and to allow for full avionics privileges in Part 43.

CASA has:

- Introduced a limited (Avionics only) IA for issue to a B2 LAME.
- made provision for major avionics repairs and modifications to be certified for conformity and released to service by a B2 LAME who holds an avionics IA.
- defined major avionics repairs and modifications in paragraph (a) of Appendix A.

65.82 What it means

- A B2 LAME will not be required to hold a CASA approval to provide avionics maintenance services for aircraft or appliances.
- A B2 LAME with an avionics IA may certify conformity of avionics major repairs and modifications
- If a major avionics modification involves disturbance of a mechanical or primary structural component or system, the aircraft may only be returned to service by a B1 LAME. This means that 2 maintenance record entries will be required: (1) a certification by the avionics IA holder that the modification conforms to the approved data, and (2) a certification by the B1 LAME that the aircraft is approved for return to service. If the structural work or mechanical work is a major modification, the B1 LAME returning the aircraft to service must hold an IA.
- A B2 LAME may expand their scope of certification privileges on a task by task basis under supervision of a LAME who may certify the task.

65.91 - Inspection Authorisation

Application

An application for an Inspection Authorisation (IA) will be made to CASA Service Centre in a form acceptable to CASA.

Issue of an IA

The applicant is entitled to be granted an IA if the following conditions are met.

Requirements for issue of an IA

An applicant for an IA is required to:

- (1) For a mechanical IA, hold a subcategory of B1 licence which does not have an engine exclusion. The licence must be valid and have been in effect for a total of at least 3 years.

Note: An E3 exclusion will not have effect if the LAME holds the relevant CASA basic examination credits or the EASA module credit.

- (2) For an Avionics IA, hold a valid B2 licence that has been in effect for at least 3 years.
- (3) have been actively engaged in exercising the privileges of their licence for at least the 2-year period before the date of application.
- (4) Have a fixed base of operations at which they may be located in person or by telephone during a normal working week, but it need not be the place where they will exercise the inspection authority.
- (5) Have available to them the equipment, facilities, and inspection data necessary to properly inspect airframes, powerplants, propellers, or any related part or appliance.
- (6) For mechanical IA complete a course provided for issuance of an IA.

65.91 - Changes to be made by CASA

Instrument of appointment holders

CASA will accept a B1 LAME who holds an Instrument of Appointment for issuing a Certificate of Airworthiness (CofA) as satisfying requirement (6).

Holder of FAA-issued IA

CASA will accept a B1 LAME who also holds an FAA-issued IA as satisfying requirement (6).

Holder of New Zealand Civil Aviation Authority (NZCAA)-issued IA

CASA will accept a B1 LAME who also holds an NZ CAA -issued IA as satisfying requirement (6)

The course required for issuance of an IA will be available on the CASA web site.

65.92 - Inspection Authorisation: Duration

- (a) Each inspection authorization expires on March 31 of each odd-numbered year. However, the holder may exercise the privileges of that authorization only while he holds a currently effective mechanic certificate with both a currently effective airframe rating and a currently effective powerplant rating.
- (b) An inspection authorization ceases to be effective whenever any of the following occurs:
 - (1) The holders Part 66 licence is suspended or cancelled
 - (2) The authorization is surrendered, suspended, or revoked.
 - (3) The holder no longer has a fixed base of operation.

- (4) The holder no longer has the equipment, facilities, and inspection data required by 65.91(c) (3) and (4) for issuance of his authorization.
- (c) The holder of an inspection authorization that is suspended or revoked must, upon CASA's request, return it to CASA

Changes to be made by CASA

To avoid congestion and delays associated with large numbers of renewals, CASA will issue each IA for a 2-year period commencing from the date of issue or renewal.

How it will look

An inspection authorisation will be issued for a period of 2 years. However, holders of an IA may exercise the privileges of that authorisation only while they hold a current, valid AMEL.

An inspection authorisation ceases to be valid whenever any of the following occurs:

- (1) The IA holders Part 66 licence is suspended or cancelled
- (2) The authorisation is surrendered, suspended, or revoked by CASA.
- (3) The holder no longer has a fixed base of operation.
- (4) The holder no longer has, or has access to, the equipment, facilities, and inspection data required for issuance of the authorisation.

65.93 - Inspection Authorisation: Renewal

Mechanical IA

- (a) To be eligible for renewal of a mechanical IA, an applicant is required to present evidence that he still meets the requirements (1), (4) and (5) of the eligibility criteria in 65.91. In addition, during the time the applicant held the IA, they must show completion of one of the activities (1) to (5) below during each 12-month period:
 - (1) Performed at least one annual inspection for each 90 days that the applicant held the current authority; or
 - (2) Performed at least one major repair or major modification for each 90 days that the applicant held the current authority; or
 - (3) Performed or supervised and approved at least one progressive inspection; or
 - (4) Attended and successfully completed a refresher course, of not less than 8 hours of instruction; or
- (b) An IA will cease to be valid if the holder does not complete one of (1) through (5) by the end of the first year.
- (c) The invalid IA will be revalidated after the holder passes an examination to determine that the applicant's knowledge of the applicable regulations and standards is current.

Note: The examination mentioned in (5) is not a repetitive requirement. It is an option for those IA holders who are unable to meet one of requirements (1) to (4)

Avionics IA

An avionics IA holder is entitled to renewal of the authorisation if they continue to meet requirements (2), (4) and (5) for initial issue of the IA.

65.93 - Changes to be made by CASA

CASA will accept issuance of a certificate of airworthiness as satisfaction of requirement(a)
(3)

A refresher course for the purposes of renewal, will be made available on the CASA web site.

65.95 - Inspection authorization: Privileges and limitations

- (a) The holder of an inspection authorization may:
- (1) Inspect and approve for return to service any aircraft or related part or appliance after a major repair or major modification to it in accordance with subpart C, if the work was done in accordance with technical data approved by CASA; and
 - (2) Perform an annual or perform or supervise a progressive inspection according to 43.13 and 43.15 of CASR.
- (b) When exercising the privileges of an inspection authorization the holder must keep it available for inspection by the aircraft owner, the LAME submitting the aircraft, repair, or modification for approval (if any), and must present it upon the request of CASA or an authorized representative of the Australian Transportation Safety Board.
- (c) If the holder of an inspection authorization changes his or her fixed base of operation, he or she may not exercise the privileges of the authorization until he has notified the responsible CASA office in writing, of the change.

65.95 - Changes to be made by CASA

Under Part 43, an IA holder will be permitted to perform or supervise an annual inspection.

If an IA holder has an exclusion E12 (Propellers), or E 13 (Hydraulics) attached to their AME licence they will not be permitted to certify for completion of an annual inspection of an aircraft equipped with one or more of those systems unless the LAME has either:

- a. successfully completed an examination in the relevant module of the Part 66 licence syllabus, or
- b. satisfactorily carried out an inspection of the excluded system under the supervision of a person who is qualified to perform the inspection, or
- c. satisfactorily carried out an annual inspection of a comparable aircraft under the supervision of an IA holder who is qualified to perform the inspection.

Note: Examples of comparable aircraft are:

a pressurised Piper Navajo, would be comparable to a pressurised Cessna 337

a Cessna 421 would be comparable to a Beech King Air

Note: A person who completes CASA examination FF (power fluid systems) and GC (propellers) will be deemed to have met the requirements of a. above.

5 Aircraft maintenance technician (AMT)

5.1 What is an AMT certificate?

An AMT certificate (AMTC) is an individual authorisation to perform or supervise maintenance of an aircraft, engine, propeller or appliance and authorise its return to service.

The certificates supplement the Part 66 licence structure and provide for maintenance authorisations to be issued to non-LAMEs.

The certificates will allow for appropriately qualified individuals to perform targeted maintenance activities and the holders do not require oversight by a LAME or maintenance organisation approval.

5.1.1 What types of AMTCs are available?

CASA will introduce 5 types of AMTCs which will be based on the FAA-style Repairman certificates set out in Subpart E of FAR Part 65. The certificates are:

- AMTC 1 – Maintenance of aircraft and aeronautical products
- AMTC 2 – Experimental Aircraft Builder, and
- AMTC 3 – Inspection, Amateur-built and Light Sport Aircraft,
- AMTC 4 – Light Sport aircraft- Maintenance, and
- AMTC 5 – Maintenance of limited category aircraft.

5.2 Aircraft Maintenance Technician

65.101 - Eligibility requirements: General

(a) To be eligible for an aircraft maintenance technician certificate (AMTC) a person must—

- (1) Be at least 18 years of age;
- (2) Have either—
 - i. At least 18 months of practical experience in the procedures, practices, inspection methods, materials, tools, machine tools, and equipment generally used in the maintenance duties of the specific job or aircraft for which the person is to be certificated; or
 - ii. Completed formal training that is acceptable to CASA and is specifically designed to qualify the applicant for the certificate being sought; and
- (3) For an AMTC 1 that permits overhaul of engines, propellers or aeronautical products, provide evidence that they have, or have use of adequate facilities and the infrastructure, data, tools, including any required specialised tooling or testing equipment required for the proposed scope of the certificate.
- (4) Be able to read, write, speak, and understand the English language.

(b) This section does not apply to the issuance of an AMTC 2 certificate (experimental aircraft builder) under 65.104 or an AMTC 3 or 4 certificate under 65.107.

65.101- What it means

CASA has adopted the FAA Repairman Certificate model (to be described as aircraft maintenance technician) to provide for specific maintenance tasks to be carried out by qualified persons who do not hold a Part 66 licence. The authorisations were previously available under regulation 33B or subregulation 42ZC (6) of CAR. Experience with Part 66 has highlighted a need to retain this form of authorisation.

The authorisations could be used to cover a range of maintenance tasks however CASA proposes to initially provide for an AMTC 1 (Engine overhaul), (propeller maintenance), (aircraft welder) or (component maintenance) certificate. This would provide existing CAR 30 engine/component overhaul and maintenance approval holders with an option to continue providing maintenance services under Part 43 without a maintenance organisation approval.

CASA acknowledges that some niche overhaul facilities only maintain engines, propellers and components for use in historic aircraft and warbirds, and we anticipate that the AMTC 5 will meet their needs.

Changes made by CASA

CASA does not propose to limit the AMTC authorisation to employees of an AMO. A holder of an AMTC will be able to independently provide maintenance services within the scope of his or her certificate.

AMTC 1 Maintenance of aircraft and Aeronautical Products. CASA will require a qualified applicant for one of these certificates to show that they have adequate facilities etc to carry out the work.

AMTC 5 Special. The certificate is intended to provide for individuals who have recognised relevant experience or qualifications to carry out and certify maintenance of limited category aircraft. The certificate would be issued by the administering authority for the aircraft and would be valid for any activity listed on the certificate.

65.103 - AMTC: Privileges and limitations

- (a) A holder of an AMTC may perform or supervise the maintenance, preventive maintenance, or modification of aircraft or aircraft components for which the AMTC is issued.
- (b) An AMTC holder may not perform or supervise duties under the AMTC unless they understand the manufacturer's instructions for continued airworthiness relating to the specific operations concerned.
- (c) This section does not apply to the holder of an AMTC 3 or AMTC 4 while the holder is performing work under one of those certificates.

65.104 - AMTC 2 —experimental aircraft builder—Eligibility, privileges and limitations

- (a) To be eligible for an AMTC 2 (experimental aircraft builder), an individual must—
 - (1) Be at least 18 years of age;
 - (2) Be the primary builder of the aircraft to which the privileges of the certificate are applicable;
 - (3) Show to the satisfaction of CASA that the individual has the requisite skill to determine whether the aircraft is in a condition for safe operations; and
 - (4) Be an Australian citizen.
- (b) The holder of an AMTC 2 may perform condition inspections on the aircraft constructed by the holder.

65.104 What it means

An AMTC 2 is issued to a primary builder and applies to the aircraft for which it is issued and is only valid for that aircraft while it is owned by the certificate holder.

This means that if a person has assembled or fabricated the major portion of the aircraft (including kit built experimental LSA), that person may be issued with an AMTC 2 for the aircraft.

Maintenance other than inspection

FAR 43 states that the performance rules do not apply to experimental aircraft, which means that for an amateur-built aircraft or experimental LSA, any person may perform maintenance tasks other than condition inspections regardless of credentials held.

The condition inspection may only be carried out by:

- a holder of an AMTC 2 certificate for the aircraft
- a LAME; or
- an AMO.

Condition inspections must be recorded in the aircraft maintenance records showing the following or a similarly worded statement:

"I certify that this aircraft has been inspected on (insert date) in accordance with the scope and detail of appendix D to part 43 and found to be in a condition for safe operation." The entry will include the aircraft total time in service, and the name, signature, certificate number, and type of certificate held by the person performing the inspection.

Notes:

1. an ELSA for which an experimental certificate has been issued under 21.191 (k) is not an amateur-built aircraft, which means that an AMTC 2 may not be issued in respect of that aircraft.

If an aircraft is constructed by a group, and no individual group member meets the primary builder requirements, an AMTC 2 will not be issued to any member of the group. This means that the condition inspections will be required to be carried out by an AMO, a B1 LAME or a holder of a relevant AMTC 3 issued under 65.107.
2. a person who does not qualify as a primary builder may be issued with an AMTC 3 (inspection) certificate subject to the requirements in 65.107
3. A LAME or an AMO is not required to hold an IA or engage the services of an IA holder for the purpose of carrying out a condition inspection.
4. Inspections carried out in accordance with the CASA Inspection Schedule (schedule 5 of CAR) meet or exceed the scope and detail of Appendix D
5. essentially similar in this context, refers to the type of aircraft (helicopter or aeroplane) and method of construction i.e. wood, composite, steel tube or all-metal construction.
6. of the same kind means an aeroplane, a glider, a balloon etc.

65.105 - Display of certificate

Each person who holds an AMTC must keep it within the immediate area where he normally exercises the privileges of the certificate and must present it for inspection upon the request of CASA.

65.107 - AMTC (light-sport aircraft and amateur-built aircraft): Eligibility, privileges, and limits

(a) Use the following table to determine your eligibility for a AMTC certificate (light-sport aircraft or amateur-built aircraft) and appropriate rating:

To be eligible for	You must
(1) Any AMTC	<ul style="list-style-type: none"> i. Be at least 18 years old, ii. Be able to read, speak, write, and understand English. If for medical reasons you cannot meet one of these requirements, CASA may place limits on your AMT certificate necessary to safely perform the actions authorized by the certificate and rating, and iii. Demonstrate the requisite skill to determine whether a light-sport or amateur-built aircraft is in a condition for safe operation.
(2) An AMTC 3	<ul style="list-style-type: none"> i. Meet the requirements of paragraph (a)(i) of this section, and ii. Complete a 16-hour training course acceptable to CASA on inspecting the particular kind of experimental light-sport or amateur-built aircraft for which you intend to exercise the privileges of this rating.
(3) An AMTC 4	<ul style="list-style-type: none"> i. Meet the requirements of paragraph (a)(i) of this section, and ii. Complete a training course acceptable to CASA on maintaining the particular class of light-sport aircraft for which you intend to exercise the privileges of this rating. The training course must, at a minimum, provide 120 of hours of instruction.

(b) The holder of an AMTC 3 may perform the annual condition inspection on an experimental light-sport or amateur-built aircraft:

- (1) If for an experimental LSA, the aircraft is the same kind of experimental light-sport-aircraft for which the holder has completed the training specified in paragraph (a)(2)(ii) of the table;
- (2) if for an amateur-built aircraft, the aircraft is essentially similar to the aircraft listed on the certificate.

(c) The holder of an AMTC 4 may—

- (1) Carry out an annual inspection of the kind of LSA for which the certificate has been issued

- (2) Approve and return to service an aircraft that has been issued a special airworthiness certificate in the light-sport category under 21.186 of CASR, or any part thereof, after performing or inspecting maintenance (to include the annual condition inspection and the 100-hour inspection required by 91.327), preventive maintenance, or a modification (excluding a major repair or a major modification on a product produced under a CASA approval);
 - (3) Perform the annual condition inspection on an experimental light-sport aircraft that has been issued an experimental certificate for operating a light-sport aircraft.
 - (4) Only perform maintenance, preventive maintenance, and a modification on a light-sport aircraft that is in the same kind of light-sport aircraft for which the holder has completed the training specified in paragraph (a)(3)(ii) of this section. Before performing a major repair, the holder must complete additional training acceptable to CASA and appropriate to the repair performed.
- (d) The holder of an AMTC 4 certificate may not approve for return to service any aircraft or part thereof unless that person has previously performed the work concerned satisfactorily. If that person has not previously performed that work, the person may show the ability to do the work by performing it to the satisfaction of CASA, or by performing it under the direct supervision of an appropriately licenced LAME, or a certificated AMT, who has had previous experience in the specific operation concerned. The AMT may not exercise the privileges of the certificate unless the AMT understands the current instructions of the manufacturer and the maintenance manuals for the specific operation concerned.

Changes made by CASA

CASA will permit an authorised person who issues a special CofA for an amateur-built aircraft to issue an AMTC 2 to the primary builder.

CASA will permit an organisation to issue an AMTC 3 if the organisation is approved to provide the training specified in 65.107 (2).

CASA will permit an organisation to issue an AMTC 4 certificate if the organisation is approved to provide the training specified in 65.107(3).

Maintenance of limited category aircraft

CASA has provided for issue of an AMTC 5 - to persons engaged in maintenance of Warbird, Historic and Replica aircraft (WHR).

The certificate will be issued by the organisation responsible for administering limited category aircraft and an applicant will be required to have:

- At least 18 months of practical experience in the procedures, practices, inspection methods, materials, tools, machine tools, and equipment generally used in the maintenance duties of the specific job or aircraft for which the person is to be certificated; or
- Completed formal training that is acceptable to the administering authority and is specifically designed to qualify the applicant for the certificate being sought

This certificate will be available for individuals having military experience or manufacturers training in maintenance of ex-military, historic or replica aircraft.

Privileges of an AMTC 5 holder. The holder of an AMT 5 may perform any maintenance on a limited category aircraft or component that is specified on the certificate, and release an aircraft or component to service after a repair, overhaul or inspection that is specified on the

certificate.

To avoid any doubt, a LAME or AMTC holder does not require an Inspection Authorisation to release an aircraft or component to service when maintaining or inspecting limited category aircraft.

6 Subpart B – Operator responsibilities

This subpart sets out the responsibilities of the registered operator of an aircraft that:

- is engaged in private, flying training or aerial work operations, and
- is not being maintained under Part 42 of CASR

Notes:

1. Part 43 does not apply to balloons, or aircraft maintained under different rules administered by a CASA-approved self-administering aviation organisation.
2. The following requirements in this subpart do not apply to the registered operator of an aircraft for which a limited category certificate of airworthiness is in force:
 - 91.403(c) (note 3)
 - 91.405(c) (note 4)
 - 91.409 (note 5)
 - 91.415 (note 5)
3. Maintenance data for limited category aircraft is controlled under Part 132 of CASR
4. Management of inoperative equipment in limited category aircraft is controlled by the administering authority
5. Inspection programs for limited category aircraft are approved and controlled by the administering authority

91.327 - Aircraft having a special airworthiness certificate in the light-sport category: Operating limitations

- (a) No person may operate an aircraft that has a special airworthiness certificate in the light-sport category unless:
- (1) The aircraft is maintained by a holder of an AMTC 4 , an appropriately licenced LAME, or an appropriately rated maintenance organisation approval holder in accordance with the applicable provisions of subpart C and maintenance and inspection procedures developed by the aircraft manufacturer or a person acceptable to the CASA;
 - (2) A condition inspection is performed once every 12 calendar months by, the holder of an appropriately endorsed AMTC 4, an appropriately licenced LAME, or an appropriately rated AMO in accordance with inspection procedures developed by the aircraft manufacturer;
 - (3) The owner or operator complies with all applicable airworthiness directives;
 - (4) The owner or operator complies with each safety directive applicable to the aircraft that corrects an existing unsafe condition. In lieu of complying with a safety directive an owner or operator may—
 - i. Correct the unsafe condition in a manner different from that specified in the safety directive provided the person issuing the directive concurs with the action; or
 - ii. Obtain a CASA waiver from the provisions of the safety directive based on a conclusion that the safety directive was issued without adhering to the applicable consensus standard;
 - (5) Each modification accomplished after the aircraft's date of manufacture meets the applicable and current consensus standard and has been authorized by either the manufacturer or a person acceptable to CASA;

- (6) Each major modification to an aircraft product produced under a consensus standard is authorized, performed and inspected in accordance with maintenance and inspection procedures developed by the manufacturer; and
 - (7) The owner or operator complies with the requirements for the recording of major repairs and major modifications performed on type-certificated products in accordance with 43.9(d), and with the retention requirements in 91.417.
- (b) No person may operate an aircraft issued a special airworthiness certificate in the light-sport category to tow a glider for compensation or hire or conduct flight training for compensation or hire in an aircraft which that person provides unless within the preceding 100 hours of time in service the aircraft has—
- (1) Been inspected by an appropriately authorised AMTC holder, an appropriately licenced LAME, or a maintenance organisation approval holder in accordance with inspection procedures developed by the aircraft manufacturer been approved for return to service in accordance with subpart C; or
 - (2) Received an inspection for the issuance of an airworthiness certificate in accordance with part 21 of CASR.

91.327 What it means

The RO is responsible for ensuring that a LSA (not including ELSA) is not permitted to be flown unless:

- (a) If maintenance work is required, it is carried out by an appropriately authorised person (LAME, AMTC 4 holder or maintenance organisation approval holder).
- (b) A condition inspection is carried out annually by an appropriately authorised person
- (c) All applicable ADs have been complied with
- (d) If any safety directive is issued by a manufacturer, the RO has either complied with the direction, obtained a waiver from CASA, or used an alternate means of compliance subject to agreement by the issuing person
- (e) If a modification has been made, the aircraft manufacturer has approved the modification in writing
- (f) If a major modification has been made to an aircraft product that has been produced under a consensus standard, it has been carried out in accordance with any requirements developed by the manufacturer or a person acceptable to CASA
- (g) If an LSA is to be used for flying training (other than training the owner in his or her own aircraft) or glider towing, it must have 100-hour inspections in addition to the annual inspection.

91.403 - General

- (a) The owner or operator of an aircraft must keep a regularly updated record of aircraft utilisation
- (b) The owner or operator of an aircraft is primarily responsible for maintaining that aircraft in an airworthy condition, including compliance with part 39 of CASR.
- (c) No person may perform maintenance, preventive maintenance, or modifications on an aircraft other than as prescribed in these regulations.

- (d) No person may operate an aircraft for which a manufacturer's maintenance manual or instructions for continued airworthiness has been issued that contains an airworthiness limitations section unless the mandatory replacement times, inspection intervals, and related procedures specified in that section or alternative inspection intervals and related procedures approved by CASA or in accordance with an inspection program approved under 91.409(e) have been complied with.
- (e) A person must not alter an aircraft based on a supplemental type certificate unless the owner or operator of the aircraft is the holder of the supplemental type certificate or has written permission from the holder.

91.403 What it means:

The registered operator (RO) is responsible for ensuring that the aircraft is not flown or made available for a flight if the aircraft is not in a condition for safe operation.

For an aircraft to be in a condition for safe operation, the RO must:

- (a) Ensure that any maintenance required by an applicable Airworthiness Directive (AD) is carried out as required by the AD
- (b) Comply with any requirements set out in the airworthiness limitations (AWL) for the aircraft unless CASA has approved an alternate means of compliance
- (c) Ensure that any defect or damage that could affect the safe operation of the aircraft is rectified before a flight

Additionally, the RO must not:

- (a) Permit maintenance to be carried on the aircraft except in accordance with the requirements and limitations set out in this subpart and subparts A and C.
- (b) Incorporate a Supplemental Type Certificate (STC) in an aircraft without the written permission of the STC holder.

91.405 - Maintenance required

Each owner or operator of an aircraft:

- (a) Must have that aircraft inspected in accordance with this subpart and must between required inspections, except as provided in paragraph (c) of this section, have defects repaired as prescribed in subpart C;
- (b) Must ensure that maintenance personnel make appropriate entries in the aircraft maintenance records indicating the aircraft has been approved for return to service;
- (c) Must have any inoperative instrument or item of equipment that is fitted to the aircraft; and
 - (1) is not required by the certification basis for the aircraft; and
 - (2) is not required by or under these Regulations for the operation of the aircraft for the flight, repaired, replaced, removed, or inspected at the next required inspection; and
- (d) When listed defects include inoperative instruments or equipment, must ensure that a placard has been installed as required by 43.11.

91.405 what it means:

In this regulation, paragraph:

- (a) Requires the RO to have the aircraft inspected in accordance with 91.409 and have rectifications carried out as required between inspections.
- (b) If maintenance is carried out on an aircraft, requires the RO to ensure that appropriate entries are made in the aircraft records indicating that the aircraft is approved for return to service before permitting the aircraft to be flown— regulations 43.9 and 43.11 set out the form and disposition of maintenance record entries.
- (c) Permits an aircraft to be operated with unrectified defects if the defects are in an instrument or item of equipment that are not required by the aircrafts type certification and are not required for a flight.
- (d) If an aircraft is to be operated in accordance with (c), requires the RO to ensure that a placard has been installed in accordance with 43.11 for each inoperative system or item of equipment.

Note: Paragraph (c) does not permit an aircraft to be flown if an inoperative instrument or equipment is listed as an airworthiness limitation (AWL) or is required to be operational by an AD.

Examples of defects that could be permitted would include:

- A defective transponder if the aircraft is to be operated under VFR and outside of airspace for which a transponder is required.
- Defective position lights if a flight is to be made in VFR by day.
- Defective crew oxygen systems if a flight is to be made below levels for which oxygen is required.
- An unserviceable co-pilot AH for a single pilot operation.

Change to be made by CASA – Reporting of major defects

- (1) The RO will be required to report major defects to CASA and the Type Certificate holder.
- (2) For a limited category aircraft, the RO will be required to report a major defect to the administering authority.

91.407 - Operation after maintenance, preventive maintenance, rebuilding, or modification

- (a) No person may operate any aircraft that has undergone maintenance, preventive maintenance, rebuilding, or modification unless—
 - (3) It has been approved for return to service by a person authorized under 43.7; and
 - (4) The maintenance record entry required by 43.9 or 43.11, as applicable, has been made.
- (b) No person may carry any person (other than crewmembers) in an aircraft that has been maintained, rebuilt, or altered in a manner that may have appreciably changed its flight characteristics or substantially affected its operation in flight until an appropriately rated pilot with at least a private pilot licence flies the aircraft, makes an operational check of the maintenance performed or modification made, and logs the flight in the aircraft records.
- (c) The aircraft does not have to be flown as required by paragraph (b) of this section if, prior to flight, ground tests, inspection, or both show conclusively that the maintenance, preventive

maintenance, rebuilding, or modification has not appreciably changed the flight characteristics or substantially affected the flight operation of the aircraft.

91.407 What it means:

The RO is required to ensure that when maintenance is carried out on the aircraft, the aircraft is released to service by a person who holds the required licence, certificate or authorisation for the type of maintenance. The RO must not let the aircraft be flown unless the release to service has been made.

Additionally, if the maintenance may have appreciably affected the flight characteristics of the aircraft, the RO must not let it be flown with a person, other than a crew member, on board until a satisfactory operational check flight has been performed by a person who holds at least a private pilot licence (PPL).

If ground tests or inspections are able to satisfactorily determine that the aircraft will not be appreciably affected by the changes, an operational check flight will not be required.

Changes to be made by CASA

In response to submissions received, CASA will retain the requirement to have a second person conduct an inspection if maintenance has disturbed a flight control system (Independent Inspection). The RO will be responsible for ensuring that the inspection is recorded in the maintenance records before permitting an aircraft to be flown after maintenance of a flight control system.

91.409 - Inspections

- (a) Except as provided in paragraph (c) of this section, no person may operate an aircraft unless, within the preceding 12 calendar months, it has had—
- (1) An annual inspection in accordance with subpart C and has been approved for return to service by a person authorized by 43.7 or 43.8; or
 - (2) An inspection for the issuance of an airworthiness certificate in accordance with Part 21 of CASR.
- No inspection performed under paragraph (b) may be substituted for any inspection required by this paragraph unless it is performed by a person authorized to perform annual inspections and is entered as an “annual” inspection in the required maintenance records.
- (b) Except as provided in paragraph (c), no person may operate an aircraft carrying any person (other than a crewmember) for hire, and no person may give flight instruction for hire in an aircraft which that person provides, unless within the preceding 100 hours of time in service the aircraft has received an annual or 100-hour inspection and been approved for return to service in accordance with subpart C or has received an inspection for the issuance of an airworthiness certificate in accordance with part 21 of CASR.
- (c) Paragraphs (a) and (b) of this section do not apply to—
- (1) An aircraft that carries a special flight permit, a current experimental certificate, or a light-sport or provisional airworthiness certificate;
 - (2) An aircraft inspected in accordance with an approved aircraft inspection program;
 - (3) An aircraft subject to the requirements of paragraph (d) or (e); or
 - (4) Turbine-powered rotorcraft when the operator elects to inspect that rotorcraft in accordance with paragraph (e) of this section.

- (d) **Progressive inspection.** Each registered owner or operator of an aircraft desiring to use a progressive inspection program must submit a written request to the responsible CASA office or a relevant authorised person, and must provide—
- (1) Details of a LAME holding an inspection authorization, an AMO, or the manufacturer of the aircraft who will supervise or conduct the progressive inspection;
 - (2) A current inspection procedures manual available and readily understandable to pilot and maintenance personnel containing, in detail—
 - i. An explanation of the progressive inspection, including the continuity of inspection responsibility, the making of reports, and the keeping of records and technical reference material;
 - ii. An inspection schedule, specifying the intervals in hours or days when routine and detailed inspections will be performed and including instructions for exceeding an inspection interval by not more than 10 hours and for changing an inspection interval because of service experience;
 - iii. Sample routine and detailed inspection forms and instructions for their use; and
 - iv. Sample reports and records and instructions for their use;
 - (3) Enough housing and equipment for necessary disassembly and proper inspection of the aircraft; and
 - (4) Appropriate current technical information for the aircraft.

The frequency and detail of the progressive inspection must provide for the complete inspection of the aircraft within each 12 calendar months and be consistent with the manufacturer's recommendations, field service experience, and the kind of operation in which the aircraft is engaged. The progressive inspection schedule must ensure that the aircraft, at all times, will be airworthy and will conform to all applicable aircraft specifications, type certificate data sheets, airworthiness directives, and other approved data, the first annual inspection under 91.409(a)(1) is due within 12 calendar months after the last complete inspection of the aircraft under the progressive inspection. The 100-hour inspection under 91.409(b) is due within 100 hours after that complete inspection. A complete inspection of the aircraft, for the purpose of determining when the annual and 100-hour inspections are due, requires a detailed inspection of the aircraft and all its components in accordance with the progressive inspection. A routine inspection of the aircraft and a detailed inspection of several components is not considered to be a complete inspection.

(e) Large airplanes and turbine-powered aircraft:

No person may operate a large airplane, turbojet multiengine airplane, turbopropeller-powered multiengine airplane, or turbine-powered rotorcraft unless the replacement times for life-limited parts specified in the aircraft specifications, type data sheets, or other documents approved by the certifying NAA are complied with and the airplane or turbine-powered rotorcraft, including the airframe, engines, propellers, rotors, appliances, survival equipment, and emergency equipment, is inspected in accordance with an inspection program selected under the provisions of paragraph (f) of this section, except that, the owner or operator of a turbine-powered rotorcraft may elect to use the inspection provisions of 91.409(a), (b), (c), or (d) in lieu of an inspection option of 91.409(f).

Turbine powered helicopters and single engine turbine powered aeroplanes

Turbine powered aircraft that are being inspected in accordance with 91.409(a), (b), (c), or (d), must have their turbine engines inspected in accordance with a manufacturer's recommended progressive inspection schedule, or an annual inspection checklist provided by the manufacturer.

(f) Selection of inspection program under paragraph (e) of this section:

The registered owner or operator of each airplane or turbine-powered rotorcraft described in paragraph (e) of this section must select, identify in the aircraft maintenance records, and use one of the following programs for the inspection of the aircraft:

- (1) A continuous airworthiness inspection program that is part of a continuous airworthiness maintenance program currently in use by an RO.
- (2) An aircraft inspection program approved by CASA.
- (3) A current inspection program recommended by the manufacturer.
- (4) Any other inspection program established by the registered owner or operator of that airplane or turbine-powered rotorcraft and approved by CASA under paragraph (g) of this section. However, CASA may require revision of this inspection program in accordance with the provisions of 91.415.

Each operator must include in the selected program the name and address of the person responsible for scheduling the inspections required by the program and make a copy of that program available to the person performing inspections on the aircraft and, upon request, to CASA.

(g) Inspection program approved under paragraph (e) of this section:

Each operator of an airplane or turbine-powered rotorcraft desiring to establish or change an approved inspection program under paragraph (f)(4) of this section must submit the program for approval to the responsible Flight Standards office. The program must be in writing and include at least the following information:

- (1) Instructions and procedures for the conduct of inspections for the particular make and model airplane or turbine-powered rotorcraft, including necessary tests and checks. The instructions and procedures must set forth in detail the parts and areas of the airframe, engines, propellers, rotors, and appliances, including survival and emergency equipment required to be inspected.
- (2) A schedule for performing the inspections that must be performed under the program expressed in terms of the time in service, calendar time, number of system operations, or any combination of these.

(h) Changes from one inspection program to another:

When an operator changes from one inspection program under paragraph (f) of this section to another, the time in service, calendar times, or cycles of operation accumulated under the previous program must be applied in determining inspection due times under the new program.

(i) Transport category aircraft:

- (1) The registered operator of a transport category aircraft (e.g. aeroplane that is certificated under Part 25 of CASR or a helicopter certificated under Part 29 of CASR) must not authorise a person to carry out scheduled inspections or scheduled maintenance to the aircraft except under the control of an AMO.

- (2) The registered operator must not permit an overhauled engine to be installed on the aircraft unless the engine has been overhauled by:
- i. The engine manufacturer
 - ii. An agent of the engine manufacturer
 - iii. A maintenance organisation approved for the purpose

91.409 What it means

The RO is required to have the aircraft inspected at regular intervals to determine that it remains in a condition for safe operation and continues to comply with its type certification basis.

There are 3 options from which the RO may choose to have an aircraft inspected.

Option 1: The aircraft may be inspected annually (annual inspection) in accordance with Subpart C, specifically regulation 43.15 and Appendix D of Subpart C.

This option is not permitted for large aircraft (MTOW>5700kG) or multi-engine turbine powered aircraft.

Notes:

1. For the purpose of determining the due date for an annual inspection, the next annual inspection will fall due on or before the last day of the twelfth month since the preceding annual inspection was completed. i.e., if an annual inspection is completed on 1st January 2019, the next inspection will fall due on 31st January 2020.
2. If an aircraft is being inspected under Subpart C, and is operated in aerial work or flying training, it must also be inspected at each 100 hours of operation.

Option 2: The aircraft may be inspected under a progressive inspection schedule based on Subpart C. The progressive inspection must be overseen by a holder of an IA

Option 3: The aircraft may be inspected under an inspection program approved by CASA or an Authorised Person (AP).

An inspection program may be one of the following:

- (1) A system of maintenance previously approved by CASA
- (2) A continuous airworthiness inspection program that is part of a continuous airworthiness maintenance program (AMP)
- (3) An inspection program recommended by the aircraft manufacturer
- (4) An inspection program approved by CASA or an authorised person.

Note: If a small aircraft is being inspected under option 3, the elected program must be overseen by a nominated IA.

Large aircraft and multi-engine turbine powered aircraft

Large aircraft and multi-engine turbine powered aircraft must be inspected in accordance with option 3. If the aircraft is being maintained under a program that incorporates a manufacturer's recommended component overhaul or retirement intervals, those intervals are mandatory. Otherwise, the life limitations set out in relevant AWLs and ADs are applicable.

Transport category aircraft

Inspections and scheduled maintenance of aircraft certificated under part 25 or 29 of CASR must be performed in an AMO.

Light Sport aircraft

91.409 does not apply to Light sport aircraft. Light Sport Aircraft are required to be inspected in accordance with 91.307.

Experimental Aircraft – other than amateur-built aircraft and experimental LSA

Experimental aircraft are required to be inspected in accordance with conditions attached to their certificates.

Amateur-built aircraft and experimental LSA (ELSA)

Amateur-built aircraft and ELSA are required to have an annual condition inspection carried out in accordance with Appendix D of subpart C.

Changes to be made by CASA

(1) Progressive inspections:

CASA proposes to retain the progressive inspection provisions currently set out in paragraph 2.5 of CASA Schedule 5

http://classic.austlii.edu.au/au/legis/cth/consol_req/car1988263/sch5.html

The CASA progressive schedule which will be an acceptable means of compliance with 91,409 (d) is a simpler schedule, requires less documentation and may be adopted by the RO as an election not requiring CASA approval.

(2) Planning tolerances:

100-hourly inspections: a 10-hour planning tolerance will be permitted.

Annual inspections, a 10-day planning tolerance will be permitted.

(3) Turbine powered helicopters and single turbine engine aeroplanes.

CASA has had discussions with the FAA about the applicability of Appendix D for turbine engines and, based on those discussions, CASA requires all turbine engines to be inspected in accordance with a manufacturers recommended progressive inspection or an annual checklist that is provided by the manufacturer.

(4) Limited category aircraft

Limited category aircraft must be inspected in accordance with a schedule approved by an administering organisation for the aircraft. If no administering organisation exists for the aircraft, the aircraft must be inspected in accordance with a schedule approved by CASA or an authorised person, this schedule may be in accordance with Subpart C and appendix D if appropriate.

(5) Aircraft engaged in tandem and training parachute operations.

Aircraft that are engaged in tandem and training parachute operations will be required to have their engines inspected and maintained in accordance with the engine manufacturers recommended inspection and maintenance programs.

(6) Aircraft engaged in community service flights (CSF)

In addition to the annual inspection, CSF aircraft will be required to have had a 100-hour inspection within the 100 hours preceding a CSF operation.

(7) Aircraft inspected in accordance with an approved inspection programme (91.409 (e))

If the ICA do not provide for a one-off extension, a non-cumulative 10% or 3 month or 200 interval (whichever is the lesser) extension will be available.

- A one-off extension will not be permitted 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.

91.411 - Altimeter system and altitude reporting equipment tests and inspections

- (a) No person may operate an aeroplane, or helicopter, in controlled airspace for which a transponder is required to be carried, or under IFR unless—
- (1) Within the preceding 24 calendar months, each static pressure system, each altimeter instrument, and each automatic pressure altitude reporting system has been tested and inspected and found to comply with appendices E and F of Subpart C;
 - (2) Except for the use of system drain and alternate static pressure valves, following any opening and closing of the static pressure system, that system has been tested and inspected and found to comply with paragraph (a), appendix E, of Subpart C; and
 - (3) Following installation or maintenance on the automatic pressure altitude reporting system of the ATC transponder where data correspondence error could be introduced, the integrated system has been tested, inspected, and found to comply with paragraph (c), appendix E, of Subpart C.
- (b) The tests required by paragraph (a) of this section must be conducted by—
- (1) The manufacturer of the aeroplane, or helicopter, on which the tests and inspections are to be performed;
 - (2) An AMO; or
 - (3) A LAME who has been instructed in the operation of the test equipment
- (c) Altimeter and altitude reporting equipment approved under Technical Standard Orders are considered to be tested and inspected as of the date of their manufacture.
- (d) No person may operate an aeroplane, or helicopter, in controlled airspace under IFR at an altitude above the maximum altitude at which all altimeters and the automatic altitude reporting system of that aeroplane, or helicopter, have been tested.

91.411 What it means:

Testing of altimeters, static pressure measuring systems and pressure altitude reporting systems is only required to be carried out for aircraft that are to be operated under IFR or in controlled airspace for which a transponder is required. The main difference between this regulation and current practice is that the testing requirement will be based on the type of operation and will no longer be required to be carried out every 2 years regardless of aircraft utilisation.

Changes made by CASA

Testing of static systems, altimeters and pressure altitude reporting systems may be carried out by a holder of a B1 or B2 licence if the LAME has the use of the requisite testing

equipment and has been instructed in the use of it. Instruction in the use of the testing equipment may be provided by any of the following means:

- The manufacturer of the test equipment, or an appointed agent may provide training in the form of verbal instruction, demonstrations (including demonstrations provided on public media platforms) or written instructions.
- A LAME who has been instructed in the operation of the test equipment may instruct a person in the use of it
- An accredited training provider may provide training in the use of the test equipment

91.413 - ATC transponder tests and inspections

- (a) No persons may use an ATC transponder that is to be operated in controlled airspace for which a transponder is required or under IFR unless, within the preceding 24 calendar months, the ATC transponder has been tested and inspected and found to comply with appendix F of Subpart C; and
- (b) Following any installation or maintenance on an ATC transponder where data correspondence error could be introduced, the integrated system has been tested, inspected, and found to comply with paragraph (c), appendix E, of Subpart C.
- (c) The tests and inspections specified in this section must be conducted by—
 - (1) An AMO;
 - (2) A holder of a B1 or B2 AMEL who has been instructed in the operation of the test equipment
 - (3) The manufacturer of the aircraft on which the transponder to be tested is installed, if the transponder was installed by that manufacturer.

91.413 Changes made by CASA

Testing of transponders will be permitted to be carried out by a holder of a B1 or B2 licence if the LAME has use of the requisite testing equipment and has been instructed in the use of it. Instruction in the use of the testing equipment may be provided by any of the following means:

- The manufacturer of the test equipment, or an appointed agent may provide training in the form of verbal instruction, demonstrations (including demonstrations provided on public media platforms) or written instructions.
- A LAME who has been instructed in the operation of the test equipment may instruct a person in the use of it
- An accredited training provider may provide training in the use of the test equipment

91.415 - Changes to aircraft inspection programs

- (a) Whenever CASA finds that revisions to an approved aircraft inspection program are necessary for the continued adequacy of the program, the owner or operator must, after notification by CASA, make any changes in the program found to be necessary by CASA.
- (b) The owner or operator may petition CASA to reconsider the notice to make any changes in a program in accordance with paragraph (a) of this section.
- (c) The petition must be filed with CASA within 30 days after the certificate holder or fractional ownership program manager receives the notice.
- (d) Except in the case of an emergency requiring immediate action in the interest of safety, the filing of the petition stays the notice pending a decision by CASA.

91.415 What it means

CASA may direct the RO to amend an aircraft inspection program if CASA forms the view that the program is deficient, and that the deficiency may create an unacceptable risk to safety. Notwithstanding that this provision is a duplication of regulation 11.245 of CASR, CASA proposes to retain the FAR provision in order to preserve the right of the RO to petition CASA in the event of a direction being given.

91.417 - Maintenance records

- (a) Except for work performed in accordance with 91.411 and 91.413, each registered owner or operator must keep the following records for the periods specified in paragraph (b) of this section:
- (1) Records of the maintenance, preventive maintenance, and modification and records of the 100-hour, annual, progressive, and other required or approved inspections, as appropriate, for each aircraft (including the airframe) and each engine, propeller, rotor, and appliance of an aircraft. The records must include—
 - i. A description (or reference to data acceptable to CASA) of the work performed; and
 - ii. The date of completion of the work performed; and
 - iii. The signature, and certificate number of the person approving the aircraft for return to service.
 - (2) Records containing the following information:
 - i. The total time in service of the airframe, each engine, each propeller, and each rotor.
 - ii. The current status of life-limited parts of each airframe, engine, propeller, rotor, and appliance.
 - iii. The time since last overhaul of all items installed on the aircraft which are required to be overhauled on a specified time basis.
 - iv. The current inspection status of the aircraft, including the time since the last inspection required by the inspection program under which the aircraft and its appliances are maintained.
 - v. The current status of applicable airworthiness directives (AD) and safety directives including, for each, the method of compliance, the AD or safety directive number and revision date. If the AD or safety directive involves recurring action, the time and date when the next action is required.
 - vi. Certifications and copies of documents relating to major modifications or repairs that are mentioned in 43.9(d).
- (b) The owner or operator must retain the following records for the periods prescribed:
- (1) The records specified in paragraph (a)(1) of this section must be retained until the work is repeated or superseded by other work or for 1 year after the work is performed.
 - (2) The records specified in paragraph (a)(2) of this section must be retained and transferred with the aircraft at the time the aircraft is sold.
 - (3) A list of defects furnished to a registered owner or operator under 43.11 must be retained until the defects are repaired and the aircraft is approved for return to service.

- (c) The owner or operator must make all maintenance records required to be kept by this section available for inspection by CASA or any authorized representative of the Australian Transportation Safety Board (ATSB)
- (d) When a fuel tank is installed within the passenger compartment or a baggage compartment pursuant to Subpart C, a copy of the instructions for operation of the fuel system must be kept on board the modified aircraft by the owner or operator.

Aircraft operating limitations

If a repair or modification is made to the aircraft that has an effect on operating limitations set out in the aircrafts approved flight manual, the IA inspecting the work must provide to the RO, any approved documentation that sets out the changed operating limitations.

Weight and Balance

If a repair or modification affects the empty weight or the position of the centre of gravity at empty weight of an aircraft to the extent that use of the flight manual or placarded loading instructions could result in the aircraft being loaded outside the aircraft's approved flight manual limitations, the IA must provide a new loading system to the RO that will ensure correct loading of the aircraft.

91.417, What it means

91.417(a)(1)(i). Is identical to 43.9(a)(1) and requires the maintenance record entry to include "a description of the work performed." The description should be in sufficient detail to permit a person unfamiliar with the work to understand what was done and the methods and procedures used in doing it. When the work is extensive, this results in a voluminous record. To provide for this contingency, the rule permits reference to technical data acceptable to CASA in lieu of making the detailed entry. Manufacturer's manuals, Service Letters (SL), bulletins, work orders, ACs, and others, which accurately describe what was done or how it was done, may be referenced. Except for the documents mentioned that are in common usage, referenced documents such as one-off modification design data are to be made a part of the maintenance records and retained in accordance with 91.417(b).

The retention requirements of this section do not apply to records relating to testing of altimeters, static pressure systems and transponders. The RO is required to retain a record of these tests for 2 years or until the work is repeated or superseded.

Changes to be made by CASA

Aircraft operating limitations

If a repair or modification is made to the aircraft that has an effect on operating limitations set out in the aircrafts approved flight manual, the IA inspecting the work must provide to the RO, any approved documentation that sets out the changed operating limitations.

Weight and Balance

If a repair or modification affects the empty weight or the position of the centre of gravity at empty weight of an aircraft to the extent that use of the flight manual or placarded loading instructions could result in the aircraft being loaded outside the aircraft's approved flight manual limitations, the IA must provide a new loading system to the RO that will ensure correct loading of the aircraft.

Responsibility of the RO to update aircraft operating instructions

If the RO is provided with a flight manual supplement or amended loading instructions, the RO must ensure that the amendments are incorporated in the Flight manual, pilot operating instructions, or system of placards as appropriate.

91.419 - Transfer of maintenance records

Any owner or operator who sells an Australian registered aircraft must transfer to the purchaser, at the time of sale, the following records of that aircraft, in plain language form or in coded form at the election of the purchaser, if the coded form provides for the preservation and retrieval of information in a manner acceptable to CASA:

- (a) The records specified in 91.417(a)(2).
- (b) The records specified in 91.417(a)(1) which are not included in the records covered by paragraph (a) of this section, except that the purchaser may permit the seller to keep physical custody of such records. However, custody of records by the seller does not relieve the purchaser of the responsibility under 91.417(c) to make the records available for inspection by CASA or any authorized representative of the Australian Transportation Safety Board (ATSB).

91.421 - Rebuilt engine maintenance records

- (a) The owner or operator may use a new maintenance record, without previous operating history, for an aircraft engine rebuilt by the manufacturer or by an agency approved by the manufacturer.
- (b) Each manufacturer or agency that grants zero time to an engine rebuilt by it must enter in the new record—
 - (1) A signed statement of the date the engine was rebuilt;
 - (2) Each change made as required by airworthiness directives; and
 - (3) Each change made in compliance with manufacturer's service bulletins, if the entry is specifically requested in that bulletin.
- (c) For the purposes of this section, a rebuilt engine is a used engine that has been completely disassembled, inspected, repaired as necessary, reassembled, tested, and approved in the same manner and to the same tolerances and limits as a new engine with either new or used parts. However, all parts used in it must conform to the production drawing tolerances and limits for new parts or be of approved oversized or undersized dimensions for a new engine.

91.423 - Overhaul of turbine engines

If turbine engine maintenance work is beyond the limits recommended in the manufacturer's maintenance manual or service instructions for service in the field, then that maintenance must be performed at an AMO who has the scope to perform such work. Any work or repairs that require the overhaul of a turbine engine, turbine engine module or engine accessory component must be performed at appropriately rated AMO. This includes any tasks or repairs detailed within the turbine engine overhaul manual or the equivalent document.

7 Subpart C – Performance rules

7.1 What this subpart does

This subpart sets out the requirements that apply to persons carrying out maintenance, preventive maintenance, inspections, modifications or rebuilds to aircraft, airframes, engines propellers and appliances. This subpart is about who can perform maintenance and how maintenance is to be performed, recorded and released to service.

7.2 What this subpart does not do

This subpart does not specify what sort of maintenance or inspection must be carried out or when it must be done. Those requirements are the responsibility of the RO and are set out in subpart B

43.1 - Applicability

- (a) Except as provided in paragraphs (b) and (d) of this section, this subpart prescribes rules governing the maintenance, preventive maintenance, rebuilding, and modification of any—
 - (1) Aircraft engaged in private, aerial work, community service flights and flying training operations;
 - (2) Airframe, aircraft engines, propellers, appliances, and component parts of aircraft engaged in private, aerial work, community service flights and flying training operations.
- (b) This subpart does not apply to
 - (1) Any aircraft for which CASA has issued an experimental certificate, unless CASA has previously issued a different kind of airworthiness certificate for that aircraft;
 - (2) Any aircraft for which CASA has issued an experimental certificate under CASR 21.190 or 21.191(g), (h), (j) or(k) of CASR;
 - or
 - (3) Any aircraft subject to the provisions of part 101 of CASR
- (c) This subpart applies to all life-limited parts that are removed from a type certificated product, segregated, or controlled as provided in 43.10.
- (d) This subpart applies to any aircraft issued a special airworthiness certificate in the light-sport category except that the listing of major modifications and major repairs specified in paragraphs (a) and (b) of appendix A of this subpart is not applicable to products not produced under a Part 21 approval.

43.1 What it means

Subpart C does not apply to an amateur-built aircraft, an experimental aircraft such as a prototype for which a different CofA has not been previously issued, or an aircraft that is subject to Part 101.

These rules apply to a light sport aircraft except for the rules relating to major repairs and modifications.

These rules apply to a limited category aircraft except for the:

- rules relating to major repairs and modifications
- data requirements in 43.13(a)

43.2 - Records of overhaul and rebuilding

- (a) No person may describe in any required maintenance entry or form an aircraft, airframe, aircraft engine, propeller, appliance, or component part as being overhauled unless—
- (1) Using methods, techniques, and practices acceptable to CASA, it has been disassembled, cleaned, inspected, repaired as necessary, and reassembled; and
 - (2) It has been tested in accordance with approved standards and technical data, or in accordance with current standards and technical data acceptable to CASA, which have been developed and documented by the holder of the type certificate, supplemental type certificate, or a material, part, process, or appliance approval under part 21 of CASR.
- (b) No person may describe in any required maintenance entry or form an aircraft, airframe, aircraft engine, propeller, appliance, or component part as being rebuilt unless it has been disassembled, cleaned, inspected, repaired as necessary, reassembled, and tested to the same tolerances and limits as a new item, using either new parts or used parts that either conform to new part tolerances and limits or to approved oversized or undersized dimensions.

43.2 What it means

This regulation when read in conjunction with 91.421 means that a LAME may overhaul an engine in accordance with paragraph (a), however only a manufacturer or its approved agents may rebuild an engine in accordance with paragraph (b).

43.3 - Persons Authorized to Perform Maintenance, Preventive Maintenance, rebuilding, and modifications

- (a) Except as provided in this section, no person may maintain, rebuild, alter, or perform preventive maintenance on an aircraft, airframe, aircraft engine, propeller, appliance, or component part to which this part applies. Those items, the performance of which is a major modification, a major repair, or preventive maintenance, are listed in appendix A.
- (b) The holder of a Part 66 AMEL may perform maintenance, preventive maintenance, and modifications as provided in subpart A (65.81 and 65.82).
- (c) The holder of an AMT certificate may perform maintenance, preventive maintenance, and modifications as provided in subpart A (65.103, 65.104 and 65.107).
- (d) A person working under the supervision of a LAME or AMT may perform the maintenance, preventive maintenance, and modifications that his supervisor is authorized to perform, if the supervisor personally observes the work being done to the extent necessary to ensure that it is being done properly and if the supervisor is readily available, in person, for consultation. However, this paragraph does not authorize the performance of any inspection performed after a major repair or modification.

- (e) An AMO may perform maintenance, preventive maintenance, and modifications as provided in Part 145.
- (f) Reserved
- (g) Except for holders of a recreational pilot licence, the holder of a pilot licence issued under part 61 may perform preventive maintenance on any aircraft owned or operated by that pilot which is not used under Part 135 of CASR. The holder of a recreational pilot licence may perform preventive maintenance on an aircraft owned or operated by that pilot and issued a special airworthiness certificate in the light-sport category.
- (h) Notwithstanding the provisions of paragraph (g) of this section, the RO of an aircraft engaged in aerial work operations may approve a pilot to carry out maintenance on an aircraft that he or she is flying in the employment of the RO provided—
 - (1) The RO is satisfied that the pilot is competent to perform the task and has been authorized in writing for each item of preventive maintenance that the pilot is authorized to perform; and
 - (2) The items of preventive maintenance authorized by this section are those listed in paragraph (c) of appendix A of this part.
- (i) Reserved
- (j) A manufacturer may—
 - (1) Rebuild or alter any aircraft, aircraft engine, propeller, or appliance manufactured by him under a type or production certificate;
 - (2) Rebuild or alter any appliance or part of aircraft, aircraft engines, propellers, or appliances manufactured by him under a Technical Standard Order Authorization, a Parts Manufacturer Approval, or Product and Process Specification issued by the certifying NAA; and
 - (3) Perform any inspection required by part 91 on aircraft it manufactured under a type certificate, or currently manufactures under a production certificate.
- (k) Deleted see proposed changes below relating to uploading or downloading of data.

Maintenance outside Australian territory

A person mentioned in 43.3 (b) to (j) may perform maintenance on an Australian aircraft outside Australian territory and release the aircraft to service.

A person or organisation authorised to perform maintenance under the laws of a contracting state may perform the maintenance on an Australian aircraft in that state.

A maintenance organisation approved under the laws of a contracting state may perform scheduled maintenance for an Australian transport category aircraft in that state.

43.3 What it means

43.3 (a) specifies that only persons nominated in 43.3 and may inspect, rebuild, repair, overhaul or alter an aircraft, engine, propeller or component. This subsection also refers to Appendix A of Subpart C which sets out what actions are a major repair or major modification for the purpose of Subpart C

43.3 (b) permits a LAME to perform all maintenance actions that are listed in subpart A (see 65.81, 65.82 and 65.95). This permission over-rides limitations imposed on a Part 66 licence by licence subcategory and exclusions. The permissions are subject to conditions and competency requirements set out in Subpart A and do not translate across to maintenance under CAR or Part 42 of CASR.

43.3(c) permits a holder of an AMTC to perform maintenance in accordance with the privileges and limitations set out in Subpart A (see 65.103, 65.104 and 65.107).

43.3(d) permits a person who is not a LAME or AMTC holder, to perform maintenance tasks under the supervision of a LAME or AMTC holder.

The permission does not include performance of inspections after a major repair or modification, and is restricted to the type of maintenance, preventive maintenance or modification that is within the scope of the supervising LAME or AMTC as set out in Subpart A.

The person supervising must personally observe the work to the extent necessary to ensure that the work has been carried out properly and be readily available in person for consultation during the maintenance.

This provision also means that a non-LAME may not perform an inspection after a major repair or modification under supervision. It does not preclude a LAME from performing the inspections under supervision of another LAME or IA as applicable.

This subsection does not permit a pilot to supervise preventive maintenance or pilot maintenance tasks listed in paragraph (d) of Appendix A.

43.3(e) permits an AMO to perform maintenance, preventive maintenance and modifications to Part 43 aircraft, their engines, propellers and appliances. The AMO would perform an inspection using an appropriate checklist and in accordance with the procedures set out in its exposition.

An AMO when performing maintenance will use the appropriate manufacturer's instructions or other such instructions acceptable to CASA and release an aircraft, engine, propeller or accessory to service using its approved procedures and documentation.

When an AMO carries out annual inspections for a part 43 aircraft, it must use a procedure that sets out how it will inspect the aircraft (by using an Appendix D inspection checklist or an approved inspection program provided by the RO), and how it will release the aircraft to service taking into consideration the requirements of 43.5, 43.9 and 43.11.

Additionally, the AMOs procedures must set out how the person releasing the aircraft to service after an annual inspection or major repair or modification, if not the holder of an IA, will meet the knowledge and experience requirements set out in 61.91.

Note: AMO includes a CAR 30 maintenance approval holder.

43.3(f) has no relevance at this time (to be revisited when Part 135 policy settings are finalised)

43.3(g) will permit a pilot to perform preventive maintenance on an aircraft which is owned by the pilot. This subsection will also permit a pilot to perform preventive maintenance on any aircraft that the pilot is licenced to fly as pilot in command provided that the pilot has the permission of the RO to perform the maintenance.

This subsection also permits a holder of a recreational pilot licence to carry out preventive maintenance to a light sport aircraft that he or she owns.

43.3 (h) will permit a pilot to perform maintenance that is listed in paragraph (d) of Appendix A, to aircraft engaged in flying training or aerial work, provided that the RO has ensured that the pilot is competent to perform the task. The competency may be established by any

combination of instruction and/or observed performance of the tasks. The subsection does not specify that the pilot must hold a commercial pilot licence or an instructor rating. The RO is required to authorise the pilot in writing, specifying the particular tasks that the pilot is authorised to perform.

43.3(i) has no relevance at this time (to be reviewed when Part 135 policy settings are resolved)

43.3(j) will permit a manufacturer to rebuild or alter aircraft, engines, propellers or appliances that it has manufactured under a production certificate.

This subsection will also permit a manufacturer to:

- rebuild or alter any appliance or part of an aircraft that it has manufactured under a Part 21 approval (PMA, APMA, TSO)
- perform any inspection required by 91.409 on an aircraft that it has manufactured under a type certificate or production certificate.

Note: 43.3(k) does not apply to updating of maintenance related databases or software updates.

Changes to be made by CASA

Downloading of aircraft data

Downloading of information from a computerised aircraft system is not a maintenance activity and may be carried out by any person authorised by the RO provided (1) the download of data does not require removal or disassembly of the computerised aircraft system; and (2) the download of data is performed in accordance with the instructions issued by the manufacturer of the system.

Uploading of data to a computerised aircraft system

Uploading of data to a computerised aircraft system such as a computerised navigation database, is not maintenance provided that: (1) the upload of data does not require removal or disassembly of the computerised aircraft system; (2) the upload of data is performed in accordance with the instructions issued by the manufacturer of the system; and (3) the uploading of the data does not alter firmware or affect operational characteristics.

The RO may authorise any person to perform a download or upload of information to a computerised aircraft system provided that the RO has ensured that the person understands the manufacturer's instructions for the download or upload.

Reporting of major defect to RO

If a LAME/AMT/AMO, in the course of carrying out an inspection or maintenance becomes aware of a major defect, the maintainer must report the defect to the RO.

Non Destructive Testing (NDT) Inspections

A LAME or AMT may perform NDT inspections limited to liquid penetrant inspection using aerosol packed materials.

Any other form of NDT may only be performed and certified by a person holding a recognised qualification.

Recognised qualification includes:

- CASA issued authorisation under CAR33B
- A qualification issued under the control of the NANDTB

43.5 - Approval for return to service after maintenance, preventive maintenance, rebuilding, or modification

No person may approve for return to service any aircraft, airframe, aircraft engine, propeller, or appliance, that has undergone maintenance, preventive maintenance, rebuilding, or modification unless—

- (a) The maintenance record entry required by 43.9 or 43.11, as appropriate, has been made;
- (b) If a repair or a modification results in any change in the aircraft operating limitations or flight data contained in the approved aircraft flight manual, those operating limitations or flight data are appropriately revised and set forth as prescribed in Subpart B.

43.5 What it means

This requirement applies equally to a pilot, a LAME, an AMT or a manufacturer who is returning to service, an aircraft, an airframe or an engine, propeller or appliance that has been inspected or had any form of maintenance, preventive maintenance, overhaul or modification carried out to it.

43.5(a) requires that:

- (1) a maintenance record entry as specified in 43.9 must be made for any maintenance, preventive maintenance overhaul or modification task before the aircraft is released to service (the making of the maintenance record constitutes a return to service for this requirement), and
- (2) if the maintenance action is an inspection required by 91.409, an inspection record entry must be made in accordance with 43.11.

Operating limitations and aircraft weight and balance

43.5 (b) specifies that if a repair or modification has an effect on the operation limitations set out in the aircrafts approved flight manual, or the aircraft weight and balance, the person returning the aircraft to service must provide the RO with information about the changes and any approved flight manual supplement that accompanies the repair or modification instructions. (based on FAR 91.9)

43.7 - Persons Authorized to Approve Aircraft for Return to Service

- (a) Except as provided in this section and 43.8, no person may approve an aircraft, airframe, aircraft engine, propeller, appliance, or component part for return to service after it has undergone maintenance, preventive maintenance, rebuilding, or modification.
- (b) The holder of an AMEL or an inspection authorisation may approve an aircraft, airframe, aircraft engine, propeller, appliance, or component part for return to service as provided in Subpart A.
- (c) An AMO whose approval certificate permits the particular maintenance may approve an aircraft, airframe, aircraft engine, propeller, appliance, or component part for return to service.
- (d) A manufacturer may approve for return to service any aircraft, airframe, aircraft engine, propeller, appliance, or component part which that manufacturer has worked on under 43.3(h). However, except for minor modifications, the work must have been done in accordance with technical data approved by CASA.

- (e) A person holding at least a private pilot licence may approve an aircraft for return to service after performing preventive maintenance under the provisions of 43.3(g).
- (f) The holder of an AMT certificate may approve an aircraft, engine or component for return to service, as provided in Subpart A (see 65.103 and 65.107)
- (g) The holder of at least a recreational pilot licence may approve an aircraft owned or operated by that pilot and issued a special airworthiness certificate in the light-sport category for return to service after performing preventive maintenance under the provisions of 43.3(g).

43.7 What it means

This section provides the permissions for LAMEs, AMTs, AMOs, pilots and manufacturers to return an aircraft to service after maintenance that they are permitted to perform under 43.3

43.7 (d) requires a manufacturer to use approved technical data for inspections, rebuilds and modifications, other than minor modifications.

43.8 - Persons authorised to approve aircraft for return to service outside Australian territory

- (a) A person may approve an aircraft for release to service outside Australian territory if the person is authorised to perform the same maintenance certification or release to service in an Australian territory under 43.7
- (b) A person who would be permitted under the laws of a contracting state to authorise an aircraft of the same type for release to service after maintenance if it were registered in that state may approve an Australian aircraft for release to service after maintenance.

43.8 - What it means

This provision:

- (a) prescribes that a holder of an Australian AMEL, AMT or pilot licence may exercise the privileges of the authorisation on an Australian aircraft outside Australian territory.
- (b) Authorises a person who holds a maintenance licence/authorisation issued by a contracting state, may release an Australian aircraft to service in that state but only within the privileges of the licence/authorisation.
- (c) This provision does not permit an independent maintainer in a contracting state to release a transport category aircraft to service after a scheduled maintenance action.

43.9 - Content, Form, and Disposition of Maintenance Records

- (a) Maintenance record entries. Except as provided in paragraphs (b) and (c) of this section, each person who maintains, performs preventive maintenance, rebuilds, or alters an aircraft, airframe, aircraft engine, propeller, appliance, or component part must make an entry in the maintenance record of that equipment containing the following information:
 - (1) A description (or reference to data acceptable to CASA) of work performed.
 - (2) The date of completion of the work performed.
 - (3) The name of the person performing the work if other than the person specified in paragraph (a)(4) of this section.

- (4) If the work performed on the aircraft, airframe, aircraft engine, propeller, appliance, or component part has been performed satisfactorily, the signature, certificate number, and kind of certificate held by the person approving the work. The signature constitutes the approval for return to service only for the work performed.
- (b) Reserved.
- (c) This section does not apply to persons performing inspections in accordance with 91.409
- (d) In addition to the entry required by paragraph (a) of this section:
- (1) the maintainer must supply to the RO copies of data used for major repairs and major modifications if that data is not publicly available.
 - (2) certifications for conformity of major repairs and major modifications must be entered in the aircraft records in a form acceptable to CASA by the IA holder performing the conformity inspection.

Additional requirements

- (1) Engine overhaul records:

In addition to 43.9 (a). maintenance record entry for an engine overhaul will be required to list:

- A statement that the engine has been overhauled
- The date of completion of the overhaul
- The time in service of the engine at overhaul
- Details of applicable ADs that have been carried out
- Details of overhaul instructions that were used
- Details of new and/or used replacement parts by part number and serial number if applicable
- Service bulletins, service letters and service instructions if any, that have been incorporated
- Details of engine test stand and measuring equipment used
- Details of engine test results
- the signature, certificate number, and kind of certificate held by the person approving the work. The signature constitutes the approval for return to service for the engine

- (2) Independent inspection of flight controls

If an independent inspection of a flight control system is required under 43.13, the person performing the inspection must make an entry stating:

“I have inspected the (flight control) system and I confirm that it has been properly assembled in accordance with the relevant instructions and is functioning in the correct sense”.

Name

ARN

Authorisation (Pilot/LAME/IA)

Note: The person performing the inspection must familiarise him or herself with the instructions relating to the maintenance work that is under inspection and ensure that he or she adequately understands the

instructions in order to make an informed assessment that such things as cable routing, locking devices and split pins etc are correctly assembled.

(3) Copies of data – when required

If reference is made to data under 43.9 (a)(1), that is not generally available, a copy of the relevant data must be given to the RO for inclusion in the aircraft records as required by 91.417.

43.9 What it means

The maintenance records described in 43.9 (a) are required to be made after maintenance, preventive maintenance, rebuilds or modifications but not for an inspection made in accordance with 91.409 (the requirements for inspection records are set out in 43.11).

The certification described in 43.9(a)(5) is also the return to service with respect to the maintenance described in the maintenance record entry. It is not a statement about the general airworthiness of the aircraft.

The certification of conformity for a major repair or modification mentioned in 43.9 (d) must be made by the IA holder who carries out the conformity inspection. The entry must be retained in accordance with 91.417(b)(2).

CASA has removed the requirement to use a form (FAA Form 337) for recording of major repairs and modifications. The form would be a duplication of the mandatory logbook entries and would therefore serve little useful purpose.

Note: 91.417(b)(2) requires the documentation to be retained with the aircraft until it is sold or removed from service.

43.10 - Disposition of Life Limited Aircraft Parts

(a) **Definitions used in this section.** For the purposes of this section the following definitions apply.

- Life-limited part means any part for which a mandatory replacement limit is specified in the type design, the Instructions for Continued Airworthiness, or the maintenance manual.
- Life status means the accumulated cycles, hours, or any other mandatory replacement limit of a life-limited part.

(b) **Temporary removal of parts from type-certificated products.** When a life-limited part is temporarily removed and reinstalled for the purpose of performing maintenance, no disposition under paragraph (c) of this section is required if—

- (1) The life status of the part has not changed;
- (2) The removal and reinstallation is performed on the same serial numbered product; and
- (3) That product does not accumulate time in service while the part is removed.

(c) **Disposition of parts removed from type-certificated products.** Except as provided in paragraph (b) of this section, each person who removes a life-limited part from a type-certificated product must ensure that the part is controlled so as to prevent the installation of the part on a type certificated aircraft after it has reached its life limit.

Acceptable methods include:

- (1) **Record keeping system.** The part may be controlled using a record keeping system that substantiates the part number, serial number, and current life status of the part. Each time the part is removed from a type certificated product, the record must be updated with the current life status. This system may include electronic, paper, or other means of record keeping.
 - (2) **Tag or record attached to part.** A tag or other record may be attached to the part. The tag or record must include the part number, serial number, and current life status of the part. Each time the part is removed from a type certificated product, either a new tag or record must be created, or the existing tag or record must be updated with the current life status.
 - (3) **Non-permanent marking.** The part may be legibly marked using a non-permanent method showing its current life status. The life status must be updated each time the part is removed from a type certificated product, or if the mark is removed, another method in this section may be used.
 - (4) **Permanent marking.** The part may be legibly marked using a permanent method showing its current life status. The life status must be updated each time the part is removed from a type certificated product. Unless the part is permanently removed from use on type certificated products.
 - (5) **Segregation.** The part may be segregated using methods that deter its installation on a type-certificated product. These methods must include, at least—
 - i. Maintaining a record of the part number, serial number, and current life status, and
 - ii. Ensuring the part is physically stored separately from parts that are currently eligible for installation.
 - (6) **Mutilation.** The part may be mutilated to deter its installation in a type certificated produce. The mutilation must render the part beyond repair and incapable of being reworked to appear to be airworthy.
 - (7) **Other methods.** Any other method approved or accepted by CASA.
- (d) **Transfer of life-limited parts.** Each person who removes a life-limited part from a type certificated product and later sells or otherwise transfers that part must transfer with the part the mark, tag, or other record used to comply with this section, unless the part is mutilated before it is sold or transferred.

43.10 What it means

Disposition of parts removed.

This regulation places the responsibility on the person removing a time-expired part to take steps to ensure that the part will not be reinstalled in a type certificated aircraft. Various options are described, and it should be noted that the person is not required to do damage to the component; there is nothing in these rules that precludes use of the time-expired part on a non-type certificated aircraft.

Note:

Mandatory replacement limit has different meanings, depending on the context in which it is being considered. For aircraft engaged in private and aerial work, a mandatory replacement limit is:

- (1) any limit specified in the aircrafts airworthiness limitations (AWL) section of the maintenance manual. For example, in the case of a US-manufactured aircraft, these limits must be identified in the manual as:
“The Airworthiness Limitations section is FAA approved and specifies maintenance required under 43.16 and 91.403 of Title 14 of the Code of Federal Regulations unless an alternative program has been FAA approved.”

Similar requirements are imposed under type certification rules in other countries.

A manufacturer may specify other limits in the ICAs for an aircraft, but these limits, which are accepted by the NAA are not mandatory unless the RO has elected or been directed by CASA to use a maintenance or inspection schedule that incorporates manufacturers ICAs. If an operator is using an inspection schedule that incorporates manufacturers ICAs, the operator must comply with all of those ICAs; they may not pick and choose from those limits and requirements according to convenience.
- (2) a limit specified in an AD.
- (3) For a limited category aircraft, a time limit specified in data approved by the administering authority

43.11 - Content, Form, and Disposition of Records for Inspections

- (a) **Maintenance record entries.** The person approving or disapproving for return to service an aircraft, airframe, aircraft engine, propeller, appliance, or component part after any inspection must make an entry in the maintenance record of that equipment containing the following information:
 - (1) The type of inspection and a brief description of the extent of the inspection.
 - (2) The date of the inspection and aircraft total time in service.
 - (3) The signature and the licence/AMT (and IA if applicable) details of the person approving or disapproving for return to service the aircraft, airframe, aircraft engine, propeller, appliance, component part, or portions thereof.
 - (4) **Except for progressive inspections**, if the aircraft is found to be airworthy and approved for return to service, the following or a similarly worded statement—“I certify that this aircraft has been inspected in accordance with (insert type) inspection and was determined to be in airworthy condition.”
 - (5) **Except for progressive inspections**, if the aircraft is not approved for return to service because of needed maintenance, noncompliance with applicable specifications, airworthiness directives, or other approved data, the following or a similarly worded statement—“I certify that this aircraft has been inspected in accordance with (insert type) inspection and is not approved for return to service, a list of defects and unairworthy items dated (date) has been provided for the aircraft owner or operator.”
 - (6) **For progressive inspections**, the following or a similarly worded statement—“I certify that in accordance with a progressive inspection program, a routine inspection of (identify whether aircraft or components) and a detailed inspection of (identify components) were performed and the (aircraft or components) are (approved or disapproved) for return to

service.” If disapproved, the entry will further state “and a list of defects and unairworthy items dated (date) has been provided to the aircraft owner or operator.”

- (7) If an inspection is conducted under an inspection program, the entry must identify the inspection program, that part of the inspection program accomplished, and contain a statement that the inspection was performed in accordance with the inspections and procedures for that particular program.
- (b) **Listing of defects and placards.** If the person performing any inspection finds that the aircraft is unairworthy or does not meet the applicable type certificate data, airworthiness directives, or other approved data upon which its airworthiness depends, that persons must give the owner or lessee a signed and dated list of those defects. For those items permitted to be inoperative that person must place a placard, on each inoperative instrument and the cockpit control of each item of inoperative equipment, marking it “Inoperative,” and must add the items to the signed and dated list of defects given to the owner or lessee.

43.11 What it means

When a LAME or IA holder makes an entry on completion of an inspection as described in 43.11(a), the inspection requirement under 91.409 is satisfied, regardless of whether or not the aircraft is authorised for return to service, and no further action is required by the person performing the inspection.

If a person performing an inspection disapproves return to service and provides a list of defects in accordance with 43.11(b), the inspection is completed, and the RO becomes responsible for dealing with those defects. The RO is not required to have the aircraft re-inspected once the defects have been rectified by a LAME.

Three important points to note:

- (1) Not all defects require mandatory rectification before flight.
43.11 (b) says “...the aircraft is unairworthy or does not meet the applicable type certificate data, airworthiness directives, or other approved data upon which its airworthiness depends”. For a Part 91 aircraft, “approved data” means AWLs and ADs. If the RO is using an inspection or maintenance program that incorporates a manufacturers ICAs, “approved data” also includes the manufacturers recommended maintenance.
- (2) If the RO is presented with a list of defects, for some of which rectification is mandatory, the aircraft may not be flown except under a special flight permit, until the defects are rectified. The person who completed the inspection may be engaged to carry out the rectifications, but the rectifications are not part of the inspection and may be carried out or supervised by any LAME with appropriate licence coverage.
- (3) For defects which are permitted to be inoperative (ref. 91.405(c)) the person releasing the aircraft to service must ensure that each instrument or control for an inoperative item of equipment is placarded as “inoperative” in addition to providing the RO with a list of the defects.

These defects do not require rectification before further flight. Additionally, nothing in these regulations prevents defects of this type being carried forward over subsequent annual inspections if the inspecting IA holder is satisfied that they are not required by regulations to be rectified before further flight.

43.12 - Maintenance Records: Falsification, Reproduction, or Modification

- (a) No person may make or cause to be made:

- (1) Any fraudulent or intentionally false entry in any record or report that is required to be made, kept, or used to show compliance with any requirement under this part;
 - (2) Any reproduction, for fraudulent purpose, of any record or report under this part; or
 - (3) Any modification, for fraudulent purpose, of any record or report under this part.
- (b) The commission by any person of an act prohibited under paragraph (a) of this section is a basis for suspending or revoking the applicable authorisations held by that person

Note Re 43.12

These provisions may be made under Part 11 of CASR or given effect under other legislation.

43.13 - Performance Rules (General)

- (a) Each person performing maintenance, modification, or preventive maintenance on an aircraft, engine, propeller, or appliance must use the methods, techniques, and practices prescribed in the current manufacturer's maintenance manual or Instructions for Continued Airworthiness prepared by its manufacturer, or other methods, techniques, and practices that provide for the same maintenance outcome, except as noted in 43.16.
- (b) He or she must use the tools, equipment, and test apparatus necessary to assure completion of the work in accordance with accepted industry practices. If special equipment or test apparatus is recommended by the manufacturer involved, he or she must use that equipment or apparatus or its equivalent.
- (c) Each person maintaining or altering, or performing preventive maintenance, must do that work in such a manner and use materials of such a quality, that the condition of the aircraft, airframe, aircraft engine, propeller, or appliance worked on will be at least equal to its original or properly altered condition (with regard to aerodynamic function, structural strength, resistance to vibration and deterioration, and other qualities affecting airworthiness).

43.13 What it means

The regulation applies equally to a LAME or an AMTC holder and a person working under supervision of a LAME or an AMTC holder (an AME for instance or an avionics technician or a component maintenance provider) regardless of whether or not the person is releasing the thing to service after maintenance.

When performing maintenance (which includes inspections), the LAME/AME/AMTC holder must use the methods techniques and practices (MTP) set out in the aircraft manufacturer's current maintenance manual or ICAs, or other MTPs that provide for the equivalent maintenance outcome. This means that a maintainer may deviate from manufacturer's instructions provided that they can demonstrate that the MTPs that they have used will meet the relevant regulatory requirements.

"Current" means the manuals or ICAs that are published by the manufacturer at the time of doing the work.

This requirement only refers to the MTPs and does not include Service Bulletins (SBs). However, if the RO elects to have an SB incorporated that specifies accomplishment instructions, the SB must be fully complied with.

It is also important to note that the RO of a small Part 91 aircraft is not required to comply with manufacturers recommended maintenance intervals unless an RO is using a maintenance or inspection program that incorporates the manufacturers recommendations. 43.13(a) says: *“each person performing maintenance..”* this is describing the action of doing something, and describes how it should be done, it does not specify what should be done or when it should be done.

AWLs are mandatory and include any maintenance specified in the AWL.

The regulation also requires the person carrying out maintenance to use those tools, equipment and test apparatus necessary to assure that the work is completed in accordance with accepted industry practices. **This means that if a person carries out work such as welding, that person must be capable of performing the work to a standard that would be expected of a trained and qualified person.**

Additional requirements apply if the work is a major repair or modification (see Appendix A and 65.95(a)(i)).

The requirement to use special equipment or test apparatus that is recommended by the manufacturer involved, or its equivalent acceptable to CASA, provides scope for a person to source or fabricate apparatus or equipment that will provide the same airworthiness outcome.

Paragraph (b) requires maintainers to use materials of such a quality that the aircraft, appliance etc will be at least equal to its original or properly altered condition. This effectively means that commercial grade materials would be unacceptable unless the specifications and traceability could demonstrate that the material is equivalent to that used in the manufacture of the aircraft or component.

When installing components, appliances etc, the maintainer is required to use those components and appliances that comply with Part 21 of CASR, unless a modification is made using approved data that includes use of an alternative part or component.

Changes to be made by CASA

(1) Independent Inspection of flight controls

If a maintenance action involves disturbance of a flight control system that is essential for the safe operation of the aircraft, the person releasing the aircraft to service must first arrange for an independent inspection to be carried out of the affected flight control system to ensure that it has been properly reassembled, all required safetying devices such as split pins and lock wires have been installed and the controls are working in the correct sense. The inspection must be carried out and a certification made in the maintenance records by:

- a LAME,
- a holder of a relevant AMTC, or
- a holder of at least a private pilot licence.

(2) Maintenance of limited category aircraft

Notwithstanding 43.13(a) Each person performing maintenance, modification, or preventive maintenance on an aircraft, engine, propeller, or appliance for a limited category aircraft must use the methods, techniques, and practices acceptable to the administering authority for the aircraft.

43.14 - Transport Category aircraft – additional performance rules for maintenance

(a) Scheduled maintenance

Each person performing scheduled maintenance (including engine overhauls) of a transport category aircraft must do so in accordance with the procedures, and under the control, of an AMO

Note: Regardless of type certification basis, an aircraft for which a special certificate of airworthiness is in force is not a transport category aircraft.

43.15 - Additional Performance Rules for Inspections

(a) **General.** Each person performing an inspection required by 91.409, must—

- (1) Perform the inspection so as to determine whether the aircraft, or portion(s) thereof under inspection, meets all applicable airworthiness requirements; and
- (2) If the inspection is one provided for in 91.409(h) of Subpart B, perform the inspection in accordance with the instructions and procedures set forth in the inspection program for the aircraft being inspected.

(b) **Rotorcraft.** Each person performing an inspection required by 91.409 on a rotorcraft must inspect the following systems in accordance with the maintenance manual or Instructions for Continued Airworthiness of the manufacturer concerned:

- (1) The drive shafts or similar systems.
- (2) The main rotor transmission gear box for obvious defects.
- (3) The main rotor and centre-section (or the equivalent area).
- (4) The auxiliary rotor on helicopters.

(c) **Annual and 100-hour inspections:**

- (1) Each person performing an annual or 100-hour inspection must use a checklist while performing the inspection. The checklist may be of the person's own design, one provided by the manufacturer of the equipment being inspected or one obtained from another source. This checklist must include the scope and detail of the items contained in appendix D to this subpart and paragraph (b) of this section.
- (2) Each person approving a reciprocating-engine-powered aircraft for return to service after an annual or 100-hour inspection must, before that approval, run the aircraft engine or engines to determine satisfactory performance in accordance with the manufacturer's recommendations of—
 - i. Power output (static and idle r.p.m.);
 - ii. Magnetos;
 - iii. Fuel and oil pressure; and
 - iv. Cylinder and oil temperature.
- (3) Each person approving a turbine-engine-powered aircraft for return to service after an annual, 100-hour, or progressive inspection must, before that approval, run the aircraft engine or engines to determine satisfactory performance in accordance with the manufacturer's recommendations.

(d) **Progressive inspection:**

- (1) Each person performing a progressive inspection must, at the start of a progressive inspection system, inspect the aircraft completely. After this initial inspection, routine and detailed inspections must be conducted as prescribed in the progressive inspection schedule. Routine inspections consist of visual examination or check of the appliances,

the aircraft, and its components and systems, insofar as practicable without disassembly. Detailed inspections consist of a thorough examination of the appliances, the aircraft, and its components and systems, with such disassembly as is necessary. For the purposes of this subparagraph, the overhaul of a component or system is considered to be a detailed inspection.

- (2) If the aircraft is away from the station where inspections are normally conducted, a LAME, an AMO, or the manufacturer of the aircraft may perform inspections in accordance with the procedures and using the forms of the person who would otherwise perform the inspection.

(e) Transport category aircraft

Inspections required by 91.409 for transport category aircraft must be performed under the control of an AMO

Note: Regardless of type certification basis, an aircraft for which a special certificate of airworthiness is in force, is not a transport category aircraft.

Note regarding 43.15

When an inspection is performed and a determination of airworthiness is required, ICAs must be used (or other equivalent data) as stated in 43.13. The ICAs are used to determine HOW an inspection is to be performed and to determine whether any wear or damage is within allowable limits.

The term "all applicable airworthiness requirements" has important implications for a person releasing an aircraft to service after completing an inspection in accordance with 43.15(a)(1). For the purposes of Part 43, an aircraft is deemed 'airworthy' when it conforms to its type certificate (if and as that certificate has been modified by supplemental type certificates and by Airworthiness Directives), and is in a condition for safe operation.

Limited Category Aircraft

For limited category aircraft, the reference to a type certificate is not applicable. The requirement is that the aircraft must be in a condition for safe operation and must comply with any conditions applicable under Part 132 of CASR.

43.16 - Airworthiness Limitations

Each person performing an inspection or other maintenance specified in an Airworthiness Limitations section of a manufacturer's maintenance manual or Instructions for Continued Airworthiness must perform the inspection or other maintenance in accordance with that section or an inspection program approved under 91.409(h).

8 Part 43 MOS Appendices

8.1 Appendix A to Subpart C—Major Modifications, Major Repairs, and Preventive Maintenance

(a) Major modifications—

- (1) **Airframe major modifications.** Modifications of the following parts and modifications of the following types, when not listed in the aircraft specifications issued by CASA or the certifying NAA, are airframe major modifications:
- i. Wings.
 - ii. Tail surfaces.
 - iii. Fuselage.
 - iv. Engine mounts.
 - v. Control system.
 - vi. Landing gear.
 - vii. Hull or floats.
 - viii. Elements of an airframe including spars, ribs, fittings, shock absorbers, bracing, cowling, fairings, and balance weights.
 - ix. Hydraulic and electrical actuating system of components.
 - x. Rotor blades.
 - xi. Changes to the empty weight or empty balance which result in an increase in the maximum certificated weight or centre of gravity limits of the aircraft.
 - xii. Changes to the basic design of the fuel, oil, cooling, heating, cabin pressurization, electrical, hydraulic, de-icing, or exhaust systems.
 - xiii. Changes to the wing or to fixed or movable control surfaces which affect flutter and vibration characteristics.
- (2) **Powerplant major modifications.** The following modifications of a powerplant when not listed in the engine specifications issued by CASA or the certifying NAA, are powerplant major modifications.
- i. Conversion of an aircraft engine from one approved model to another, involving any changes in compression ratio, propeller reduction gear, impeller gear ratios or the substitution of major engine parts which requires extensive rework and testing of the engine.
 - ii. Changes to the engine by replacing aircraft engine structural parts with parts not supplied by the original manufacturer or parts not specifically approved by CASA.
 - iii. Installation of an accessory which is not approved for the engine.
 - iv. Removal of appliances that are listed as required equipment on the aircraft or engine specification.
 - v. Installation of structural parts other than the type of parts approved for the installation.
 - vi. Conversions of any sort for the purpose of using fuel of a rating or grade other than that listed in the engine specifications.

- (3) **Propeller major modifications.** The following modifications of a propeller when not authorized in the propeller specifications issued by CASA or the certifying NAA are propeller major modifications:
- i. Changes in blade design.
 - ii. Changes in hub design.
 - iii. Changes in the governor or control design.
 - iv. Installation of a propeller governor or feathering system.
 - v. Installation of propeller de-icing system.
 - vi. Installation of parts not approved for the propeller.
- (4) **Appliance major modifications.** Modifications of the basic design not made in accordance with recommendations of the appliance manufacturer or in accordance with an Airworthiness Directive are appliance major modifications. In addition, changes in the basic design of radio communication and navigation equipment approved under type certification or a Technical Standard Order that have an effect on frequency stability, noise level, sensitivity, selectivity, distortion, spurious radiation, AVC characteristics, or ability to meet environmental test conditions and other changes that have an effect on the performance of the equipment are also major modifications.

Changes proposed by CASA

Avionics major modifications

- Installation of avionics systems that perform critical functions, other than installation of basic attitude, altitude, and airspeed instruments, or are highly integrated with complex switching interfaces with other equipment and systems.
- Installation of flight-critical electrical/electronic equipment and systems such as electronic flight controls or the engine control system, full-authority digital electronic control (FADEC), electronic engine control (EEC), or fly-by-wire.
- Installation of a radio communication or navigation system
- A change of radio communication or navigation equipment that requires structural modifications
- Installation of electronic flight instrument systems (EFIS) that display primary flight information to meet regulatory operating requirements.
- Installation of Autopilots (AP), Flight Guidance Systems, and automatic flight control systems (AFCS) or flight directors (FD), or stability augmentation systems
- Installation of a radar system including radar altimeter
- Installation of ground proximity warning systems (GPWS), Terrain awareness systems (TAWS), or emergency vision assurance systems (EVAS).
- Installing night vision goggle (NVG) lighting and night vision systems (NVS)
- Installation of cockpit voice recording (CVR) or flight data recording (FDR) systems.
- Installation of aircraft or engine health and usage monitoring systems (ECTM or HUMS)
- Installation of specialist mission equipment; for example LiDAR, LADS, thermal imaging surveillance systems.
- Installation of cabin information/entertainment cvc.

(b) Major repairs—

- (1) **Airframe major repairs.** Repairs to the following parts of an airframe and repairs of the following types, involving the strengthening, reinforcing, splicing, and manufacturing of primary structural members or their replacement, when replacement is by fabrication such as riveting or welding, are airframe major repairs.
- i. Box beams.
 - ii. Monocoque or semi monocoque wings or control surfaces.
 - iii. Wing stringers or chord members.
 - iv. Spars.
 - v. Spar flanges.
 - vi. Members of truss-type beams.
 - vii. Thin sheet webs of beams.
 - viii. Keel and chine members of boat hulls or floats.
 - ix. Corrugated sheet compression members which act as flange material of wings or tail surfaces.
 - x. Wing main ribs and compression members.
 - xi. Wing or tail surface brace struts.
 - xii. Engine mounts.
 - xiii. Fuselage longerons.
 - xiv. Members of the side truss, horizontal truss, or bulkheads.
 - xv. Main seat support braces and brackets.
 - xvi. Landing gear brace struts.
 - xvii. Axles.
 - xviii. Wheels.
 - xix. Skis, and ski pedestals.
 - xx. Parts of the control system such as control columns, pedals, shafts, brackets, or horns.
 - xxi. Repairs involving the substitution of material.
 - xxii. The repair of damaged areas in metal or plywood stressed covering exceeding six inches in any direction.
 - xxiii. The repair of portions of skin sheets by making additional seams.
 - xxiv. The splicing of skin sheets.
 - xxv. The repair of three or more adjacent wing or control surface ribs or the leading edge of wings and control surfaces, between such adjacent ribs.
 - xxvi. Repair of fabric covering involving an area greater than that required to repair two adjacent ribs.
 - xxvii. Replacement of fabric on fabric covered parts such as wings, fuselages, stabilizers, and control surfaces.
 - xxviii. Repairing, including re-bottoming, of removable or integral fuel tanks and oil tanks.

Changes proposed by CASA

Avionics major repairs

Repairs to or replacement of components of a system listed under avionics major modifications

- (2) **Powerplant major repairs.** Repairs of the following parts of an engine and repairs of the following types, are powerplant major repairs:
- i. Separation or disassembly of a crankcase or crankshaft of a reciprocating engine equipped with an integral supercharger.
 - ii. Separation or disassembly of a crankcase or crankshaft of a reciprocating engine equipped with other than spur-type propeller reduction gearing.
 - iii. Special repairs to structural engine parts by welding, plating, metalizing, or other methods.
- (3) **Propeller major repairs.** Repairs of the following types to a propeller are propeller major repairs:
- i. Any repairs to or straightening of steel blades.
 - ii. Repairing or machining of steel hubs.
 - iii. Shortening of blades.
 - iv. Re-tipping of wood propellers.
 - v. Replacement of outer laminations on fixed pitch wood propellers.
 - vi. Repairing elongated bolt holes in the hub of fixed pitch wood propellers.
 - vii. Inlay work on wood blades.
 - viii. Repairs to composition blades.
 - ix. Replacement of tip fabric.
 - x. Replacement of plastic covering.
 - xi. Repair of propeller governors.
 - xii. Overhaul of controllable pitch propellers.
 - xiii. Repairs to deep dents, cuts, scars, nicks, etc., and straightening of aluminium blades.
 - xiv. The repair or replacement of internal elements of blades.
- (4) **Appliance major repairs.** Repairs of the following types to appliances are appliance major repairs:
- i. Calibration and repair of instruments.
 - ii. Calibration of radio equipment.
 - iii. Rewinding the field coil of an electrical accessory.
 - iv. Complete disassembly of complex hydraulic power valves.
 - v. Overhaul of pressure type carburettors, and pressure type fuel, oil and hydraulic pumps.

(c) Preventive maintenance—

Preventive maintenance is limited to the following work, provided it does not involve complex assembly operations:

- (1) Removal, installation, and repair of landing gear tires and tubes.
- (2) Replacing elastic shock absorber cords on landing gear.

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- (3) Servicing landing gear shock struts by adding oil, air, or both.
- (4) Servicing landing gear wheel bearings, such as cleaning and greasing.
- (5) Replacing defective safety wiring or cotter keys.
- (6) Lubrication not requiring disassembly other than removal of non-structural items such as cover plates, cowlings, and fairings.
- (7) Making simple fabric patches not requiring rib stitching or the removal of structural parts or control surfaces. In the case of balloons, the making of small fabric repairs to envelopes (as defined in, and in accordance with, the balloon manufacturers' instructions) not requiring load tape repair or replacement.
- (8) Replenishing hydraulic fluid in the hydraulic reservoir.
- (9) Refinishing decorative coating of fuselage, balloon baskets, wings tail group surfaces (excluding balanced control surfaces), fairings, cowlings, landing gear, cabin, or cockpit interior when removal or disassembly of any primary structure or operating system is not required.
- (10) Applying preservative or protective material to components where no disassembly of any primary structure or operating system is involved and where such coating is not prohibited or is not contrary to good practices.
- (11) reserved
- (12) Making small simple repairs to fairings, non-structural cover plates, cowlings, and small patches and reinforcements not changing the contour so as to interfere with proper air flow.
- (13) Replacing side windows in an unpressurised aircraft where that work does not interfere with the structure or any operating system such as controls, electrical equipment, etc.
- (14) Replacing safety belts and harnesses.
- (15) Replacing seats or seat parts with replacement parts approved for the aircraft, not involving disassembly of any primary structure or operating system.
- (16) Trouble shooting and repairing broken circuits in landing light wiring circuits.
- (17) Replacing bulbs, reflectors, and lenses of position and landing lights.
- (18) Replacing wheels and skis where no weight and balance computation is involved.
- (19) Replacing any cowling not requiring removal of the propeller or disconnection of flight controls.
- (20) Replacing or cleaning spark plugs and setting of spark plug gap clearance.
- (21) Replacing any hose connection except hydraulic connections.
- (22) Replacing prefabricated fuel lines.
- (23) Cleaning or replacing fuel and oil strainers or filter elements.
- (24) Replacing and servicing batteries.
- (25) Replacement or adjustment of non-structural standard fasteners incidental to operations.
- (26) The installations of anti-misfuelling devices to reduce the diameter of fuel tank filler openings provided the specific device has been made a part of the aircraft type certificate data by the aircraft manufacturer, the aircraft manufacturer has provided instructions for installation of the specific device, and installation does not involve the disassembly of the existing tank filler opening.
- (27) Removing, checking, and replacing magnetic chip detectors.
- (28) The inspection and maintenance tasks prescribed and specifically identified as preventive maintenance in a primary category aircraft type certificate or supplemental

type certificate holder's approved special inspection and preventive maintenance program when accomplished on a primary category aircraft provided:

- (29) They are performed by the holder of at least a private pilot licence issued under part 61 who is the registered owner (including co-owners) of the affected aircraft and who holds a certificate of competency for the affected aircraft (issued by a school that has a course approved by CASA; and
- (30) The inspections and maintenance tasks are performed in accordance with instructions contained by the special inspection and preventive maintenance program approved as part of the aircraft's type design or supplemental type design.
- (31) Removing and replacing self-contained, front instrument panel-mounted navigation and communication devices that employ tray-mounted connectors that connect the unit when the unit is installed into the instrument panel, (excluding automatic flight control systems, transponders, and microwave frequency distance measuring equipment (DME)). The approved unit must be designed to be readily and repeatedly removed and replaced, and pertinent instructions must be provided. Prior to the unit's intended use, and operational check must be performed in accordance with the applicable sections of CASR.
- (32) Removing and replacing optional dual control in an aircraft without the use of any tools for the purpose of transitioning the aircraft from single to dual, or dual to single, pilot operation.
- (33) Carrying out of an inspection under regulation 43.13 of a flight control system that has been assembled, adjusted, repaired, modified or replaced.
- (34) Changing and replenishing engine oil.
- (35) Inspections or checks set out in the following documents in circumstances where the document clearly states that the maintenance may be carried out by the pilot of the aircraft and the maintenance does not require the use of any tools or equipment:
 - i. the aircraft's approved maintenance data
 - ii. the aircraft's flight manual or an equivalent document
 - iii. any instructions issued by the NAA that approved the type certificate for the aircraft.
- (36) Removal or refitting of a door, but only if:
 - i. no disassembly of the primary structure or operating system of the aircraft is involved; and
 - ii. if the aircraft is to be operated with the door removed--the aircraft has a flight manual and the manual indicates that the aircraft may be operated with the door removed.

Changes to be included by CASA

- (d) Pilot maintenance tasks that may be performed by a pilot who has been assessed as competent and authorised in accordance with 43.3 (h)
 - (1) Turbine engine compressor wash/rinse
 - (2) PWC PT6 compressor turbine wash
 - (3) Bell 206 series weekly inspection
 - (4) Robinson R22 and R44 50-hour inspections
 - (5) Removal and installation of role equipment
 - (6) Replenish of oxygen systems

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- (7) Replace windshield wiper blades
- (8) Wipline float 25/50-hour inspection
- (9) Fire extinguisher reweigh
- (10) ELT self-test
- (11) Any other maintenance task approved by CASA

9 Appendix D to Subpart C—Scope and Detail of Items (as Applicable to the Particular Aircraft) To Be Included in Annual and 100-Hour Inspections

- (a) Each person performing an annual or 100-hour inspection must, before that inspection, remove or open all necessary inspection plates, access doors, fairing, and cowling. He must thoroughly clean the aircraft and aircraft engine.
- (b) Each person performing an annual or 100-hour inspection must inspect (where applicable) the following components of the fuselage and hull group:
 - (1) Fabric and skin—for deterioration, distortion, other evidence of failure, and defective or insecure attachment of fittings.
 - (2) Systems and components—for improper installation, apparent defects, and unsatisfactory operation.
- (c) Each person performing an annual or 100-hour inspection must inspect (where applicable) the following components of the cabin and cockpit group:
 - (1) Generally—for uncleanliness and loose equipment that might foul the controls.
 - (2) Seats and safety belts—for poor condition and apparent defects.
 - (3) Windows and windshields—for deterioration and breakage.
 - (4) Instruments—for poor condition, mounting, marking, and (where practicable) improper operation.
 - (5) Flight and engine controls—for improper installation and improper operation.
 - (6) Batteries—for improper installation and improper charge.
 - (7) All systems—for improper installation, poor general condition, apparent and obvious defects, and insecurity of attachment.
- (d) Each person performing an annual or 100-hour inspection must inspect (where applicable) components of the engine and nacelle group as follows:
 - (1) Engine section—for visual evidence of excessive oil, fuel, or hydraulic leaks, and sources of such leaks.
 - (2) Studs and nuts—for improper torquing and obvious defects.
 - (3) Internal engine—for cylinder compression and for metal particles or foreign matter on screens and sump drain plugs. If there is weak cylinder compression, for improper internal condition and improper internal tolerances.
 - (4) Engine mount—for cracks, looseness of mounting, and looseness of engine to mount.
 - (5) Flexible vibration dampeners—for poor condition and deterioration.
 - (6) Engine controls—for defects, improper travel, and improper safetying.
 - (7) Lines, hoses, and clamps—for leaks, improper condition and looseness.
 - (8) Exhaust stacks—for cracks, defects, and improper attachment.
 - (9) Accessories—for apparent defects in security of mounting.
 - (10) All systems—for improper installation, poor general condition, defects, and insecure attachment.
 - (11) Cowling—for cracks, and defects.

Turbine engines

Inspect the engine in accordance with the manufacturers recommended progressive inspection schedule or a 100-hour inspection check list provided by the manufacturer.

- (e) Each person performing an annual or 100-hour inspection must inspect (where applicable) the following components of the landing gear group:
 - (1) All units—for poor condition and insecurity of attachment.
 - (2) Shock absorbing devices—for improper oleo fluid level.
 - (3) Linkages, trusses, and members—for undue or excessive wear fatigue, and distortion.
 - (4) Retracting and locking mechanism—for improper operation.
 - (5) Hydraulic lines—for leakage.
 - (6) Electrical system—for chafing and improper operation of switches.
 - (7) Wheels—for cracks, defects, and condition of bearings.
 - (8) Tires—for wear and cuts.
 - (9) Brakes—for improper adjustment.
 - (10) Floats and skis—for insecure attachment and obvious or apparent defects.
- (f) Each person performing an annual or 100-hour inspection must inspect (where applicable) all components of the wing and centre section assembly for poor general condition, fabric or skin deterioration, distortion, evidence of failure, and insecurity of attachment.
- (g) Each person performing an annual or 100-hour inspection must inspect (where applicable) all components and systems that make up the complete empennage assembly for poor general condition, fabric or skin deterioration, distortion, evidence of failure, insecure attachment, improper component installation, and improper component operation.
- (h) Each person performing an annual or 100-hour inspection must inspect (where applicable) the following components of the propeller group:
 - (1) Propeller assembly—for cracks, nicks, binds, and oil leakage.
 - (2) Bolts—for improper torqueing and lack of safetying.
 - (3) Anti-icing devices—for improper operations and obvious defects.
 - (4) Control mechanisms—for improper operation, insecure mounting, and restricted travel.
- (i) Each person performing an annual or 100-hour inspection must inspect (where applicable) the following components of the radio group:
 - (1) Radio and electronic equipment—for improper installation and insecure mounting.
 - (2) Wiring and conduits—for improper routing, insecure mounting, and obvious defects.
 - (3) Bonding and shielding—for improper installation and poor condition.
 - (4) Antenna including trailing antenna—for poor condition, insecure mounting, and improper operation.
- (j) Each person performing an annual or 100-hour inspection must inspect (where applicable) each installed miscellaneous item that is not otherwise covered by this listing for improper installation and improper operation.

10 Appendix E to Subpart C—Altimeter System Test and Inspection

Each person performing the altimeter system tests and inspections required by 91.411 must comply with the following:

(a) Static pressure system:

- (1) Ensure freedom from entrapped moisture and restrictions.
- (2) Perform a proof test to demonstrate the integrity of the static pressure system in a manner acceptable to CASA. For airplanes certificated under part 25 of CASR, determine that leakage is within the tolerances established by regulation 25.1325.
- (3) Determine that the static port heater, if installed, is operative.
- (4) Ensure that no modifications or deformations of the airframe surface have been made that would affect the relationship between air pressure in the static pressure system and true ambient static air pressure for any flight condition.

(b) Altimeter:

- (1) Test by in accordance with the following subparagraphs. Unless otherwise specified, each test for performance may be conducted with the instrument subjected to vibration. When tests are conducted with the temperature substantially different from ambient temperature of approximately 25 degrees C., allowance must be made for the variation from the specified condition.
 - i. Scale error. With the barometric pressure scale at 1013 hPa the altimeter must be subjected successively to pressures corresponding to the altitude specified in Table I up to the maximum normally expected operating altitude of the aeroplane in which the altimeter is to be installed. The reduction in pressure must be made at a rate not in excess of 20,000 feet per minute to within approximately 2,000 feet of the test point. The test point must be approached at a rate compatible with the test equipment. The altimeter must be kept at the pressure corresponding to each test point for at least 1 minute, but not more than 10 minutes, before a reading is taken. The error at all test points must not exceed the tolerances specified in Table I.
 - ii. Hysteresis. The hysteresis test must begin not more than 15 minutes after the altimeter's initial exposure to the pressure corresponding to the upper limit of the scale error test prescribed in subparagraph (i); and while the altimeter is at this pressure, the hysteresis test must commence. Pressure must be increased at a rate simulating a descent in altitude at the rate of 5,000 to 20,000 feet per minute until within 3,000 feet of the first test point (50 percent of maximum altitude). The test point must then be approached at a rate of approximately 3,000 feet per minute. The altimeter must be kept at this pressure for at least 5 minutes, but not more than 15 minutes, before the test reading is taken. After the reading has been taken, the pressure must be increased further, in the same manner as before, until the pressure corresponding to the second test point (40 percent of maximum altitude) is reached. The altimeter must be kept at this pressure for at least 1 minute, but not more than 10 minutes, before the

test reading is taken. After the reading has been taken, the pressure must be increased further, in the same manner as before, until atmospheric pressure is reached. The reading of the altimeter at either of the two test points must not differ by more than the tolerance specified in Table II from the reading of the altimeter for the corresponding altitude recorded during the scale error test prescribed in paragraph (b)(i).

- iii. After effect. Not more than 5 minutes after the completion of the hysteresis test prescribed in paragraph (b)(ii), the reading of the altimeter (corrected for any change in atmospheric pressure) must not differ from the original atmospheric pressure reading by more than the tolerance specified in Table II.
 - iv. Friction. The altimeter must be subjected to a steady rate of decrease of pressure approximating 750 feet per minute. At each altitude listed in Table III, the change in reading of the pointers after vibration must not exceed the corresponding tolerance listed in Table III.
 - v. Case leak. The leakage of the altimeter case, when the pressure within it corresponds to an altitude of 18,000 feet, must not change the altimeter reading by more than the tolerance shown in Table II during an interval of 1 minute.
 - vi. Barometric scale error. At constant atmospheric pressure, the barometric pressure scale must be set at each of the pressures (falling within its range of adjustment) that are listed in Table IV, and must cause the pointer to indicate the equivalent altitude difference shown in Table IV with a tolerance of 25 feet.
- (2) Altimeters which are the air data computer type with associated computing systems, or which incorporate air data correction internally, may be tested in a manner and to specifications developed by the manufacturer which are acceptable to CASA.
- (c) Automatic Pressure Altitude Reporting Equipment and ATC Transponder System Integration Test. The test must be conducted by an appropriately rated person under the conditions specified in paragraph (a). Measure the automatic pressure altitude at the output of the installed ATC transponder when interrogated on Mode C at a sufficient number of test points to ensure that the altitude reporting equipment, altimeters, and ATC transponders perform their intended functions as installed in the aircraft. The difference between the automatic reporting output and the altitude displayed at the altimeter must not exceed 125 feet.
- (d) Records: Comply with the provisions of 43.9 of this subpart as to content, form, and disposition of the records. The person performing the altimeter tests must record on the altimeter the date and maximum altitude to which the altimeter has been tested and the persons approving the aeroplane for return to service must enter that data in the aeroplane log or other permanent record.

Table I

Altitude	Equivalent pressure (hectopascals)	Tolerance \pm (feet)
-1,000	1050	20
0	1013	20

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Altitude	Equivalent pressure (hectopascals)	Tolerance \pm (feet)
500	995	20
1,000	977	20
1,500	960	25
2,000	942	30
3,000	908	30
4,000	875	35
6,000	812	40
8,000	753	60
10,000	697	80
12,000	644	90
14,000	595	100
16,000	549	110
18,000	506	120
20,000	466	130
22,000	428	140
25,000	376	155
30,000	301	180
35,000	238	205
40,000	188	230
45,000	147	255
50,000	116	280

Table II—Test Tolerances

Test	Tolerance (feet)
Case Leak Test	± 100
Hysteresis Test:	
First Test Point (50 percent of maximum altitude)	75
Second Test Point (40 percent of maximum altitude)	75
After Effect Test	30

Table III—Friction

Altitude (feet)	Tolerance (feet)
1,000	±70
2,000	70
3,000	70
5,000	70
10,000	80
15,000	90
20,000	100
25,000	120
30,000	140
40,000	180
50,000	250

Table IV—Pressure-Altitude Difference

Pressure (hectopascal)	Altitude difference (feet)
952	-1,727
965	-1,340
982	-863
999	-392
1013	0
1033	+ 531
1046	+ 893
1049	+ 974

11 Appendix F to Subpart C—ATC Transponder Tests and Inspections

The ATC transponder tests required by 91.413 may be conducted using a bench check or portable test equipment and must meet the requirements prescribed in paragraphs (a) through (j) of this appendix. If portable test equipment with appropriate coupling to the aircraft antenna system is used, operate the test equipment for ATCRBS transponders at a nominal rate of 235 interrogations per second to avoid possible ATCRBS interference. Operate the test equipment at a nominal rate of 50 Mode S interrogations per second for Mode S. An additional 3 dB loss is allowed to compensate for antenna coupling errors during receiver sensitivity measurements conducted in accordance with paragraph (c)(1) when using portable test equipment.

(a) Radio Reply Frequency:

- (1) For all classes of ATCRBS transponders, interrogate the transponder and verify that the reply frequency is 1090 ± 3 Megahertz (MHz).
- (2) For classes 1B, 2B, and 3B Mode S transponders, interrogate the transponder and verify that the reply frequency is 1090 ± 3 MHz.
- (3) For classes 1B, 2B, and 3B Mode S transponders that incorporate the optional 1090 ± 1 MHz reply frequency, interrogate the transponder and verify that the reply frequency is correct.
- (4) For classes 1A, 2A, 3A, and 4 Mode S transponders, interrogate the transponder and verify that the reply frequency is 1090 ± 1 MHz.

(b) Suppression: When Classes 1B and 2B ATCRBS Transponders, or Classes 1B, 2B, and 3B Mode S transponders are interrogated Mode 3/A at an interrogation rate between 230 and 1,000 interrogations per second; or when Classes 1A and 2A ATCRBS Transponders, or Classes 1B, 2A, 3A, and 4 Mode S transponders are interrogated at a rate between 230 and 1,200 Mode 3/A interrogations per second:

- (1) Verify that the transponder does not respond to more than 1 percent of ATCRBS interrogations when the amplitude of P2 pulse is equal to the P1 pulse.
- (2) Verify that the transponder replies to at least 90 percent of ATCRBS interrogations when the amplitude of the P2 pulse is 9 dB less than the P1 pulse. If the test is conducted with a radiated test signal, the interrogation rate must be 235 ± 5 interrogations per second unless a higher rate has been approved for the test equipment used at that location.

(c) Receiver Sensitivity:

- (1) Verify that for any class of ATCRBS Transponder, the receiver minimum triggering level (MTL) of the system is -73 ± 4 dbm, or that for any class of Mode S transponder the receiver MTL for Mode S format (P6 type) interrogations is -74 ± 3 dbm by use of a test set either:
 - i. Connected to the antenna end of the transmission line;
 - ii. Connected to the antenna terminal of the transponder with a correction for transmission line loss; or
 - iii. Utilized radiated signal.
- (1) Verify that the difference in Mode 3/A and Mode C receiver sensitivity does not exceed 1 db for either any class of ATCRBS transponder or any class of Mode S transponder.

(d) Radio Frequency (RF) Peak Output Power:

- (1) Verify that the transponder RF output power is within specifications for the class of transponder. Use the same conditions as described in (c)(1)(i), (ii), and (iii) above.
 - i. For Class 1A and 2A ATCRBS transponders, verify that the minimum RF peak output power is at least 21.0 dbw (125 watts).
 - ii. For Class 1B and 2B ATCRBS Transponders, verify that the minimum RF peak output power is at least 18.5 dbw (70 watts).
 - iii. For Class 1A, 2A, 3A, and 4 and those Class 1B, 2B, and 3B Mode S transponders that include the optional high RF peak output power, verify that the minimum RF peak output power is at least 21.0 dbw (125 watts).
 - iv. For Classes 1B, 2B, and 3B Mode S transponders, verify that the minimum RF peak output power is at least 18.5 dbw (70 watts).
 - v. For any class of ATCRBS or any class of Mode S transponders, verify that the maximum RF peak output power does not exceed 27.0 dbw (500 watts).

Note: The tests in (e) through (j) apply only to Mode S transponders.

- (e) Mode S Diversity Transmission Channel Isolation: For any class of Mode S transponder that incorporates diversity operation, verify that the RF peak output power transmitted from the selected antenna exceeds the power transmitted from the nonselected antenna by at least 20 db.
- (f) Mode S Address: Interrogate the Mode S transponder and verify that it replies only to its assigned address. Use the correct address and at least two incorrect addresses. The interrogations should be made at a nominal rate of 50 interrogations per second.
- (g) Mode S Formats: Interrogate the Mode S transponder with uplink formats (UF) for which it is equipped and verify that the replies are made in the correct format. Use the surveillance formats UF = 4 and 5. Verify that the altitude reported in the replies to UF = 4 are the same as that reported in a valid ATCRBS Mode C reply. Verify that the identity reported in the replies to UF = 5 are the same as that reported in a valid ATCRBS Mode 3/A reply. If the transponder is so equipped, use the communication formats UF = 20, 21, and 24.
- (h) Mode S All-Call Interrogations: Interrogate the Mode S transponder with the Mode S-only all-call format UF = 11, and the ATCRBS/Mode S all-call formats (1.6 microsecond P4 pulse) and verify that the correct address and capability are reported in the replies (downlink format DF = 11).
- (i) ATCRBS-Only All-Call Interrogation: Interrogate the Mode S transponder with the ATCRBS-only all-call interrogation (0.8 microsecond P4 pulse) and verify that no reply is generated.
- (j) Squitter: Verify that the Mode S transponder generates a correct squitter approximately once per second.
- (k) Records: Comply with the provisions of 43.9 as to content, form, and disposition of the records.

Savings Provisions

Systems of Maintenance

CASA will preserve Systems of Maintenance approved under regulation 42M of CAR

Transitional arrangements

CAR 30 component maintenance

CASA will provide for maintainers to accept and use components repaired or overhauled by a holder of a CAR 30 approval

Maintenance releases (Form 918)

When Part 43 comes into effect, aircraft will not be required to undergo an annual inspection if a maintenance release is valid for the aircraft. A maintenance release that is suspended under regulation 45 or ceases to be in force under regulation 47, may continue to be the maintenance release for the aircraft until its stated expiry date or time in service however the terms of any suspension would continue to apply as stated.

ANNEX A

Table 1 -

Minor repair or modification data sources
Type certificate data sheets (TCDS)
Foreign TCDS used for the issue of a type acceptance certificate
Type design data for type certificated products e.g. approved drawings issued by the type certificate holder
Data that supports a design change approved under Part 21
Data provided by CASA or a recognised authority in an advisory circular or other advisory document (FAA AC 43.13-1 and -2 for example)
Airworthiness directives that give specific instructions for a modification or repair
Supplemental type certificates or approvals issued by CASA or a recognised foreign NAA
Data giving specific instructions for modification or repair contained in a maintenance manual, repair manual, overhaul manual, continuing airworthiness document, service bulletin, or an equivalent provided by the manufacturer of the product for which it is to be used and which is listed in the type certificate or by reference in the type acceptance certificate i.e. data that has been approved for use by the type certificate holder. Note: This includes data provided by the manufacturer of a component of a product where that component is a part of the approved type design of the product.
Data included in, and specific to the category of, an airworthiness certificate

Note: This table is not an exhaustive list. Any data that meets the applicable regulatory requirements would be acceptable. See the "Approved vs. Acceptable" information sheet for a more detailed explanation.