



2004 - Start of the Change

Part 145 certificate A rating self assessment

In this issue the merits of Part 145 as they affect “maintenance of aircraft” will be discussed and how you can assess what type of “A” rating that you will need to address the types of aircraft maintenance, and depth of maintenance, that you currently carry out. Future issues will address the change of “maintenance of components” and “specialised services maintenance” as they are a subject on their own.

Firstly, maintenance is now defined in the Act to support the new maintenance rules as:

“maintenance means any task required to ensure, or that could affect, the continuing airworthiness of an aircraft or aeronautical product, including any one or combination of overhaul, repair, inspection, replacement of an aeronautical product, modification or defect rectification.”

The Act clearly states that aircraft maintenance is **“any one or combination of overhaul, repair, inspection, replacement of an aeronautical product, modification or defect rectification”**.

Note the different kinds of maintenance specified in the definition as they are important to remember when reading CASR Part 43. The definition is broader than the types of maintenance identified when you look at the opening phrase of the definition that states **“any task required to ensure, or that could affect, the continuing airworthiness of an aircraft or aeronautical product”**. These opening words refer to any task affecting the continuing airworthiness of an aircraft or product; such tasks could be servicing, preventive maintenance, supplemental maintenance, etc.

Airworthy is also defined in the proposed regulations as:

an aircraft is airworthy if:

- (a) it is of a type that has been designed to, and approved as meeting, a certification standard; and*
- (b) it has been manufactured by an approved organisation, in accordance with the conditions of its certificate of type approval, to conform with the type design; and*
- (c) it has been maintained by people qualified to do so, in accordance with an approved system; and inspected in accordance with any applicable airworthiness directives; and*
- (d) no significant defect has been found in it.*

So what is Part 145 aircraft maintenance?

Aircraft maintenance has been an area of debate throughout this industry for many years and, at times, interpretations have caused some anguish to the MRO industry. Different CASA, or its predecessors, regions/areas have been known to have *slightly* different interpretations on when aircraft maintenance actually turned into component maintenance (new terminology: aeronautical product maintenance). On-wing and off-wing aircraft maintenance clarified, at last.

Basically, the simplest way of describing aircraft maintenance is by asking if an “Authorised Release Certificate” (ARC) is used to return the part to service or the aircraft maintenance records are used. If the part is going back on the same aircraft after any type of maintenance then it can be aircraft maintenance. **CASA has agreed with this policy.**

Each approved maintenance organisation (AMO) will be required to have a “Capability List” that the AMO will copy to CASA whenever amended. This Capability List will define what an AMO can do within a rating. The Capability List is very important as it will spell out to what depth an “A” rated AMO will be able to carry out maintenance. The Capability List will be discussed later and how it defines a company’s capability.

This means that an AMO certificate (A) rating (aircraft maintenance) will enable an AMO to either carry out product maintenance in its own support shops for a particular aircraft or to contract some product maintenance to other maintenance organisations (MO), approved or not approved. I will explain the difference between AMO and MO maintenance later under “contract maintenance”.

This will mean that an AMO may have, if it has all the necessary support shops, the capability to totally overhaul an aircraft and all its aeronautical products under an “A” rated Part 145 certificate as long as all the maintenance is carried out and signed for in the aircraft maintenance records.

In theory, if an AMO has all the support shops necessary to overhaul all the products removed from the aircraft, including its engine and propeller, it could overhaul, repair, inspect, replace aeronautical products, modify and rectify defects in an aircraft and its products, sign for all of the tasks carried out in the aircraft maintenance records and return the aircraft to service.

In practice, it is not economical for most AMOs to have all of the support shops necessary that it needs to carry out the aircraft and product maintenance all at the same time nor is it acceptable to most aircraft registered operators to have the aircraft on the ground for the length of time necessary to perform the maintenance. Many AMOs replace many items rather than carry out the required maintenance on the items themselves.

For example, if an aircraft comes into an “A” rated AMO and the AMO had all necessary support shops then all products could be removed and maintained within the definition in the Act and refitted to the same aircraft as aircraft maintenance. The “*length of a piece of string*” debate has once and for all been put to bed. **Congratulations CASA.**

An AMO will be given an “A” rated certificate if it intends to carry out aircraft maintenance. The AMO will then need to maintain a current “Capability List” that will detail what an AMO may do within each rating it holds.

CASA will also have the power, when necessary, to issue an “Operation Specification” that could limit or place a condition on an AMO’s certificate rating or ratings. AMROBA

has been assured by CASA that this will not be the normal method of controlling an AMO's capability but has been included in the rules for safety reasons.

For example, if an organisation has no way of expanding its capability within a rating because of the availability of facilities at a specific location, then CASA would be within its rights to place a limitation on the rating in the form of an "Operations Specification". The Ops Spec could also be used by CASA, where there has been proven safety concerns, to place a condition on the certificate. This is the intent of this provision.

Ratings

Part 145 has several aircraft ratings that are coupled to the certification basis of each aircraft type. There are ratings for classes of aircraft as defined in the proposed regulations. The ratings are a simple way of looking at the capability of an organisation and gives a standard similar to one used by the Europeans. The European system was adapted to CASR Part 21 types of aircraft so that design standards, that set the basis for maintenance standards, were taken into account as the approval basis of maintenance.

Current "A" ratings as listed in the latest version of Part 145 are:

- A1** Maintenance on aeroplanes certificated under Part 23 or Part 26, or other aeroplanes in the normal, utility, acrobatic, commuter, primary or intermediate category.
- A2** Maintenance on aeroplanes certificated under Part 25 or other aeroplanes in the transport category, including those in the commuter category.
- A3** Maintenance on rotorcraft certificated under Part 27 or other rotorcraft in the normal category.
- A4** Maintenance on rotorcraft certificated under Part 29 or other rotorcraft in the transport category.
- A5** Maintenance on aircraft certificated under Part 22 or other sailplanes or other powered sailplanes.
- A6** Maintenance on balloons certificated under Part 31 or other manned free balloons.
- A7** Maintenance on aircraft authorised under Part 21, other than aircraft mentioned in item 1, 2, 3, 4, 5 or 6.

Basically, the ratings are quite simple and will require little time for an AMO to review the aircraft that it has been maintaining over the past few years, to translate to the rating or ratings that will equate to the work being carried out under today's approval basis.

A1 means aeroplanes of a type addressed by CASR Part 23 and aircraft of a type certificated in Part 26. Notice that Part 23 addresses aeroplanes whereas Part 26 addresses aircraft in the primary or intermediate category. These will be expected to be listed on your Capability List by defining the type, See Capability List below.

For example, if you are a GA related AMO then you may only require an "A1" rating on your certificate. This rating will enable aircraft maintenance as defined above to be carried out on all non-transport type certificated aeroplanes.

A2 means all transport category and commuter category aeroplanes. CASA will expect that these aircraft to be listed individually on your Capability List.

A3 means rotorcraft certificated in the normal category.

A4 means all transport category and commuter category rotorcraft. CASA will expect that these aircraft to be listed individually on your Capability List.

A5 covers aircraft classified as sailplanes and powered sailplanes.

A6 covers manned free balloons.

A7 is the catch-all rating to pick aircraft not covered by the above ratings.

Capability List

An AMO “Capability List” is a description of an AMO’s capability (JAA Part 145 AMO Exposition is similar) within each rating held by the AMO. The Capability List will need to be reviewed on a regular basis to maintain its currency. This is the AMO’s responsibility, not CASA. e.g. If you are no longer maintaining an aircraft then you simply remove it.

All AMOs will therefore need to have a process documented in their manual that will detail how they perform self assessment of their AMO prior to adding to the capability within a rating. This process will need to address the adequacy and currency of the AMO’s facility, technical data, employee qualifications, tooling and equipment required prior to making any addition to the capability list.

There will also need to be a simple form retained by the AMO that enables an audit trail to verify that the adequacy of each item listed in the above paragraph has been checked in accordance with the company process and the accountable/responsible manager has accepted the assessment prior to varying the AMO’s Capability List.

If you are an AMO with multiple ratings then it is recommended that your Capability List be divided to address each rating. It must be quite clear which rating each section of the Capability List applies to. Transport aircraft will need to be listed individually whilst CASA has agreed that other aircraft could be defined collectively. The Capability List will also be expected to list the support shop capability of an AMO used for an “A” rating.

Workshops that are used to support aircraft maintenance and sign for maintenance tasks on worksheets, that become part of the aircraft maintenance records, will need to be listed in the Capability List with either a reference to the rating(s) they support or be included in each section defining a specific rating’s capability.

The use of the Capability List provides the method that industry needs to invest in the MRO industry. An AMO may start with a Capability List that has very few aircraft identified in the Capability List. As the AMO expands, it simply has to perform a self assessment prior to adding aircraft or workshop capacity to the Capability List. A copy of this list is then sent to CASA so that their regulatory oversight can be properly fulfilled.

CASA will become involved whenever a rating is to be added. The Capability List enables an AMO to grow within its ratings without Government (CASA) intervention and therefore obtain the financial backing that the AMO needs to successfully grow. **Well done, CASA.**

Contract Maintenance

Contract maintenance, as specified in Part 145, addresses maintenance performed by another AMO and maintenance tasks carried out by another person or organisation on behalf of the AMO.

The first situation is quite simple in that it involves the return of the product under the cover of an ARC, or equivalent document, depending whether it is returned to service by a CASA approved AMO or another NAA approved AMO.

Having maintenance tasks carried out on behalf of your AMO has been part of the Australian MRO industry for many, many years. Previously identified in CAOs as “*working under an arrangement*”. What Part 145 has done, is to once more make it clear that any AMO can have tasks, as long as they are documented in their manual, carried out under contract (written or verbal) by a person (includes an organisation) that has the skills to perform the maintenance tasks. This arrangement becomes part of the AMO’s capability.

Whenever an AMO uses a person other than a NAA (includes CASA) AMO, the CASA AMO must provide the QC and QA to ensure that the tasks are performed safely and in compliance with acceptable maintenance standards and practices.

For example, an AMO may use a local organisation to perform nominated maintenance tasks because that organisation has the expertise and qualified staff available. As the tasks are isolated it would not be economical for an AMO to perform such tasks due to overhead costs involved. As long as the AMO performs the majority of the work then contract work is a cost effective method available to the AMO.

Basically, the proposed system is more industry controlled and operated. You do the work and CASA provides regulatory oversight. You do this by taking responsibility for assessing your own capability within a rating(s) and therefore you now have proper management responsibility for your own organisation.

Part 145 certificate B rating self assessment - next issue