



Engineering – Maintenance - 2017

The onus to have aircraft and component regulatory maintenance requirements harmonised with international standards cannot be denied. **Aircraft and aircraft components tend to move from one regulatory system to another so harmonisation and global recognition is vital.**

Therefore, why has our regulatory requirements been so hard to harmonise, particularly for aircraft that are not subject to a full system of maintenance?

The ICAO standard is for each aircraft be 'maintained in an airworthy condition'. So who certifies aircraft as being airworthy in CAR/CASR regulations?

ICAO Airworthy. The status of an aircraft, engine, propeller or part when it conforms to its approved design and is in a condition for safe operation.

Two aspects: conforms to design standards and serviceable.

The current regulatory requirements shows we are not a world leading aviation regulatory conformist as we react too slowly to international changes. CASA, and its predecessors, have been slow to respond to harmonisation with ICAO and NAA responsible for the design & manufacture standards for the majority of imported aircraft/components.

Aircraft and components maintenance standards are prescribed by the NAA responsible for the design/manufacture with an expectation that other NAAs, like Australia, will maintain the aircraft and components to their regulatory standards. Australia did so up till 1990 when it dropped the requirement to certify conformity to design standards.

FAR Part 43.15. (1) Perform the inspection so as to determine whether the aircraft, or portion(s) thereof under inspection, meets all applicable airworthiness requirements; and

Australia has an international obligation to maintain foreign manufactured aircraft to the same standard the foreign regulatory system applies so that the aircraft & components can leave our regulatory control and be transferred to another NAA's regulatory system without any additional checks/inspection/maintenance.

Decades back, Australia also dropped the ICAO renewable certificate of airworthiness and adopted an indefinite certificate of airworthiness, based on a continual system of inspection. A three year 'detailed' annual inspection that included conformity inspections to type design standards was part of the continual inspection system. It too was cancelled in 1990.

Because past regulatory changes have lost the airworthy nuances that are important in a harmonised system, it is time to replace the general aviation requirements by adopting FAR Parts 43, 91 airworthiness and maintenance provisions and other associated provisions.

Ken Cannane

AMROBA

www.amroba.org.au

Safety All Around.

ADDENDUM:

Modern aircraft certificated under the MSG philosophy include an “airworthy inspection” system, as does some other aircraft that include condition monitoring, that meets the airworthy obligation, but the majority of aircraft operating in GA do not.

Therefore, proposals contained in this paper will not affect the airline sectors or many aircraft operating under an approved system of maintenance.

Adoption of airworthiness and maintenance regulatory provisions from the FARs would return our regulatory system to international standards.

CASA’s attempts to modernise the regulatory requirements since 1990 has not addressed the basic requirement to maintain aircraft as “airworthy”.

Doing scheduled and unscheduled maintenance iaw approved ‘maintenance data’ is not the same as certifying airworthy and inspection to conformity with airworthiness standards.

CASA’s own maintenance standards, specified in CAAPs, do not meet these international standards. They only require aircraft maintenance to be done iaw regulatory “approved maintenance data”. Also, CASA only requires GA aircraft to be inspected for “GENERAL CONDITION”, a much lower standard than applied under the FARs for US manufactured aircraft.

As an example of government initiated reviews that do not identify “causal” issue was CASA review of GA aging aircraft. A lot of blame was placed on industry for poor maintenance but the causal reason is CASA’s own low inspections standard documented in a CAAP.

There is no requirement for, or identification of, ‘routine’ and ‘detailed’ inspections. CAAP 42-1 states aircraft are inspected for “**General Condition**” and “**freedom from excessive**” which is just about everything. Standards that are not in any other regulatory system.

After nearly 27 years it is time to ADOPT FARs.

We do not have regulatory inspection or maintenance standards that harmonise with the FAA and the NAA responsible for the majority of type certificated aircraft on the CASA aircraft register that are operating outside the airline sectors.

Aircraft and aircraft components and parts tend to move from one regulatory system to another so harmonisation and global recognition is vital.

Industry supports the adoption of the FARs as it will align GA with NZ and the Pacific region.

The Pacific Region

The Pacific Aviation Safety Office is a regional international organisation overseeing aviation safety and security oversight in the Pacific Islands using guidelines provided by the International Civil Aviation Organization (ICAO).

PASO was created 11 June 2005 and has an agreement with the CAA(NZ) for *“the assistance in preparing for*

new legislation, rules and requirements as promulgated by ICAO and/or the CAANZ.



Australia, NZ & Fiji are also members of the PASO but are not parties to the Pacific Islands Civil Aviation Safety and Security Treaty that applies to others.

This agreement with CAANZ is why all Pacific nations, including PNG, have adopted the CAANZ regulatory system for GA that is based on the FARs. The only aspect of the US system not adopted in the CAANZ system is the US FBO system which leaves a hole in the GA system. An amended version of the FBO system would work in Australia

New Zealand is the leading aviation nation in the Pacific Region, not Australia.

New Zealand’s leadership in the Pacific region followed many years of dominance by Australia. Pre 1988, many Asia Pacific Region countries had an adopted Australian ANR/ANO system. They have moved ahead and we have failed to remain harmonised.

Regulatory Changes

Step 1. After 27 years of being out of step with fulfilling our obligation to manufacturers and the NAA responsible for the type design, it is time to adopt the FARs for GA as soon as possible.

Amplification:

Adopt FAR Parts 43, 91, and other associated Parts, airworthiness and maintenance provisions and include the detailed annual inspection responsibilities of the Part 65 Inspection Authorisation. These skills are detailed in the ICAO AME training annual.

1. FAR 91.409 states that each aircraft will undergo a Part 43 “detailed” annual inspection by an A&P mechanic with an Inspection Authorisation.
2. If the aircraft is used for flight training, FAR 91.409 adds a 100hrly inspection by an A&P mechanic. Part 43 does not mention the US FBO system as the standards for a maintenance FBO were specified by the DoT.
3. Beyond the annual & 100hrly inspection there are provisions requiring maintenance programs including progressive maintenance schedules and an approved continuous maintenance program.

4. Many manufacturers do not have the regulatory annual inspection specified in their manual because it a regulatory requirement with the scope specified in Part 43 and it must be carried out by a person in FAR Part 65.
5. The FAA annual inspection, already adopted by NZ, means adopting FAA manual, *FAA-G-8082-19* that prescribes the conformity requirements as well as the inspection areas listed in an Appendix to FAR Part 43.

Step 2. Adopt FAA relevant advisory material by reference or top & tail the material – replace FAA/Administrator with CASA.

Amplification:

Some FAA ACs and Orders that contain processes may need to be adapted as a CASA AC or Standard. However, most of the ACs, Orders and other procedures can be adopted by an overall reference statement.

1. AC 43-13-1, latest revision General Maintenance Practices and Methods should continue to be adopted by reference. Other ACs like AC 43-4, latest revision, Corrosion Control, is another example to adopt by reference. There are many in this class.
2. The majority of maintenance organisations use the FAA documentation because they are often referred to by the USA aircraft or component manufacturers.
3. Some of the FAA Orders may contain flowcharts specifying (FAA) Principal Inspectors or Administrator involvement – these may need adaption as a CASA AC.

Step 3. As part of adopting the FAR maintenance requirements, consideration should be given to the capability of the fixed based operator provisions as they apply to their FBO system.

Amplification:

The A&P mechanic with an Inspection Authorisation is an individual made regulatory responsible to do the annual inspection & all conformity inspections across the whole maintenance industry.

1. Our current regulatory and training system does not address conformity with design standards inspections even though most LAMEs believe they apply this standard.
2. New Zealand implemented the same FAR provisions and have an excellent training course that CASA could adopt to transition current LAMEs so they can perform the annual inspection, including conformity inspections.

Summary.

The current mixture of regulatory systems adds to confusion and has little chance of ever been reviewed by other NAAs to verify if harmonised or not.

Adoption of the FAR system harmonises all maintenance aspects for the major number of aircraft and this will enable more recognition from the Asia Pacific Region, including the USA who are the manufacturers of the vast majority of GA registered aircraft.