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NEWSLETTER

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Australia's Obligations under the Chicago Convention.

How close does Australia comply with ICAO [Minimum] Standards prescribed in the Annexes to the Convention? You can see what differences government has notified to ICAO quite simply by clicking on the link: <http://www.airservicesaustralia.com/aip/current/sup/s17-h24.pdf>, and open any of the Annex links in the Appendix of AIP H24-17. What it demonstrates is little policy is given to eliminating differences as new regulations and standards are developed and made. Many of the differences are failure to adopt the ICAO international terminology by creating our own or adopting terminology from other countries regulatory system. However, there are many 'missing' differences such as Annex 6: "a) the aeroplane is maintained in an airworthy condition". There should be a concerted effort to harmonise with the ICAO standards and practices, including adopting its international definitions. It is time for government to get serious and stop wasting resources. Adopt and harmonise.

For example: Article 33. Recognition of certificates and licences states: *Certificates of airworthiness and certificates of competency **and licences** issued or rendered valid by the contracting State in which the aircraft is registered, shall be recognized as valid by the other contracting States, provided that the requirements under which such certificates or **licences** were issued or rendered valid **are equal to or above the minimum standards which may be established from time to time pursuant to this Convention.*** (Annex 1 licence standards may be closely followed for pilot licences but not the AME licences.)

1. Airworthiness and Maintenance Control.

Reliability is the real reason why a commercial operator wants to control the airworthiness and maintenance of his/her aircraft so that it can return the best profit. Without looking at regulatory reasons for airworthiness and maintenance control, the operator is looking for maintaining the aircraft in a state of readiness to meet the need of the operator. The depth of monitoring and reviewing is dependent on the needs of the operator. For instance, if you are operating a tight schedule service that requires high hours per day, then a high level of monitoring is required to apply preventive measures to lower ground time.

There are many principles applied in airline operations all designed to get the maximum out of each component fitted to the aircraft. In these sectors, high level monitoring not only of engines and their components but also airframe and avionics systems are subject to the same monitoring process. Emergency services and charter operators are also benefiting from adapting monitoring and reviews of their aircraft's maintenance programs a lot more than in the past.

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2. When "global standards" should be promulgated before regulations

What comes first, promulgation of a "standard" straight out of an Annex prior to developing a regulatory base to implement the standard or is the ICAO [minimum] standard "**Australianised**" so we continue with differences? For instance, Annex 1 states for a LAME: "4.2.2.3 A Contracting State shall prescribe the scope of the [ICAO] privileges of the licence holder in terms of the complexity of the tasks to which the certification relates." The scope of the [ICAO] privileges relates to the ICAO LAME certification privileges to sign "as airworthy" or "to sign the maintenance release".

This was partially described in CAO 100.90 series except it failed to mention "Scope of Certification Privileges". ICAO state in: 4.2.2.3.1 "**Recommendation** — Details of the LAME certification privileges should be endorsed on or attached to the licence, either directly or by reference to another document issued by the Contracting State."

Adopt and promulgate the standard and then develop the regulations and advisory material. This must be the way of the future.

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Safer Aircraft
Reliability can be improved by implementing preventative maintenance requirements identified during reviews of the maintenance, especially unscheduled maintenance.

Promulgate the ICAO standard and then create the regulation and supporting advisory material to implement it.

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There are many principles applied in airline operations all designed to get the maximum out of each component fitted to the aircraft. In these sectors, high level monitoring not only of engines and their components but also airframe and avionics systems are subject to the same monitoring process. Emergency services and charter operators are also benefitting from adapting monitoring and reviews of their aircraft's maintenance programs a lot more than in the past.

However, at the other end of the scale are aircraft that do not operate anywhere near the expected 200-300 plus hours per annum that designer/manufacturers base their designs on. These aircraft, in many cases, need short and long term storage maintenance requirements added to their maintenance to implement proper airworthiness and maintenance control.

Even a private owner can save overall costs over an extended period by implementing some preventive maintenance or, as they used to say, a bit of TLC.

Are aircraft that you are servicing complying with its airworthiness and maintenance requirements?

Under CAR 41 for Class B aircraft, there is very little clarity regarding the responsibilities of the aircraft registered operator (RO). The reason the regulations places total responsibility on the RO originated in the 1990 CAR amendments that purposely shifted the responsibility for determining WHAT aircraft and its components maintenance has to be carried out, and to also determine WHEN that maintenance is to be performed. Class B is very different to Class A.

Maintenance schedule and maintenance instructions

- (1) The holder of the certificate of registration for a class B aircraft must ensure that all maintenance required to be carried out on the aircraft (including any aircraft components from time to time included in or fitted to the aircraft) by the aircraft's maintenance schedule is carried out when required by that schedule.*
- (2) A person must not use a class B aircraft in an operation if there is not a maintenance schedule for the aircraft that includes provision for the maintenance of all aircraft components from time to time included in, or fitted to, the aircraft.*

The aircraft RO must include ALL maintenance required to be included in the schedule but nothing informs the RO that he must create a Log Book Statement that includes all maintenance required. This could be better explained if the RO understood that they need to determine WHAT and WHEN they want the maintenance performed.

For instance, engines, propellers and other items are included in manufacturers' manuals as "recommended overhaul periods" or "recommended replacement" periods. It is the RO's responsibility to determine whether they accept the recommended maintenance period or whether they extend the period. AD/Eng/4 provides one engineering process to extend the engine overhaul periods. However, if a RO wants to extend beyond the manufacturers' recommended overhaul / replacement period, they should provide engineering support data to the maintenance organisation.

If RO's developed their LBS correctly, much of the differences in opinions in deciding when these items should be overhauled/replaced, would be detailed on the LBS. Many ROs expect that decision to be made by the LAME/AMO.

AMROBA has suggested to CASA that their promulgated "guide" for aircraft registered operators should include guidance on how you complete the LBS and the purpose of the LBS.

Another misleading "guide" produced by CASA.

Understanding Airworthiness

Is airworthiness a part of maintenance or vice versus? Maintaining the airworthiness of an aircraft is based on an inspection system that ensures the aircraft continues to meet its design standards – this is an international requirement under Annex 8.

Modern large aircraft usually combine airworthiness structural and systems inspections with the maintenance tasks to become part of the maintenance program.

When an aircraft has a system of maintenance and there is a maintenance controller, part of that inspection is done and managed by the maintenance controller carrying out continual review of all data that affects the appropriate design standards. This could be manufacturers' data, airworthiness directives, airworthiness limitations and/or engineering change approvals.

Maintaining airworthiness means validating the aircraft's certificate of airworthiness continually.

The aircraft records must always provide evidence that the design status of the aircraft is valid, including inspections of the structure and systems to ensure the aircraft continues to meet design standards such as major structural inspections and Airworthiness Limitations. Though the aircraft's type certificate and type certificate data sheet are not approved maintenance data, they may include reference to approved data that is mandatory so the aircraft can continue to comply with the applicable design standards.

The maintenance controller is responsible for obtaining approved design approvals for repairs and modifications that affect the original design standards. This is a reason why AD and EO records must be kept up to date at all times.

The aircraft, including fitted equipment, must, during its service life, continue to meet the applicable design standards, including changes applied by AD action and any additional design standards applied during service for repairs and modifications. Repairs must also meet design standards.

Most aircraft manufacturers today produce a maintenance program that includes the structural and system inspections that comply with meeting Annex 8 requirements to continue to meet the design standards. This is not necessarily so for older aircraft.

Understanding Maintenance

Maintenance includes schedule and unscheduled tasks that are carried out to keep the aircraft serviceable. There is an old saying that an airworthy aircraft (meets its design standards) may not be serviceable until maintenance/servicing has been completed. In other words, the aircraft meets its design standards but there is outstanding maintenance/servicing to be completed to be serviceable.

Maintenance is an area of significant importance because maintaining an aircraft and aeronautical products in a good condition increases aviation safety. Since 1980, most transport category aircraft utilise the MSG-3 principles to develop the aircraft maintenance program. These programs include the inspection system required by Annex 8 to maintain the validity of the certificate of airworthiness.

However, older transport aircraft and non-transport aircraft maintenance programs do not include a total maintenance program, which includes the Annex 8 inspections, to maintain the validity of the certificate of airworthiness. This is why there is an "annual inspection" in most regulatory systems.

The annual inspection was originally introduced when CASA's predecessors removed the renewal of the certificate of airworthiness and replaced with an inspection system to verify the on-going validity of the certificate of airworthiness.

The difference between a manufacturer's maintenance schedules is that it does not include the mandatory FAR annual inspection. A manufacturer's "progressive maintenance program" includes the annual inspection requirements. Usually, the progressive program includes the annual inspection tasks below the normal maintenance tasks.

CASA, unlike the FAA, has not promulgated an AC detailing what should be done in a CAAP/AC.

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“Recommendation — Details of the LAME certification privileges should be endorsed on or attached to the licence, either directly or by reference to another document issued by the Contracting State.”

Without everyone involved in regulatory development understanding the Convention Annex “standards” is there little chance of harmonisation ever being achieved? Adopt and promulgate the standard and then develop the regulations and advisory material. This must be the way of the future.

For example, how do other NAAs promulgate the scope of the LAME privileges?

In the FAA system, the privileges are specified in: [FAA AMT Handbook Chapter 13](#)

And the following FARs:

- 65.81 General Privileges and Limitations
- 65.83 Recent Experience Requirements
- 65.85 Airframe Rating: Additional Privileges
- 65.87 Powerplant Rating: Additional Privileges
- 65.95 Inspection Authorization: Privileges and Limitations

Other NAAs vary in their descriptions. ICAO also prescribe the subject matters a LAME, depending on employment, have to hold to fulfil responsibilities that even go to signing AME experience records. The ICAO Training Manual is available on our website under NAA legislation. Read Chapter 3 of the ICAO Training manual available on AMROBA website under Association News.

The FARs are outcome based regulations that comply with the “standards” with less differences.

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