

# Class B Aircraft Maintenance Standards

Aircraft maintenance standards have become a very debatable subject as we draw closer to endorsing the new maintenance rules. A recent AAT finding that was based on an incorrect interpretation of **who** is responsible for “**mandatory**” maintenance has added to that confusion. The AAT was wrong and simply did not understand what is “**mandatory by regulation**” and what a manufacturer **recommends** as mandatory. There is a clear difference in what is **mandatory by legislation** to what a manufacturer **recommends as mandatory** maintenance. A maintainer only has to do the work that he/she has been authorised to do, not decide what and when maintenance has to be done. If the AAT finding became the **regulatory maintenance standard**, then Australia would have an internationally unique, and very costly, aircraft maintenance requirements.

## What, when and how.

There is now increased confusion between “**mandatory**” and “**recommended**” maintenance. That is, the “**what**” and “**when**” maintenance has to be done which is the responsibility of the certificate of registration (CoR) holder and the “**how to**” instruction to do maintenance that is the responsibility of the maintainer. This is the international standard used in aviation and all other segments of society. If you own a motor car, it is the owner’s responsibility to keep the car roadworthy not the maintainer. The same philosophy applies in aviation.

The CoR holder (registered operator in new rules) has the responsibility to document **what** and **when** maintenance has to be carried out and make the aircraft available to a maintainer when maintenance is due. The maintainer, on the other hand, must, in accordance with approved (accepted in the new rules) maintenance data, do what the CoR holder, or the pilot or operator, authorises the maintainer to do. **It is not the maintainer’s responsibility to decide what or when maintenance has to be done under current legislation or proposed legislation. The maintainer must do that maintenance in accordance with the “how” instructions issued by those listed in CAR 2A.**

## CAR 2A is deficient.

CAR 2A is a deficient regulatory standard when compared to other regulatory systems that also enable additional acceptable maintenance data, including maintenance data issued by NAAs, to be used in the course of maintenance. Aviation maintenance could

not happen unless the additional data, not covered by CAR 2A, is used. An example of this is the FAA AC43-4A, Corrosion Control of Aircraft commonly used in GA.

## **Manufacturer's recommendations are exactly that – Recommendations**

Many manufacturers, besides their published (regulatory) mandatory requirements in the Airworthiness Limitations Section of the Maintenance Manual, recommend many other maintenance periods based on in-service reports. These recommended periods are not mandatory (even if they are marked “mandatory” by the manufacturer) but give guidance to the licensed aircraft maintenance engineer (LAME) so that he/she can make an airworthiness determination on the serviceability of an item knowing that the manufacturer has had in-service reports that affect the serviceability of the item. In-service field reports sent to manufacturers are usually worse case scenarios. In fact, within Airworthiness Limitations, there are manufacturer's recommended periods that can be varied under certain conditions. e.g. Life development program.

Unless the CoR holder has included any recommended period for an item, not covered by an Airworthiness Limitations or AD, in the maintenance schedules or system for an aircraft, then they remain as recommended periods guiding the LAME in making his/her airworthiness determination to leave the item in-service. This is where many in CASA, including the recent AAT finding, have misinterpreted the requirements.

The decision to leave an item in-service is also based on an on-condition inspection schedule that ensures close inspections of such items. Manufacturer's meet their obligations by bringing it specifically to the notice of the maintainer so that an airworthiness determination can be made by the only person licensed to make such a decision. This is why the aircraft maintenance engineer (AME) is trained, highly skilled and licensed by CASA.

i.e. The LAME.

## **Maintenance Control**

One of the biggest errors is that maintainers use different standards depending on the operational use of the aircraft. There is only one standard used to maintain aircraft. However, additional maintenance schedules may be added depending on the class of operation. E.g. privately owned aircraft only have an annual inspection but if it is used commercially, it must also do 100 hourly inspections. The other difference in maintenance requirements for an aircraft that is used privately instead of commercially is the control methods (scheduling) adopted. Commercially used aircraft must have

documented control systems whereas privately owned aircraft rely on the CoR holder only.

Why are the control methods different when an aircraft is commercially used? This is quite simple, the more hours flown with better controls to monitor the aircraft condition, the less frequently maintenance needs to be done, and the aircraft becomes a cost effectiveness method of transport. If the aircraft is not more cost effective and safer than other forms of transport (bus and rail) then the public will look for cheaper modes of transport.

## **Maintenance data**

Internationally, all maintenance has to be carried out to “acceptable” data and this includes all maintenance data available not just what is predicated in Australia’s legislation today. Standard industry practices adopt many maintenance practices not currently identified in Australian legislation but are the basis of maintenance worldwide. Today’s regulatory requirements do not recognise the myriad of regulatory maintenance data available to the industry. Just about all non-transport aircraft today utilise the myriad of acceptable maintenance data available as standard industry practices. This flaw in the current system is being corrected in the new maintenance rules.

The following is a comparison on what maintenance is applicable to private and aerial work aircraft today and what it will be in the future.

## **Clarifying confusion with mandatory and recommended, etc**

As stated above, there is confusion understanding the difference between mandatory and recommended maintenance requirements. Also, there is confusion on what is the difference between an annual inspection and a 100 hourly inspection. The following comments will explain what was proposed. Unique Australian requirements and processes were to be removed so that FAA ADs would be applicable to US certificate aircraft.

## **Will the proposed maintenance requirements be unique or meet international standards?**

The new rules, if implemented as agreed with industry, will adopt international standards for the maintenance of all aircraft and specifically, privately owned (non-transport) aircraft will adopt the FAR standards to harmonise with the certification standards adopted under Part 21.

The new rules will clarify what was introduced in 1992 when the 3 year major was dropped in favour of the FAR annual inspection without adopting the US system of who inspects to what standards.

The US system uses the A&P mechanic or IA to sign the 100 hourly inspection but only their super LAME, the IA, can sign the annual. The IA signs that the aircraft still conforms to the aircraft's certification and modification standard. Basically, the "structural" inspection of the old (pre 1992) "major inspection" is done annually. This was supposed to happen under the current rules though not very well explained. Both the A&P and IA certify the aircraft as airworthy when they return the aircraft to service after the 100 hourly or annual inspections. This is not done under current legislation.

### **What data can be used for maintenance?**

Currently, the regulations "prevent" the use of NAA promulgated maintenance data (except AC 43 13-1B & CAIPs covered by a CASA Instrument) from being used as how-to instructions to maintain aircraft even though this is the data expected to be used by the certifying NAA. The difference in the proposed system is a return to the situation where the LAME signing must ensure that he/she uses the most acceptable data. The onus is on the LAME and maintenance organisation not CASA. Priority must be given to ensure that the most appropriate data is used. Once again in Australia, NAA promulgated maintenance data will be able to be used even if the aircraft manufacturer makes no reference to this data. Standard maintenance practices adopted internationally.

### **What is proposed to be changed?**

Basically, a private non-transport aircraft will only require an annual inspection unless the owner allows it to be used for flight training or hire and reward. If used for these purposes, the 100 hourly inspections must also be done. Nothing startling at this stage!!

What actually changes is the adoption of the FAR system that removes the current election process and the requirement on the CoR holder to ensure that his/her maintenance schedules or system are not deficient or ineffective.

Adoption of the FAR system simply means that these aircraft are maintained to the manufacturer's schedules as supplemented by the minimum standards promulgated in Part 43. Use of a manufacturer's progressive maintenance schedules is permitted without approval as long as the aircraft meets the conditions set by the aircraft

manufacturer. No log book statements required.

Use of an approved system of maintenance will still be an option for the private owner.

**Once the aircraft is used commercially, airworthiness and maintenance control is greater and the operator must appoint a head of airworthiness and maintenance control.**