

AMROBA[®]inc

ADVOCATE OF THE AVIATION MRO INDUSTRY

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Time in Service Records

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Time in Service (TIS) records are essential for the safety of aircraft — the lack of records has been a bane of maintenance personnel for many years. Who is responsible for maintaining the records still needs some clarification and how much detail is required also needs to be explained.

AMROBA hopes that new proposed regulations will clarify and simplify what is currently capable of being applied differently by CASA officers.

Records are about traceability to birth but is this always possible with an ageing GA fleet? The following logic is based on maintaining safety which seems to be forgotten some times.

At the birth of an aircraft the evidentiary trail of all parts and materials used have been put through a very rigorous system to prevent non approved parts and materials entering the system.

The owner/operator (registered operator) then has a responsibility to have aircraft maintained airworthy (fit for flight) and to ensure that they do not pay for non-approved parts or materials to be fitted.

What a register operator cannot prevent is fraudulent acts by a maintainer to substitute a non-approved part. In addition, a maintainer can sometimes be caught out by a registered operator who fraudulently presents an aircraft/component to a maintainer with false records. These things have happened in the past and will happen in the future — it is a fact of life that non compliant individuals exist in all walks of life and aviation is not exempt.

We know that TIS records relate to flight time (wheels off-wheels on), flight cycles, engine cycles, pressurisation cycles and even calendar periods.

The most crucial records are for Life Limited (Limited Life) Items (LLI) that have a designed 'hard time' life. Most of these items require the item to be permanently removed from service whilst some items may have a limit that can be extended with further maintenance (e.g. additional inspections). Some components also have items fitted within them that are life limited, especially engines, propellers and more complex components.

Many items can remain fitted "on-condition" as long as they are inspected or serviced as part of the aircraft's maintenance program. Other items are 'condition-monitored' so that derogation of the item is monitored and the item removed prior to failure.

Hard time items based on flight time, cycles or a specified calendar period are the easiest items to keep records up to date.

However, items transferred from one aircraft to another is not uncommon in an ageing GA aircraft fleet. It is these items that sometimes have lost their traceable history to birth. For example, previous aircraft records will be destroyed once the aircraft is permanently removed from service but many items from that aircraft may have been fitted to other aircraft still in service.

A special example is a wooden propeller that is usually "on-condition" maintained based on pre-flight and specified period inspections. The serviceability of such an item also depends on storage conditions when removed from an aircraft. Tracing the history to birth can be lost because previous aircraft history logs have been destroyed.

However, CASA's Exemption 5, issued in 1992, addressed shortcomings with CAR42W by exempting compliance with CAR42W2(c) by placing the responsibility on the installer to ensure that the item is serviceable and performs satisfactorily when installed in the aircraft.

In addition, Exemption 5 also states that a component that does not have a document that satisfies CAR42W(5), ARC or equivalent, may also be fitted if the LAME is satisfied, on reasonable grounds, that the component is serviceable and is suitable for its intended use.

This Exemption was issued in September 1992 some 6 months post making CAR42W. It demonstrated that CASA's Director of Aviation Safety realised the problems of complying with the current legislation that still exists.

Copy of the Exemption is available for those members of AMROBA that do not have a copy. Without it, compliance with CAR42W is almost impossible.

Aircraft maintenance recording requirements have changed over the years by the Authority and it is impossible to apply current rules to what happened prior to new rules. The problem is that many in industry, including CASA, do not have the corporate memory or training in past regulatory requirements for maintaining records.

Avionic Workshops—Part 145 or 42F

CASA introduced the “**registered operator (RO)**” under a direction from the Minister to identify the person responsible for airworthiness and maintenance. The RO could be an individual or a body corporate.

Now CASA is proposing to add the European CAMO (Continuing Airworthiness Management Organisation) to be contracted by the RO to do functions on behalf of the RO. An additional entity that will add to the red tape and therefore costs in GA.

CASA intends to adopt the European system of splitting the ICAO compliant CAR30 maintenance organisation system into two separate entities that will increase red tape and costs to the GA segment.

Moving to the EASA Part 145 and Part M, Subpart F system will place barriers in the Australian system that will increase regulatory imposts, red tape and add costs to a system that already has too much regulatory impost.

EASA states that no component may be fitted unless it has been appropriately released to service on an EASA Form 1, or equivalent, and is marked in accordance with Part 21 Subpart Q, unless otherwise specified in Part 145 and Subpart F.

Though there is some sense in separate approval systems for what is Class A & B only aircraft maintenance today, AMROBA cannot see any benefits for component maintenance organisations.

In Europe, large organisations actively use sub-contractors for all sorts of component maintenance that do not hold Regulatory Authority approvals.

The following are links to the CAA(UK) “**anybodies**” maintenance organisations expositions for Part 145 and Part-M Subpart F.

<http://www.caa.co.uk/default.aspx?catid=146&pagetype=90&pageid=10066> and

<http://www.caa.co.uk/default.aspx?catid=1461&pagetype=90&pageid=8752> or, for small organisations

<http://www.caa.co.uk/default.aspx?catid=1461&pagetype=90&pageid=10167>

The biggest concern is that the CASA Subpart F organisations will not be permitted to issue an Authorised Release Certificate, CASA Form 1.

This will exclude many avionic components from use in Class A aircraft even though the maintenance facilities, procedures, processes and personnel will still require to meet the same standards.

EASA has stated that maintenance organisations approved in accordance with Part-145 and Part-M Subpart F, may still issue the current applicable EASA Form 1 until 28 September 2010.

For all maintenance carried out by maintenance organisations approved in accordance with Section A, Subpart F of Annex I (Part M) to Regulation (EC) No 2042/2003, the box ‘other regulation specified in block 12’ shall be ticked and the certificate of release to service statement made in block 12. i.e. Subpart F still issues the Form 1.

Therefore, if the actual maintenance being performed is done to the same standards, then the only differences between Part 145 and Part-M Subpart F is in the administration requirements. More additional costs for what safety benefit?

Post implementation will mean that serviceable items will be labelled for the operational segment.

What are the safety benefits adopting this approach to releasing components?

AMROBA NEW WEBSITE

The new website is in trial mode prior to going live. There will be some new capabilities on the new site and we will have direct access to update the data on the website.

Newsletter: Instead of attaching the newsletter to each member, a hyperlink will be sent in the email so that the member only has to click on it to gain access to the newsletter that will be on the website. In addition, past newsletters can also be accessed.

MRO Services: Click on this button and it will take you to an active map of Australia. Click on a State and a list of business websites will be accessed. It is intended to expand this to include more contact details and business activity descriptions.

For those businesses that do not have a website, we will, if the business agrees, provide contact details, etc. This is intended to provide business with a commercial advantage.

Job Posting: This will allow our businesses to advertise vacant positions directly on the website. Our website will be linked to other employment channels so they can link to our job vacancy listings. This will be active as soon as we activate.

Association News: We are looking at providing a members only section so information for members eyes only can be loaded. This may not be necessary, as members only information can be done by email only.

We hope that the new website will provide members with more information and be simpler to access. We will continue to expand aviation web links and appreciate members sending us any site they think other members may find useful.

If you have any ideas on what we could improve the website, please let us know.

Stage Inspection Certifications

CAR Schedule 6 (*CASA's system of certification for the completion of maintenance*) states that the completion of *'each stage of maintenance'* must be certified by a person identified in CAR42ZV.

So what is a “*stage of maintenance*”?

These are regulatory imposed “*safety checks*” that are, or should be, included in an aircraft's approved system of maintenance. They include coordination and mini coordination certifications as well as operator required quality control checks to improve safety and reliability.

Stage of Maintenance plus *CAR 42G Independent Inspections* are no different to the *FAR's RII (Required Inspection Items)* system. Unique Australian terminology has always confused harmonisation efforts.

If these “*safety checks*” and their certification by appropriately rated LAMEs are not included in an aircraft's maintenance worksheets then we really are not complying with the regulatory intent or applying the same safety standards as the aircraft's country of design regulatory requirement.

Individual maintenance tasks can be carried out by qualified AMEs who sign for the task completion. There may be just a single task, or a number of tasks, required before a stage of maintenance has to be certified. On an aircraft, it is the appropriately rated LAME that signs the completion of that 'stage'. This should be an additional maintenance task added to the worksheets.

How often is there an unwritten requirement in an AMO where the AME has been taught to get the LAME to check before further maintenance? In small AMOs this is very common and there is no written evidence of that “stage of maintenance” being carried out. With litigation on the increase and new 'criminal' CASRs being developed, it will become very important for an AMO to document these additional safety checks not specified by the manufacturer's maintenance program.

Where the operator's approved aircraft maintenance system does not include these tasks, or the operator does not provide worksheets, an AMO would need to decide where and at what stage a LAME would need to sign. Note: If there is only the LAME signing the category, then the '*stage*' is the coordination of category and final coordination.

In component workshop work, it is usually a stage where the supervisor checks completion before further maintenance tasks are started.

Besides duplicate inspections, coordinator and mini-coordinator certifications, any check added to the worksheets by the AMO that provide/improve quality control are a “stage of maintenance”.

The problem is that many approved systems of maintenance have not added '*stage*' completion certification tasks for the appropriately rated LAME and, in workshops, there is a lack of stage checks and certifications being added as is expected by the Schedule 6 requirement.

The reason that many systems do not include “stages of maintenance certification tasks” is that CAR42L does not state that the system of maintenance has to include this requirement.

CAAP42M-1(O) produced by CASA in 2006 did not address the need for stages of maintenance to be included in an approved system of maintenance.

The FARs require US operated aircraft to include in their maintenance program a list of RIIs—they define RIIs as follows:

“*REQUIRED INSPECTION ITEMS (RII)*”

Any maintenance operations which, if improperly performed, could be critical to the safe flight of an aircraft will be given a required inspection. A qualified inspector [LAME], familiar with all inspection methods, techniques, and equipment will be assigned to determine the quality of airworthiness of the article involved. When work is performed for an operator under the continuous airworthiness requirements of FAR Part 121, 125, and 135, the RII items specified by the operator will be maintained as RII items.

What are some examples of RIIs?

In determining the tasks to designate as RIIs, you should consider the following examples. This list does not cover all RIIs.

- a. Installation, rigging, and adjustments of flight controls and surfaces.*
- b. Installation and repair of major airframe or engine structural components.*
- c. Installation of an aircraft engine, propeller, propeller blade, or rotor.*
- d. Installation, repair, and calibration of certain avionics and navigational equipment.”*

AMROBA has been working with CASA to clarify and harmonise terminology and to place responsibilities with the right person—individual or AMO.

Some aircraft's system of maintenance may include the operator's RIIs (stages of maintenance) but many AMOs may also need to add their own identified stage of maintenance so that corporate responsibility for safety can be achieved.

The large airlines have included this process for many years but with government policy that all pax carrying segments be treated the same, then it must be expected that CASA will clarify the current confusing regulatory requirements.

Regulatory Development

ICAO provides standards and recommended practices that contracting States (Australia) are obliged to adopt as closely as possible to meet the requirements of an international agreement.

In many ways, the ICAO Annexes are written in 'plain English' so that countries can translate it into the aviation requirements for that country.

Australia is a mature and one of the oldest regulated aviation industry in the world that is being aligned with a regulatory system (EASA) that is so young.

EASA has no treaty obligation to be ICAO compliant because it is not a contracting State of ICAO.

Their rules also depends on each of the EU countries to provide

regulations that underpin the EASA rules. Each EU country still has aviation rules that must be complied with and underpin EASR.

However, the shift in policy from one CASA Director of Safety to the next demonstrates the frustrations of a battered industry.

AMROBA know the proposed rules will not be principle (outcome) based rules as they look more like 'black letter' law.

AMROBA has stated for a long time that drafting what are basically criminal provisions is better done using 'black letter' law.

This requires CASA technical specialists instructing their legal people fully understand what they are trying to achieve in the way of aviation safety.

The CASA drafting instructions should be addressing safety matters and those matters necessary to give effect to the international treaty. (Convention & Annexes)

In recent meetings with CASA, AMROBA has witnessed a willingness by CASA to take notice of the concerns that we have raised.

CASA is now concentrating on the airline regulations and the relationship with AMOs, AMEs and LAMEs related to this segment.

The problem is that some proposed rules will translate into the non airline segment.

AMROBA has more meetings arranged with the project leader for the maintenance rules. We are at the 11th hour negotiating corrections that are desperately needed if the rules are to work.

When this rule rewrite started, the government supported previous CASA CEOs to adopt the FARs as the basis for airworthiness and maintenance.

With Part 21 based on the FARs, there are a number of FARs in Parts 43 & 91 that are needed to make the system work correctly.

However what is now being proposed is another unique Australian system that is no longer outcome (principle) based.

AMROBA continues to impress on CASA how important it is to get the rules right. We have suffered for too many years with the current rules that can be applied in variable ways.

The problem with current legislation is that the CAR30 maintenance organisation is not, in its own right, approved in CAR42ZC to carry out maintenance. CAR42ZC approves the employees of the CAR30 organisation to carry out maintenance.

The Act requires the person doing maintenance to be identified in the regulations. A "person" can be a "body corporate", i.e. a maintenance organisation.



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The Aircraft Maintenance Engineers/Technician Creed

Worth Remembering

"UPON MY HONOR I swear that I shall hold in sacred trust the rights and privileges conferred upon me as a qualified aircraft maintenance engineer/technician. Knowing full well that the safety and lives of others are dependent upon my skill and judgment, I shall never knowingly subject others to risks which I would not be willing to assume for myself, or for those dear to me.

IN DISCHARGING this trust, I pledge myself never to undertake work or approve work which I feel to be beyond the limits of my knowledge nor shall I allow any non qualified superior to persuade me to approve aircraft or equipment as airworthy against my better judgment, nor shall I permit my judgment to be influenced by money or other personal gain, nor shall I pass as airworthy aircraft or equipment about which I am in doubt either as a result of direct inspection or uncertainty regarding the ability of others who have worked on it to accomplish their work satisfactorily.

I REALIZE the grave responsibility which is mine as a qualified aircraft maintenance engineer/technician, to exercise my judgment on the airworthiness of aircraft and equipment. I, therefore, pledge unyielding adherence to these precepts for the advancement of aviation and for the dignity of my vocation."