

Differences with ICAO Annexes

Civil Aviation Manufacturing and Maintenance in Australia need nil Differences to trade Globally.

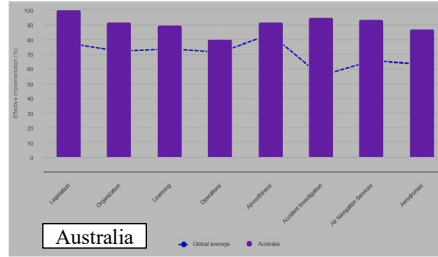
With all sorts of new aviation technology being developed in Australia, one would expect that the regulatory system for ANNEX 8 would have nil to minimal differences with the ICAO Annex 8 standards. Australia, after all, prides itself on having legislation that is 100% ICAO Compliant. Hmmmmmm; how can you be legislative compliant with the Annexes when Australia has lodged 4000 plus differences?

Doesn't seem to pass the pub test. Until there are no differences, the legislation must be less than 100% or is it recorded 100% even if there is deficient legislation. Column 1 = Legislation, 3 = Licencing; 5 = Airworthiness.

"The following States were elected from among ICAO's 193 Member States to the Organization's 36 Member Governing Council during the 2022 ICAO Assembly:

Part 1: States of chief importance in air transport

Australia, Brazil, Canada, China, France, Germany, Italy, Japan, United Kingdom, and the United States."



ICAO Annex 8 Compliance Differences.									
Australia	Brazil	Canada	China	France	Germany	Italy	Japan	UK	USA
139	Nil	8	3	EASA Regulations: 58			12	24	22

World's best practice must be Brazil followed by China, Canada, Japan, USA & UK, EASA regulations are not as well harmonised.

However, when you look at **France, Germany & Italy** individually, they have a higher compliance than the EASA Regulations which demonstrates why individual nations within the EU apply the rules differently to comply with the Annexes SARPs. Other EU nations have nil differences lodged with ICAO. The UK is a good example of audit compliance now they have left the EU.

One of the aims of CASA in the past was to work towards harmonisation with major nations so our manufacturing and maintenance AMOs could trade with other nations under, at least, a CASA technical agreement with the NAA of each nation. This would remove our AMOs from obtaining each foreign nation's AMO approval.

This aim to have Nil differences to Annex 8 aligns well with ICAO's global harmonisation Resolution that Australia signed up to in 1992.

ICAO Audit Q4. "Do you consider "Monitoring of Annex differences" is implemented in your State?"

Australia. "Yes: Spreadsheet, with monitoring and maintenance across 3 government agencies (Dept of Infrastructure and Transport; Civil Aviation Safety Authority & Airservices Australia)".

Yep, they may monitor but have no program to implement and keep up to date with Annex requirements.

Annex 8 includes a number of SARPs that are required to be implemented by certain dates. Many of the **States of chief importance in air transport** include in their differences these dates and some even list an amended date when the State intends to implement a SARP at a later date.

When compared to NZ, recognising that both Australia and NZ are above the world average, NZ has 50 differences and a number of provisions marked as "not applicable".

Australia, as a **State of chief importance in air transport**, should also be a world leader in adopting ICAO Annexes SARPs as it did before it became an Agency in 1988.

The more differences lodged informs ALL how low our ICAO Annexes SARPs compliance has become – it is government and its agencies that have dropped the ball in this aspect.

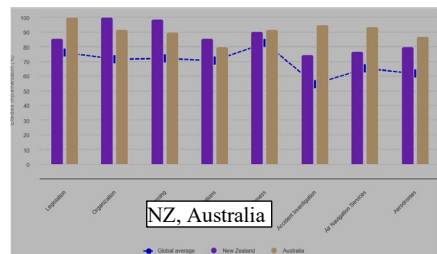
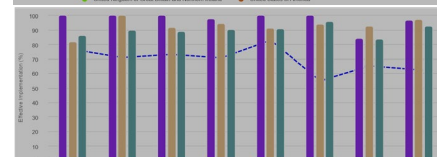
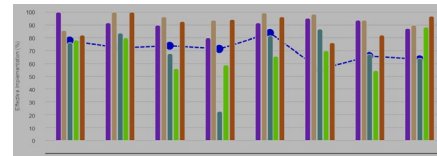


Table of Contents

Differences with ICAO Annexes..... 1
Why Harmonised Engineering Standards Benefit Industry 2
Legacy Aircraft Maintenance..... 3
Why LAME skills are so Important. 4

Why Harmonised Engineering Standards Benefit Industry

Why are Australian civil aviation designers, manufacturers and maintenance businesses restricted to trading within Australia when, with harmonised regulatory standards and agreements between governments, they could be trading globally creating Australian jobs?

Answer: Because government and CASA have no dedicated staff negotiating agreements with other nations to recognise Australian civil aviation design, manufacture, and maintenance businesses in their own right. E.g. No Free Trade Agreement like those raised by Singapore with the USA & EASA.

*“ICAO: Compliance to all applicable SARPs remains the foundation on which State safety programmes are established. The concepts of performance or risk management in Annex 19 **do not absolve the States from complying with the existing provisions in other Annexes, which remains fundamental to aviation safety.** In the future, while overarching safety management SARPs will be included in Annex 19, new sector-specific safety management provisions are expected to be included in the appropriate Annexes.*

SARPs and PANS are critical to ICAO Member States and other stakeholders, given that they provide the fundamental basis for harmonized global aviation safety and efficiency in the air and on the ground, the worldwide standardization of functional and performance requirements of air navigation facilities and services, and the orderly development of air transport.”

Singapore are very SARP compliant and even has a BASA with the FAA & EASA that includes manufacture and maintenance.

Agreements (Singapore-USA)

- [Bilateral Aviation Safety Agreement - Executive Agreement](#)
- [Implementation Procedures for Airworthiness](#)
- [Maintenance Agreement Guidance \(MAG\) - Temporary Rev 1](#)
- [Maintenance Implementation Procedures \(MIP\) - Revision 1](#)
- [2016 Notification of Policy Deviation Memorandum for FAA Order 8130.21H](#)

Singapore & EASA

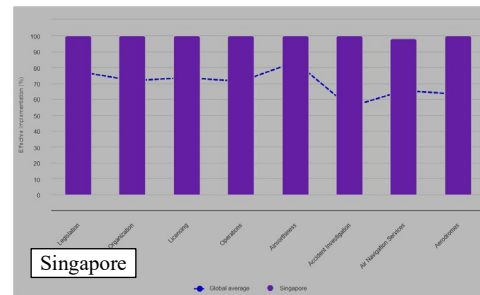
- [WA between EASA and CAAS on Airworthiness Certification](#)
- [Amendment to WA on Airworthiness Certification](#)
- [WA between EASA and CAAS on maintenance organisations](#)
- [Implementation Procedures to the Working Arrangement between EASA and CAAS on maintenance organisation](#)

Agreements (UK-USA)

- [Bilateral Aviation Safety Agreement - Executive Agreement](#)
- [FAA-UK CAA Implementation Procedures for Airworthiness \(IPA\), Revision 1](#)
- [Courtesy Reminder - Conclusion of Transition Period](#)

Instead of the government developing a “Foreign Office” somewhere in Infrastructure and/or CASA, individual Australian design, manufacturing and maintenance organisations, to provide their service in a foreign nation, have to obtain approval of their businesses by the NAA of that nation.

Some organisations have had more than 10 foreign nations approvals.



- [Maintenance Implementation Procedures \(MIP\)](#)
- [Maintenance Agreement Guidance \(MAG\)](#)

Agreements (Australia – USA)

- [Bilateral Aviation Safety Agreement - Executive Agreement](#)
- [Implementation Procedures for Airworthiness \(Revision 1\)](#)
- [Implementation Procedures for Airworthiness \(Amendment 1 to Revision 1\)](#)
- [Implementation Procedures for Airworthiness \(Addendum 1 to Amendment 1\)](#)
- [Revised Export Documentation Requirement For Engines And Propellers](#)
- [2016 Notification of Policy Deviation Memorandum for FAA Order 8130.21H](#)

Solution: Not until government, its departments and agencies involved, implement a process to obtain many Free Trade Aviation Agreements/Bilateral Aviation Technical Agreements enabling Australian design, manufacture and maintenance businesses to provide their products and services in/for these foreign countries then Australian aviation is just that, Australian.

Government have completely ignored the potential of many Australian jobs being created by these businesses providing products and services for and in these foreign nations.

[Back to the Front Page](#)

Legacy Aircraft Maintenance

For those of us that are legacy LAMEs, using the skills, techniques, knowledge, experience and hand skills of the era past, fully understand ageing aircraft and fatigue issues related to these aircraft.

The knowledge and skills needed to maintain these aircraft are not documented by the manufacturers nor are they taught. Many are only attained by experience.

Manufacturer manuals, pre the adoption of the ATA format, contained little data on ‘how’ maintenance was done because they rely on the knowledge and skill an A&P mechanic attained. In the US the A&P mechanic must do each new task under supervision of another A&P mechanic that has done the task.

The same concept works in Australia. The CE/EM normally ensures an AME/LAME has the skills and knowledge before they can sign for the task.

CASA’s predecessors also reviewed the majority of mainly GA used single and twin-engine piston aeroplanes to develop what is now known as Schedule 5 maintenance. This is based on a detailed US “annual inspection” that very few legacy aircraft include in their documentation.

One of the most important differences between modern and legacy aircraft, is modern aircraft include the basic knowledge on how to do a task in their manuals whereas legacy aircraft do not provide this.

Many young LAMEs with experience on modern aircraft who become involved with legacy aircraft find they need to relearn the basic hand skills and knowledge that they need to maintain these aircraft.

Some manuals simply state “*Remove Engine; Install Engine; Test Engine.* No detail.

Is this 3 “Stages of Maintenance” or is there multiple “Stages” within these 3 Stages?

Our general aviation fleet grows progressively older and accessing “approved data” becomes more difficult especially where there is little produced by manufacturers of these aircraft.

According to the FAA, the average age of the American general aviation fleet in 2000 was 30 years old. By 2020, the average age will likely be 50. As it is, many of those airplanes no longer have the active support of their original manufacturers, and that’s a problem with little hope of improvement.

In fact, many companies that once worked so hard to gain type certificates for these planes have long since gone out of business. Fearful of liability problems, some of the companies still in business are reluctant to provide the data. Based on the advice of government lawyers, the FAA has also decided that it will not release the approved data it holds, which only adds to the problem.

Yet, at the same time, we require owners and LAMEs to use approved data for the maintenance, repair, and restoration of older aircraft. This is the classic Catch-22 now facing owners of vintage airplanes.

Ironically, owners of aging aircraft have compounded the problem by doing a great job of maintaining their aeroplanes. Through diligent upkeep, the support of type clubs, and 21M approvals to install modern, improved parts, owners have played a significant role in extending the lives of aeroplanes that weren’t designed to fly after 50, 60 or even 70 years.

The FAA has a new program that CASA should review, accept and implement. [Vintage Aircraft Replacement and Modification Article \(VARMA\) program](#), a new program for the use of off-the-shelf parts in type-certificated aircraft. It applies to small (less than 5,700Kg) type-certificated aircraft built before 1980.

AMROBA has asked CASA will they adopt and implement this program.

Questions for CASA: Where are the detailed approved maintenance instructions issued by aircraft manufacturers to maintain these legacy aircraft many of your field staff demand?

- CAR 2A approves manufacturer manuals that are not approved by the FAA.
- The FAA system has approved data and acceptable data.
 - Acceptable data includes numerous FAA ACs and Reports, e.g.: [Aging Aircraft Best Practices](#), [Best Practices for Maintaining Small Aeroplanes](#), plus many more that the AMT/IA use at annual inspections.
- CAA/CASA have been aware of this issue with the regulations since the mid-1990s.
- CASA AWIs, usually no experience in GA, often require a LAME to identify approve maintenance data that does not exist. CAR2A doesn’t enable the use of NAA instructions.

[Back to the Front Page.](#)

Why LAME skills are so Important.

An Aircraft Maintenance Technician/Engineer/Mechanic (AMT/E/M) is responsible for the safety and repair of aircraft, allowing aeroplanes/helicopters continuous flight. This profession implies manual dexterity and knowledge to preserve aircraft in the best operating conditions, through scheduled maintenance or occasional services. The technician/engineer/mechanic has to recognise and identify faults or problems in the aircraft, working with the electrical, mechanical and other components of the aircraft.

In the USA, the Aircraft Maintenance Technicians Association (www.amtausa.com), was able to have U.S. Congressman Bob Filner (CA) introduce and pass a U.S. Congressional AMT Day Resolution bringing federal recognition to May 24.

Why May 24? This day was chosen in honour of Charles E. Taylor's birthday. Charles was the Wright brother's mechanic who built by hand the first aircraft engine.

Recognising commitment to safety

AMT Day was created to recognize the knowledge, skill, and integrity of each AMT in every sector of aircraft maintenance, regardless of the size or type of aircraft being maintained. This is because all AMTs belong to a brotherhood of skilled craftsmen. Today's AMTs, whether they are maintaining military, commercial, general, private, corporate, experimental, or civil aircraft, do so with the same commitment to safety. This safety can easily be taken for granted by the public and media. This is in large part because today's AMT, like Charles E. Taylor, doesn't look for the limelight and say, "Hey, look what I do." Actually, it is just the opposite. AMTs perform their duties the same way Charlie did: there is a job to be done and they do it — and they do it well.

In the US, the LAMEs importance to aviation safety is well recognised and respected.

A day in the life of a LAME could be one or a mix of the following:

1. *Inspection and maintenance.* AMTs/LAMEs start their day by performing routine inspections and maintenance on aircraft, which may include checking fluid levels, replacing worn or damaged parts, and performing basic repairs.
2. *Troubleshooting and repair.* When something goes wrong with an aircraft, it's up to the AMT/LAME to identify the problem and fix it. Troubleshooting may involve using diagnostic tools and equipment to test and troubleshoot systems or disassembling and reassembling components to locate and repair faults.
3. *Record-keeping and documentation.* AMTs/LAMEs also spend a significant portion of their day completing paperwork and documenting their work. This includes keeping track of maintenance and repair records and ensuring that all work meets regulatory standards and requirements.
4. *Training and continuing education.* To stay up-to-date on the latest technologies and techniques, AMTs/LAMEs also invest time in training and continuing education. This may involve attending seminars, online courses, or on-the-job training.
5. *Collaboration and communication.* AMTs/LAMEs work as part of a team and often collaborate with other technicians, pilots, and engineers to solve problems and ensure the smooth operation of aircraft. Good communication skills are essential in this role.

Overall, a day in the life of a LAME is varied and exciting. Because there are so many sectors of aviation, specialities, and needs of the industry, very rarely will two days be the same. Whether performing routine inspections, trouble shooting and repairing problems, or staying current on the latest technologies, LAMEs are an essential part of the aviation industry and play a crucial role in ensuring the safety and reliability of aircraft. They contribute to the safety of our communities in meaningful ways, and their skills are essential to our daily way of life.

The administrative support a LAME gets from his/her employer is dependent on the size of the organisation. In a small business, the LAME may be the only engineering technical person. In a large business, layers of tech services, planning, etc may exist so the LAME is working from documented worksheets. The breadth of knowledge of regulations and access to all the data that is required to do aircraft maintenance is the responsibility of the LAME in small business.

FYI: *The 'small aircraft' weight of approx. 12,500lbs is half the DC3 approx. 25,000lbs, which was the largest air transport airplane at the time small airplanes were defined by the FAA.*

[Back to the Front Page](#)