## **Critical Shortage of Maintenance Personnel?**

We start this year with the same critical shortage of Aircraft Maintenance Engineers (AME) and Licenced AMEs to service the Helicopter sector and General Aviation (GA) Aeroplane sector.

30 plus years and still no aircraft maintenance engineer vocational trade training courses for the helicopter or CASR Part 23 aeroplane sector's mechanical trade streams.

There is one vocational pathway for the Part 25 aeroplane trade stream that supports the airline's three trades streams of avionics, mechanical and structures. The other sectors are supported by a two trade streams, avionics and mechanical.

After our first meeting with CASA this year, we now know that there will be no regulatory change to address the shortage of aircraft maintenance personnel and LAMEs, simply because CASA said "there will be no regulatory change". So, we are stuck with the system that creates a shortage of personnel.

• The regulatory system is "broke", the VET training system is also broken, but repairable.

The problem that fails to be recognised is there are three (3) separate AME mechanical training pathways in the non-airline sector but only one pathway that exists in the VET system.

The second problem is that CASA does not acknowledge VET qualifications.

### **Regulatory Systems - worldwide**

Regulatory systems worldwide are more harmonised today, than at any other time in my 60 plus years of participating in civil aviation. In every system there is basically the same maintenance concepts as included in CAR/CASRs requiring the person signing a maintenance release to meet the standards of Annex 1, Chapter 4 and Annex 8, Chapter 6.6.6. Their licenced AMEs, however named, all certify the aircraft as airworthy at completion of work. We should be no different. The maintenance and aircraft records required to be kept are closely aligned. The maintenance and aircraft records that approved AMOs need to keep are very closely globally aligned.

Our fleets are not so different, and their safety records are as good as, or better, than Australia.

**Foreign LAMEs:** To provide our employers with qualified staff that the Australian training system doesn't produce, a **fast-track system of recognising foreign LAMEs** is required so current maintenance organisations can service the non-airline aircraft fleet and the industry maintainer experience is maintained.

CASA's modular self-study pathway, pass CASA Part 66 module examinations is the only way to address this issue in the short term. In house on-the-job training will add costs to operating a business. As maintenance employers state, the bureaucracy has caused the problem but have taken no action to correct the shortage of maintenance personnel they created for over 2 decades.

### Part 21 realignment with FAR Part 21.

In addition, getting engineering fields of design, manufacture and maintenance harmonised globally is not even being contemplated. Aviation engineering/maintenance is not unique to Australia; it is a global industry with global standards that all other mature safe nations are or have implemented.

CASA told industry harmonisation would happen years ago post a CASA/FAA bilateral agreement meeting. They stated they would realign CASR Part 21 with FAR Part 21 applauded by industry.

### Same action as last year and years before, no action.

**Regulatory Reform.** If done correctly, the results should return civil aviation, especially the non-airline sectors, to the participation rates pre the creation of CARs/CASRs. However, how many more regimes of government and CASA will come and go before Regulatory Reform, originally direct by Parliament in the late 1990s, is completed?

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## **VET Training Does Not Support All Employers (Non-Airline)**

Except for aeroplanes covered by CASA's <u>Part 66 B1.1 and B2 AME licences</u>, the rest of the aeroplane and all the helicopter fleet covered by the <u>B1.2</u>, <u>B1.3</u>, <u>B1.4 AME licences</u> do not, and have not, had VET courses for apprentices to become tradespersons in these sectors.

Why can't Australia's education system produce maintenance personnel qualifications that meet CASA trade-based AME licencing system? Our members simply state, the bureaucracy won't allow it.

In the flow chart on the right, once a trainee has completed "basic maintenance engineer" training (modules 1-9), there needs to be a helicopter pathway (Module 12) or a piston aeroplane pathway (Module 11B) as well as the current airline pathway (Module 11A).



The same flowchart can be used for the self-study method of attaining an AME licence. The self-study method is the only way the helicopter and piston aeroplane sectors can use if they don't want to end up with exclusions of Module 11A subjects not relevant to these two sectors, on their licence.

Because the VET system is only geared for the airlines, the other two sectors have not had specified VET courses available for decades. No wonder there is a shortage.

This country has had a critical shortage of maintenance personnel & organisations in the non-airline sectors for over two decades. CASA won't accept poor regulations lead to obstacles that slow down & even stops business investment & new job creation.

• The regulatory system has not produced employable helicopter or non-airline aeroplane AMEs, let alone LAMEs, and it hasn't produced them for decades.

Red tape predominates these sectors with each government department and agency working in isolation from each other. Something is not working because the government system is failing its own industry. e.g. The Trade Recognition Authority no longer accesses civil aviation qualifications of foreign civil aviation tradespersons wanting to take up residence in Australia.

B1.1 Aeroplanes (11A)		B1.2 Aeroplanes (11B)		B1.3/4 Helicopters (M12)		
Avionics	Mechanical	Structure	Avionics	Mechanical	Avionics	Mechanical

The B2 Avionic LAME shortage is also caused by government regulations.

Pre Part 66 change, the avionic trade AME licencing system was a modular system that enabled a Basic Avionic Systems AME licence to be issued by CASA that could progressively add avionic systems until full Avionic Systems licence coverage was attained. System worked very well.

CASR Part 66 regulatory change nearly 2 decades back provided for a full B2 avionic licence pathway only based on EASA Part 66. However, EASA quickly realised the full B2 pathway did not work and adopted a progressive avionic trade/licencing system, like the progressive B2 avionics systems licence Australia originally had.

No action to adopt the EASA progressive B2 AME licence; why?

### Can be corrected with regulatory/standard change that is not forthcoming.

### Is there an Ulterior Motive?

Why won't government adopt and implement regulations and standards, that harmonise globally and would enable civil aviation to operate in the same manner as other mature aviation markets like the US? Is CASA being influenced politically to provide such a non-harmonised engineering regulations and standards to reduce industry participation?

Or is CASA wittingly, or unwittingly, captured by certain sectors to the detriment of other sectors.

Whatever it is, it has prevented proper regulatory reform for over 3 decades.

The engineering fields outside those with airline involvement, have not received government support since the creation of an agency, CAA or CASA to regulate the industry.

There has to be a reason why sensible regulatory change is being prevented or ignored. *Back to the Front Page*.

## Aviation Emergency Services Support Critical

This is an industry that requires, and demands, high skills from both the pilots and maintenance personnel. The sector is operationally always prepared to react to the fires and floods. Many outside the team simply accept these aeroplanes and helicopters just turn up and do their best to put fires out, save people lives and assist all during these emergencies.

To keep these aeroplanes and helicopters in a state of readiness is part of the maintenance personnel DNA. They are highly talented and experienced that keeps aviation safety levels very high.

Today, they are suffering from a shortage of maintenance personnel with these talents that is impacting on some of the AMOs and operators.

We can't expect them to continue to provide these important emergency services if the regulatory system restricts training the next generation, and the following generation, of aeroplane and helicopter maintenance personnel that support these services.

A helicopter could be fighting fires one month and doing flood rescue work the next month.

The on-going rebuilding of communities also need these aircraft support, sometimes for months at a time.

Many of these operators have aircraft shipped to other nations to address emergencies in those nations which is another reason why our regulatory system has to be globally harmonised.

Feedback from those that have participated in emergencies in other countries is that the foreign personnel maintaining the same type of aircraft as they are, are as well trained or better than what we produce.

The feedback from our off-shore participants is our system is very dated and not globally harmonised.

Our aviation emergency services have been global leaders in the past and have shown a high level of technical expertise in the systems that are used on these aeroplanes and helicopters.

It is crucial that maintenance organisations and personnel, including our Part 66 licences, to be recognised and accepted by other nations so the global emergency services system can operate efficiently.

# **Engineering Standards Still Not Global**

Successful design, manufacturers and maintenance companies continue to leave this country because of the lack of recognition of the Australian civil aviation regulatory system and the lack of foreign recognition of government documents like the Government Form One, *Authorised Release Certificate*, design/manufacturer and maintenance organisation *certificates* issued by CASA.

This means Australian jobs end up being another nations jobs.

Is it because the Civil Aviation Act has no remit to support engineering and export?

'The main object of this Act is to establish a regulatory framework for <u>maintaining</u>, <u>enhancing and promoting the safety</u> of civil aviation, with particular emphasis on preventing aviation accidents and incidents.'

This has been the case since the creation of an Agency to regulate civil aviation. It has become increasingly obvious, that the policy or policies of governments have got it wrong for so long.

We are becoming increasingly isolated from a world participating civil aviation nation. Industry aspirations are being dashed by regulations and red tape.

### **Engineering Success Benchmark**

- 1. How many nations accept an Australian civil aviation designed product in its own right?
- 2. How many nations recognise a CASA approved design, manufacture and/or maintenance organisation certificate in its own right?
- 3. How many nations allow an Australian approved maintenance organisation to maintain their registered aircraft and/or product in their own right?
- 4. How many nations acknowledge the aircraft maintenance engineer licence in its own right?
- 5. How many bilateral/multilateral agreements enable our design manufacture and/or maintenance organisations to freely trade within the other nation?

Currently, many CASA approved maintenance organisations have to apply to foreign NAAs for their approvals to do this maintenance. Costly approach as it also means auditing by the NAA.

Where are the government-to-government civil aviation free trade civil aviation maintenance/manufacturing agreements so Australian aviation businesses can trade in other nations?

Needed to create jobs. Back to the Front Page

### **Methods of Trade Presentations**

Online trade/licencing training is the solution for the shortage of civil aviation maintenance personnel other than the large companies with or using dedicated training establishments.

Due to the spread of specialised aeroplane and helicopter maintenance businesses across Australia, the old method of having a few trade training schools, mostly in major cities, has become ineffective.

It is more cost effective for government and businesses to provide fully on-line aircraft maintenance personnel trade training courses as an alternative to the standard face-to-face trade training schools.

The future is on-line training, and our widely spread aviation industry is an ideal industry sector to adopt and implement full on-line training. Administratively, the government vocational on-line/elearning training would not need all subject experts to be in one training establishment. They could even be from different State's vocational training establishments.

Aviation apprentices/trainees are under direct supervision of qualified and experienced aircraft maintenance engineers who also provide the apprentice/trainee with practical tuition. Local artisan training has never left this industry.

Our members complain about the costs of sending regional employees to major city trade training schools. Travel time and accommodation costs continue to escalate and hard to organise from the bush.

Many that go to the city see other opportunities and don't return and complete the trade.

We also recognise that aviation maintenance trade training has small numbers when compared to a motor mechanic and other more common trades. It doesn't make sense to have more training schools than is required to provide the industry with the trade skills that are required.

### On-line Training – the way of the future

In this modern digitalised era, there is no need for a student to be face-to-face with the subject trainer, nor is there a reason that it has to provide it in a trade training school.

Hand skills on-site can and are taught by the technical supervisor in the workplace.

Workplace assessment of samples of hand skills by the LAME can be sent to the trainer to confirm hand skills practical capability.

Online aircraft maintenance personnel training is available in Europe including the aviation regulators acceptance of the qualifications to sit the NAA module examinations for a licence.

The advent of online learning tools and programmes has led to rapid growth in people accessing open and distance learning, pioneered in previous generations. Distance education, facilitated by e-learning and online learning, has become increasingly popular in the aviation industry but not yet adopted in Australia.

### Proposal

AMROBA proposes that the vocational training system implement an on-line e-learning system be provided to the civil aviation aeroplane and helicopter sectors that are not based at a major city that has a vocational approved aviation maintenance personnel training organisation.

AMROBA also propose that on-line training is only available to apprentices, trainees or other tradespersons employed by an aircraft maintenance organisation.

- The reason is it is more cost effective to train employed maintenance personnel due to the need for the organisation's responsibility to provide supervised practical supervision.
- The person undergoing on-line training would also be on the payroll.

To add the most value to educational and training processes, digital resources e.g. digital databases, eresources and e-textbooks should not merely be digital versions of existing paper material. For example, e-textbooks look beyond the format of traditional textbooks by providing interactive and personalised learning, allowing individualisation and differentiation of teaching.

### Adoption, Not Creation of Regulations and Standards

Just about every issue that has been raised about the CASR engineering and personnel regulations and standards promulgated by government is caused by the partial adaption of these foreign regulations and standards and a failure to stay harmonised with those foreign regulations and standards.

Both the FAA and EASA have amended their regulations to better harmonise and improve efficiency of what they originally promulgated. EASA has a Notice out at present regarding Part 66 licences s to address some shortcomings that have been identified in the EASA maintenance licensing system that impacts on the effectiveness and efficiency of the current Part-66 requirements. CASR Part 66 is stuck in the past.

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