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Part 66 AME Licences, Ratings and Scope of each licence

LAME Roles and Responsibilities

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Roles and Responsibilities Overall

CARs/CASRs, MoS, GMs, etc., including ICAO and manufacturers, have, between them, imposed responsibilities on the LAME. Industry wide practices have traditionally implemented roles and responsibilities of LAMEs and AMEs in accordance with international practice. Do we all understand the responsibilities?

CASR Part 66 has also imposed an EASA AME licencing structure without EASA training standards being assimilated into the NVET AQF trade training system. This has added to the decline in industry skills training that has not met GA industry needs since the mid 1980s.

Employers and employee representatives, including CASA, need to work together to steer the next government "Skill Council", due to start next year, to implement a two tier AME training system encapsulating the full scope as adopted from international standards – EASA/ICAO.

Radical change is needed. Einstein stated: "*Insanity is doing the same thing over and over again and expecting different results*"

This is what we have been doing with (L)AME training since the mid 1980s, and it has not provided AMEs with industry wide skills. It must change or the slide down will continue.

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Background

Safety (maintenance) needs the 'roles and responsibilities' of the AME & LAME to be clearly understood and be stated in simple plain English. To those working in this industry, maintenance is pretty common sense, especially throughout the non-airline sectors where multi-skilled avionic and mechanical tradespersons are traditional. However, current requirements are not reflecting industry practice.

The basic problem with Part 66 was the introduction of 'mandatory' AME training without the underpinning trade training that was not amended to meet CAR31, and still has not been applied. Industry wide avionic and mechanical trade streams once were available.

Two AME training pathways to support the avionic/mechanical AME trades disappeared in the 1980s when the union driven MEA packages introduced three pathways, avionics/mechanical/structures.

The Authority did not object back then but retained the two stream expectations in AME licencing. Most training providers slowly stopped providing GA aircraft and helicopter subjects. The Authority also stopped promulgating the ICAO AME avionic/mechanical syllabi. **EASA has two pathways – avionic and mechanical.** The trade training has been deficient for the non-airline sectors since the 1980s when training providers adopted the modified MEA packages for the avionics/mechanical trades.

It is the trade training split into three pathways that has lost acceptance of our, mainly mechanical trade, AME/LAME skills globally.

CASA must resurrect their inter-government department/agencies connections to bring about industry wide trade, avionic & mechanical, training back into the MEA packages.

AME trade training, mainly the mechanical (B) trade, was reduced dramatically to support the "structures" stream. This has to be rejected. The two pathways must support the B1 & B2 scopes completely. This means replacing training with a radical change to current training – long overdue. The non-airline sectors have suffered with this lack of training ever since and could only obtain the knowledge by self-study.

The adoption of the EASA AME B licences needs the MEA AME training packages to return to the two stream avionic and mechanical – that is the EASA AME licencing system. CASA introduced it, CASA must support NVET AME trade training changes to support it.

Radical Training Change Required

Both ALAEA & AMROBA can see the need for radical change to obtain practical skills pre-employment and then obtain knowledge that meet international training standards of ICAO and EASA. When a broad skilled AME obtains an AME licence, the AME will have internationally acceptable trade qualifications that will enable better acceptance of our AME B1 & B2 licences.

To change the training to meet EASR requirements, which we must do in Australia, then many government department/agencies need to be involved so the NVET MEA training courses for AMEs would revert back to two pathways and overturn the 1980s union/airline agreement for three pathways that CAA's predecessor endorsed. CASA alone, decided to adopt a foreign system but forgot to work with government to fund the broader training required.

CASA and government departments and agencies must support the return to the globally accepted two stream system for AME training. It could take another year or more before government adopts such a process. This means it could be 3-4 years before we see fully skilled AMEs meeting international training standards of ICAO and EASA.

In Australia, we face a bigger challenge than in many EU States as many still have secondary school technical training that provide hand skills prior to employment. It must be accepted that in Australia, this only happens in a limited number of schools.

A B1 & B2 licence, without a type rating (LWTR), will support general aviation aircraft maintenance in the future. The weight split, to meet GA needs, should be higher based on past experience pre CAA/CASA. It is important to get this split right to identify the scope of the AME LWTR to cover aircraft up to Part 23/SFAR 23/FAR 27 and maybe some aircraft from the transport levels, that are not high speed/high altitude aircraft.

The implementation of CASR Part 66 & 147, besides not being a success, has devastated NVET AME training and the LAME system for the non-airline sectors. Most non-airline LAMEs are unsure of the scope of their licences. Uncertainty is a safety risk that must be addressed.

Creating a trade training NVET system approved by AQF/ASQA to underpin the AME licencing should be a high priority task for CASA & industry. CASA will need to continue with self-study until a completely new NVET AQF trade training system can be created.

CASA must provide leadership and cooperate with other government departments and agencies so apprentice trade funding can be maintained as it is developed.

Government may opt for radical change as proposed by AMROBA or an ALAEA proposal. However, they never will change unless CASA also supports the change. Industry may propose, but nothing will change unless government (department and agencies) all support radical change for practical skills pre-employment.

Responsibilities – Regulatory and Manufacturers

One of the major safety reasons for being very cautious when changing licenced AME's roles and responsibilities is that the AQF NVET training standards must provide skills and knowledge to underpin the "roles and responsibilities" that the legislative requirements and manufacturers place on the LAME. NVET changes currently do not support the EASR A, B1 & B2 underpinning trade training implemented.

This may not be as important in large AMOs supporting large airlines where technical services and the availability of trade specialists are common, but is very important in other sectors that do not have local technical services to support them doing maintenance nor do they use specialists to any degree. Most rely on manufacturers and NAAs documentation noting other NAA regulatory systems use "acceptable data" that is not available under the CARs.

> Hawker Beechcraft Bonanza Maintenance Manual – same text in other US manufacturers' manuals
>
> "This **inspection guide is not intended to be all-inclusive**, for no such guide **can replace the good judgment of a certified airframe and power plant mechanic in the performance of his duties**."

HB's manuals, and other US aircraft manufacturers, have for decades transferred responsibility to the LAME. This places massive responsibility on LAMEs and sort of ridicules current Regulations to follow manufacturers' manuals. **FAR Part 43 is needed in the CASRs and FAR Part 91, Subpart E to set the basic maintenance of aircraft in Australia**.

General aviation, mainly US manufactured aircraft, should be maintained to the same system in the US by similarly qualified AMEs/LAMEs. Adopted correctly, then the role and responsibilities of the LAME, (including the IA role and responsibilities) will meet the non-airline sectors requirements. **Resurrect FAR based CASR Part 43/MoS, will fix many issues. This is about correcting errors introduced in 1991**.

Based on manufacturers' expectation of the broader skills of the LAME, the AME basic NVET training should therefore be broader than the particular licence applied for.

Roles and Responsibilities

The role of the AME is to perform maintenance. All LAMEs have been, and are AMEs performing maintenance and, depending on employment, will be multi-skilled depending mostly on the size of the AMOs. The smaller the AMO, the more multi-skilled the AME has to be. As an example, CASA mandated SIDs for Cessna aircraft. Part of the SIDs introduced NDI inspections. In rural AMOs, AME/LAMEs are attending NDI training courses to obtain the qualification to perform the NDI tasks in the Cessna SIDs. Some have also become CASA authorised persons for one or more purposes to keep costs down.

If the work is in an aviation component AMO, many jobs are identified as aircraft maintenance technicians so the AME doing workshop maintenance may also be identified as AMTs. In workshops, they may be permitted by the employer to sign the release to service on behalf of the AMO. An employer decision.

There are two roles of the LAME

One role is related to Annex 8 to certify the aircraft, or parts of aircraft, as airworthy (conformity inspections) after certain maintenance prescribed in Annex 1, paragraph 4.2.2.1,

LAME privileges, and the other role is to supervise, coordinate so the LAME can sign the maintenance release, however called, after the completion of maintenance.

First privilege – Annex 8; Second privilege – Annex 6.

> *4.2.2.1 Subject to compliance with the requirements specified in 4.2.2.2 and 4.2.2.3, the **privileges** of the holder of an aircraft maintenance licence shall be to [*Annex 8*] certify the aircraft or parts of the aircraft as airworthy after an authorized repair, modification or installation of an engine, accessory, instrument, and/or item of equipment, and to [*Annex 6*] sign a maintenance release following inspection, maintenance operations and/or routine servicing.*

Both roles are important elements of the safety system. One is to certify as airworthy so the certificate of airworthiness remains valid and the other relates to serviceability by coordinating and supervising maintenance and then releasing aircraft back into service.

The role of the LAME is to supervise/coordinate maintenance. Accepting that an AME performs maintenance, it is only an AME with a licence that can perform both ICAO privileges. This has traditionally been the role they perform when coordinating maintenance and performing stage inspections of completed maintenance tasks. This has been demonstrated as the best model to maintain safety in Australia. It technically gives the LAME two masters – one is to the employer and the other is the regulatory responsibilities to ensure safety standards take precedent over employer business pressures. It is similar to other NAA regulatory systems. Our workplace practices adopt this practice – it should not have been changed to a unique system that is so different to ICAO, EASA and others.

AMROBA knows that the LAME will be expected by the public, government, courts and **manufacturers** to exercise the ICAO privileges, especially to ensure maintenance performed by AMEs and non-rated LAMEs meet appropriate quality standards.

- Not meeting these ICAO privileges will only demonstrate, domestically and globally, continuation of a unique AME training and licencing system because the skills do not meet the EASA & ICAO training standards.
- Both ICAO privileges are not maintenance task certifications, they are much more important to aviation safety. Maintenance tasks is a qualified AME responsibility & a LAME can also sign maintenance tasks as they are an AME. (This is normal industry practice). The regulations do not need to mention the LAME doing AME tasks.
- Supervising and coordinating maintenance is especially important in AMOs. It has been slowly changed over the decades to address previous safety issues and, though Schedule 6 is a little over-prescriptive, it has proven to be very safe. The majority of the AMOs are not located in densely populated areas. The AME must be multi-skilled and the LAME is expected to coordinate with appropriate and applicable people and companies for technical advice.

Return of past responsibilities. CASA's certification standards committee is now amending the Part 21 legislative requirements so the AME **will once again** be able to perform modifications and repairs using data identified by the LAME by making reference to approved modification data without a CAR 21M approval. The LAME will be doing basically what the A&P IA can do in the USA and what the non-airline LAME does now, and also did with more clarity pre 1991. EASA has now moved to adopt the FAA system. There is support for the FAA 337 Form. Another reason for AME training changes.

Responsibility important to non-airline sectors: The AME training will need to include structures knowledge & skills to do modifications and repairs in the maintenance competencies for a B1/B2 licence. This was in Australia's system pre 1990. It is in the FAA system and EASA is moving to be closer to the FAA system. The AME two stream training pathways need to meet EASA & ICAO training standards.

- Similar to the LAME IA training course in NZ, there is an additional reason to include the practical and knowledge skills to do modifications and repairs in the AME training scope for each basic AME streams underpinning each licence.

Specifying Scope

The scope of each AME licence has to be identified in a CASA issued document as they are too detailed to be included on the licence. The scope is also very important to identify the training pathways so that the NVET AME training pathways can produce the practical skills and knowledge to do the work.

The current system with all its transitional problems must be ignored to develop the scope for the future LAME. For instance:

  - Do training pathways cover each licence: A, B1.1, B1.2, B1.3, B1.4 and B2.
  - AQF Level 3 AME technical training meet Cat A, Transport & Non Transport.
    - AQF 3 is the first AQF level where independence can be exercised.
  - AQF Level 4 AME training meet EASA & ICAO standards to provide the trade knowledge and practical skills to underpin the avionic or mechanical LAME's additional roles and responsibilities they adopt in employment.
- For instance, what is the full scope of the B1.1 without a specific type rating?

This can be very simple if plain English is used, but very complicated if ATA Chapters are used, unless it simply states avionic or mechanical aspects of the Chapter(s) and leave it to employers to determine. It must be simplified and leave it to industry.

EASA Flexibility Not Used

Australia, pre Part 66, also had a flexible approach to obtaining a licence; as does EASRs & FARs. The removal of those flexible methods to attain a licence makes us unique and has damaged the non-airline sectors. Since making Part 66, less participation – failure.

The EASRs & FARs retain self-study plus experience but that wasn't made available when CASR Part 66 was introduced. This authority decision, not supported by many in non-airline sectors, created an impractical situation outside the structured airlines.

CASA has had to extend Basic Exams until the NVET/ASQA/AQF is directed by government to two stream AME trade training in Australia. We know the government supports trade skills meeting international training standards like ICAO/EASA.

EASR 66.A.30 *states:*

1. for category A and subcategories B1.2 and B1.4:

(i) Self study + prac. & knowledge exams.

(ii) allied trade +

(iii) CASA adopts

(i) three years of practical maintenance experience on operating aircraft, if the applicant has no previous relevant technical training; or

(ii) two years of practical maintenance experience on operating aircraft and completion of training considered relevant by the competent authority as a skilled worker, in a technical trade; or

(iii) one year of practical maintenance experience on operating aircraft and completion of a Part-147 approved basic training course.

2. for category B2 and subcategories B1.1 and B1.3:

(i) Self study + prac & knowledge exams.

(ii) allied trade +

(iii) CASA adopts

(i) five years of practical maintenance experience on operating aircraft if the applicant has no previous relevant technical training; or

(ii) three years of practical maintenance experience on operating aircraft and completion of training considered relevant by the competent authority as a skilled worker, in a technical trade; or

(iii) two years of practical maintenance experience on operating aircraft and completion of a Part -147 approved basic training course.

One out of three ways to obtain an EASA Part 66 licence and CASA regulated to adopt only one way. Why? Both the US and EU provide similar flexible pathways and we only have one highly costly method.

EASA had it right; self-study, allied trades, formal training. This is what Australia had in the past with CASA assessing allied trades – a totally unnecessary action.

CASA's decision to implement the Part 66 AME licence, based on the EASA A/B arrangement, was poorly implemented – in particular, CASA did not need to approve ASQA approved RTOs.

Pre acceptance of three streams by CASA's predecessor when the MEA training packages were changed in the 1980s, the avionic & mechanical (2 stream) pathways were standard industry wide. Trade training that enabled AME employment throughout the aviation industry.

CASA, when implementing Part 66, demonstrated no understanding of Australian business, government education systems and, most importantly, government funding conditions associated with skill training. CASA does not have the government funds to support skill training. In fact, CASA must now work side by side with industry to convince governments to fund a new cost effective training system. AMROBA has previously proposed one.

Australia's past flexible training approach has not been replaced with a workable model. This is a major flaw in the current system that has seen large apprentice training providers closing their doors as CASA dictated changes to an incompatible model under NVET/AQF/ASQA.

> Industry wants acceptance by CASA of AQF qualifications that are both internationally comparable and accepted by other countries Basic Exams would not be required.
>
> **In other words, aviation requirements should simply state that an applicant for an AME licence will need to hold a specific AQF qualification plus one or two years' experience to be entitled to an AME licence.**

The introduction of Part 66 was the best opportunity for CASA to return AME trade training to the two streams by demanding the MEA packages be based on international training standards promulgated by ICAO and EASA and forget about the current funding model.

A "safety" regulator should demand adoption of international training standards.

There were no Authority approvals of the MEA packages as AME licencing was restricted to the aviation sectors where experience was attained. CASA Basic exams confirmed the person had the knowledge. Experience was recorded in a log.

EASA Rules – Regional Rules not 'State' Rules

A word of caution, EU countries provide trade training quite differently, so EASA concentrated on what had to underpin the avionic and mechanical pathways to obtain an A or B licence, mainly for airlines. We don't suffer from that problem as we are one nation so we should have concentrated on changing the apprentice training to obtain a trade outcome that supports the avionic and/or the mechanical trades. Total integration with other government departments and agencies would have supported the scope of the EASA A, B1 & B2 licences.

CASA does not need to approve training providers – this is not Europe.

Many EU countries have applied the training very flexibly and they are not restricted by CASA's single mandatory training decision. Australia's rural aviation is not as dense as in Europe and the lack of training providers compared to Europe highlights why their system could not be adopted. Moving forward is the challenge.

Savings

Need to be developed in conjunction with industry so that experienced AMEs and LAMEs are kept in the system doing what they could do under the CARs.

Transitionals

If the MEA training package is developed for an avionic and mechanical training stream, as proposed by industry and to properly underpin the CASR Part 66 avionic and mechanical categories, then many that gained their skills by experience must transition to the same position under the CASRs, irrespective of academic qualifications held.

Transitionals are important to keep experience and skills in the industry in the interest of safety. Experience, was not taken into account in the Part 66 transitionals.

Summary

In summary, CASA introduced a new AME licencing structure without first obtaining government support and funds to underpin the two stream training. With the massive decline in apprenticeships, radical change must happen to lower costs to government to fund skill training and knowledge. Separating the practical skills to be provided under the NVET competency based training system, prior to employment, and then providing knowledge training from a single government funded training centre of excellence, providing knowledge by correspondence and on-line will lower costs to government, employer and employee.

AMROBA recommends a new approach must start next year.

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Safety All Around.