



Engineering – Training/Licensing - 2017

It is possible to turn a negative into a positive. The current problem with licensing and skills enables the reset button to be hit to repackage the NVET training packages. Repackaged training packages that will provide pathways to higher levels of VET qualifications. It is also a harmonisation chance to remove the differences in Australia/New Zealand VET qualifications under the TTMRA.

Since the introduction of CASA's aircraft maintenance engineer (AME) Part 66 licensing system, and CASA's direct involvement with 'controlling' NVET provided training packages, the system has failed to produce appropriately skilled or knowledgeable personnel for the maintenance industry.

In Australia, like Europe, the appropriate trade skills of maintenance staff are the responsibility of the Member State and employer, who must employ 'qualified' staff. 'Qualified' staff has not been nationally aviation regulatory specified but is normally, for aircraft, an avionic or mechanical maintenance tradesperson or a person from an allied trade that has been supervised over a period of time so the employer can assess the person as 'qualified'.

NVET trade skill training was seriously affected by the overlay of Part 66 licence provisions that were not imposed by EASA's own regulations. Trade training remains the responsibility of each EU Member State.



New Zealand VET maintenance training packages provides a similar pathway as above. Each level is a pathway to the next qualification.

EASR Part 66 has a Cat 'A' licence that was adopted and FAR 65 has a Repairman Certificate and we had the CAR 33B "Airworthiness Authority". Still needed.

The additional knowledge above the NVET Certificate 4, avionic and/or mechanical, needed for a Diploma qualification, based on ICAO standards, has to be qualifications acceptable to CASA for the issue of a 'B' category licence.

The proposed variation in the NVET qualification will be a "Diploma of Aircraft Maintenance – Avionics or – Mechanical" streams with the mechanical streams further defined for Aeroplanes or Helicopters that should include both 'Normal' and 'Transport' certificated aircraft.

Developing new workable NVET trade streams training packages, based on the minimum aircraft maintenance engineer training standards promulgated by ICAO, is the responsibility of the Education Department's controlled Australian Industry Skills Council (AISC). AISC was established by COAG in May 2015 to give industry a formal, expanded role in policy direction and decision-making for the vocational education and training sector. AISC's *Industry Reference Committees*.

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Safety All Around.

ASSUMPTIONS:

CASA is responsible for Annex 1, 6 & 8 and they all impact on the skills needed by maintenance personnel, especially the knowledge & scope of licences/ratings. Adoption of ICAO terminology and definitions are necessary.

1. The LAME has two obligations specified in Annex 1.
 - One is to sign a maintenance release and that requires coordination skills, as basically prescribed in CAR Schedule 6, for the completion of maintenance. Similar responsibility as the “C” LAME under EASRs and the A&P with an IA under FARs. (Annex 6)
 - The other role is to perform ‘stage inspections’ and then certify that the aircraft, or part of the aircraft, is ‘airworthy’ after maintenance. This role is the quality control function of maintenance whereas the first role is the supervisory coordinator role required to issue a maintenance release. (Annex 8)

Note: For any licence holder to certify aircraft, aircraft system, or part of an aircraft as “airworthy” the LAME must be knowledgeable of design standards.

2. The competence of personnel is the responsibility of Australia – Annex 6. Competence and qualification is the responsibility of the Education Department who has traditionally provided career pathways with industry/government acceptance of NVET qualifications.

- Both CASA and industry needs can be satisfied by working with AISC’s **Aerospace Industry Reference Committee** to re-package current training packages to provide for NVET trade qualifications supporting both the avionic and mechanical streams that underpin licencing categories B1.1, B1.2, B1.3, B1.4 and B2 academic qualifications.
- Repackaging current training packages will also enable the reduction of differences with New Zealand VET qualifications. This will improve the transportability of NVET qualifications in the Australasia market and also the Pacific aviation market.
- Both CASA and industry need to be confident that additional licence training packages properly provide the knowledge so the applicable licence holder has the capability to certify as ‘airworthy’ (i.e. quality control of maintenance) to design standards and to be able to coordinate and control maintenance prior to issuing a release to service.

This a great opportunity to once again align the AME training to meet minimum international training standards, provide for basic practical/knowledge competencies that are further enhanced with the avionics and mechanical aircraft maintenance streams.

Adopting the international LAME knowledge requirements in Chapter 3 of the ICAO AME Training Manual, comparable with the NZ *Inspection Authorisation* training course, will provide this industry with international acceptable NVET qualifications for each of the licences. These qualifications will enable the local MRO industry to be competitive and comparable to our Asia Pacific Rim countries standards.

AMPLIFICATION:

Current training needs to be re-packaged so each employment level provides a pathway to the next level. Trades assistants to tradespersons to supervisory staff. In addition, the additional licence knowledge to certify as “airworthy” and coordinate maintenance prior to issuing a release certificate.

The following course structure is based on providing a pathway up to each level. Similar to the course structure in New Zealand. Will also meet CASA’s licencing structure.

Avionic/mechanical Basic Practical skills can be attained under a dedicated AME **Certificate 2/3** NVET (apprenticeship) training packages, based on ICAO practical skills, or a person from an allied trade who, with the appropriate experience, can meet the qualification under recognised prior learning (RPL). This needs to be documented.

Avionic/mechanical stream specific knowledge can be attained under an AME **Certificate 4** NVET knowledge training package delivered by distant learning utilising webinar and on-line training methods. The avionic and mechanical training packages would be based on the ICAO minimum avionic/mechanical training standards.

Avionic/mechanical licencing knowledge can be attained under a **Diploma 5** NVET knowledge training package that can be delivered by distant learning utilising webinar and on-line training methods for the avionic and mechanical licence streams. The avionic & mechanical training packages would be based on the ICAO licence responsibilities specified in Chapter 3 of the ICAO AME Training Manual. CAANZ has a dedicated “Inspection Authorisation” training packages that covers much of the syllabi.

LAME manager knowledge can be attained under a **Diploma 6** NVET knowledge based training package delivered by distant learning utilising webinar and on-line training methods for LAME chief engineers/line managers/managers. This training package will be based on managing of maintenance organisations’ aviation maintenance responsibilities as highlighted in Chapter 3 of the ICAO AME Training Manual.

ICAO AME Trade, Licensing & Managing Training Standards

Adoption of ICAO training/responsibilities

So that the Education Department can develop appropriate training packages that provide pathways to further education as well as providing personnel with the appropriate skills and knowledge to perform maintenance, supervise maintenance, certify as airworthy and coordinate and release to service, CASA has to promulgate that maintenance personnel and licencing will be based on ICAO minimum international training standards as it was in the past. We need pathways as below:

1. **Initial Qualification:** ICAO has separated practical and knowledge skill requirements for a purpose. The practical skills are the underpinning trade skills needed by maintenance staff involved in line, base and workshop maintenance. This is the basic avionic or mechanical trade level.
Outcome: AQF 2/3 Certificate avionic and/or mechanical basic trade skill level.
2. **Avionic/mechanical Qualification:** ICAO knowledge training beyond the practical qualification is split into avionic and mechanical streams and this will provide the training for the avionic or mechanical aircraft maintenance engineer. This a qualified aircraft maintenance engineer level.
Outcome: AQF 4 Certificate AME avionic and/or mechanical trade level.
3. **Licensing Qualification:** This is where major change is needed to resurrect the training specifically related to the responsibility of the LAME to meet the two privileges specified in Annex 1. A proper understanding to certify as ‘airworthy’

as a part of the ‘system of inspection’ to support the ‘indefinite’ certificate of airworthiness is a high safety requirement.

Trade Training Streams:

Australia should take notice of the trade training streams in New Zealand that supports both the airline and general aviation as well as the manufacturing sector.

That is what the Education Department’s Aerospace Industry Reference Committee should be producing to support aviation maintenance and manufacturing sectors.

Not only does the streams make sense, they also support the associated fields of specialised maintenance, including the airworthiness control qualifications.

The competency standards are available, it is the packaging of those standards that are important. As previously circulated, the NZ VET qualifications have been developed to support their industry and also meet the international training standards of ICAO.

Proposed Actions

The current regulations do not clarify the ICAO role and responsibility of the aircraft maintenance engineer/technician appointed by an AMO, the LAME supervisory quality control and releasing the aircraft/product to service.

Some of the problems within the regulatory system originated from amendments in 1990 when the “system of inspection” that was adopted when “*indefinite*” certificates of airworthiness were introduced, was repealed.

The following steps need to be put in action as soon as possible.

Regulatory Changes

Step 1. CASA to promulgate policy that maintenance personnel qualifications will be based on the ICAO AME Training Standards. This will enable current training packages to be repackaged to meet these standards and, most importantly, specify the training course elapsed times and the split between practical and theoretical training. Promulgation will mean the standard the AISC Aerospace Industry Reference Committee must apply to repackaging training packages.

Step 2. CASA, as soon as possible, define whether they are going to adopt the differences in the mechanical licence streams based on EASA’s split between piston engine and turbine engine or, as recommended by AMROBA and others, make the split between aircraft certification standards, “transport” or “normal” categories. Our recommended split is based on the licence responsibility to certify as “airworthy”.

Step 3. CASR Part 66 PIR be finalised as soon as possible by determining that EASR Part 66 provisions will be fully adopted except the EASA “Group” rating system would be replaced by the previous CAR 31 “Group” rating system as amended during consultation over the previous 5 years. In addition, the responsibilities of the LAME in Annex 1 should be specified in CASR Part 66 and associated regulations.

Step 4. CASR Part 147 should be amended to remove duplication of approvals of Recognised Training Organisations, government or private, which are producing the NVET qualifications. EASR Part 147 has such a provision. Under the NVET system, qualifications should be acceptable to CASA for the purpose of issuing a licence as long as experience levels specified in EASR Part 66 are adopted.

Step 5. Transition provisions should be based on current personnel having increased their knowledge based on past experience they have attained. This should be made very clear during the changes proposed.