

## Government/CASA Responsible for Personnel Shortage

### Partial adoption of EASR Parts 66/147 has caused the critical shortage of LAMEs,

Adoption of the EASR aircraft maintenance engineer licencing structure without adopting associated EASA maintenance training means CASA relies on the self-study process to meet LAME shortfall.

EASR Part 147 NAA Approved Training Courses 2007	EASR Part 147 NAA Approved Training Courses 2023
<ul style="list-style-type: none"> <li>• B1.1 course and A1 sub-course;</li> <li>• B1.2 course and A2 sub-course;</li> <li>• B1.3 course and A3 sub-course;</li> <li>• B1.4 course and A4 sub-course; and</li> <li>• B2 course.</li> <li>• B3 course added 2011.</li> </ul>	<ul style="list-style-type: none"> <li>• B1.1 course and A1 sub-course;</li> <li>• B1.2 course and A2 sub-course;</li> <li>• B1.3 course and A3 sub-course;</li> <li>• B1.4 course and A4 sub-course;</li> <li>• B2 course, or</li> <li>• B2L course plus,               <ul style="list-style-type: none"> <li>○ Com/Nav course;</li> <li>○ Instrument course;</li> <li>○ Autoflight course;</li> <li>○ Surveillance course;</li> <li>○ Airframe Systems.</li> </ul> </li> <li>• B3 course</li> <li>• L Certificate courses               <ul style="list-style-type: none"> <li>○ Sailplanes</li> <li>○ Powered sailplanes &amp; ELA1 aeroplanes</li> <li>○ Hot air balloons</li> <li>○ Gas balloons</li> <li>○ Hot-air airships</li> <li>○ ELA2 gas airships and</li> <li>○ Gas airships other than ELA2.</li> </ul> </li> </ul>

These are EASA/NAA approved training courses provided by EASA/NAA approved Part 147 maintenance training organisations.

#### Where are Australia’s equivalent courses?

**Fact:** Australia’s National Vocational Education Training system has not been tasked by government to provide these courses as NVET training courses and qualifications.

CASA approved Part 147 are not providing the EASR Part 147 approved training courses as above.

AMROBA has made submission after submission to CASA since the making of CASR Parts 66/147 to promulgate the EASR Part 147 aircraft maintenance training courses to no avail.

#### ***Failure to Fully Adopt EASR Part 66/147 – Restricts VET courses being made available.***

CASA’s Part 66 Project leaders continue to believe that under competency-based training a course does not have any duration time allocated even though submission after submission by AMROBA has demonstrated otherwise. We have referenced the Australian training regulations and standards that clearly demonstrated this is not the case.

Our shortage of aircraft maintenance personnel would not have happened if CASA had fully adopted EASR Parts 66/147 and kept up to date with each EASA’s Part 66/147 amendments. Especially the latest changes adopting competency-based training. CASA must accept responsibility and change.

EASA latest [Opinion No 07/2022, Review of Part 66 and New Training Methods and New Teaching Technologies](#) has been submitted to the European Commission for implementation in **Q3 2023**.

- Fancy words to adopt Competency Based Training and its benefits across the EU.

Shortage of LAMEs perpetrated by partial adoption of EASA maintenance licencing system.

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## What does EASA Opinion No 7/2022 set out to achieve?

Their Parts 66/145/147 are already years in advance to Australia's CASR Parts 66/145/147.

**Issue 1:** Type rating endorsement in the licence of aircraft for which Part-147 type trainings are no longer available.

**Issue 2:** Obsolescence of the basic knowledge syllabus.

**Issue 3:** Difficulties in the accomplishment of the on-the-job training (OJT).

**Issue 4:** New training methods and new teaching technologies:

*Refer to Section 2.4 of the Opinion for the details of the amendments.*

**The Opinion** also introduces some corrections and improvement of the rule as follows:

- clarification of the basic experience requirement for licence category 'C' (66.A.30);
- accreditation of the basic knowledge Modules 1 (Mathematics) and 2 (Physics) recognised by the NCA (66.A.25 and 66.A.30);
- new provision for alternative means of compliance (66.B.2);
- provision for the mutual recognition of the credit report (66.B.400) (*NAA regulation not adopted*);
- clarifications for the demonstration of compliance with the operational suitability data (OSD) when it exists (Appendix III, 1.);
- clarification for the training required in the case of differences training (Appendix III 1.): when it is between two aircraft type ratings in the same licence category, or it is between two licence categories in the same type rating.
- clarification and improvement of the 'type examination' standard which is renamed 'type evaluation' (Appendix III, 5.) being applicable for the type rating endorsement of aircraft of Groups 2 and 3, to avoid any confusion with the 'examination' of the type training that applies to aircraft in Group 1;
- introduction of new tables in Appendix IV specifying the additional experience and knowledge required to extend the licence categories;
- correction of some errors identified in the basic knowledge modules applicable to L licences (Appendix VII) including some improvements to the modules. The related Decision is intended to contain AMC with the descriptive content, in analogy with the current Appendix I to Part-66.

### ***"L" Certificates Which We Don't Have – Why aren't Part 149 orgs issuing these?***

It is very interesting that EASA has provided the training standards for maintenance personnel involved in recreational and sport aviation. A little research highlights the maturity of the recreational and sport aviation sectors in Europe. Under a CBT system, these training standards are also linked into the Parts 66 competency-based training standards thus providing a pathway for these maintenance personnel to progress to the Part 66/147 CBT system standards.

E.g. EASR Module 7 has a Module 7L 'Airframe – General, Mechanical and Electrical Systems' based on the same subjects, as applicable, but lesser knowledge levels, that the B1 category licence covers.

EASA has done the same to AME training Modules for other 'L' certificates: **8L** – Powerplants; **9L** – Hot Air Balloons; **10L** – Gas (Free/Tethered) Balloons; **11L** Hot-Air/Gas Airships; and for the **B2L** **12L** Radio Com/ELT/Transponder and/or Instruments.

**Conclusion:** *Adopting the EASA maintenance personnel multi pathways under the 'L' & A/B/C certificates/licences stated in EASR Parts 66, 147, CAO & 145 could be implemented by the NVET education system to help address the shortage of maintenance personnel.*

*Providing continual academic pathways from school to vocational careers and higher education framework will help address the shortage of maintenance personnel in a similar manner as NZ.*

**Critical:** Make the Federal Department of Education responsible for providing these courses.

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## Need for Civil Aviation Maintenance VET Courses

### “EASR 147.B.35 Exemptions

- (a) The competent authority may exempt a State education department school from:
1. being an organisation as specified in 147.A.10.
  2. having an accountable manager, subject to the limitation that the department appoint a senior person to manage the training organisation and such person has a budget sufficient to operate the organisation to the standard of Part-147.
  3. having recourse to the independent audit part of a quality system subject to the department operating an independent schools inspectorate to audit the maintenance training organisation at the frequency required by this Part.
- (b) All exemptions granted in accordance with Article 10(3) of the basic Regulation shall be recorded and retained by the competent authority.”

### *Devolve Responsibility*

In other words, CASA could have continued Australia’s workable aviation maintenance training practice and exempted the Australian NVET system because of ASQA overview of the VET training system. Part 147 would then be restricted to aircraft type training.

Until CASA works with ASQA, supported by Infrastructure & Education Departments, to attain ASQA approval of VET training courses for the licences specified in Part 66/147, the critical shortage of maintenance personnel and licences will continue.

### **CASR Part 66 requires 9 licence courses to be developed or 5 courses and 4 sub-courses.**

- B1.1 course and A1 sub-course;
- B1.2 course and A2 sub-course;
- B1.3 course and A3 sub-course;
- B1.4 course and A4 sub-course; and
- B2 course.

CASR Part 66/147 introduced these course requirements in the mid-1970s and all we have is a Diploma of Aeroskills, Avionic or Mechanical, courses that CASA accepts meets the B1.1 and B2 airline standard AME licences. That Diploma was introduced before Part66 and caused problems with training for the other licences under CAR 31. Nothing has changed.

This Diploma has combined trade and licencing requirements for the airline sector, not the rest of aviation.

### **What about the rest?**

Underpinning all civil aviation licences globally are trades skills. These are expressed in the EASA system as Part 66 training modules. Module 10 is a dedicated licencing module.

The CASA regulatory specified 5 courses and 4 sub-courses have never eventuated in the VET system.

### **Why?**

CASA promulgated Part 66/147 without a whole-of-government commitment to underpin licences with education qualifications. CASA still has not obtained whole of government support.

**Fact:** You don’t need an education qualification to obtain a CASA Part 66 licence.

**Result:** No longer in compliance with Convention Annexes or supported by Australia’s NVET framework and qualifications.

### ***Intergovernmental Coordination.***

To bring about change, especially with international authenticities, who is coordinating the Government Department/Agencies involved: **DITRDCA/CASA, Dept of Education/ASQA, COAG/AISC/IBSA, DEWR/TRA, & ABS.** CASA state they are responsible for licencing but not maintenance personnel spelt out in Annex 8 of the Convention.

**DITRDCA** is therefore the aviation link between all government department/agencies. DITRDCA has not assigned responsibility to a separate Department or Agency to provide maintenance personnel trade training since the creation of CAA in 1988.

The Dept of Education/ASQA are responsible for providing trade training that underpin licencing.

### **When will they be assigned?**

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**Trade Course Duration - ASQA/GLOBAL****For the benefit of CASA's Part 66/147 Project Team**

In setting up VET training you need to **determine** the nominal hours to be assigned to each unit. These hours should accurately indicate the **duration** of supervised structured **learning and assessment** activities required to cover the unit's content (acknowledging that progress can vary between students).

[Standard 10.5 Australian Qualification Framework](#)

“The very basics of the Australian Qualifications Framework volume of learning to meet the various levels from certificate 1 to graduate diploma are specified in the following Tables.

Table 1—Australian Qualifications Framework volume of learning: Certificate level

Certificate I	Certificate II	Certificate III	Certificate IV
0.5 – 1 year	0.5 – 1 year	1 – 2 years	0.5 – 2 years
600 – 1200 hours	600 – 1200 hours	1200 – 2400 hours	600 – 2400 hours

Table 2—Australian Qualifications Framework volume of learning: Diploma level

Diploma	Advanced Diploma	Graduate Certificate	Graduate Diploma
1 – 2 years	1.5 – 2 years	0.5 – 1 year	1 – 2 years
1200 – 2400 hours	1800 – 2400 hours	600 – 1200 hours	1200 – 2400 hours

CASR Parts 66/147 adopted from EASR Parts 66/147 included the volume of learning and specified course duration in EASR Part 147 Annex 1.

Note: This chart is the result of EASA development of Parts 66, 145, 147 **maintenance personnel** standards. It aligns with the **16 EASRs** Parts 66 & 147 regulatory courses.

CASA did not adopt but still specified 9 courses without this very important detail.

EASA B2L and B3 courses have not been adopted.

Without these 9 courses durations being included in the VET system, the VET system cannot provide comparable VET courses. Industry supports the B2L and B3 courses.

11 Basic Course	Duration (in hours)	Theoretical Training Ratio (in %)
(1) A1	800	30-35 1/3 theory – 2/3 practical (Predominately hand skills)
(2) A2	650	
(3) A3	800	
(4) A4	800	
(5) B1.1	2400	50-60 (balanced)
(6) B1.2	2000	
(7) B1.3	2400	
(8) B1.4	2400	
(9) B2	2400	
(10) B2L	1500(*)	
(11) B3	1000	
(*) This number of hours shall be increased as follows, depending on the additional system ratings selected [Not yet adopted by CASA]		
System Rating	Duration (in hours)	Theoretical Training Ratio (in %)
Com/Nav	90	50-60 (balanced)
Instruments	55	
Autoflight	80	
Surveillance	40	
Airframe Systems	100	

Please note that ‘volume of learning’ has a different meaning to ‘amount of training’. The amount of theoretical and practical training provided by a training provider is part of the overall volume of learning and relates primarily to formal activities, including classes as well as workplace learning.

This EASR Part 147 Chart must be regulatory adopted so CASR Parts 66 & 147 maintenance personnel training can be developed under the NVET and implemented by ASQA to CASR promulgated standards.

During the consultation to introduce CASR Part 66/147, AMROBA continually lobbied CASA's project leaders to identify which EU Member State's associated aviation regulations they were including to address the trade skilling pathways that underpin EASR Parts 66/147. EU Member States manage their own skill trade training; some have been using CBT for as long as Australia has.

Worse still, CASA project leaders only adopted selected paragraphs from EASR Part 66/145/147.

AMROBA has consistently identified the problems with our system caused by partial adoption of a licencing and maintenance personnel system from the EASA system.

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