

World's Best Practice

Since government demanded an economic reform of the aviation legislative requirements in the 1990s, we have heard politicians, regulators, media and many members of the industry state we should align with “world’s best practice” in aviation. The major problem is that adopting world’s best practice is seen quite differently depending who assesses the practice. If you are a conservative risk adverse person then the most restrictive practice is world’s best practice. If you are the opposite, the most lenient practice is world’s best practice. The following explores some of the “best” practices imposed by past, present & foreign regulators.

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Micro/Small Business Revival

Micro and small businesses supported by the Department of Civil Aviation (DCA) were fundamental of the economic growth of general aviation. CAA/CASA, on the other hand, wrote micro businesses out of aviation regulations in 1988/1990 and the decline of general aviation started. Without micro/small businesses there will be no future apprentices to become tradespersons to support general aviation. The latest proposal that CASA has published will now write many small (CAR30) businesses out of the regulations.

Department of Innovation, Industry, Science and Research (DIISR):
“Although only 36 percent of all businesses employing less than 5 people undertook innovative activity in 2009–10, almost 40 percent of all businesses employing less than 5 people reported barriers to innovation in the previous year. With a greater proportion of businesses within this category reporting any barrier to innovation than those actually undertaking innovative activity, there is potential for more firms to undertake innovative activity with the removal of barriers.”

The Australian **DIISR** research clearly identifies removal of barriers potentially enables micro businesses activities to increase. CASA must become aware of micro business barriers; it must then remove barriers and provide pathways so micro and small businesses can exist and survive in all levels of aviation.

Australia last had micro-businesses represented in aviation Regulations and Orders pre the formation of the CAA in 1988. Since then, each significant regulatory change has written micro businesses out of the regulatory system. This, in our opinion, is the main reason for the decline in general aviation – the loss of regulatory provisions supporting micro businesses. In addition, recent proposals will once again see many small businesses written out of the regulations.

Why is CASA regulatory development so anti micro/small business?

Europe: *“The share of small and medium-sized aviation enterprises which in 2009 supported about 500,000 sustainable and highly skilled jobs. In the same year, aeronautics generated a turnover in excess of €100 billion, of which approximately 60% is exported outside the European Union.”*

Aviation micro-businesses can be resurrected by recreating them in aviation regulations and standards. Instead of creating large organisation standards and applying them to small businesses, regulatory Parts need to adopt the former DCA approach and include proportional requirements for micro businesses with direct supervision, without the need to have complex procedures. DCA had a risk-based system that included micro-businesses as the foundations of general aviation.

Micro, Small, Medium, Large Businesses by employment numbers			
Micro Business 1 -4	Small Business 5-19	Medium Business 20 – 199	Large Business 200 up
Direct Supervision	QC manual (SMS Airlines)	QS manual (SMS – Airlines)	QS-SMS manual
Complies w/- Regulations	Complies w/- Regulations	Complies w/- Regulations	Complies w/- Regulations

Australia is basically a sparsely populated rural country so we need more flexibility in our regulatory system to remove “barriers” impeding safe economic growth.

Many aviation businesses operate from a fixed base but, to support customers, must also have the capability of undertaking a lot of field operation/maintenance.

For example, Transport Canada Aviation also enables AMOs to provide maintenance services away from main base – this practice should be included in CASR Part 145.

TCA: “Some operators may be operating in remote areas for extended periods and it may not be feasible to return to the main base for scheduled maintenance. These operators must submit details of the level of maintenance that will be conducted and how the maintenance will be controlled, what temporary shelter will be provided, and any special procedures that will be instituted to ensure that maintenance conforms to the CAR requirements.”

Using CASR Part 145 as an example, it should be developed to include variable pathways for micro, small, medium and large businesses, as defined by the ABS, with increasing organisation compliance requirements. Direct supervision to full QC/SMS.

Providing multiple pathways in regulations will then let industry economically determine which pathways a participant adopts to compete in the aviation industry.

Australian aviation mainly used micro and small businesses, therefore government should concentrate on the survival and growth of micro and small businesses.

A Micro Maintenance Business for GA

The scope of an aviation aircraft maintenance business is traditionally limited by their employed aircraft maintenance engineer’s licence and ratings. Example: the scope of a micro maintenance business could therefore be limited by the scope of an adopted EASR Part 66 B3 licence. EASA B3 scope:

- Piston engine non-pressurised aeroplanes of **2,000 MTOW and below**.
 - **Wooden** structured aeroplanes; or
 - **Metal tubing** structured, fabric covered, aeroplanes; or
 - **Metal structured** aeroplanes;
 - (includes EASR ratings L1C, L1, L2C and L2 ratings).

Basically, CASR Part 145 needs to provide four different pathways employing EASA four different B1 licences levels. CAR 30 has two levels, CASR Part 145 adds another level and the GA industry needs its “*directly supervised*” level written back in the regulations/standards. There is no legal reason why this cannot happen.

DCA Past Approach: ANO 104 required the applicant to provide appropriate facilities, tools, equipment, test apparatus and all technical data as well as evidence of:

- “*Suitability of storage facilities at its disposal for the segregation of aircraft components and aircraft materials from other goods and for the protection of aircraft components and aircraft materials against deterioration, contamination or damage;*
- *His/her ability to control the quality of work;*
- *The competence of employees; and*
- *Quality of work previously carried out to get approval.”*

“Note: Work may be carried out by persons working under an arrangement with the applicant. However, to be eligible for the grant of a certificate of approval it is intended that the applicant provide the major portion of the facilities and staff required to carry out the activities for which approval is sought.”

The basic micro model that kept GA safely operating.

This is the risk-based approach used by CASA’s predecessor DCA encouraged persons to open micro maintenance businesses. The AMO then had the ability to progressively grow the business and add the applicable administrative controls, dependent on size and kinds of aircraft or components proposed to be maintained.

The following table demonstrates how CASA could apply various pathways within CASR Part 145 to remove regulatory barriers and achieve a more flexible regulatory system based on a proportional and practical risk management. CASA is currently proposing a LAME take the place of many micro/small (CAR 30) businesses.

Over the years we have had various pathways that have all worked.			
ANO 104	CAR 30		CASR Part 145
<i>Direct Supervision</i>	<i>Class B</i>	<i>Class A</i>	<i>SMS</i>
No QC manual Regulatory standards	Quality control manual	QC + Procedures manual	Adds SMS

Transition to Part 145 with 4 separate pathways within the Part

CASR Part 145, separate pathways based on Part 66 AME licences			
Pathway 1 – DS (*) (piston engine)	Pathway 2 – QC (piston engine)	Pathway 3 – QC (turbine engine)	Pathway 4 – SMS [EASR/FAR 145]
EASR Part 66 B3 (Direct Supervision) Aeroplanes < 2001Kg	EASR Part 66 B1 Groups 2c & 3 Aircraft Ratings	EASR Part 66 B1 Group 2a & 2b Aircraft Ratings	EASR Part 66 B1 Group 1 Specific Aircraft Ratings
<ul style="list-style-type: none"> • Wooden structured aeroplanes • Metal tubing structured, fabric covered, aeroplanes, • Metal structured aeroplanes, • Composite structure aeroplanes. <p>(*) Direct Supervision</p>	<ul style="list-style-type: none"> • single piston engine helicopters & multiple piston engine helicopters deemed low complexity by CASA • Piston engine aeroplanes other than those in Group 1. 	<ul style="list-style-type: none"> • single turbine engine helicopter & multiple-turbine engine helicopters deemed low complexity by CASA • single turboprop engine aeroplanes & turbojet and multiple-turboprop aeroplanes deemed low complexity by CASA 	<ul style="list-style-type: none"> • Specific Aeroplane Type Ratings • Specific Helicopter Type Ratings

Low Higher
Regulatory Burden

The above multi pathway makes sense if CASA adopts the EASA Part 66 licences that fully supports the different pathways.

- Pathways 1, 2, 3 do not include aircraft that need a LAME with a specific aircraft type rating; i.e. complex aircraft.
- Pathways 1, 2 & 3 should also include **EASA Annex Vd Combined Airworthiness Organisation (CAO)** principles that combines Part 42 AMO and CAMO as a CAO. A return to past Australian safe practices.

This would enable GA charter operators using aircraft covered by the EASR Part 66 LAME ‘Group’ ratings to have a single maintenance business providing airworthiness control and maintenance.

The following amplifies the separate pathways.

Pathway 1. Adopt the EASR Part 66 B3 licence which will satisfy the majority of aviation using these aircraft. The B3 licence is limited to 2000kg and less aeroplanes. This licence category makes a natural entry level pathway for aeroplane maintenance. This would use the directly supervised Part 104 system from CARs and CAOs. This would also meet GA expectations – a low cost effective and safe system.

Pathway 2. This is the next level of EASR Part 66 B1 licence based on the piston engine Group 2c helicopters and Group 3 aeroplanes definitions in the latest EASR Part 66. Basically, transition applicable CAR 30 AMO into this with a 2-year grace to comply with any different provision for the future pathway in Part 145. Like CAR30, the AMO may need to add a procedures manual if associated with fare paying passenger operations with these kinds of aircraft.

Pathway 3. Same as Pathway 2 except it applies to turbine engine helicopters and aeroplanes. The difference in equipment, tooling etc are different to a piston engine aircraft AMO. Both Pathway 2 & 3 would operate under an AOC's SMS if contracted to such an operator.

Pathway 4. This pathway is for any aircraft that require a CASR Part 66 specific aircraft rating irrespective in what operation sector. This level should meet the full SMS for a maintenance organisation because it will be contracted to the larger AOC using aircraft that the CASR Part 66 requires specific aircraft ratings. Retains the split with Part 42 CAMO.

Achievable, safety-orientated, economically viable & practical.

Government Direction Needed

Government could resurrect general aviation at any time by requiring micro businesses to be included in the regulatory system as it was in the past for flight training and directly supervised maintenance organisations. DCA enabled micro businesses to flourish by including the requirements in regulations/orders or by an exemption process. Time to recreate micro businesses in regulations. Which major political party supports micro/small businesses?

The government's small business policy does not support the removal of federal red tape and barriers, instead it helps States to "help reduce state government red tape, the Government will pay up to \$300 million to states and territories that reduce the regulatory burden on small business".

What about Federal departments/Agencies reducing the regulatory burden?

The Department of Civil Aviation had a better understanding of general aviation because it did provide regulations and orders that enabled micro businesses to survive, based on persons holding a licence applicable to the micro businesses.

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CASA Harmonising with EASR Part 66/147

The same Catch 22 exists today; until CASA promulgates the practical skills syllabi, course hours and ratio between knowledge & practical training, the VET system will not meet our needs. CASA has given the best indication yet they intend to adopt all provisions of EASA Parts 66/147. We just want CASA to confirm that this time, they will include the B3 licence category for GA. In addition, the time to implement must be much faster than being contemplated.

Why the NVET system struggles to be changed to meet the aviation regulatory requirements is because CASA has only promulgated half of the EASR Parts 66/147 requirements. The politics involved with harmonising the VET system to the CASRs/MoS is an issue for the Education system. We are working to correct this.

Things would change if CASA addressed the following in a timely manner?

1. EASR Part 147 specifies the course duration and the ratio between knowledge and practical training.
 - a. CASA has not promulgated the course duration
 - b. CASA has not promulgated the knowledge/practical ratio

Fix: Include EASR Part 147 provisions for a & b above in P147 MoS.

2. EASR Part 66 provides multi pathways to obtain a licence
 - a. On job experience plus pass NAA set examinations = licence
 - b. Encourages allied trade to use experience plus pass NAA examinations = licence
 - c. Utilisation of on-line training providers (harmonised, we could use foreign providers supporting the EASR modules, excluding module 10)
 - d. Formal training of knowledge, practical, and combined knowledge & practical courses. (VET must align with CASR MoSs, when amended)

Fix: Adopt all EASR provisions as soon as possible.

3. EASR Part 66 has introduced B licence “group” ratings.
 - a. Adopt as it will remove over prescription.
 - b. Group ratings returns sanity to a partially adopted system.
 - i. Group = piston engined aeroplanes.
 - ii. Group = piston engined helicopters.
 - iii. Group = turbined powered aeroplanes.
 - iv. Group = turbined powered helicopters.
 - c. Group = specific aircraft ratings – aeroplanes & helicopter (no change).

Fix: Adopt all groups defined in the 2018 revision of EASR Parts 66/147.

4. EASRs has set the ratio for practical training whereas CASA has been quiet on what should be included in practical training. This has enabled the LAME knowledge elements to override the practical skills and knowledge requirements for the AME.
 - a. The ‘basic’ minimum practical skills have been prescribed by ICAO.
 - b. Individual Member States of the EU have trade training standards.
 - c. ICAO is currently reviewing the practical training.

Fix: CASA promulgate in advisory document(s) the ICAO’s minimum practical skills as the level of competence for AMEs. Once promulgated, maintain currency with the ICAO minimum standards.

FAA A&P IA Not Required – just add ICAO privilege to B licences

The knee-jerk to adopt the functions of the FAA A&P mechanic holding an IA is not cost-effective. All CASA has to do is add the “other” ICAO LAME privilege to the B licence. The added administrative costs that CASA will impose to implement the IA will make it not effective. It is simpler, and more cost effective, to return the ICAO privilege, i.e., to sign as “airworthy” that existed pre-1990.

e.g: add the following paragraph to the applicable paragraphs of Part 66 to enable the FAR Part 43 IA functions to be done by a Part 66 B1 LAME, as they did pre-1990, without all the red tape of the FAA system.

- 2a. A category B1 aircraft maintenance engineer licence shall permit the holder, within the scope of the licence, to certify the aircraft or parts of the aircraft as airworthy after an authorised repair, modification or installation of an engine, accessory, instrument, and/or item of equipment.

ICAO Annex 8 CoA function: 3.2.3 A Certificate of Airworthiness shall be renewed **or shall remain valid**, subject to the laws of the State of Registry, **provided that the State of Registry shall require that the continuing airworthiness of the aircraft shall be determined by a periodical inspection at appropriate intervals having regard to lapse of time and type of service or, alternatively, by means of a system of inspection, approved by the State, that will produce at least an equivalent result.**

In other words, the continued validity of the certificate of airworthiness has been determined by the LAME.

EASA new B2L, B3 & “L” Maintenance Licence

EASA and TCA take their obligations to set standards for the aviation quite differently to how CASA has approached GA & Recreational/Sport aviation. Where EASA/TCA have set standards for pilots and maintainers in these sectors, CASA is passing that liability to Part 149 organisations. Complete opposite approach to how mature major regulators apply standards.

AME Licence	Rating	Scope
B	B2 L (new)	Applicable to all aircraft other than those in Group 1 (type rating) with at least one ‘system ratings’ <ul style="list-style-type: none"> • Communication/navigation (com/nav), • Instruments, • Autoflight, • Surveillance, • Airframe systems. Appropriate manufacturers or <u>full subgroup rating</u> .
	B3 (new)	Applicable to piston-engine non-pressurised aeroplanes of 2,000 kg MTOW and below. Deemed to meet knowledge requirements for L1C, L1, L2C and L2 ratings. <ul style="list-style-type: none"> • Wooden structured aeroplanes • Metal tubing structured, fabric covered, aeroplanes, • Metal structured aeroplanes, • Composite structure aeroplanes.
FI EASA, like TCA, have promulgated licences and examinations for: ‘L’ (new)	L1C	Composite Sailplanes – within scope B3 above
	L1	Sailplanes – within scope B3 above
	L2C	Composite powered sailplanes & composite ELA1 aeroplanes – within scope B3 above
	L2	Sailplanes & composite ELA1 aeroplanes – within scope B3 above
	L3H	Hot-air balloons
	L3G	Gas Balloons
	L4H	Hot-air airships – includes L3H knowledge requirements
	L4G	ELA2 gas airships, - includes L3G knowledge requirements
L5	Gas airships other than ELA2	

Why not adopt the EASA/TCA system of having CASA set the standards as stated in the Civil Aviation Act and, where practical, CASR Part 149 organisations be delegated to provide training, facilitate CASA examinations, and issue the licence on behalf of CASA. A CASA licence instead of a Part 149 permission.

Benefits for GA

The new EASR Part B licences has provided more licence categories to the smaller aircraft sectors and also a progressive system that enables CASA to once again provide licences to those sectors. Many small businesses in the past looked after aircraft covered by this amendment to EAR Part 66.

We circulated all the details of the EASR Part 66 changes in “EASA Part 66 Revision August 2018” that included the above table. The B2L (light) is a GA avionics LAME that can expand the qualification and transition to a full B2.

The B3 licence is limited by aeroplane size that cover the majority of GA registered aeroplanes A great basic AME licence entry level.

EASA’s new “L” licences under Part 66 would remove the perception that Part 149 organisations approval don’t meet the same standards as those set by CASA. They are similar to the approach taken by TCA.

In addition, the basic of this concept is to enable a curriculum taught by Part 149 organisations, set by CASA and attain skills with on-the-job under supervision. The CASA set knowledge examination would be done by the Part 149.

The future growth really depends on CASA developing regulations and red tape that is low for basic aircraft and increases and aircraft complexity increases.

Airworthiness & maintenance is in a Catch 22 waiting for final regulations.

If they do not include more flexibility and pathways, growth will remain restricted.

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