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The Australian Licenced Aircraft Engineers Association Submission to the Aviation Green Paper 2023

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Executive Summary

This submission addresses the ALAEA's observations and experiences of the Civil Aviation Safety Authority's regulatory reform process.

The ALAEA does not believe that CASA's current philosophy for reform is fit for purpose in relation to the timely reform needed to support and grow the General Aviation sector. Nor does it accommodate the mechanisms to proactively legislate for emerging and evolving technology for a greener aviation sector.

CASA's internal expertise and resources are deficient with respect to the development of Risk-Based and Outcome Based regulations.

CASA has deviated away from its functions under the Civil Aviation Act's requirements to promulgate regulations that meet ICAO standards as a minimum. This failure is increasing the risk to aviation participants to an unacceptable level.¹

¹ Civil Aviation Act (Cth) Sections 9A and 11

Do policy and regulatory settings adequately facilitate the GA sector's evolving role in Australian aviation?

(Green Paper Chapter 7 - General Aviation p125)

With respect to aircraft airworthiness and maintenance, No. Current policy is lagging behind the emergence of new technologies, such as electric powered aircraft (as described in the Green Paper) and hydrogen fuel cells and large drones. Historically, the resources within CASA allocated to continuing airworthiness have been inadequate to preempt and adapt to a rapidly changing industry. This is exacerbated by an ongoing deficit of training for CASA's technical staff. The 2021-2022 Australian National Audit Office² performance Audit of CASA's Planning and Conduct of

Surveillance found CASA's *"training and work allocation arrangements do not ensure that inspectors possess and retain the necessary skills and competencies to undertake the surveillance tasks that they are assigned"*. It would be a fair observation to say that these problems with CASA's surveillance arm extend into the regulatory development area. There appears to be too little focus put into arming the relevant areas within CASA with the knowledge and experience required to create appropriate regulation as the industry changes. Perhaps a case of too much emphasis on corporate and bureaucratic culture and not enough emphasis on the technical skills required in the highly technical area of aviation safety? (CASA's role is to create standards for safe aviation, and to enforce those standards).

The most significant regulatory work undertaken by CASA in relation to General Aviation has been the development of the proposed Civil Aviation Safety Regulation (**CASR**) Part 43 -*Maintenance of aircraft in private and aerial work operations*. Part 43 has been a controversial project within the industry and within CASA itself. The project commenced in 2018 with an ambitious implementation date of mid 2019. Many of the labour issues affecting General Aviation (**GA**) maintenance can be sourced back to the changes to Aircraft Maintenance Engineers (**AME**) Licencing in 2011. Civil Aviation Safety Regulation (**CASR**) Part 66 was introduced to replace Civil Aviation Regulation (**CAR**)30. Whilst these changes suited large airlines, they considerably reduced the flexibility of the AME licencing system to the detriment of GA. The aviation industry, through CASA's official consultation mechanism has been calling for years to reintroduce the flexibility to the system – with little effect.

By background. In 2011 CASA introduced a new maintenance licencing scheme based on the European Aviation Safety Agency (**EASA**) regulations. The new regulations, CASR Part 66, suited major airlines, but displaced the flexible licencing arrangements utilized by general aviation. The records show that CASA attempted to introduce a new B3 licence regime in 2015 to suit small General Aviation aircraft. The attempt ultimately failed, due in part, to the complexity of the training requirements and the integration into the new CASR Part 66 (**Part 66**) scheme. In 2018, 3 years after the B3 project was shelved, a wider (long overdue) post implementation review of the introduction of Part 66 licencing was carried out. This review identified creating suitable licencing requirements for general aviation as an industry priority. Despite this, CASA did not act as it should to further review and implement a solution until 2021 – some 10 years after the Part 66 scheme was introduced. The current solution is a stop-gap measure, designed to provide initial relief for the industry. It was only given priority due to intense lobbying of the CASA Director of Aviation Safety by multiple industry representatives, who in turn directed the relevant department to pull together the required resources (at the same time pausing other important regulatory reform work).

² The Auditor-General Auditor-General Report No.28 2021–22 Performance Audit

The solution could have been introduced 10 years earlier, having a significant positive effect on the general aviation sector.

A recent enquiry by the ALAEA to CASA about the planning for regulatory development to cater for electric aircraft and hydrogen powered aircraft prompted the following response.

In relation to this media announcement. Naturally, CASA is cognisant of the Government's plans on net zero and we continue to work collaboratively with the Department of Infrastructure, Transport, Regional Development, Communications and the Arts through the development of the Aviation White Paper process on what this means from a certification and licensing perspective as these new technologies come on board. As you would anticipate the work associated with assessing and certifying applications of this nature are complex and necessarily invoke a high level of coordination across agencies to ensure the standards applied to these aircraft are proportionate for the Australian environment and informed by contemporary thinking from the international regulatory community.³

Responses such as these identify the reactive approach to airworthiness standards. Electric powered aircraft are already in service. Hydrogen is coming. CASA needs to be on the front foot and have a plan and the resources to have the required standards and legislation ready to implement. The lag caused by the reactive approach is amplified by the associated delays in producing Vocational training qualifications to suit.

Are existing consultation mechanisms, including the GAAN and CASA-led ASAP and TWGs, appropriate?

(Green Paper Chapter 7 - General Aviation p125)

The CASA-led Aviation Safety Advisory Panel (**ASAP**) and Technical Working Group (**TWG**) consultation mechanism requires a rethink and perhaps an overhaul. The ASAP and TWGs replaced the Standards Consultative Committee (**SCC**) and relevant Sub-committee model. Whilst the SCC had some faults in that it combined all CASA regulatory development, regardless of relevance under the SCC umbrella, the workings of the relevant Sub-Committees, for example the Maintenance Standards Committee (**MSC**), worked well. The current TWG model siloes the regulatory work and prevents an overall picture of how new regulations will interact with existing and proposed legislation. Currently there are four different regulations undergoing amendment or creation. Under the MSC the committee would be across the broad spectrum of changes, providing a uniform approach and visibility across all related regulations. Under the TWG model only very few representatives sit on all TWGs. There is an internal culture within CASA's airworthiness branch limiting interactions between the regulatory projects and CASA staff, resulting in changes to one regulation affecting another, yet the staff involved are unaware it has occurred.

³ Ann Redmond PSM – CASA Branch Manager, Industry and Government Engagement Stakeholder Engagement Division – email to ALAEA 10 November 2023

Changes to safety regulation approaches cannot compromise Australia's internationally recognised high standards of safety. (Green Paper Chapter 8.2 – Safety Regulation)

CASA is in the process of developing new airworthiness and maintenance regulations purportedly to reduce regulatory burden and cost to GA. The new regulation is proposed to be CASR Part 43. They have been described as being based on the United States aviation regulations.

The tasking instructions for the Part 43 project contained the following key principles for reform:⁴

- compliance with the standards set by the ICAO for general aviation
 - Annex 6 Part II — International General Aviation — Aeroplanes
 - Annex 6 Part III, Section III — International General Aviation — Helicopters
- a regulatory structure based to the maximum practical extent on an established and appropriate international standard
- minimum regulatory compliance burden consistent with ensuring a level of safety appropriate for the general aviation (GA) and airwork (AWK) sectors
- any changes are intended to be cost neutral or provide savings for the GA and AWK sectors wherever possible

The resulting legislation (in the final drafting stages as of November 2023) does not meet the minimum safety standards and recommended practices (**SARPs**) set by ICAO. This was a key principle for reform. This undermines international recognition of Australia as a world leader in aviation safety.

The reason the proposed legislation fails to meet the ICAO requirements is because it failed in its second tenet to be based, as close as practical, on the US Federal Aviation Regulations (**FARs**). Despite CASA declaring multiple times that CASR Part 43 is based on FAR Part 43, the actual differences are so marked that most of the safety mechanisms contained within the US system become impotent.

One of many examples of this is the proposed introduction of the Aircraft Maintenance Technician Certificate - Class 1 (**AMTC-1**). This authorisation is based on the US Repairman Certificate – CASA quotes the same FAR provision as being the source of the legislation. The contrast between the two is remarkable.

The US requires the Repairman to be qualified, experienced, employed in a certified maintenance organisation (and hence under its Quality Control System) and have the employer attest to their competency. CASA's minimum requirement is 18 months experience OR a course approved by CASA and maybe demonstrate to CASA that they have the ability to conduct the maintenance they are approved for. If the holder of a Repairman Certificate in the US leaves that employer, the certificate is invalid. CASA will issue the certificate in perpetuity – there are no ongoing competency assessments. The comparisons are like chalk and cheese, and the majority of the safety mechanisms from the US system have been removed.

The table below demonstrates the key differences between the US and Australian provisions.

⁴ <https://www.casa.gov.au/part-43-twg-tasking-instructions>

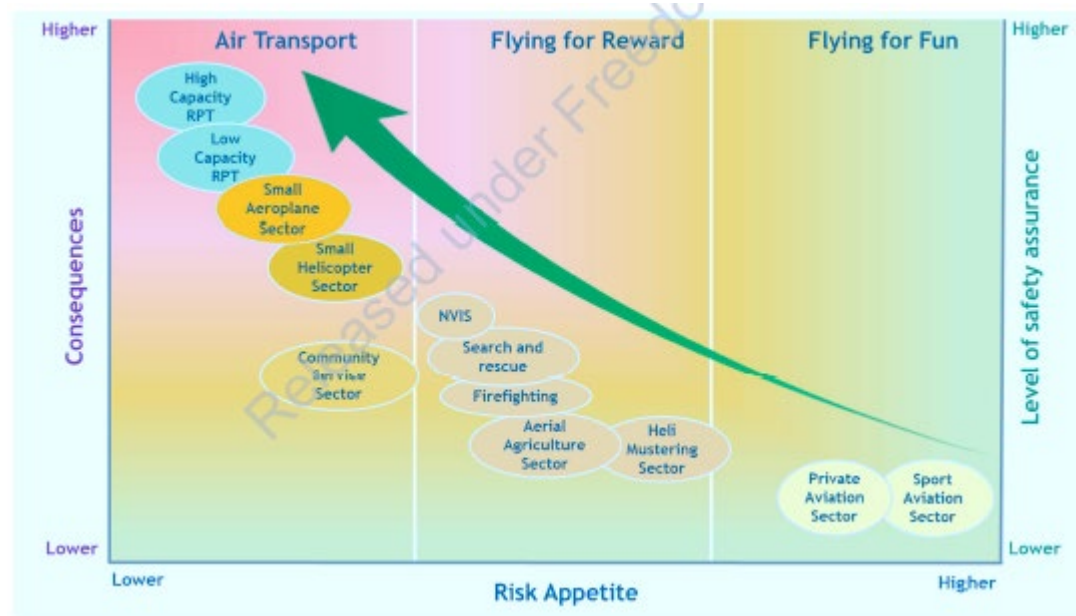
FAA Repairman Certificate requirements FAR 65.101 ⁵	CASR Part 43 AMTC 1 Source FARs section 65.101 ⁶
<ul style="list-style-type: none"> • Be specially qualified to perform maintenance on aircraft or components thereof, appropriate to the job for which he is employed; • Be employed for a specific job requiring those special qualifications by a certificated repair station, or by a certificated commercial operator or certificated air carrier, that is required by its operating certificate or approved operations specifications to provide a continuous airworthiness maintenance program according to its maintenance manuals; • Be recommended for certification by his employer, to the satisfaction of the Administrator, as able to satisfactorily maintain aircraft or components, appropriate to the job for which he is employed; <p>Have either—</p> <p>(i) At least 18 months of practical experience in the procedures, practices, inspection methods, materials, tools, machine tools, and equipment generally used in the maintenance duties of the specific job for which the person is to be employed and certificated; or</p> <p>(ii) (ii) Completed formal training that is acceptable to the Administrator and is specifically designed to qualify the applicant for the job on which the applicant is to be employed; and</p>	<ul style="list-style-type: none"> • at least 18 months of practical experience in the procedures, practices, inspection methods, materials, tools, machine tools and equipment generally used in carrying out the maintenance for which the AMTC1 would be granted; or • training, approved by CASA, that CASA is satisfied is designed to qualify the person to carry out maintenance of the kind for which the AMTC1 would be granted; and • demonstrate, to the satisfaction of CASA, that the person can satisfactorily carry out the maintenance for which the AMTC1 would be granted; and

Implementing a risk-based and outcomes-focussed regulation

CASA applied a simplified “Risk Based” approach to the regulatory development of Part 43, whereby a line was drawn between the current passenger transport operations (regular scheduled passenger, charter and patient transport) and all other operations. CASA produced a graphic to demonstrate their methodology during roadshows and seminars. (Reproduced below)

⁵ <https://www.ecfr.gov/current/title-14/part-65/subpart-E>

⁶ https://consultation.casa.gov.au/regulatory-program/maintenance-aircraft-in-private-and-aerial-work/supporting_documents/Consultation%20Draft%20Part%2043%20raft%20Manual%20of%20Standards%202022.PDF



The methodology appeared to be based on a financial Risk Appetite model i.e. How much money are you prepared to lose? (as opposed to lives), with a very basic premise that the Sport Aviation and Private Aviation Sectors had a higher appetite for risk, but the consequences of a maintenance related accident were lower, and the airline sector were the opposite. All other commercial operations fit somewhere in the middle on a sliding scale. This appears to be the only risk assessment conducted on the impact of the proposal. Freedom of Information requests for the details of any additional risk assessments failed to identify any further documents. The assessment fails to consider any other operational factors elevating risk – such as the complexity of the operations (fire fighting, search and rescue), over water, weather events, interactions with controlled airspace.

Despite the nature of the Risk Appetite model being rudimentary, it still categorized “Flying for Reward” i.e., commercial aviation activities of various risk levels, at a significantly higher level of consequence and required level of safety assurance than private and sports aviation. In fact, the model shows the consequence/safety assurance levels of some aerial work categories higher than the community services air transport.

CASA’s final approach to the development of Part 43, however, simply drew a line between air transport and everything else. Air transport airworthiness requirements remain essentially unchanged, but every other classification is covered by the proposed regulation – regardless of the risk. It is unclear what – if any – expertise is available within CASA to properly undertake the necessary risk assessments to support adopting risk-based approach to regulatory development by CASA.

The outcome CASA was seeking to achieve with Part 43 was to reduce the costs to General Aviation by reducing the burden of regulatory compliance. Unfortunately, the path taken to achieve this outcome relies on stripping out the relatively inexpensive safety mechanisms of CASA oversight. It also seeks to reduce the training cost for Licenced Aircraft Maintenance Engineers (**LAMEs**) by expand the scope of the aircraft they can work on without any additional training or formal assessment. It has reduced the standards for record keeping, parts and tooling usage. Whilst at the

same time removing the requirement to hold a Maintenance Organisation approval to conduct maintenance – meaning almost zero oversight by CASA.

As CASA has proposed to remove the organizational approval, it will require individual LAMES to certify the aircraft maintenance as complete under their own names, as opposed to certifying on behalf of the organisation. This change will significantly change the insurance requirements of the industry – moving the onus onto the individual to cover themselves for work done on behalf of the company. This cost alone outweighs any potential savings brought about by the removal of regulatory oversight.

A key principle for Safety Regulators is when an industry is exhibiting signs of financial stress, it is not the time to step away and reduce oversight. This is what CASA is proposing to do. It does not appear that CASA is equipped with the necessary understanding and expertise to be making risk-based and outcomes focused legislation.

Recommendations

A review be undertaken of CASA's internal resources to be able to adequately implement regulatory changes to accommodate the introduction of new and evolving technologies.

A review be undertaken of CASA's internal expertise to be able to implement Risk Based and Outcome Based Regulation. Where deficiencies are identified, they be corrected.

A review of the consultation process currently utilized by CASA to ensure sufficient transparency exists across related regulatory reform projects to ensure regulatory reform is completed in the most efficient manner.

A review be undertaken of CASA's compliance with ICAOs SARPs including a review of the differences lodged with ICAO.

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