



AVIATION INDUSTRY

KEY CHALLENGES AND DRIVERS SUMMARY PAPER 2025





About Industry Skills Australia

Industry Skills Australia (ISA) has been established as the Jobs and Skills Council (JSC) for the Transport and Logistics industry sectors, which includes Aviation, Maritime, Rail, Transport and Logistics, and the emerging sectors of Omnichannel Distribution and Logistics, and Air and Space Transport and Logistics.

Owned and led by industry, our JSC is committed to building a world-class supply chain workforce to increase productivity, create better jobs and build opportunities for individuals.

We will do this through:

- leveraging our more than 30-year history with the transport and logistics industry,
- undertaking research and data analysis to inform workforce planning,
- advocating for a workforce development approach in tackling industry skills issues, and
- developing priority training package products.

Purpose of the Key Challenges and Drivers Summary Paper

The purpose of this paper is to seek feedback on a summary of the key industry and skills-related trends identified for the Aviation Industry.

The main themes in this paper are drawn from extensive industry consultation conducted throughout the year including inputs from our Industry Roundtables, the Supply Chain Leaders' Summit and insights from our Strategic Workforce Planning Committee.

Feedback received on this paper will play a critical role in shaping the 2025 Aviation Industry Workforce Plan, ensuring that contemporary drivers and challenges within Australia's Aviation industry are correctly identified and developing forward thinking actions to address those challenges.

While every care has gone into ensuring the accuracy of the information contained in this Summary Paper, it is intended that this material will be validated by industry through our consultation and feedback activities over the coming months.

How to provide feedback

Stakeholders are invited to submit their comments on the key challenges and drivers outlined in this paper via a [survey](#) by close of business on **Monday 3 March 2025**.

The information provided in this paper is deliberately brief. The purpose of this paper is to validate and confirm consultation and research findings to date.

Additional responses and requests for further information should be emailed to:

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Key Challenges and Drivers

A. Key Aviation roles face ongoing shortages

Industry continues to report significant shortages in pilots, flight instructors, air traffic controllers, and Licensed Aircraft Maintenance Engineers (LAMEs). This affects both fixed-wing and rotary-wing aircraft operations, challenging industry growth and safety.

- **Occupational shortages are most acute for pilots, flight instructors, LAMEs, and ground crew**
 - The demand for pilots surpasses supply owing to global airline expansions, increasing passenger numbers, fleet growth, and pilot retirements. The high cost of training can deter potential candidates, with additional costs and limited financial support in some regions.
 - The shortage of flight instructors worsens the pilot scarcity, as qualified instructors often transition to more well-paid commercial pilot roles, impacting the training pipeline.
 - LAMEs are crucial for aircraft safety and airworthiness. However, there is a shortage due to an aging workforce, limited number of new entrants, and rigorous training requirements. Lack of articulated pathways further impacts the skills pipeline.
 - Ground operations crew and security screening personnel are also experiencing workforce shortages which have strained airports' capacity to maintain optimal safety and security for passengers and overall airport operations.
- **A lack of diversity is contributing to occupational shortages**
 - Many roles within the Aviation industry are male-dominated which is contributing to prolonged occupational shortages. Underrepresented groups face barriers to entry, such as a lack of role models, gender capability assumptions, and limited career information.

B. National coordination is essential to build Australia's Aviation workforce

Various workforce development efforts exist but are scattered and lack coherence. This increases the likelihood of duplicated efforts and inefficiencies, hindering the overall effectiveness of workforce development in the Aviation sector.

- **Coordinating initiatives can strengthen workforce development**
 - There is a lack of unified approaches to promoting Aviation careers and addressing workforce challenges. This fragmentation leads to inconsistent workforce recruitment efforts and missed opportunities for attracting and retaining talent in the Aviation sector.
 - There is also a lack of a central strategy to attract new talent, leading to challenges in maintaining a sustainable workforce pipeline. This gap results in missed opportunities for collaboration and innovation among industry players, further aggravating workforce shortages.
 - Local and regional initiatives operate in isolation, missing broader impact. This lack of coordination prevents the sharing of best practices and resources, ultimately limiting the overall effectiveness of workforce development programs.
 - Programs are often duplicative or misaligned with industry needs, leading to suboptimal resource use. This inefficiency hampers the ability to effectively address skill gaps and meet the evolving demands of the Aviation sector.
 - Sharing of best practices among different regions and sectors is limited. This lack of communication hinders the ability to learn from successful initiatives, reducing the overall efficiency and effectiveness of workforce development efforts.
- **Retaining talent is critical to overcoming workforce shortages**

- High turnover rates and impending retirements worsen the skilled worker shortage. This situation is further aggravated by the lack of effective retention strategies, making it difficult to maintain a stable and experienced workforce.
- **Aviation's diversity challenges need a unified national response**
 - Current initiatives do not adequately address barriers to diversity and inclusion. A coordinated national strategy could promote a more inclusive environment to increase workforce attraction.

C. Diversity imbalance hinders industry growth

Diversity helps address workforce shortages and brings varied perspectives and skills and enhancing innovation. Industry highlights the importance of women in Aviation and there is growing initiatives to increase female participation in the industry.

- **Closing the gender gap in Aviation requires targeted action**
 - Initiatives are needed to address the gender imbalance and occupational shortages in the industry by attracting women to critical roles, especially in engineering and piloting, and providing resources and strategies to support their career development.
 - There is a noticeable underrepresentation of women in technical roles at airports, underscoring the need for targeted recruitment efforts. There are initiatives such as the [Women in the Aviation Industry Initiative](#) which focus on pilots, aviation engineers, and air traffic controllers, but more can be done in this area.
 - There is a lack of projects that focus on increasing inclusion and outreach programs in schools, especially for girls, to encourage interest in Aviation careers.
- **Supporting First Nations and underrepresented groups can help address Aviation occupational shortages**
 - Training and developing First Nations people for Airfield Reporting Officer (ARO) and other roles in regional and remote communities may play an important part in addressing occupational shortages.

D. High cost of training is a major barrier

Training for pilots and cabin crew is expensive, involving tuition fees, flight hours, simulator sessions, and regulatory requirements.

- **High training costs limit access to Aviation careers**
 - Aviation training is often funded through personal savings, loans, airline sponsorships, government programs, or scholarships. Some training organisations offer financing options to ease the financial burden. There needs to be more support and initiatives to make training more accessible and create opportunities for less experienced pilots to enter the industry.
- **Targeted government support is needed for high-cost Aviation training**
 - Apprenticeships and government funding for priority occupations can make training more accessible, especially for high-cost roles like pilots and flight instructors.
 - Industry roundtables confirm the need for government funding through apprenticeship programs for occupations in shortage, and training that leads to licensing to reduce costs.

E. Qualifications need better alignment with industry needs and regulations

Better alignment between training products and licensing/standards requirements would promote uniformity and reliability within the industry, enhancing recognition of competence and professionalism.

- **Vocational training needs to be better aligned with industry standards and licences**
 - Qualifications for Air Traffic Controllers need better alignment with International Civil Aviation Organisation (ICAO) standards, and vocational qualifications should align more closely with CASA licences, including streamlined recognition of overseas qualifications.
 - Stakeholders highlight the need to revise the Diploma of Aviation to better align with Civil Aviation Safety Authority (CASA) licensing requirements.
- **A skills review can help ensure training meets industry needs**
 - Industry often uses in-house training for cabin crew and ground operations, but this training does not result in nationally recognised qualifications, leading to gaps in skills and increased on-the-job training costs.
 - Stakeholders suggest conducting a skills review/audit to ensure qualifications meet industry needs, highlighting the transferable skills of cabin crew and ground operation crew.
- **Industry-aligned training will create clearer career pathways**
 - Training materials that do not reflect current industry standards do not prepare trainees effectively, necessitating additional employer investment in retraining.
 - Misalignment between training and industry practices leads to a lack of clear career pathways, causing higher dropout rates.

F. Decarbonisation efforts demand new skills

Adoption of Sustainable Aviation Fuels (SAF), hydrogen, and electric aircraft requires new skills for operation and maintenance. Airlines are modernising their fleets as a considered step towards a more sustainable Aviation future.

- **Hydrogen aviation has potential, but infrastructure gaps must be addressed**
 - Sustainable fuels could serve a broader market, but the transition for aircraft, airports, and fuel logistics will slow uptake, limiting impact in the near-term.
 - Transitioning to hydrogen-powered aircraft requires new infrastructure for fuel storage, handling, and refuelling, along with training for ground crew and maintenance personnel.
- **Training must evolve to support the shift to electric propulsion systems**
 - Electric propulsion systems differ from traditional engines, necessitating new skills for maintenance and operation, and requiring updated training products to reflect these changes.
- **Sustainable Aviation Fuel (SAF) is the most immediate solution for reducing Aviation emissions**
 - SAF is crucial for decarbonisation, being safe, technically viable, and usable with existing aircraft and infrastructure. It is expected to contribute 65% of the decarbonisation needed for net zero by 2050 globally. The implementation of SAF will require new skills and knowledge for maintaining safety and compliance with regulations.
 - Alternative fuel technologies are not expected to be commercially viable in the near-term but has the potential to substantially reduce emissions.

G. New skills are needed for emerging technologies

The Aviation sector is experiencing significant advancements with Advanced Air Mobility (AAM) and Remotely Piloted Aircraft Systems (RPAS), requiring new skills and competencies.

- **Uncrewed technologies are reshaping the skills needed in the Aviation industry**
 - AAM introduction necessitates a workforce proficient in new technologies, operational procedures, and regulatory frameworks, but the required skills are still being determined.
 - Operating AAM and RPAS in complex environments demands advanced technical skills and a deep understanding of the regulatory landscape.

- The [Uncrewed Traffic Management \(UTM\) action plan](#) focuses on safely integrating drones into national airspace, supporting innovation and fostering economic growth.
- CASA's [RPAS and AAM Strategic Regulatory Roadmap](#) aims to integrate emerging Aviation technologies into Australia's airspace and regulatory framework, highlighting the need for standardised training and licensing for RPAS operators.
- **A tiered licensing approach can enhance safety and efficiency in uncrewed Aviation**
 - The current licensing system for uncrewed systems in Australia is not tiered, indicating a need for more specialised training for operators of complex drones.
 - Without a tiered licensing approach, there is a risk of operators being underprepared, potentially impacting safety and operational efficiency.
- **Artificial Intelligence is reshaping aviation with smarter operations, security, and passenger experiences**
 - The growing use of artificial intelligence (AI) in aircraft and aviation-related systems offers opportunities to enhance efficiency, safety, and consumer benefits when implemented responsibly. AI has the potential to transform airport operations by streamlining baggage handling and security screening.
 - Integrating AI technologies in security screening and ground operations can streamline passenger flow, reduce wait times, and strengthen security, resulting in a more efficient and enjoyable airport experience for travellers.

H. Vocational training is critical for Australia's growing Space industry

There are no nationally recognised qualifications or specific industry skills training available for current and anticipated Space industry roles.

- **Clear vocational pathways can strengthen career opportunities in Space transport and logistics**
 - The specific skills and roles required in Air and Space Transport are still being defined, posing a challenge for workforce development.
 - VET can help by developing new skills standards or contextualising existing ones for the Space Transport industry.
 - Developing nationally accredited training programs for schools and training organisations can help recruit the future workforce.
 - Implementing strategies to enhance vocational pathways to higher education can provide clearer career paths in the Space industry.
 - Key areas include inventory maintenance for dangerous goods, handling and transporting space-related items, and understanding import/export regulations.

I. Recruitment and funding challenges for General Aviation (GA)

General Aviation supports various sectors, including flight training, agricultural aviation, emergency medical services, aerial surveying, and recreational flying, and is crucial in disaster relief efforts. GA enhances connectivity in remote and regional areas where commercial airlines may not operate.

- **Limited amenities and high living costs hinder regional workforce retention**
 - Attracting and retaining personnel in regional and remote areas is challenging owing to limited housing, higher living costs, restricted amenities, and lifestyle options.
 - There is a growing demand for pilots, engineers, and maintenance technicians, but attracting talent to regional areas remains challenging.
- **Defined pathways are needed to attract new talent to General Aviation**
 - Clear training pathways for critical roles, including Licensed Aircraft Maintenance Engineers (LAMEs) and pilots, are needed to facilitate entry into the industry.

- **Funding challenges undermine the safety and growth of regional airports**
 - Many regional airports struggle with inadequate funding, impacting their ability to maintain and upgrade infrastructure, which affects safety and efficiency.
- **Better alignment between VET and CASA licensing is vital for General Aviation growth**
 - Aligning vocational qualifications and ASQA requirements with CASA licensing is critical for access to training and maintaining an agile and skilled workforce.
 - Better alignment of vocational qualifications with CASA requirements and clear career and training pathways are vital for the sustainability of General Aviation.
- **Advanced Air Mobility requires targeted programs to support workforce readiness**
 - The advent of Advanced Air Mobility (AAM) and other technologies requires a workforce skilled in operating, maintaining, and managing advanced aircraft, necessitating robust retraining and upskilling programs.
 - Developing targeted programs to foster the early adoption of Aviation technologies will drive sustainable economic growth and create desirable employment outcomes.



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