

INDUSTRY PROFILE-

Aviation Ground Operations

Transport Postal and Warehousing
Air and Space Transport
Flight Operations
ANZSIC 4900

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Background

Key Aviation Regulatory Bodies and Their Roles:

Civil Aviation Safety Authority (CASA): CASA is the primary aviation safety regulator in Australia, responsible for licensing pilots, engineers, and aircraft, alongside setting and enforcing aviation safety standards. It collaborates with other bodies, like Airservices Australia, to maintain safe aviation practices. CASA also oversees compliance with air navigation and security systems in partnership with agencies like the Australian Department of Infrastructure, Transport, Regional Development, Communications, and the Arts.

Airservices Australia: Airservices Australia manages air traffic control and navigation across Australia's airspace, coordinating between civilian and military aviation needs. It is also responsible for maintaining the essential infrastructure needed for communication and navigation. This organisation ensures safe air travel by managing traffic flow and providing critical support services, such as flight information and emergency coordination.

Department of Infrastructure, Transport, Regional Development, Communications and the Arts: This department provides strategic oversight and policy development for aviation in Australia, guiding long-term sustainability and competitiveness goals. It is heavily involved in initiatives like the Aviation Green and White Papers, which outline future trends and infrastructure planning. It focuses on integrating new technologies, decarbonisation efforts, and aligning Australian standards with global practices to support both economic and environmental objectives.

International Civil Aviation Organisation (ICAO): ICAO sets global aviation standards, including safety, efficiency, and environmental impact, which member countries, including Australia, must follow. It develops universal guidelines for air navigation, aviation safety, and accident investigations. ICAO's policies on emissions and noise standards are central to Australia's alignment with international safety protocols and climate goals, influencing national regulations like the standards enforced by CASA and Airservices.

Australian Transport Safety Bureau (ATSB): ATSB is the national transport safety investigator, examining aviation accidents and incidents to enhance safety across the sector. It identifies risk factors and recommends improvements for preventing future accidents. The bureau operates independently of CASA and Airservices, ensuring an unbiased investigation process for incidents impacting public safety and regulatory compliance.

Overview of Licensing Requirements for Ground Operations

Certification of Ground Operation Personnel: Ground personnel involved in safety-critical tasks, such as handling dangerous goods, require specific CASA-approved training to ensure compliance with safety and security regulations.

- Operators must ensure that ground operations staff understand and adhere to the company's safety policies. Regular safety performance reviews are mandated to assess compliance with CASA's operational standards.

Qualifications and Experience for Key Personnel: Positions like the Head of Ground Operations or Safety Management require the nominee to have relevant qualifications and experience per CASA's Civil Aviation Safety Regulations (CASR). These qualifications cover the areas of organisational safety, regulatory compliance, and safety policy implementation. Personnel in operational management roles need to be assessed as fit and proper individuals and must undergo familiarisation training as part of their certification requirements under CASA protocols.

- Ground personnel involved in handling safety and emergency equipment must complete approved training courses. Assessments are conducted by certified instructors to validate their ability to manage emergency situations effectively. This certification ensures ground personnel can safely handle passengers and cargo under various operational conditions.

Approval for Ground Operations: Organisations conducting ground operations need a CASA-issued Certificate of Approval (COA), which confirms their capability to manage safety and operational compliance. This includes requirements for training programs and safety measures aligned with Australian and international aviation standards, as stipulated in the Civil Aviation Act 1988.

Testing: Security screening personnel undergo annual accreditation testing under the Department of Home Affairs' Screener Accreditation Scheme. This testing, conducted independently, ensures all personnel performing passenger, baggage, and cargo screenings are up-to-date and competent in their roles.

Additional Regulatory Requirements

Aviation Security Identification Card (ASIC): Required by all personnel working in secure areas of airports, including ground operations, must hold a valid Aviation Security Identification Card (ASIC). This requirement is managed by the Department of Home Affairs, under the Aviation Transport Security Act 2004. ASICs are issued through accredited issuing bodies following background checks, including criminal history and ASIO assessment.

Airside Driver's License (ADL): Ground staff operating vehicles on airside (the secure area near the aircraft) are required to obtain an Airside Driver's License (ADL). This license confirms they have received training specific to operating in airside environments, including safety protocols and awareness of air traffic control signals. ADLs are typically managed by individual airport authorities, such as Perth Airport, under guidelines provided by the Civil Aviation Safety Authority (CASA).

Dangerous Goods Handling Certification: Ground operations staff who handle, package, or transport hazardous materials must complete certification in Dangerous Goods Handling. This certification covers regulations on identifying, labelling, and safely transporting dangerous goods by air. The Civil Aviation Safety Authority (CASA) sets guidelines for Dangerous Goods training in alignment with the International Air Transport Association (IATA) Dangerous Goods Regulations.

Security Screening Accreditation: Security screening officers, responsible for passenger and baggage checks, must pass an annual competency-based accreditation. This ensures they meet standards for detecting prohibited items and maintaining safety protocols. The Department of Home Affairs' Cyber and Infrastructure Security Centre (CISC) oversees the accreditation process under the Aviation Security Regulations, often carried out by third-party accreditation bodies.

Occupational Health and Safety (OHS) Compliance: Ground operations staff must comply with the Occupational Health and Safety standards for airport and airside environments. This includes training in workplace safety, the use of personal protective equipment (PPE), and emergency response protocols. OHS requirements are overseen by Safe Work Australia and enforced at the state level by WorkSafe WA, which may conduct regular inspections and compliance checks for airport ground operations.

Impact of the regulatory environment: The WA aviation industry faces significant barriers in training and workforce development due to stringent regulatory and auditing requirements. Compliance with evolving safety, security, and operational standards requires continuous certification and recurrent training, which places financial and administrative pressure on the industry. Perth Airport reports that maintaining compliance with economic and environmental regulations diverts resources from workforce development, impacting the ability to invest in specialised training. The City of Karratha adds that meeting compliance standards in regional airports often stretches limited staff capacity, reducing opportunities for skill enhancement and recruitment initiatives. Similarly, the Regional Capitals Alliance WA notes that adherence to strict regulatory guidelines, particularly for airside operations and safety standards, limits the flexibility to focus on proactive workforce training strategies. Virgin Australia indicates that regulatory-driven operational costs in areas like security and environmental compliance further limit the resources available for professional development in critical roles.

Ground Operations Overview:

Challenges Facing Aviation Ground Operations:

Perth: Perth Airport plays a central role in Western Australia's aviation sector, facing unique challenges in maintaining operational efficiency as demand for both passenger and cargo services grows. Key issues include managing the increased flow of traffic while balancing development projects aimed at expanding airport infrastructure. Perth Airport's upcoming expansion, valued at over \$3 billion, includes new terminal facilities, multi-storey car parks, upgraded road networks, and a new runway. These investments underscore the pressing need to scale ground operations efficiently, yet the financial dependence on investor confidence, particularly from the taxpayer-backed Future Fund, brings significant pressure to maintain a favourable regulatory environment (Perth Airport). Moreover, Perth Airport has been vocal about the importance of a "light-handed" regulatory approach to sustain ongoing infrastructure investment, fearing that any shift could dampen investor interest, subsequently limiting the airport's ability to meet growing operational demands (Perth Airport Submission). Additionally, workforce shortages persist in ground roles, especially as demand rises in sectors like cargo handling. Addressing these gaps requires a concerted focus on attracting skilled labour, promoting job security, and improving training programs tailored to critical ground operations (Australian Services Union Submission).

New routes announced for Perth Airport in 2024:

- **Cathay Pacific:** Operating 11 weekly flights from Hong Kong to Perth as of October 28, 2024. Additionally, Cathay Pacific will increase its frequency with daily services.
- **Qantas:** Reached a major agreement with Perth Airport to enhance both domestic and international flight options, boosting tourism and connectivity.
- **China Southern Airlines:** Resuming flights between Guangzhou and Perth on November 28, 2024, re-establishing a direct connection to mainland China.
- **South African Airways (SAA):** Restarted its popular route from Johannesburg to Perth in April 2024.
- **Thai Airways:** Reinstated daily flights between Bangkok and Perth, connecting Thailand with Western Australia.
- **Singapore Airlines:** Increased to four daily flights between Singapore and Perth, matching pre-COVID levels, and opened a new SilverKris Lounge at Perth Airport.
- **AirAsia Malaysia:** New entry from Kuala Lumpur to Perth, marking AirAsia's expansion into the Australian market.
- **Emirates:** Resuming a double-daily service between Dubai and Perth from December 1, 2024, enhancing travel options between the UAE and Australia.
- **All Nippon Airways (ANA):** Returned with flights between Tokyo and Perth in October 2024, ahead of schedule due to high travel demand.
- **Airnorth:** Launched a direct service from Alice Springs to Perth in March 2024, increasing domestic travel options within Australia.
- **China Eastern Airlines:** Scheduled to reintroduce seasonal flights between Shanghai and Perth around the 2025 Chinese New Year.

Regional Western Australia: Faces distinct and multi-layered challenges in aviation ground operations due to its expansive geography, sparse population centres, and reliance on aviation for connectivity. Airports such as those in Karratha, Broome, and across the Kimberley region are vital not only for transporting passengers but also for facilitating cargo operations essential to mining, agriculture, and emergency medical services. The City of Karratha, for example, highlights the airport's role in supporting the local fly-in fly-out (FIFO) workforce essential to the mining sector, driving demand for ground operations while underscoring a dependency on continuous, high-quality service (City of Karratha). In regions like the Kimberley, local governments manage multiple airports, often with limited resources, serving as critical infrastructure for communities otherwise isolated by vast distances. The challenges are compounded by high operational costs and the need for specialised services like the Royal Flying Doctor Service, further stressing local aviation infrastructure and ground support personnel (Kimberley Regional Group Submission). Staffing shortages are acute across regional airports, where attracting

and retaining skilled ground staff is a significant hurdle. Many regional councils advocate for government-supported workforce initiatives to address the shortage of ground personnel and enhance training to meet the unique operational needs of regional airports (Regional Capitals Alliance of WA). Moreover, regional airports often rely on community reinvestment of airport revenues to sustain operations, making financial viability a constant challenge amidst fluctuating demand and high operational expenses (City of Karratha).

- **New Routes Announced Regional WA in 2024:**
 - **Busselton Margaret Rive Airport:** Jetstar have begun flights between Sydney and the Busselton Margaret River Airport
 - **Virgin Australia Regional Airlines (VARA):** WA Based VARA has placed orders for eight Embraer E190-E2 aircraft to service regional routes.

Airfares:

Spike in fares: Following the COVID-19 pandemic, Australian airfares initially spiked due to a combination of reduced capacity, strong demand, and increased operational costs. During the recovery phase in 2022, leisure travel demand surged while capacity lagged, as airlines had downsized significantly during the pandemic. Additionally, rising jet fuel prices due to global factors, including the Ukraine conflict, further drove fares higher. The Bureau of Infrastructure, Transport and Regional Economics (BITRE) recorded a peak in discounted airfares by December 2022, attributed to low availability and high demand. However, with airlines gradually restoring routes and the return of workforce capacity, fares began to decrease in 2023, moving closer to pre-pandemic levels.

Competition from new entrants: The brief operation of low-cost carrier Bonza, along with operational adjustments by established airlines, contributed to stabilising fare prices. For example, Qantas and Virgin Australia modified their pricing models and adjusted route offerings to better balance demand and manage capacity constraints. By early 2024, domestic airfares began to approach pre-COVID levels as international airlines expanded routes, adding capacity and supporting industry stability. However, following the recent collapse of budget airline Rex, along with Bonza, concerns have emerged about potential fare increases due to Qantas and Virgin Australia now controlling key routes. This impact is already evident, with Melbourne-Sydney fares rising 39.5% between July and October.

Regional Airfare Zone Cap (Western Australia): Introduced by the Western Australian government in 2020, the **Regional Airfare Zone Cap** initiative aims to make air travel more affordable for residents in remote and regional communities. This initiative sets a maximum price (or “cap”) that regional residents have to pay for flights between specific regional areas and Perth.

- **How It Works:** The airfare cap is applied only to residents of regional areas, not tourists or visitors, ensuring that locals benefit from lower prices. The cap varies depending on the distance. For example, flights between regions like Karratha and Perth are capped at, depending upon distance, approximately \$199 or \$299 one-way, making regular travel more accessible. The initiative is applicable on select airlines that have agreed to participate in the program, including Qantas, Airnorth, Nexus, Rex, Skippers Aviation and **Virgin Australia**, ensuring that a variety of flight schedules and services are available.

Qantas and Virgin Regional Flight Discounts (Western Australia): Qantas and Virgin Australia, in collaboration with the Western Australian government, offer **Resident Fares Programs** that provide discounted flights for locals travelling to and from regional areas.

- **How It Works:** Residents in eligible regional towns register through the airline’s website to access discounted fares. These discounts can range from **20% to 30% off standard ticket prices** for regional routes. The fare reductions apply to specific routes, primarily those serving resource-rich regions with Fly-In, Fly-Out (FIFO) operations or areas heavily dependent on tourism, like Broome and Kununurra. The discounted tickets are subject to availability, and the initiative is intended to ensure that residents are not priced out of critical travel services.

Federal Remote Airfare Subsidy (Australia-Wide): The Australian government’s **Remote Airfare Subsidy Scheme** (RASS) targets making air travel more affordable for remote and Indigenous communities by offering

travel subsidies. This is part of a broader effort to increase connectivity and reduce isolation for Australia's most remote populations.

- **How It Works:** Eligible remote residents can apply for a subsidy through the government to receive reduced airfares. The scheme covers a portion of the travel cost for essential travel, including medical appointments, education, and family reunions. The subsidy is calculated based on the distance travelled, the remoteness of the destination, and the purpose of the travel. Approved individuals can access the discount via government-issued travel vouchers.

Regional Express (Rex) Community Fares Program: Rex Airlines offers a **Community Fare** initiative aimed at providing affordable airfares to regional towns across Australia. The program sets aside a portion of seats on each flight at a reduced rate, targeting low-density, remote communities.

- **How It Works:** Community fares are available for advance bookings (typically 30 days or more before the flight) and within 24 hours of departure, providing flexibility for both planned and urgent travel. Key routes serviced include flights to small regional airports like Esperance and Albany in Western Australia. The initiative is designed to maintain consistent and affordable travel options for residents who rely on regular air services to connect with larger hubs.

Workforce Challenges

Housing Affordability

Perth: high housing costs pose a challenge for aviation ground staff, affecting recruitment and retention in airport roles such as baggage handling and security screening. The high cost of living, particularly in terms of housing affordability for both renting and buying, exacerbates workforce shortages as potential recruits face financial strain from elevated rent prices and limited affordable home ownership options. This constraint is especially impactful for entry-level positions in ground operations, where wages may not sufficiently cover the cost of living in the area, making it difficult to attract and retain essential personnel (Australian Services Union).

Regional Western Australia: Housing affordability significantly impacts the aviation sector's ability to maintain ground operations. Key regions, including Karratha and Broome, face severe housing shortages and high rental costs, driven by resource-sector demand and limited housing supply. The City of Karratha, for instance, highlights housing availability as a primary challenge, with limited rental options placing additional pressure on airport staff, especially for roles requiring shift work and flexibility (City of Karratha). In these areas, inflated rental costs often deter skilled workers from relocating, which complicates the recruitment of essential airport personnel. Additionally, regional airports rely heavily on fly-in-fly-out (FIFO) employees, adding a layer of complexity as these workers face rising accommodation expenses, potentially impacting retention and job satisfaction. Regional councils and local governments advocate for state and federal support to improve housing infrastructure and affordability, a crucial step in sustaining regional aviation operations and ensuring accessible housing for ground staff, thereby stabilising essential services in remote and regional airports (Kimberley Regional Group Submission; Regional Capitals Alliance of WA Submission).

Operations:

Operational demands for ground crew roles are high, with tasks ranging from baggage handling to maintenance and security screening. Ground staff must manage physically demanding tasks while meeting tight schedules to avoid delays and disruptions. However, these roles are further complicated by high turnover and staff shortages, which often lead to increased workloads and extended shifts for remaining employees. Such conditions contribute to worker fatigue, reducing productivity and increasing the risk of errors or accidents on the job. Addressing these challenges requires targeted workforce development strategies and enhanced job security measures to stabilise the ground crew workforce and support efficient airport operations (Australian Services Union; Transport Workers Union).

Additionally, training and certification requirements for ground crew roles add complexity to the hiring process. Security screenings and certifications are essential for roles that interact with screened baggage or restricted airport areas, as highlighted by industry security bodies.

Workforce Supply and Demand

Aircraft Baggage Handler And Airline Ground Crew (ANZSCO 721911):

- The demand for baggage handlers has risen significantly due to increased passenger and cargo volume, with airlines like Qantas reporting a return to near pre-pandemic levels in passenger numbers. This resurgence places pressure on airports to maintain an efficient baggage-handling workforce to meet operational demands. The Qantas Group emphasises that sustained traffic growth directly drives the need for roles like baggage handlers, as efficient luggage processing is essential for customer satisfaction and operational flow (Qantas Group). However, attracting and retaining baggage handlers is a notable challenge. The Australian Services Union highlights that roles similar to baggage handling often suffer from high turnover due to low wages and challenging working conditions. These positions typically offer entry-level pay, which does not align with the high cost of living in many areas, particularly around major urban airports like Perth. This mismatch between wages and living expenses discourages potential recruits and makes it difficult to maintain a stable workforce in baggage handling (Australian Services Union).
- Workforce shortages are compounded by the physical demands of the job, which often involve repetitive heavy lifting and extended hours. These conditions contribute to employee fatigue and may result in higher turnover rates. The Transport Workers Union notes that labour shortages mean remaining staff face increased workloads, which can impact efficiency and service quality. As a result, airports are urged to implement supportive policies that improve job security and enhance working conditions to retain baggage-handling staff (Transport Workers Union).
- Moreover, the security and screening requirements for baggage handlers add complexity to recruitment. CW Aviation Security notes that strict training and certification protocols for roles involving screened baggage may deter potential hires, adding to the supply challenge. These requirements are essential for security but can slow down the hiring process, making it more difficult to meet rising demand for baggage handlers. Streamlining onboarding for these roles could help airports quickly fill critical vacancies and ensure operational continuity (CW Aviation Security).

Aerodrome Reporting Officers (AROs) (ANZSCO 231199):

- The demand for Aerodrome Reporting Officers (AROs) in Australia is growing, particularly in regional and remote airports. AROs play a vital role in ensuring airport safety and compliance with aviation regulations, responsibilities that are critical as passenger and cargo traffic increase across the country. The Australian Airports Association highlights the economic importance of regional airports, which rely heavily on roles like AROs to maintain safe operations. With regional airport activity expanding, there is an increasing need for a stable ARO workforce to meet these operational demands (Australian Airports Association).
- Regional Western Australia, where several small airports service essential mining, medical, and community needs, faces significant challenges in attracting and retaining AROs. High housing costs in these areas often deter potential recruits, making it difficult to maintain an on-site workforce for essential roles similar to AROs. For instance, in locations like the Kimberley, housing shortages and inflated rental prices due to mining activity contribute to workforce instability, leading to a reliance on fly-in, fly-out staff for ARO roles. This dependency on non-local labor adds operational costs and impacts service continuity (City of Karratha; Kimberley Regional Group).
- Training and certification requirements for AROs, while essential for safety, add complexity to the supply of qualified personnel. ARO roles require specialised knowledge in areas such as airport inspections, wildlife management, and emergency response. However, training programs for these specific competencies are often limited to larger urban areas, making it challenging for regional airports to source locally trained personnel. The Regional Capitals Alliance of WA advocates for expanded training

opportunities in rural areas to bridge this gap, suggesting that accessible local training could support a more reliable regional workforce for roles like AROs (Regional Capitals Alliance of WA).

- In addition to logistical challenges, AROs face high job demands and responsibilities, including regular safety inspections, weather monitoring, and runway condition reporting. These duties can be physically demanding and require attention to detail and flexibility to manage irregular hours. Due to these requirements, roles such as AROs often have high turnover, especially in remote areas where job stress and the cost of living further complicate retention efforts. Increased support for job security and competitive wages could help alleviate these challenges, promoting workforce stability (Australian Airports Association).
- As part of workforce planning, regional and remote airports are calling for targeted government support to improve recruitment and retention for ARO roles. Enhanced housing support, wage adjustments, and increased training opportunities are recommended to ensure a steady supply of qualified AROs. By addressing these factors, regional airports hope to build a sustainable local workforce, reducing the need for temporary staffing and creating a reliable foundation for safe and efficient airport operations across Australia (City of Karratha; Regional Capitals Alliance of WA; Australian Airports Association).

Passenger Screeners (ANZSCO 721911 – reported as Airline Ground Crew):

- The demand for passenger screeners in Australia is high as airports navigate increasing security requirements and rising passenger numbers. Passenger screeners are essential for maintaining security compliance and public safety, but industry sources indicate challenges in attracting and retaining sufficient staff in these roles. The rise in airport activity following the pandemic has placed additional strain on screening operations, and meeting demand for passenger screeners has become a priority as airports work to reduce wait times and ensure a seamless experience for travellers (Australian Airports Association; Qantas Group).
- Retention issues in passenger screening are exacerbated by the physically demanding nature of the job and strict regulatory requirements. Screeners must undergo rigorous, ongoing certification, which ensures security standards are met but can be a barrier for new recruits. CW Aviation Security notes that roles similar to passenger screening require annual accreditation to confirm competency, adding complexity to the workforce supply. High turnover in these roles often means that airports must continually recruit and train new staff, which affects operational stability and increases recruitment costs (CW Aviation Security; Transport Workers Union).

Air Traffic Controllers (ANZSCO 231112):

- Australia faces potentially a significant shortage of air traffic controllers, an occupation critical for ensuring safe and efficient airspace operations. With increased flight volumes post-pandemic, the demand for air traffic controllers has risen, yet workforce supply remains constrained due to high retirement rates and illness-related absences, particularly since the COVID-19 pandemic. During the pandemic, a retirement incentive program led to a notable decrease in controller numbers, impacting staffing availability as the industry rebounds. This shortage has created delays and operational disruptions, with some flights affected due to an insufficient number of controllers to manage all air traffic sectors effectively (Aviation White Paper; Australian Airports Association).
- As Australia's aviation sector grows and flight volumes continue to rise, ensuring a steady supply of qualified air traffic controllers is essential to avoid bottlenecks in air traffic management. Given the critical role controllers play, any staffing shortfalls directly impact flight scheduling, leading to delays and potentially compromising safety standards. Addressing this workforce shortage is crucial for the sector's long-term growth, with initiatives in place to stabilise the workforce and sustain the safety and reliability of air traffic control services through 2050 (Airservices Australia; Australian Airports Association).
- To address this supply issue, Airservices Australia is undertaking initiatives to recruit and train between 80 to 140 new air traffic controllers annually. This training process is lengthy, however, requiring significant time and investment due to the specialised skill set and high safety standards involved. The aim is to mitigate the current shortage and enhance staffing levels to meet increasing traffic demands across Australia's airspace. Additional strategies include exploring operational model changes that allow

for more flexible deployment of controllers, which would help cover peak periods and manage staff absences more efficiently, thus reducing the impact on service continuity (Aviation White Paper; Airservices Australia).

Migration:

Australian Government's 2023 Migration

The Australian Government's 2023 Migration Strategy introduces a Skills in Demand Visa with two targeted pathways: the Specialist Skills Pathway and the Core Skills Pathway. These pathways aim to attract skilled overseas workers to fill critical roles, including aircraft maintenance engineers, baggage handlers, and airline ground crew, helping meet the shortfall in essential aviation ground positions (Aviation White Paper).

For highly skilled roles in aviation, the Specialist Skills Pathway offers streamlined visa processing to attract top talent in critical, high-wage positions, such as aeronautical engineers and technical aviation specialists. The flexibility in the Specialist Skills Pathway facilitates rapid access to global talent needed for advanced technologies and maintenance work in aviation, thereby reducing barriers to hiring skilled foreign professionals in specialised aviation roles (Aviation White Paper).

Industry groups like Qantas advocate for a Permanent Residency Pathway for workers on temporary skilled visas, particularly those filling roles that require long-term commitments, such as aircraft maintenance and ground operations. This pathway helps alleviate workforce instability by encouraging skilled foreign workers to commit to the Australian aviation sector long-term, especially in occupations where demand consistently outpaces supply due to training and certification requirements (Qantas Group).

State and federal governments recognise that efficient migration policies are essential to balancing local workforce development efforts. In Western Australia, aviation ground roles, especially in remote areas, are prioritised on the State Priority Occupation List. This initiative not only highlights the ongoing critical demand for these roles but also aligns migration support with local hiring efforts to stabilise regional aviation operations through a mix of local and international talent (WA Government).

Current 2023 SPOL Aviation Ground Operations-related roles include:

- ANZSCO 721911 Aircraft Baggage Handler and Airline Ground Crew

Designated Area Migration Agreement (DAMA)

There are currently no Aviation Ground Operations occupations within either of the WA State or within the four regional Designated Area Migration Agreements (DAMA's) that are currently active.

Technology

Sustainable Aviation Fuel (SAF) and Hydrogen Technology: With decarbonisation as a focal industry goal, the adoption of Sustainable Aviation Fuel (SAF) and hydrogen fuel in aviation ground operations presents both an opportunity and a challenge. Transitioning to SAF and hydrogen requires a skilled workforce capable of managing the infrastructure, refuelling, and maintenance related to these fuels. Industry stakeholders, including Bioenergy Australia and Qantas, anticipate that SAF could create over 8,000 new jobs, underscoring the need for specialised training in handling alternative fuels.

Skill Gaps and Training Needs:

- Specialised handling: Workers need training in SAF and hydrogen safety protocols, emphasising environmental and operational safeguards.
- Technical standards: Training must include standards for handling hydrogen fuels and SAF in both existing and new infrastructure to ensure safe integration.

Vertiports: Specialised facilities designed to support vertical take-off and landing (VTOL) aircraft, including drones and advanced air mobility (AAM) vehicles. These infrastructures are essential for integrating new aviation technologies into both urban and remote locations, offering a practical solution where conventional airport space may not be feasible. The Civil Aviation Safety Authority (CASA) has formed the Vertiport Design and Operations Technical Working Group to establish safety and design standards. This guidance aims to facilitate the safe, regulated development of vertiports across Australia, with regulatory frameworks expected by 2025.

Skills Gaps and Training Needs

- Vertiport operations, maintenance, and air traffic management specific to advanced air mobility vehicles
- Specialised programs for vertiport design, safety protocols, and VTOL aircraft handling to meet emerging operational demands.

Automation and Autonomous Ground Support Equipment (GSE): Automation is expected to reshape ground operations significantly. Automated systems, such as baggage handling robots and autonomous tow tractors, aim to improve efficiency and reduce operational costs. Perth Airport, for example, is investing heavily in automation and advocates for extensive training to maintain and operate these systems effectively.

Skill Gaps and Training Needs:

- System diagnostics and maintenance: Training for technicians to manage autonomous GSE, focusing on diagnostics, repair, and safe operation.
- Safety protocols: Development of safety training for personnel working around autonomous systems and ensuring integration into existing operations.

Cybersecurity for Digital Aviation Infrastructure: Increased digitalisation within ground operations highlights the need for robust cybersecurity practices, particularly in data management and operational technologies. Reports indicate that the aviation sector's cybersecurity capabilities are crucial for the safety and integrity of ground operations, especially with sensitive passenger and operational data at risk.

Skill Gaps and Training Needs:

- Cybersecurity protocols: Comprehensive cybersecurity training, including data protection and incident response.
- Threat management: Developing skills for the identification and management of cyber threats in aviation-specific contexts.

Accessibility and Inclusivity in Ground Operations: Improving accessibility and inclusivity in aviation is essential for catering to passengers with disabilities. New technologies like assistive kiosks and sensory-friendly areas are being implemented to enhance inclusivity at airports. The Australian Federation of Disability Organisations advocates for increased training in assistive technologies and sensitivity training to support diverse passenger needs.

Skill Gaps and Training Needs:

- Assistive technology: Training for personnel to operate assistive technologies, such as accessible check-in kiosks.
- Soft skills: Enhanced training to ensure sensitivity and understanding in supporting passengers with disabilities.

ESPG

Environmental Initiatives:

Sustainable Aviation Fuel (SAF) and Hydrogen Integration: One of the most significant environmental projects is the shift toward Sustainable Aviation Fuel (SAF) and hydrogen fuel. The development of a local SAF industry in

Australia, as supported by stakeholders like Qantas and Bioenergy Australia, represents a crucial step toward reducing aviation's carbon footprint. SAF's local production could contribute up to \$2.8 billion to GDP annually and create approximately 8,000 jobs, emphasising the need for a trained workforce adept in handling and managing these alternative fuels.

Skills Gaps and Training Needs:

- **Fuel handling and safety:** Workforce training in SAF and hydrogen safety protocols, including fuel storage and transportation, is necessary to meet industry safety standards.
- **Technical operations:** Staff will require specific training in operational practices for SAF and hydrogen integration into existing infrastructure, especially for roles involving ground support and refueling operations.

Emission Reduction and Energy Efficiency Programs: Perth Airport's infrastructure development program, which includes a \$3 billion expansion, is prioritising energy efficiency through the integration of green technologies such as solar power installations and energy-efficient building designs. This aligns with nationwide efforts to decarbonise aviation operations as highlighted in the Aviation White Paper.

Skills Gaps and Training Needs:

- **Green infrastructure management:** Training in energy management and sustainable building maintenance to support operations within green-certified airport facilities.
- **Carbon accounting and reporting:** Training programs to develop competencies in carbon accounting, crucial for tracking emissions reductions aligned with Australia's net-zero targets.

Social Initiatives

Accessibility and Inclusivity Enhancements: The aviation industry is focused on creating an inclusive environment for passengers with disabilities. The Australian Federation of Disability Organisations advocates for airports to implement inclusive designs and assistive technologies. These efforts include the introduction of sensory-friendly spaces and accessible check-in kiosks, which improve the travel experience for passengers with diverse needs.

Skills Gaps and Training Needs:

- **Assistive technology operations:** Training ground operations staff in the use of assistive technologies, such as accessible kiosks and other aids.
- **Sensitivity and inclusivity training:** Development of training programs focused on interpersonal skills to support staff in providing better service to passengers with disabilities and addressing accessibility requirements.

Environmental and Sustainability Initiatives: Perth Airport's environmental strategies reflect its long-term commitment to sustainability and regulatory compliance. Guided by its Environmental and Sustainability Policy, the airport aligns with the *Airports Act 1996* and *Environment Protection Regulations 1997*, with policies updated every five years. Its Carbon Management Plan (CMP) targets carbon neutrality by 2030 and Net Zero by 2040, leveraging energy efficiency, renewable energy, and operational innovations. Building designs adhere to Green Star standards, aiming for sustainable construction, while energy and water conservation targets include a 10% energy efficiency improvement and a 15% groundwater reduction by 2025. Waste management focuses on recycling and waste diversion, complemented by biodiversity efforts to preserve 100 hectares of natural habitat. Initiatives like the Living Stream project and groundwater monitoring promote ecological health, while Aboriginal heritage preservation and community collaboration underscore cultural sustainability. Annual sustainability reporting ensures transparency, reinforcing Perth Airport's leadership in environmental stewardship.

Occupation Focus:

231199 Aerodrome Reporting Officers:

Key Requirements include:

Regulatory Knowledge and Compliance: AROs must operate under the guidelines established in Part 139 of the Civil Aviation Safety Regulations (CASR) on aerodromes, Part 175 for Aeronautical Information Management, and Part 99, which covers drug and alcohol management and testing. Adherence to these regulations is crucial to maintaining safety and compliance at aerodromes.

Training and Certification: Prospective AROs need formal training, which covers areas such as aerodrome inspections, radio operation (resulting in an Aeronautical Radio Operator Certificate), wildlife hazard management, and emergency response. Training can be completed in-house or through registered training organisations and should be refreshed every two to five years.

Operational Competency: AROs must be competent in conducting regular serviceability inspections, managing wildlife hazards, coordinating airside works, and responding to emergencies, as per the requirements of the Civil Aviation Safety Authority (CASA). They may also issue Notices to Airmen (NOTAMs) when necessary.

Emergency Response Skills: AROs are often required to secure accident sites, communicate with Air Traffic Control and emergency services, and provide access to responders. This role demands strong situational awareness and preparedness for various incidents.

Documentation and Reporting: Accurate documentation is vital. AROs must log inspections, report incidents, and maintain records of compliance with aerodrome manuals and emergency plans. This data is essential for operational audits and ensuring regulatory adherence.

Training and Workforce Challenges

Regulatory Complexity and Compliance Costs: AROs must adhere to multiple regulations, including Part 139 and Part 175 of the Civil Aviation Safety Regulations (CASR), which require detailed knowledge of safety and reporting protocols (e.g., issuing Notices to Airmen or NOTAMs). Compliance with these standards requires extensive and ongoing training, often imposing significant costs on aerodrome operators. The Australian Airports Association emphasises that complex regulatory frameworks, while crucial, can strain the resources of smaller regional airports, making it difficult to fund continuous training programs for roles such as AROs.

Training and Certification Requirements: Formal training is mandatory for AROs, covering a range of competencies, such as wildlife hazard management, serviceability inspections, and emergency response. However, the high costs of certification, particularly for specialised skills like aeronautical radio operation, and wildlife control using firearms, create barriers. The Regional Capitals Alliance WA suggests that access to local training centres in remote areas would alleviate some of these costs, particularly for regional AROs.

Workforce Shortages and Skill Gaps: The unique skill set required for AROs, such as operational safety knowledge and emergency response capability, makes recruitment challenging. The Civil Aviation Safety Authority (CASA) guide highlights that workforce shortages can lead to situations where AROs must handle multiple roles, increasing risks of fatigue and reduced compliance with safety protocols. Virgin Australia similarly notes that regulatory and compliance demands can exacerbate skill shortages by deterring potential recruits from pursuing careers such as ARO.

High Demand for Recurrent Training: Recurrent training, essential to keep AROs updated with regulatory changes and new safety standards, must be completed every two to five years. The frequent requirement for training refreshers places a financial and logistical burden on operators, especially smaller airports. The City of Karratha, which oversees a major regional airport, stresses that recurrent training requirements often conflict with budget constraints, limiting their ability to maintain a fully compliant workforce.

Passenger Screeners

Key requirements include:

Security Accreditation and Background Checks: Passenger Screeners are mandated to hold a current Aviation Security Identification Card (ASIC), which involves rigorous background checks, including criminal history and assessments by the Australian Security Intelligence Organisation (ASIO). This accreditation ensures that screeners are cleared to operate in restricted airport areas. Regular background checks are essential for ongoing compliance with aviation security standards under the Department of Home Affairs.

Training and Competency Testing: Passenger Screeners must complete accredited training in security screening, which covers essential procedures like screening of passengers, baggage, and cargo. Duties similar to Passenger Screener roles require annual competency assessments, which validate their ability to detect prohibited items accurately. CW Aviation Security Consulting outlines the importance of independent and standardised testing to maintain security protocol integrity and screening efficacy in line with regulatory requirements.

Knowledge of Screening Equipment and Procedures: Passenger Screeners are required to be proficient in using various screening technologies, such as X-ray machines, metal detectors, and explosive trace detection systems. This proficiency includes understanding calibration, routine equipment checks, and procedures to follow if screening equipment identifies potential threats. This training ensures that screeners can consistently identify and manage risks associated with prohibited items.

Compliance with the Screener Accreditation Scheme: Under the Department of Home Affairs' Cyber and Infrastructure Security Centre (CISC), Passenger Screeners must adhere to the Screener Accreditation Scheme. This scheme mandates independent accreditation for screeners and applies stringent standards to ensure competency in security-related tasks. Screeners must also follow strict reporting procedures for detected threats, contributing to the ongoing security and regulatory compliance at Australian airports.

Ongoing Training and Recurrent Certification: Given the dynamic nature of aviation security, Passenger Screeners and those in security-related roles must complete periodic training updates to remain aware of evolving threats and updated security measures. Recurrent certification is crucial to maintaining high security standards, especially in high-traffic or sensitive airport environments. The Australian Services Union emphasises the need for continuous professional development to support the workforce in adhering to security regulations amid rising passenger volumes.

Training and Workforce Challenges:

High Compliance and Accreditation Demands: The Passenger Screener role requires adherence to stringent accreditation processes set by the Department of Home Affairs through the Cyber and Infrastructure Security Centre (CISC). The necessity for annual independent accreditation assessments for screeners has created operational pressures, with the CW Aviation Security Consulting Group noting that compliance with such standards often strains the capabilities of in-house supervisory staff, impacting time and financial resources. This is compounded by the lack of incentives for in-house accreditors to enforce rigorous, unbiased evaluations of their own trainees.

Operational Costs and Resource Allocation: The Australian Government mandates that the industry bears the cost of all security screening operations, including training and ongoing competency checks. For many smaller and regional airports, the costs associated with training Passenger Screeners can be prohibitively high. The Regional Aviation Association of Australia reports that such costs make certain regional air services financially unsustainable, leading to barriers in maintaining a fully trained workforce in remote areas.

Burnout: High turnover among Passenger Screeners further challenges workforce stability, exacerbated by limited rostering flexibility and high demands. A study by the Australian Services Union identified that factors such as irregular rostering, job insecurity, and lack of career development significantly contribute to worker dissatisfaction and turnover.

Need for Independent Training Providers: Industry feedback suggests that independent third-party accreditation bodies could improve training integrity and mitigate the inherent conflicts of interest associated with in-house accreditation. Independent bodies would ensure consistent and unbiased competency assessments, thereby enhancing workforce reliability and addressing the current issue where supervisors often double as evaluators for their trainees.

231112 Air Traffic Controller:

Key requirements include:

Certification and Licensing Requirements: Air Traffic Controllers in Australia require certification from the Civil Aviation Safety Authority (CASA), which mandates completing a comprehensive training program through an approved provider, typically Airservices Australia. This certification includes assessments to confirm proficiency in air traffic control standards and procedures, alongside ongoing evaluation to maintain certification validity.

Technical Skills and Specialised Knowledge: ATCs must be skilled in using radar and communication systems, as well as digital tools that manage traffic flow and minimise delays. Knowledge of airspace regulations, emergency protocols, and flight path optimisation is essential. The Qantas Group highlights the importance of technology-driven improvements such as the OneSky program, which integrates civil and military air traffic management, requiring controllers to navigate between different airspace sectors seamlessly.

Training on Digital and Remote Operations: The role increasingly involves proficiency in digital control towers, which use remote surveillance for managing air traffic at multiple locations from a central point. This transition is aimed at enhancing operational efficiency and reducing staffing costs. Controllers require specialised training for these systems, which include digital data interpretation, on-screen labeling of aircraft, and low-visibility management capabilities.

Endorsements for Sector-Specific Operations: ATCs receive endorsements for specific airspace sectors, with training required to transition between sectors due to different operational procedures. These endorsements ensure controllers have detailed knowledge and competencies specific to the airspace areas they oversee, critical for safely managing traffic flow and minimising incidents in congested zones.

Addressing Workforce Shortages: Airservices Australia has faced shortages in the ATC workforce, leading to delays and operational challenges. To address this, Airservices is recruiting 80-140 ATC trainees annually and exploring flexible deployment models to cover staffing gaps. The Australian Government also acknowledges the need for expanded training programs and recruitment efforts to meet future air traffic demands.

Training and Workforce Challenges:

Stringent Certification and Licensing Requirements: Training for ATCs requires certification through rigorous programs administered by Airservices Australia, under CASA's oversight. The intensity and duration of this training limit the industry's capacity to quickly address workforce shortages, particularly in regional areas. The Regional Aviation Association of Australia notes that these demands, while essential for safety, can restrict flexible staffing solutions and contribute to service delays due to insufficient certified personnel.

Workforce Shortages and High Turnover: Shortages of trained ATCs are exacerbated by high turnover rates, partly due to the stressful nature of the role. Additionally, Airservices Australia's decision to offer retirement incentives has further reduced the number of available controllers, putting pressure on remaining staff and potentially impacting service quality. The need for annual recruitment of trainees and retention strategies is critical, especially as other sectors also compete for similarly skilled personnel.

Technological Adaptations in Air Traffic Control: With advancements like the OneSky program, which integrates civil and military air traffic control, ATCs must adapt to new systems and protocols, requiring ongoing training and adaptation. This shift towards digital and remote control towers, as identified by the Qantas Group, requires controllers to acquire additional skills in remote surveillance and management of air traffic across multiple locations. These technological demands necessitate regular upskilling, which can strain resources and increase training timelines.

Cost and Logistical Barriers to Training: The high costs of ATC training, along with limited training facilities, place additional financial pressures on both the government and industry stakeholders. Smaller airports, in particular, face difficulties in funding training programs and providing the necessary resources to meet certification standards for new hires. Such challenges highlight the need for increased government support and potential subsidy programs to make ATC training more accessible and affordable.

Ground Operations Training Challenges and Opportunities:

The training and workforce needed for flight operations, particularly pilots, often receive more focus than those for ground operations. The *Aviation White Paper* emphasises significant investments and policies aimed at addressing pilot shortages through specialised training pathways and government support, largely due to high demand driven by airline growth and upcoming pilot retirements. However, while crucial, these efforts often overshadow the equally essential roles in ground operations, such as ground handling, ramp officers, and load controllers. Stakeholders, including unions, have pointed out that these roles are undervalued, despite their importance in ensuring smooth flight schedules, timely luggage handling, and efficient freight operations.

Safety issues in aviation are often linked to inexperienced staff and limited situational awareness. Rapidly trained or insufficiently onboarded employees may overlook critical safety protocols, increasing risks in ground handling and maintenance. The *Aviation White Paper* underscores stakeholder concerns that accelerated training undermines safety, especially in these critical roles. Situational awareness is crucial for accurately assessing and anticipating operational conditions; however, limited awareness can lead to dangerous misjudgements, particularly in ground movement and emergency response roles. High turnover, noted by the Transport Workers' Union and Flight Attendants' Association, exacerbates these challenges, emphasising the need for enhanced training and continuous professional development to reinforce safety standards.

Supply chain issues are causing significant disruptions in aviation ground operations. A critical challenge is the delay in acquiring essential parts and equipment due to global supply chain constraints, a problem exacerbated since the COVID-19 pandemic. For instance, slowdowns in obtaining necessary components, such as aircraft parts, can extend ground times, impacting the capacity of those working in ground operations in their roles (*Qantas Group*).

Complex and often overlapping regulations among border agencies like the Australian Border Force and the Department of Agriculture introduce further delays in cargo processing. These regulatory inefficiencies complicate the timely movement of goods, affecting both operational costs and the ability of workers to undertake their duties with confidence (*Regional Capitals Alliance WA*).

A shortage of qualified trainers is severely impacting aviation ground operations, adding to existing workforce challenges. The *Aviation White Paper* and stakeholder reports highlight the importance of experienced trainers in developing competencies for ground roles like ramp officers and load controllers. However, this shortage limits training quality and speed, affecting safety and efficiency (*Aviation White Paper*). High turnover, worsened by post-COVID demand, intensifies the need for rapid training that current resources can't meet. Unions, including the Australian Services Union, warn that insufficient training support leaves new staff without essential experience, increasing safety risks. Regional aviation bodies further note limited access to trainers in remote areas (*Regional Aviation Association of Australia*), while Qantas Group advocates for government and industry partnerships to bolster training resources.

Addressing the shortage of aviation trainers: Industry and government have undertaken several partnerships and proposed initiatives. The *Aviation White Paper* underscores the need for collaboration between the aviation industry, major training providers, and government bodies to strengthen workforce training across the sector. For instance, partnerships with registered training organisations (RTOs) and TAFEs have been suggested to provide more opportunities for instructors to maintain their industry currency, which is essential for effective training. Government also supports policies that allow TAFE lecturers to undertake industry placements, enhancing their familiarity with current industry standards. Additionally, financial incentives for TAFE lecturers in regional areas aim to attract and retain trainers, which is critical for meeting the needs of regional airports. The *Regional Aviation Association of Australia (RAAA)* also advocates for a National Aerospace Aviation Training Academy, which would

standardise training delivery and support both civilian and defence aviation apprentices under a consistent national model .

The Aviation White Paper

The Aviation White Paper identifies several critical training and workforce development issues impacting aviation ground operations, focusing on recruitment challenges, skills gaps, and barriers related to qualification pathways.

Attraction and Retention of Ground Operations Staff

- The White Paper highlights a nationwide struggle to attract and retain ground operations personnel, especially in regional areas. Many potential workers are deterred by perceptions of low pay, limited career progression, and the physically demanding nature of the roles, which include baggage handling, refuelling, and airside security. This workforce gap affects operational efficiency and heightens the need for consistent, high-quality training programs tailored to entry-level roles in ground operations that exist within complex and fragmented qualification pathways.
- Training pathways for ground operations roles often lack clarity and uniformity, creating confusion among new entrants. Industry stakeholders note that the qualification process can be fragmented, with training requirements varying between locations and roles, such as Aerodrome Reporting Officers (AROs) and other ground staff. The White Paper recommends streamlining these pathways to reduce complexity and enhance the attractiveness of ground operation roles to new entrants.

Demand for New Technical Skills

- Emerging aviation technologies, including automated and sustainable ground operations equipment, require upskilling of the existing workforce. Training programs need to incorporate digital literacy and sustainable practices, which are increasingly essential for roles involving ground support and equipment maintenance. The White Paper underscores the need for advanced vocational education and training (VET) programs to prepare ground operation staff for these evolving requirements.

High Staff Turnover

- Ground operations face high turnover rates due to job demands and limited career mobility. This turnover creates a constant demand for training new personnel, which diverts resources from other operational areas. The White Paper suggests introducing retention incentives, such as clearer progression pathways and improved working conditions, to stabilise the workforce and reduce the costs associated with continual recruitment and training.

The Drone Sector

Legislation and Regulation

Australia has developed a structured regulatory framework for the operation of drones, overseen primarily by the Civil Aviation Safety Authority (CASA). CASA's regulations include specific rules under the Civil Aviation Safety Regulations (CASR) Part 101, which governs the use of Remotely Piloted Aircraft (RPA) for both recreational and commercial purposes.

For commercial drone pilots, CASA requires a Remote Pilot Licence (RePL) and a Remote Operator Certificate (ReOC) for operators overseeing the use of multiple drones. Additional guidelines restrict drone flights near airports, emergency operations, and environmentally sensitive areas, to reduce risks associated with safety, privacy, and environmental impact. Recently, CASA introduced exemptions (CASA EX91/23) for RePL holders, allowing them to gain experience operating medium RPAs, facilitating skill progression and adaptability in diverse operational contexts.

Australia's infrastructure planning also considers the community and environmental impact, including consultation processes to balance economic benefits and community concerns around noise and privacy in densely populated areas.

Industry Sectors Using Drones

The use of drones in Australia spans multiple sectors, each employing unique capabilities to enhance operations:

- **Agriculture:** Drones support precision farming, pest detection, crop monitoring, and water management, offering substantial productivity gains by reducing the need for on-ground labour and optimising resource use.
- **Mining and Resources:** In remote and hazardous environments, drones are used for surveying, mapping, and monitoring, aiding in efficient resource extraction and reducing safety risks.
- **Public Safety and Emergency Services:** Drones are essential in bushfire monitoring, search and rescue missions, and disaster management. They provide real-time data and situational awareness, which is invaluable in high-risk areas.
- **Freight and Delivery:** Companies are increasingly exploring last-mile delivery using drones, especially in rural areas, to overcome logistical challenges. However, there are public concerns regarding noise pollution and privacy from such applications, which CASA addresses through regulatory controls.
- **Environmental Management:** Drones facilitate wildlife monitoring, habitat protection, and invasive species management, including projects like the Bitou Bush detection initiative, which uses AI and multispectral imaging.
- **Media and Entertainment:** Drones capture unique perspectives for film, sports events, and tourism, adding value to content creation industries without significant regulatory concerns.

Workforce Skills and Training Needs

As the drone sector in Australia grows, the demand for skilled personnel across various levels has become evident:

- **Basic Training:** Entry-level certifications, such as the AVI30419 Certificate III in Aviation (Remote Pilot), provide foundational skills for operating drones within regulatory standards. This certification is often a prerequisite for more advanced roles.
- **Advanced Training for BVLOS Operations:** The AVI40422 Certificate IV in Aviation (Remote Pilot - Beyond Visual Line of Sight) offers training for operations where pilots cannot see the drone, a crucial skill for applications like large-scale surveying and delivery.
- **Operational Management:** The AVI59922 Diploma of Aviation (Chief Remote Pilot) focuses on training individuals for senior roles, including operational risk management and crew coordination, essential for larger organisations using fleets of drones.

The need for workforce development is underlined by challenges in attracting skilled pilots, especially in emerging fields such as advanced air mobility (AAM) and drone-based logistics. Skills in risk management, data analysis, and regulatory compliance are increasingly valued, especially for sectors involving high-risk applications.

Challenges to the Drone Sector:

Regulatory and Compliance Challenges: Australia's drone sector is governed by stringent regulations to balance innovation with public safety, privacy, and environmental concerns. While these regulations provide a structured operational framework, they also introduce complexities that can hinder sector expansion.

- **Complex Licensing Requirements:** Drone operators, particularly in the commercial sector, must acquire a Remote Pilot Licence (RePL) and a Remote Operator Certificate (ReOC) for multi-drone operations, with additional licensing requirements for advanced operations like Beyond Visual Line of Sight (BVLOS) (Validating the benefits of increased drone uptake for Australia, 2023). These requirements add significant compliance costs and time investments, especially for smaller businesses.
- **Limitations on Urban Operations:** Regulatory restrictions on operating near populated areas, airports, and sensitive zones impact urban drone delivery and surveillance services, as operators must navigate complex airspace and safety regulations. This has stalled growth for urban-focused drone services like food and retail deliveries (Transport Workers' Union of Australia Submission, 2022).
- **Evolving Policy Frameworks:** As technology rapidly evolves, keeping regulatory frameworks up-to-date is challenging. Infrastructure planning guidelines must consider diverse stakeholder interests while ensuring safety and efficiency. Delays in updating policies, especially regarding advanced air mobility and expanded BVLOS permissions, may slow sector growth (Minderoo Tech & Policy Lab, 2022).

Technological and Operational Barriers: The rapid development of drone technology has introduced both opportunities and operational challenges. Key technical limitations impacting the sector's growth include:

- **Battery Life and Payload Limitations:** The payload capacity and battery endurance of current drone models limit their ability to perform long-range or high-demand tasks, which affects sectors like agriculture, logistics, and emergency services. Innovations in battery technology or alternative power sources, such as hydrogen fuel cells, are required to overcome these limitations (Economic Benefit Analysis of Drones to Australia, Deloitte Access Economics, 2020).
- **Weather and Environmental Challenges:** Drones are susceptible to adverse weather conditions, such as high winds, rain, and extreme temperatures. This restricts their use in regions with unpredictable climates, limiting consistent service offerings across Australia's diverse geographies (Public Version of Aerial Drone System Report, 2023).
- **Traffic Management and Airspace Integration:** Integrating drones into the existing airspace is a significant operational hurdle, especially in urban and high-traffic areas. The development of a unified traffic management system is crucial for enabling safe and efficient drone operations at scale (Advanced Air Mobility in Australia Report, 2023).

Public Acceptance and Community Concerns: Public concerns around privacy, safety, and environmental impact present substantial barriers to widespread drone acceptance. Key issues include:

- **Privacy and Noise Pollution:** Drones used for surveillance, delivery, and data collection raise concerns over privacy intrusions, particularly in residential areas. Additionally, noise pollution from drones has become a point of contention, with communities in drone trial areas like Bonython, ACT expressing frustration over intrusive noise levels from delivery drones (Dr. Murray May Submission, 2022).
- **Wildlife and Environmental Impact:** Wildlife disturbances and environmental impacts are pressing issues, especially in ecologically sensitive regions. Increased drone activity can disrupt wildlife habitats, as observed in studies of bird and animal responses to drone presence (Flying Near Emergencies and Wildlife, CASA).
- **Safety Concerns:** Public safety remains a significant consideration, particularly regarding drone malfunctions, crashes, and potential interference with emergency operations. CASA mandates strict safety protocols, but any perceived or actual safety risks can diminish public support for drone operations (Drone Safety Rules, CASA).

Workforce and Skills Gaps: As the drone industry grows, the need for skilled operators, technicians, and regulatory compliance officers has intensified, presenting challenges in workforce development:

- **Skill Shortages:** Australia faces a shortage of qualified remote pilots and skilled technicians capable of managing advanced operations, such as BVLOS. Training programs like the Certificate IV in Aviation

(Remote Pilot-BVLOS) and the Diploma of Aviation for Chief Remote Pilots are essential but may not produce enough qualified personnel to meet demand (AVI40422 Certificate IV, 2022).

- **Retention and Career Pathways:** The fast-paced evolution of drone technology demands continuous upskilling, making it challenging to retain a skilled workforce. Establishing clear career pathways and ongoing training will be vital for sustaining the sector's growth (Advanced Air Mobility Group Report, 2023)

Economic and Market Barriers: Despite the economic potential of drones in sectors such as agriculture, logistics, and public safety, several financial and market challenges persist:

- **High Initial Costs and Operational Expenses:** The initial investment in drone technology and the cost of meeting regulatory requirements pose financial burdens for small and medium enterprises (SMEs), limiting market entry. High operational costs, including those for maintenance, insurance, and compliance, can also reduce profit margins (Economic Benefit Analysis of Drones to Australia, Deloitte Access Economics, 2020).
- **Return on Investment and Value Perception:** Many industries are still exploring the value proposition of drone technology, particularly in terms of productivity gains and cost savings. This hesitancy can dampen adoption rates, as companies may prioritise proven technologies over relatively new drone-based solutions until a clearer economic benefit is demonstrated (Validating the Benefits of Increased Drone Uptake, 2023).
- **Competition from Traditional Methods:** Traditional delivery and inspection methods remain competitive with drone services in terms of cost, reliability, and scalability, especially in densely populated areas where regulatory constraints are more pronounced (Advanced Air Mobility Group Report, 2023).

WA 2024 Funded Aviation Ground Operations Qualifications

Funding Initiative	Qualification	Description
Eligible traineeship list	Certificate II in Aviation (Ground Operations and Service) AVI20219 Certificate III in Aviation (Ground Operations and Service) AVI30319	All apprenticeships and traineeships for new entrants in priority industry areas are subsidised through Jobs and Skills WA
Fee-free course list	Certificate IV in Aviation (Supervision) AVI40122	Fee-free course under the state initiative to make high-priority skills training accessible.
Higher level course list – Diploma and advanced diploma	Diploma Of Aviation (Chief Remote Pilot) AVI59922	The WA State Government subsidises a range of courses at diploma and advanced diploma levels for priority industries.
Lower fees, local skills course list	Diploma of Aviation (Aviation Management) AVI50119	Substantial fee reductions, ensuring affordability for students who meet eligibility criteria.
Priority industry qualifications list (PIQL)	Certificate III in Aviation (Ground Operations and Service) AVI30319 Certificate III in Aviation (Remote Pilot) AVI30419 Certificate III in Aviation (Rescue Crew Officer) AVI30519 Certificate IV in Aviation (Remote Pilot-Beyond Visual Line of Sight) AVI40422	These advanced courses support students aiming for high-demand aviation roles in WA.

Funding Eligibility Requirements:

- **Residency:** Applicants typically need to reside in Western Australia and meet specific citizenship or visa requirements.
- **Program Enrolment:** Some qualifications require enrolment in a formal traineeship or apprenticeship as regulated by the WA Apprenticeship Office.
- **Priority Industry Status:** Many qualifications fall under the Priority Industry Qualifications list, which may offer reduced or fee-free options to meet industry needs.
- **Financial Support Programs:** Australian Apprenticeship Support Loans may be available for eligible courses, providing financial assistance during training.

Initiatives to Encourage Underrepresented Groups in Aviation:

- **Women in the Aviation Industry Initiative:** Led by the Australian Government, this initiative collaborates with industry partners to increase female representation across the aviation workforce and attract more women into critical aviation careers.
<https://www.infrastructure.gov.au/infrastructure-transport-vehicles/aviation/women-aviation-industry-initiative>
- **Women in Aviation/Aerospace Australia (WA/AA):** WA/AA promotes gender diversity and the participation of women within the aviation, aerospace, and space sectors in Australia. They offer networking opportunities, professional development, and support for women in these industries.
<https://www.aviationaerospace.org.au/pages/women-in-aaa/about>

Your input

- **Why this report?** The WA Government has 8 skills councils to engage stakeholders to advise the State Training Board and the Department of Training and Workforce Development on the training

and priorities of industry with particular reference to skills development.

- **Input.** LSC welcomes input on 08 9388 8781 or <https://www.lsc.asn.au/contact.html>
- **Industry Advisory Group.** LSC invites stakeholders to join our Community Pharmacy Industry Advisory Group 08 9388 8781 or <https://www.lsc.asn.au/contact.html>

Industry Consultation

Regular industry consultation is undertaken by the Logistics Skills Council via Industry Advisory Groups (IAGs), Registered Training Organisations (RTOs), LSC Annual RTO Forums, LSCs Board of Management (BoM) meetings, regional consultations, participation in industry advisory committees, teleconferences, email, social media, and the use of online surveys.

Ongoing contact is made throughout the year via emails, newsletters, surveys (our most recent State of the Industry Survey had 89 industry respondents: across all industries under the LSC remit. This data has also been included in these responses); and other channels by the LSC to members and non-members of our RTO and IAG networks. Consultation is also maintained through ongoing ad-hoc group and individual meetings throughout the year.

Participating organisations include many small, medium and large companies and organisations within the retail sector across WA. These include local Chambers of Commerce and Industry (CCIs), Industry Associations, Unions, Local and Commonwealth Government Departments, and Regional Development organisations.

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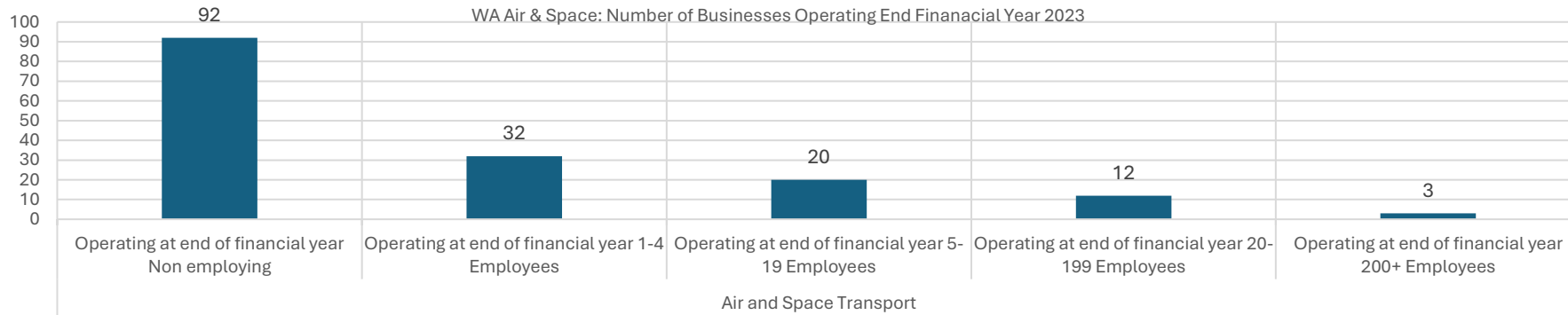
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Western Australia Aviation and Space Workforce Feb-2019 to Aug-2024

