Industry Skills Australia

GROUND OPERATIONS SKILLS GAP ANALYSIS

Final Report

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EXECUTIVE SUMMARY

ABOUT INDUSTRY SKILLS AUSTRALIA

ISA is the Jobs and Skills Council (JSC) for Australia's Transport and Logistics sector, established as a not-for-profit entity for the Commonwealth Government's Jobs and Skills Councils – Strengthening Australia's National Vocation Education and Training System Program in December 2022. The aim of a Jobs and Skills Council is to provide industry with the means to ensure Australia's Vocational Education and Training (VET) sector delivers outcomes for learners and employers, with a particular focus on addressing skill shortages and rapid technological change.

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

ISA 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
- developing priority training package products

KEY THEMES IN AIRPORT GROUND OPERATIONS TRAINING AND WORKFORCE DEVELOPMENT

This report analyses qualitative interview data from multiple aviation stakeholders, including airlines, airports, ground handling organisations and Registered Training Organisations (RTOs). The purpose is to identify key themes shaping workforce capability, training practices, and future skill requirements in airport ground operations. The findings highlight consistent challenges across the sector, alongside emerging trends and opportunities for improvement.

1. Strengthening Career Awareness and Clear Pathways

A dominant theme across organisations is the need for greater awareness and visibility of career pathways in ground operations. While some organisations provide structured internal progression, many entrants do not perceive ground operations as a long-term career.

Several employers emphasised that pathways exist but are not always well understood by new staff:

> **"We step that out when we do our induction training. We always let them know that they can advance if they want."[1]**

Others noted that the absence of visible pathways affects attraction and retention:

> **"I think some of the staff coming in… I don't think they see that pathway."[2]**

Across airports and airlines, there was strong support for early exposure through schools, traineeships and graduate programs:

> **"If this could be built into like a year 11, year 12 pathway… people would be more likely to come on board with some more foundational knowledge."[3]**

Key insight: This is not a skills gap per se, but an *awareness gap*. Ground operations offer diverse progression opportunities, yet these are poorly communicated to potential entrants.

2. Non-Technical Skills: Situational Awareness, Safety and Human Factors

Non-technical skills emerged as one of the most critical capability gaps, particularly situational awareness, safety consciousness and human factors.

Concern was consistently raised about younger or inexperienced workers entering high-risk environments:

[1] Stakeholder interview held 04 February 2026
[2] Stakeholder interview held 25 February 2026
[3] Stakeholder interview held 24 February 2026

"The main problem that we see is the safety aspect or situational awareness… the young ones don't have."[4]

"They do have a habit of walking in ingestion and jet blast areas, completely oblivious to the outside world."[5]

Human factors such as fatigue, stress, extreme weather, and shift work significantly impact performance:

"Fatigue is always a factor… it can really impact your ability to make decisions when people are tired."[6]

Communication was also identified as a foundational safety skill:

"How important communication is… hand signals, body language, your eyes, your voice, it is very critical to what we do."[7]

Key insight: Technical competency alone is insufficient. Safety outcomes depend heavily on situational awareness, fatigue management, communication, and broader human factors training.

3. Technology and Automation Transforming Ground Operations

Technology-enabled transformation is reshaping roles, workflows and training requirements across the sector. Automation is most evident in check-in, baggage handling, simulation, Artificial Intelligence (AI) and Augmented Reality (AR) and or Virtual Reality (VR) training tools.

Participants highlighted the rapid move toward self-service and automated systems:

"Cheque in kiosks… passengers can virtually check in themselves, go to the bag drop and pop their bag off."[8]

Airlines and airports are increasingly exploring immersive technologies for training:

"We are looking at VR/AR training. That's going to be a focus for the next 12 months."[9]

"We're actually into trying to explore an aerobridge simulator… to bring that gamified experience in."[10]

Artificial intelligence is also seen as a major future capability:

[4] Stakeholder interview held 04 February 2026
[5] Stakeholder interview held 24 February 2026
[6] Stakeholder interview held 25 February 2026
[7] Stakeholder interview held 24 February 2026
[8] Stakeholder interview held 04 February 2026
[9] Stakeholder interview held 10 February 2026
[10] Stakeholder interview held 24 February 2026

"In the next coming 5 to 10 years… AI is going to be a huge factor in ground operations."[11]

Key insight: Technological change is not eliminating roles but reshaping them, requiring stronger digital literacy, adaptability and continuous upskilling.

4. Current Training Models: In-House, Airline-Specific and On-the-Job

Most organisations rely heavily on in-house and airline-specific training, supplemented by external RTOs where regulatory compliance is required.

"All our training… is airline approved training."[12]

On-the-job, site-based delivery was widely viewed as most effective:

"The bulk of our training is on the job, out on the tarmac or at check-in."[13]

There were mixed views on the value of formal qualifications at entry level:

"Right at this very moment, I don't see that there is (an advantage)."[14]

However, qualifications were often supported as professional development rather than mandatory entry requirements.

Key insight: The issue is not lack of training provision, but inconsistency in expectations, recognition, and alignment between vocational qualifications and operational practice.

5. Emerging and Evolving Roles in Ground Operations

New roles are emerging in response to safety risks, wellbeing needs, automation and operational complexity.

Examples include:

- Ramp Safety Officers
- Middle-management and organiser roles
- Specialist equipment and assurance roles
- Wellbeing and mental health support roles

"We don't just have a manager and a supervisor anymore. We have someone in the middle now."[15]

[11] Stakeholder interview held 25 February 2026
[12] Stakeholder interview held 04 February 2026
[13] Stakeholder interview held 11 February 2026
[14] Stakeholder interview held 10 February 2026
[15] Stakeholder interview held 10 February 2026

"We've raised another capability solely dedicated to the efficiency, operations and safety of those on the ramp."[16]

Key insight: Ground operations work is becoming more specialised and layered, increasing the need for leadership, coordination and specialist oversight skills.

6. Workforce Challenges: Turnover, Inexperience and Consistency

High turnover remains a persistent industry challenge, driven by:

- Unrealistic job expectations
- Shift work and lifestyle impacts
- Lack of career understanding at entry

"They realise they've got to work Christmas Day… a lot of them do leave."[17]

Post-COVID workforce inexperience has heightened operational and safety risks:

"We have got inexperienced people… and a lot of issues arise… around safety events."[18]

Inconsistent procedures across airports, airlines and handlers further compound risk:

"They've got multiple procedures they need to try and remember; the consistency is extremely challenging."[19]

Key insight: Retention and safety are interlinked. Better preparation, consistent standards and realistic job previews are critical.

Summary

The data highlights that the greatest gaps in ground operations are not purely technical, but lie in awareness, non-technical skills, consistency and adaptability to change. Strengthening early career education, embedding human factors training, improving alignment between qualifications and practice, and leveraging technology thoughtfully are key to building a safer, more sustainable ground operations workforce.

Stakeholder Interviewees

Stakeholder Organisation	Type
Dnata	Ground Service Provider
Industry Delivered Training	Registered Training Organisation
Melbourne Airport	Airport

[16] Stakeholder interview held 05 March 2026
[17] Stakeholder interview held 11 February 2026
[18] Stakeholder interview held 25 February 2026
[19] Stakeholder interview held 05 March 2026

Stakeholder Organisation	Type
Oceania Ground Force	Ground Service Provider
Qantas	Airline
Sydney Airport	Airport
Virgin Australia	Airline
Western Sydney International Airport	Airport

SUPPLEMENTARY INDUSTRY INSIGHTS: GROUND OPERATIONS 'GO SAFE' FORUM (FEBRUARY 2026)

Insights from the Ground Operations Forum reinforce and extend the themes identified through stakeholder interviews, particularly in relation to safety-critical decision making, role clarity, and systemic training gaps across the ground operations workforce.

1. Managing Non-Normal and Emergency Operations in Complex Environments

A dominant theme from the forum was the operational complexity associated with rapid disembarkation and emergency response, particularly in congested terminal environments. Participants emphasised that rapid disembarkation sits in a grey zone between normal operations and full evacuation, characterised by time pressure, uncertainty, and incomplete information.

Ground and cabin crew are frequently required to make critical decisions without clear visibility of escalation thresholds, particularly when determining when a situation transitions from non-normal to emergency. Once an evacuation decision is made, it was consistently noted that there is no opportunity to reverse that decision, significantly increasing the importance of early judgement and coordination.

Operational risk was seen to vary by airport context, with larger and more complex airports presenting heightened hazards due to congestion, infrastructure density, and multiple agency interfaces.

Key insight: Managing non-normal operations is less about procedural compliance alone and more about decision quality under uncertainty, requiring shared situational awareness across cabin, flight, and ground roles.

2. The Critical but Undervalued Role of Ground Staff in Safety Outcomes

The forum strongly reinforced the safety-critical role of ground staff during abnormal and emergency events. Participants highlighted responsibilities such as passenger flow control, equipment positioning, obstacle clearance, aircraft access control, and emergency services coordination as central to successful outcomes.

Despite this, ground staff are often excluded from a deep understanding of cabin crew procedures, flight crew decision logic, and overall command structures during emergencies. Limited exposure to these processes reduces their ability to anticipate requirements and act proactively.

This disconnect was viewed as a systemic issue rather than an individual failing, reflecting training design that occurs in functional silos.

Key insight: Ground staff play a decisive role in emergency and abnormal operations yet training models do not consistently reflect the interconnected nature of aviation safety roles.

3. Fragmentation and Inconsistency in Training Standards

A recurring concern was the lack of nationally consistent training frameworks for Ground Service Providers (GSPs). While international guidance materials such as the IATA Ground Operations Manual (IGOM) and Airport Handling Manual (AHM) are widely recognised, they are not uniformly applied across operators, particularly at smaller or remote airports.

Outcome-based regulation under Civil Aviation Safety Regulations (CASR) Parts 119 and 121 was identified as contributing to this variability. The requirement for trainers to be deemed “competent” without a defined benchmark has resulted in inconsistent interpretations of trainer capability and training quality across the sector.

By contrast, participants pointed to Dangerous Goods training under CASR Part 92 as an example of a more structured and standardised framework that could inform future approaches to GSP training approval and oversight.

Key insight: The challenge is not an absence of guidance, but a lack of shared benchmarks for training design, delivery, and trainer competence across ground operations.

4. Human Factors, Role Clarity and the Breakdown of Responsibility

Human factors were repeatedly identified as a central contributor to ground operations incidents and near misses. Discussions highlighted gaps between work as documented, work as imagined, and work as actually performed, particularly during handovers and task allocation.

Examples included assumptions that tasks had been completed by others, unclear boundaries between engineering and ground roles, and reliance on informal verbal handovers without confirmation of task completion. Physical and cognitive factors, including fatigue, anthropometric limitations that fail to accommodate the full range of human body sizes, shapes, and capabilities, reliance on memory, and checklist design, further compounded these risks.

Participants stressed that many incidents reflected systemic role ambiguity rather than individual error, particularly in environments with increasing outsourcing and workforce turnover.

Key insight: Safety risks are amplified where accountability is diffused and human factors are not explicitly addressed through recurrent, role-specific training.

5. Increasing Outsourcing and Expanding Role Expectations

An emerging risk identified at the forum is the growing outsourcing of ground support functions, with GSPs increasingly expected to assume responsibilities previously managed directly by airline staff. This shift was

not always accompanied by commensurate increases in training depth, recurrent assessment, or exposure to safety-critical decision contexts.

Participants expressed concern that expanding role expectations, combined with high turnover and limited industry-wide standards, may be outpacing current training and assurance mechanisms.

Key insight: As ground operations roles expand and diversify, capability assurance has not kept pace with operational expectations, increasing systemic risk.

6. The Need for Shared Learning and Cross-Role Awareness

There was strong consensus on the value of establishing formal mechanisms for shared learning across operators and service providers, including the exchange of safety occurrence information and lessons learned. Participants noted that incidents are often reviewed in isolation, limiting the industry's ability to identify cross-cutting risks and systemic trends.

Improving cross-role awareness, particularly between flight crew, cabin crew, engineers, and ground staff, was seen as critical to strengthening emergency response, clarifying command structures, and improving overall safety performance.

Key insight: Meaningful safety improvement depends on collective learning and cross-functional understanding, not isolated organisational responses.

Summary

The findings of the Ground Operations 'Go Safe' Forum reinforce that the most significant gaps in ground operations are not technical in nature, but are rooted in how training is designed, delivered, and assured across the workforce. Both the interview data and forum discussions consistently indicate that current training approaches do not fully reflect the realities of modern ground operations, particularly in non-normal and emergency contexts.

The forum highlighted that ground operations training remains fragmented, role-specific, and inconsistently applied, despite the increasingly interconnected nature of safety-critical tasks. While ground staff are expected to make time-critical decisions, coordinate across multiple roles, and manage complex operational interfaces, training models often prioritise procedural knowledge over decision making under uncertainty, cross-role awareness, and human factors capability. This disconnect contributes to gaps between work as documented, work as trained, and work as performed.

Variability in training standards, driven by outcome-based regulation, differing organisational interpretations of competence, and limited shared benchmarks, further compounds these challenges. The absence of nationally consistent expectations for Ground Service Provider training, trainer capability, and recurrent assessment was identified as a systemic weakness, particularly as outsourcing expands and role expectations continue to evolve.

Taken together, the forum insights confirm that strengthening safety outcomes in ground operations will depend on greater alignment between training and operational reality. This includes embedding non-technical skills, clarifying role boundaries and accountabilities, supporting cross-role learning, and

improving consistency in training and assurance frameworks. Addressing these training-related gaps is central to building a capable, adaptable, and resilient ground operations workforce that can meet the demands of an increasingly complex aviation environment.

GROUND CREW ROLES AND CAREER PATHWAYS

Understanding the structure of ground operations roles and the pathways between them is essential to contextualising the training and capability challenges identified throughout this report. The roles outlined in this section represent the practical workforce architecture through which skills are developed, safety outcomes are delivered, and career progression is enabled within airport ground operations.

Analysis of interview and forum findings indicates that many of the sector's workforce challenges, particularly those relating to safety-critical decision making, non-technical skills, and workforce retention, are most pronounced at transition points between roles, rather than within individual positions. Entry-level roles often provide early exposure to regulated aviation environments, while more senior operational, supervisory, training, and management roles carry increasing responsibility for coordination, judgement under uncertainty, and system-level oversight. However, training and qualification structures do not always reflect these escalating capability requirements.

The following role descriptions and indicative pathways illustrate a typical progression across ramp and customer service streams, highlighting how capability is currently built through experience rather than through consistently articulated, nationally recognised training pathways. Presenting the role structure in this way provides a foundation for the subsequent gap analysis, enabling clearer identification of where training provision, skill standards, and workforce development mechanisms may not be aligned with the realities of modern ground operations.

Fleet Presentation

Role overview:

Fleet Presentation staff are responsible for preparing aircraft interiors to operational and brand standards between flights. This role is typically an entry point into ground operations and provides initial exposure to airside safety, aircraft environments, and regulated aviation procedures.

Key tasks:

- Cleaning aircraft cabins between services
- Replacing magazines, seat materials, and in-flight collateral
- Loading blankets and pillows for international services
- Conducting visual checks to ensure cabin readiness and compliance

Skills and capabilities developed:

- Introduction to aircraft layout and safety zones
- Procedural compliance and time-critical task execution
- Understanding aviation hygiene, presentation, and quality standards

Pathways to and from the role:

Fleet Presentation commonly serves as a starting point, with progression to Baggage Handler roles as staff gain airside exposure and safety competencies.

Baggage Handler

Role overview:

Baggage Handlers manage the movement and processing of passenger baggage within baggage rooms and on the airside, supporting both barrow-based and containerised aircraft operations across multiple aircraft types.

Key tasks:

- Sorting, loading, and unloading baggage
- Operating baggage handling equipment
- Managing baggage flows across different aircraft configurations
- Ensuring safe manual handling and adherence to airside safety rules

Skills and capabilities developed:

- Situational awareness in operationally busy environments
- Equipment operation and hazard identification
- Coordination with ramp and load teams

Pathways to and from the role:

Progression typically occurs from Baggage Handler to Ramp Duty, where staff broaden their exposure to aircraft-side operations.

Ramp Duty

Role overview:

Ramp Duty staff operate in close proximity to aircraft and are responsible for supporting aircraft arrival and departure processes under varying operational contexts, including aerobridge and remote stand operations.

Key tasks:

- Positioning stairs and ground equipment
- Assisting with aircraft access and securing zones
- Operating vehicles around aircraft
- Observing and supporting loading and unloading activities

Skills and capabilities developed:

- Aircraft-specific knowledge and hazard management
- Understanding ramp layouts and sequencing
- Exposure to multi-role coordination during turnarounds

Pathways to and from the role:

Ramp Duty roles commonly lead to Load Operator positions as technical and aircraft-specific competence increases.

Load Operator

Role overview:

Load Operators are responsible for the correct loading, positioning, and securing of cargo and baggage within aircraft holds, ensuring balance, safety, and compliance with aircraft load requirements.

Key tasks:

- Operating aircraft loaders
- Positioning containers and baggage
- Securing loads using locks and restraints
- Following aircraft-specific loading procedures

Skills and capabilities developed:

- Technical understanding of aircraft loading systems
- Procedural accuracy and safety-critical task execution
- Increased accountability for operational outcomes

Pathways to and from the role:

Experienced Load Operators often progress to Leading Hand roles where coordination and leadership skills become central.

Leading Hand

Role overview:

Leading Hands coordinate ramp activity and take responsibility for guiding aircraft and directing teams during arrivals and departures.

Key tasks:

- Marshalling aircraft into bay positions
- Guiding aircraft movements and signalling stops
- Coordinating ground crew activities during turnarounds
- Acting as a point of control on the ramp

Skills and capabilities developed:

- Leadership and supervision in safety-critical environments
- Communication through standardised hand signals
- Operational decision making under time pressure

Pathways to and from the role:

Leading Hands typically progress into Ramp Duty Manager roles.

Ramp Duty Manager

Role overview:

Ramp Duty Managers oversee ramp operations, combining hands-on aircraft movement responsibilities with coordination, communication, and oversight functions.

Key tasks:

- Towing and pushing back aircraft
- Monitoring radios, phones, and operational communications
- Coordinating responses to bay changes, weather, and operational disruptions
- Acting as liaison with flight crew and operational control

Skills and capabilities developed:

- Multi-tasking and prioritisation
- Communication across multiple stakeholders
- Supervisory accountability and operational oversight

Pathways to and from the role:

Ramp Duty Managers often move into Ramp Trainer roles or broader management positions.

Ramp Trainer

Role overview:

Ramp Trainers are responsible for delivering airline-specific training and ensuring operational staff are competent against required procedures and safety standards.

Key tasks:

- Delivering practical and classroom-based training
- Assessing staff competency against airline materials
- Supporting recurrent and upgrade training
- Reinforcing safety and procedural compliance

Skills and capabilities developed:

- Instructional and assessment capability
- Deep operational and procedural knowledge
- Mentoring and coaching skills

Pathways to and from the role:

Ramp Trainers commonly progress to Ground Service Manager roles.

Ground Service Manager

Role overview:

Ground Service Managers hold responsibility for workforce performance, safety outcomes, and service delivery, requiring both people leadership capability and deep operational understanding.

Key tasks:

- Managing teams across ramp or customer service environments
- Overseeing training, compliance, and performance
- Coordinating operational resourcing and safety outcomes
- Bridging operational reality with organisational requirements

Skills and capabilities developed:

- People management and leadership
- Strategic decision making
- System-level understanding of ground operations

Customer Service Agent

Role overview:

Customer Service Agents support passengers through check-in, boarding, and assistance services, representing the front-of-house function of ground operations.

Key tasks:

- Passenger check-in and boarding processes
- Managing passenger flow and documentation
- Providing assistance to passengers requiring support
- Ensuring service quality and compliance

Skills and capabilities developed:

- Communication and customer interaction
- Managing passenger needs in operational environments
- Understanding frontline aviation compliance requirements

Pathways to and from the role:

Customer Service Agents may progress to Customer Service Manager, Trainer, or Ground Service Manager roles.

Customer Service Manager

Role overview:

Customer Service Managers oversee front-of-house teams and service delivery at the airport interface.

Key tasks:

- Supervising customer service staff
- Managing rostering and performance
- Ensuring service standards and compliance
- Coordinating with ramp and operational managers

Pathways to and from the role:

Customer Service Managers commonly transition into Ground Service Manager or training roles, supporting integrated ground operations leadership.

GAP ANALYSIS

Currently in progress

RECOMMENDATIONS

Currently in progress

GLOSSARY OF TERMS

AHA	Airport Handling Manual
AI	Artificial Intelligence
AR	Augmented Reality
CASR	Civil Aviation Safety Regulations
GSP	Ground Service Provider
IATA	International Air Transport Association
IGOM	IATA Ground Operations Manual
JSC	Jobs and Skills Council
RTO	Register Training Organisation
VET	Vocational Education and Training
VR	Virtual Reality