SUMMARY

The Rail Industry Reference Committee (IRC) Skills Forecast identifies the priority skill needs of the Rail industry following research and stakeholder consultation.

The IRC, made up of industry leaders and experts, acts as a conduit between the Rail industry and the Australian Industry and Skills Committee (AISC). It proposes Training Package development work to ensure that skills standards and qualifications are contemporary, as well as future focused, to meet the skill needs of industry.

INDUSTRY TRENDS AND OVERVIEW

The Rail industry in Australia has an estimated annual revenue of $26.56 billion, adding $10.43 billion to the Australian economy in 2018. The industry employs almost 60,000 people across 961 companies comprising private and public operators, passenger and freight operators, track owners and managers, manufacturers and suppliers that operate in urban, regional, and rural areas of Australia.
INDUSTRY CHALLENGES AND OPPORTUNITIES

The Rail industry is an intrinsic part of the Australian economy. The industry underpins Australian business, as it carries people and commodities on over 33,000 km of track across the country, providing mobility to millions of passengers, and vital freight services across the country.

TECHNOLOGICAL INNOVATIONS AND AUTOMATION

The Rail industry is significantly impacted by a new wave of technologies which are aimed at improving network operations, reducing power consumption, having smarter monitoring and asset management processes, and advanced safety and threat detection. New systems need to be interoperable across states and territories and over different networks. Advanced Train and Management System (ATMS) is also being designed which will improve rail network capacity, operational flexibility, and train service availability. Automation and driverless systems also offer the potential to achieve greater operational efficiency, improved safety, reduced fuel consumption, improved reliability, and lower operations costs.

BIG DATA

The use of Big Data in the Rail industry enables transport systems to accurately analyse information from the network, to improve real-time operations, decision-making, threat detection, and productivity. It will also be used to optimise the network, by identifying points of preventative maintenance before infrastructure is damaged and improve safety control systems. Innovations such as Remote Diagnostics and Advisory System (RDAS) are already assisting rail operators to view their asset in real-time and predict faults with an accuracy rate of 85 per cent. Insightful interpretation of data can produce actionable intelligence and help organisations transition to a proactive maintenance regime.

REMOTE OPERATIONS

Efficient and reliable operations along with work health and safety concerns are of paramount importance to the Rail industry. To this end, new computer systems are being developed and more and more sensors are being embedded into rail assets to collect valuable data to enable remote condition monitoring of assets and operation of trains. The key objective of remote operations is to utilise collected data to generate meaningful information, leading to improved network performance, safety, reliability, and regulatory compliance. The new sensors and systems provide real-time data from remote monitoring that can help to make informed asset maintenance decisions by predicting faults and enabling more cost-effective maintenance work.
INFRASTRUCTURE PROJECTS

Australian Federal, State and Territory governments have committed over $100 billion for new rail infrastructure projects and upgrades to 2030. This will require a substantial recruitment of workers experienced in large-scale infrastructure projects. The Rail industry has already expressed concerns in recruiting workers who have varying skill capabilities to work on current and future infrastructure projects. This is largely attributed to the temporary nature of projects in various locations within or between State/Territories. Peak demand at the national level is anticipated to be in the mid-2020s, especially for specialised roles such as train controllers and railway signal operators.

INDUSTRY-SPECIFIC CYBER SECURITY

Cyberattacks are a common risk to many industries including the Rail sector. The unique nature of Rail technologies and innovations such as Big Data, IoT, and automation generates large amounts of data which can expose the industry to growing cyber security risks. It is therefore necessary to have a tailored cyber security training program to give the workforce the skills and competencies to be able to identify, block or remediate against any malicious cyberattacks.

DIGITAL LITERACY

Advancements in Artificial Intelligence, computer technology, automation, the Internet of Things, cloud computing, big data, and customer-service platforms are generating a massive volume of data and information, offering a range of benefits such as improved customer service and operational efficiency. Demand for analytical skills, digital literacy, and information management will continue to rise, making digital literacy one of the most significant areas for the new and existing workforce.

AGEING WORKFORCE AND GENDER DIVERSITY

Attracting and retaining young recruits remains a challenge for the industry. The current employment rate for those aged under 30 is approximately 11 per cent, which has the potential to negatively impact the industry. Workforce ageing and retirements will place further strain on some workforce gaps, most notably among machinery operators, including train drivers. With a large percentage of employees approaching retirement age, the skills challenge is further intensified by the need to not only meet growing demand, but also to replace skills lost to an ageing workforce. Female participation in the Rail industry has been improving steadily, from approximately five per cent of employees in 1984 to 20 per cent in 2017. However, the majority of female workers perform customer service roles and only a minority hold technical positions. The new technologies provide an opportunity to increase the diversity of the rail workforce.
SKILLS RELATED INSIGHTS AND OUTLOOK

Nearly 94 per cent of employers reported experiencing a skills shortage in the last 12 months. The occupations reported as being in shortage were: engineers, educators/trainers/assessors, signalling technicians, train drivers, and track workers.

The Rail industry employers identified the following reasons for the shortage:

1. Ageing workforce / current staff retiring
2. Competition from other organisations
3. Cost/time to achieve the required qualification
4. Wages / salaries considered too low
5. Unattractive job / poor industry image

RAIL TRAINING PACKAGE

The Rail-specific components of the TLI Transport and Logistics Training Package provide the only nationally recognised Vocational Education and Training (VET) qualifications for occupations involved in rail infrastructure, track protection, shunting, rail track vehicle driving, tram or light rail infrastructure, customer service, rail driving, rail track surfacing, signalling, electric passenger train guard, track protection, heritage locomotive assistant or steam locomotive fireman, train driving, safety investigation, network control, safety management, tram/light rail control and rail operations management. The Rail-specific components of the TLI Transport and Logistics Training Package comprise 26 qualifications, 54 Skill Sets and 247 Units of Competency and associated assessment requirements.

TRAINING PACKAGE REVIEW AND DEVELOPMENT – PRIORITY WORK

*The following projects were proposed and submitted to Australian Industry and Skills Commission for consideration on 30 April 2019.

2019-20 TRAIN AND NETWORK CONTROL OPERATIONS – REVIEW AND DEVELOPMENT

This project will review and amalgamate the Certificate IV in Rail Network Control and Certificate IV in Tram/Light Rail Control qualifications. These qualifications provide the key skills and knowledge for Rail industry personal working in the network control sector of the industry. This project includes adding systems operation requirements for autonomous rail and light rail vehicles. One new qualification and the associated Units of Competency will be developed to ensure alignment with the specific requirements for the safe and effective control of all rail vehicles using rail networks.
2019-20 NETWORK FAULT SUPPORT – DEVELOPMENT

This project will develop a new Skill Set to address immediate network faults or breakdown support. This Skill Set will provide the necessary skills and knowledge enabling faster response times for faults or breakdown rectification, reducing rail vehicle downtime, and passenger or freight delays.

2019-20 TRANSPORT AND LOGISTICS PATHWAYS – REVIEW AND DEVELOPMENT

The revision and development of this qualification will ensure provision of an entry pathway for Rail and Road Transport given the increase in intermodal hubs. The inclusion of Rail into this qualification negates the need to develop a new qualification specifically for Rail.

The full Rail IRC Skills Forecast can be accessed at: https://www.australianindustrystandards.org.au/industry-reference-committee-irc-skills-forecasts-2019/
AUSTRALIAN INDUSTRY STANDARDS

Australian Industry Standards (AIS) is a Government appointed Skills Service Organisation (SSO) that partners with industry to shape the workforce of the future through the development of skills standards.

We work under the direction of Industry Reference Committees that represent the following sectors: aviation, transport and logistics, maritime, energy, water and utilities, public safety, police, fire, defence and corrections. Together, these industries keep Australia productive, powered and secure.

AIS supports IRCs through industry engagement, research and analysis to prioritise the skill needs of their industry. We help to develop contemporary, future focused and world class qualifications for the workforce, create career pathways, and support industry growth and productivity.

CONTACT US

instagram.com/ausindstds
twitter.com/AusIndStds
www.linkedin.com/company/australian-industry-standards/

www.australianindustrystandards.org.au
enquiries@australianindustrystandards.org.au