



Australian Government

TLIW5002A Manage rail assets and interfaces

Release 1

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Modification History

Release 1. This is the first release of this unit.

Unit Descriptor

This unit involves the skills and knowledge required to manage rail assets and interfaces. It includes managing rail infrastructure fixed assets and maintenance regimes; managing rail operation fixed assets and management regimes; applying reliability, availability, maintainability and safety of rail infrastructure; and managing wheel rail interface.

Licensing, legislative, regulatory or certification requirements are not applicable to this unit at the time of publication.

Application of the Unit

This unit involves knowledge of rail assets in general terms. It covers the different rail infrastructure and operational components and can be applied to freight, heavy haul or passenger rail systems.

Licensing/Regulatory Information

Refer to Unit Descriptor.

Pre-Requisites

Nil

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

1 Manage rail infrastructure fixed assets and maintenance regimes

- 1.1 Components and functions of track and track bed are identified and explained
- 1.2 Electrical infrastructure components and functions are identified and explained
- 1.3 Other fixed assets and their functions are identified and explained
- 1.4 Organisational track inspection methodologies are identified, analysed and where required, recommendations for improvement are made to management
- 1.5 Inspection and maintenance regimes for other assets are identified, analysed and where required, recommendations for improvement are made to management

2 Manage rail operation fixed assets and management regimes

- 2.1 Rail operation assets and their individual life cycles are identified and explained
- 2.2 Asset maintenance plans are identified, accessed and implemented
- 2.3 Processes to monitor asset utilisation and their effectiveness in meeting operational needs are identified and followed
- 2.4 Potential conflict between operational asset utilisation and maintenance requirements are identified, explained and managed
- 2.5 Organisational technologies and processes that could enhance asset utilisation are identified, analysed and recommended to management
- 2.6 Inspection and maintenance regimes for other assets are identified and analysed

3 Apply reliability, availability, maintainability and safety of rail infrastructure

- 3.1 Concepts related to rail infrastructure reliability, availability, maintainability and safety (RAMS) are identified and explained
- 3.2 Risk assessment is undertaken in relation to rail infrastructure RAMS

3.3 Programs are developed and implemented to ensure rail infrastructure RAMS are applied

3.4 Impacts of safety requirements on rail network are identified, explained and taken into consideration

4 Manage wheel rail interface

4.1 Wheel rail interface is identified and explained

4.2 Defects and problems related to wheel rail interface are anticipated and rectified, and preventative programs are developed and implemented

4.3 Impacts of poor management of wheel rail interface are identified and explained

4.4 Damage that can be caused by poor wheel rail interface is identified and explained

4.5 Methods for measuring and maintaining rail profiles are identified and applied

4.6 Methods for maintaining rolling stock wheels are identified and applied

Required Skills and Knowledge

This section describes the knowledge and skills required for this unit.

Required knowledge:

- Changes in rail industry operations and technology with implications for rail safety
- Duty holders and their duties under rail safety legislation:
 - contractors
 - designers, manufacturers, suppliers, commissioners, erectors and installers
 - de-commissioners
 - managers of private sidings
 - rail safety workers
 - rail transport operators (rail infrastructure managers and/or rolling stock operators)
- Key concepts and definitions relating to rail assets and interfaces
- Key principles and practices associated with railway operations
- Key regulatory requirements and standards for participants in the rail industry
- Rail industry and rail industry terminology, including terminology used in technical standards
- Rail safety management systems
- Rail safety operating principles:
 - ensuring emergencies and incidents are properly managed
 - ensuring interfaces between different organisations are properly defined and managed
 - identifying and managing risk
 - protecting persons from injury
 - protecting property from damage
 - track access
 - train separation
- Rail regulatory framework
- Relevance of national and international standards to the rail industry
- Relevant information:
 - audit program information
 - changes to regulations
 - compliance and enforcement regime
 - rail regulatory requirements
 - safety notices

Required skills:

- Access and use rail safety industry standards
- Develop and maintain currency of rail industry knowledge and regulatory requirements
- Communicate effectively with others and interpret complex information relating to rail operations
- Manage wheel rail data
- Network and build relationships with a diverse range of rail industry organisations
- Research information related to the rail industry and rail safety regulation
- Review changing regulatory information
- Work ethically in accordance with legislation

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required knowledge and skills, the range statement and the assessment guidelines for this Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the Elements, Performance Criteria, Required Skills, Required Knowledge and include demonstration of applying:

- required knowledge and skills
- relevant legislation and workplace procedures
- other relevant aspects of the range statement.

Context of and specific resources for assessment

Performance is demonstrated consistently over time and in a suitable range of contexts.

Resources for assessment include access to:

- a range of relevant exercises, case studies and/or other simulated practical and knowledge assessment, and/or
- an appropriate range of relevant operational situations in the workplace.

In both real and simulated environments, access is required to:

- relevant and appropriate materials and equipment, and
- applicable documentation including workplace procedures, regulations, codes of practice and operation manuals.

Method of assessment

As a minimum, assessment of knowledge must be conducted through appropriate written/oral tests

Practical assessment must occur:

- through activities in an appropriately simulated environment, and/or
- in an appropriate range of situations in the workplace.

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance.

Fixed assets may include:

- bridges
- cuttings
- level crossings and equipment
- sidings
- signals
- signs and boards
- stations and platforms
- tunnels

Rail operation assets may include:

- buildings
- carriages
- diesel multiple units (DMU)
- electric multiple units (EMU)
- locomotives
- maintenance facilities
- operating equipment
- rolling stock
- stations

Defects and problems may include:

- poor rail condition including:
 - checking defects
 - corrugations
 - rolling contact fatigue
 - manufacturing defects
 - shelling
 - squats
 - wheel burn
 - wheel slip defects
- poor wheel condition including:
 - arris
 - cracks
 - hollow tread
 - scaling
 - skidded wheels
 - spalling

Unit Sector(s)

Not applicable.

Competency Field

W – Equipment and Systems Operations