



Australian Government

TLIW5003A Manage rail network control systems

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 network control systems. It includes identifying network control and train control systems and their functions.

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

Application of the Unit

This unit involves rail network control systems and applications. It can be applied to networks supporting heavy haul, freight or passenger rail services.

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 network control systems and their components

- 1.1 Purpose of network control systems and their functions are identified and explained
- 1.2 Different types of network control systems are identified and discussed
- 1.3 Components of each type of network control system are identified and explained
- 1.4 Principles and major components of interlocking systems are identified, explained and used as the foundation for decision making
- 1.5 Safety implications associated with different types of signalling and interlocking systems are identified and used as to guide decision making

2 Manage operation of train control systems

- 2.1 Functions of train control systems are identified and explained
- 2.2 Main components of a train control system and their purpose are identified and explained
- 2.3 Interaction of train control systems with rail operations is identified, explained and used as the basis for decision making
- 2.4 Possible impact train control systems can have on rail operations are identified, explained and taken into consideration in decision making

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 network control systems
- Duty holders and their duties under rail safety legislation
- 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 regulatory framework
- Rail safety management system
- Rail safety operating principles:
 - ensuring emergencies and incidents are properly managed
 - ensuring interfaces between different organisations are properly defined and managed
 - identifying, eliminating and controlling risk
 - protecting persons from injury
 - protecting property from damage
 - track access
 - train separation
- 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
- Situational awareness

Required skills:

- Access and use rail safety industry standards
- Communicate effectively with others and interpret complex information relating to rail operations
- Develop and maintain currency of rail industry knowledge and regulatory requirements
- Network and build relationships with a diverse range of rail industry organisations

- Research information related to the rail industry and rail regulations
- 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.

Network control systems may include:

- colour light signalling
- digital train control systems
- mechanical signalling
- radio communication

Unit Sector(s)

Not applicable.

Competency Field

W – Equipment and Systems Operations