



Australian Government

Department of Education, Employment and Workplace Relations

TLIB3118A Apply awareness of railway fundamentals

Release: 1

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Modification History

Not applicable.

Unit Descriptor

This unit involves the skills and knowledge required to develop an awareness of railway fundamentals. This includes the track, trackside equipment, fixed structures, rail vehicles and rolling stock.

Licensing or certification requirements are not applicable to this unit.

Application of the Unit

This unit is intended for persons entering the rail industry who will be required to enter and work in the rail corridor.

Licensing/Regulatory Information

Refer to Unit Descriptor

Pre-Requisites

Not applicable.

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

ELEMENT

PERFORMANCE CRITERIA

1 Identify basic terminology and features of track and structures

1.1 Basic terminology is identified for track, trackside equipment and fixed structures

1.2 Features of track, including geography, geometry and classes are identified

1.3 Bridges and other infrastructure categories and their purpose are identified

1.4 Other principal structure types and their purpose are identified

1.5 Relevant stakeholders to report structural faults and anomalies to are identified

2 Identify overhead and electrical components

2.1 Principal overhead and electrical components and their purpose are identified

2.2 Power supply voltages are identified

2.3 Methods of isolation and their purpose are identified

3 Identify rail track vehicles and rolling stock

3.1 Types of trains and rolling stock are identified

3.2 Types of machines used for track installation and maintenance are identified

3.3 Types of rail track vehicles are identified

3.4 Relevant stakeholders to whom rolling stock faults and anomalies are reported are identified

Required Skills and Knowledge

REQUIRED KNOWLEDGE AND SKILLS

This describes the essential knowledge and skills and their level required for this unit.

Required knowledge:

- Relevant safety, OH&S and environmental procedures and regulations
- Standard railway terminology
- Fundamentals of track structures and equipment
- Fundamentals of track layout and geometry
- Overhead and electrical components
- Types of rail track vehicles, trains and rolling stock
- Relevant communication systems and procedures
- Procedures for fault reporting

Required skills:

- Communicate effectively with others
- Interpret and follow operational instructions
- Interpret voltage readings for power supplies

Evidence Guide

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 competency in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria of this unit and include demonstration of applying:
 - the underpinning 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 a period of time and in a suitable range of contexts
- Resources for assessment include:
 - a range of relevant exercises, case studies and other simulated practical and knowledge assessment, and/or
 - access to 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/or equipment, and/or
 - 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

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.

Track components may include:

- rails, rail fastenings and welds
- sleepers and sleeper fastenings
- ballast
- formation and earthworks
- drainage pits
- cess or shoulder

Track layout may include:

- plain track
- gauge
- turnouts
- special track, including catchpoints/derails, expansion switches, diamond crossings and slips

Trackside equipment may include:

- signal posts
- signage
- kilometre posts
- relay huts
- trunking
- troughing
- point machines
- gantries
- level crossing equipment
- post/signal phones
- track stands
- train stops

Infrastructure may include:

- bridges
- tunnels
- level crossings
- stations
- platforms
- signal boxes
- safeworking cabins

Overhead and electrical components may include:

- catenary
- stanchions
- drop wire
- contact
- steady arm
- feeder

- spark gaps
 - earth straps
 - tension weights
 - pantographs
 - high voltage cables
 - power supplies
 - isolation points
- Rail traffic may include:**
- light locomotives
 - locomotive hauled freight trains
 - locomotive hauled passenger trains
 - railcars
 - electrical multiple units (EMUs)
 - diesel multiple units (DMUs)
- Rail track vehicles may include:**
- road/rail vehicles
 - maintenance vehicles
 - track machines
 - trolleys
 - elevated platforms
 - cherry pickers

Unit Sector(s)

Not applicable.

Competency Field

B – Equipment Checking and Maintenance