



Australian Government

Department of Education, Employment and Workplace Relations

TLIB2085A Apply track fundamentals

Release: 1

TLIB2085A Apply track fundamentals

Modification History

Not Applicable

Unit Descriptor

Unit Descriptor

This unit involves the skills and knowledge required to understand fundamentals of track maintenance and construction and carry out basic track measurement, in accordance with approved standards, safeworking and regulatory requirements and workplace procedures. It includes identifying track terminology, track components and track tools and equipment; and undertaking basic track measurement. Licensing or certification requirements are not applicable to this unit.

Application of the Unit

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Persons achieving competence in this unit will need to fulfil the applicable legislated rail safety requirements including acts and regulations from each state and territory together with any nationally approved compliance codes and/or guidelines.

Work is performed under some supervision, generally within a team environment. It involves the application of routine operational principles and procedures to the understanding of fundamentals of track maintenance and construction as part of workplace activities across a variety of operational contexts within the Australian rail system.

Licensing/Regulatory Information

Refer to Unit Descriptor

Pre-Requisites

Not Applicable

Employability Skills Information

Employability Skills 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 track and structures terminology	1.1 Basic terminology for track and structures infrastructure is identified 1.2 Features of track geometry are identified
2 Identify track components	2.1 Principal track components are identified and their purpose is understood 2.2 Principal turnout components are identified and their purpose is understood
3 Identify track tools and equipment	3.1 Tools and equipment for track installation and maintenance are identified 3.2 Track machines for track installation and maintenance are identified
4 Undertake basic track measurement	4.1 Basic terminology for track measurement is identified and defined 4.2 Measuring equipment is identified and relevant equipment is selected for taking basic track measurements 4.3 Measuring equipment is checked for accuracy 4.4 Measurements are taken accurately and recorded in accordance with workplace requirements

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
- Workplace procedures for the basic measurement of track
- Problems that may occur during the basic measurement of track, and action that can be taken to report or resolve the problems
- Hazards that may exist when taking basic track measurements, and ways of controlling the risks involved
- Track terms
- Fundamentals of track structures
- Fundamentals of track layout and geometry
- Track components
- Tools and equipment used in track construction and repair

REQUIRED KNOWLEDGE AND SKILLS

- Relevant communication systems and procedures
- Authorisation/approval processes and procedures

Required skills:

- Communicate effectively with others when taking basic track measurements
- Read and interpret instructions, procedures, information, technical data, standards and drawings relevant to taking basic track measurements
- Interpret and follow operational instructions
- Complete documentation related to basic track measurement
- Promptly report and/or rectify any identified problems, faults or malfunctions that may be identified when taking basic track measurements in accordance with regulatory requirements and workplace procedures
- Implement contingency plans for unexpected events when taking basic track measurements
- Apply precautions and required action to minimise, control or eliminate hazards that may exist during work activities
- Modify activities depending on differing operational contingencies, risk situations and environments
- Work systematically with required attention to detail without injury to self or others, or damage to goods or equipment
- Operate and adapt to differences in equipment in accordance with standard operating procedures
- Select and use required personal protective equipment conforming to industry and OH&S standards
- Select equipment used for basic track measurement
- Undertake basic track measurement
- Identify basic track tools and equipment

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

- 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

EVIDENCE GUIDE

unit

this unit and include demonstration of applying:

- the underpinning knowledge and skills
- relevant legislation and workplace procedures
- other relevant aspects of the range statement
- Assessment must include exercises which demonstrate competent performance of the following in a range of situations:
 - identifying a range of track terminology
 - identifying a number of different track components
 - identifying track tools and equipment relevant to their job role
 - undertaking basic track measurements

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/or 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 equipment, and
 - applicable documentation including workplace procedures, regulations, codes of practice and operation manuals

Method of assessment

- Assessment of this unit must be undertaken by a registered training organisation
- 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 at the registered training organisation, 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.

- Operations may be conducted:
- by day or night
 - in all weather conditions
- Work may be conducted in:
- restricted spaces
 - exposed conditions
 - controlled or open environments
- Work may involve exposure to:
- chemicals
 - dangerous or hazardous substances
 - movements of equipment, materials and vehicles
- Basic track measurements may include:
- length, depth, width, diameter
 - gauge, foot gauge
 - alignment, superelevation, track centres
 - rail gaps, rail temperature
- Measuring equipment may include:
- tape measures
 - gauge boards
 - stringline
 - plumb bob
 - gap gauge
 - rail thermometer
- Tools and equipment may include:
- mechanical handling/lifting equipment
 - track machines
 - hand tools including impact and tension wrenches, grinders, friction rail saws, rail borers, tie tampers, track jacks, spiking hammers and bars
 - rail tensors
 - cutting and boring equipment
 - fastening equipment
 - on-track equipment including sleeper spacers
 - rail heaters
 - rail threaders
 - dog pullers
- Track components may include:
- rails, rail fastenings and welds
 - sleepers and sleeper fastenings
 - ballast
 - formation and earthworks
- Track layout may include:
- plain track
 - turnouts
 - special trackwork including catchpoints, expansion

RANGE STATEMENT

- switches, diamond crossings and slips
- Basic track geometry may include:
- tangent track
 - curves
 - transitions
 - superelevation
- Track maintenance and construction methods may include:
- basic fettling
 - resleepering
 - rerailing
 - ballasting
 - track resurfacing
 - ballast cleaning
 - rail grinding
 - concrete sleeper laying
- Liaison may include:
- internal or external personnel from other work areas (e.g. train controllers)
- Communication equipment may include:
- two-way radios
 - telephones/mobile phones
 - agreed audible or hand signal
- Depending on work context, safety and personal protective equipment may include:
- high visibility clothing
 - hearing protection
 - gloves
 - sunscreen
 - sunglasses
 - safety glasses
 - insect repellent
 - safety headwear
 - safety footwear
 - portable radios/mobile phones
 - hand lamps
 - flags
 - safety devices
- Depending on the type of organisation concerned and the local terminology used, workplace procedures may include:
- company procedures
 - enterprise procedures
 - organisational procedures
 - established procedures
- Information/documents may include:
- operational instructions, policies and workplace procedures
 - local authority regulations and procedures
 - works orders
 - information provided by other workplace personnel

RANGE STATEMENT

- Applicable regulations and legislation may include:
- rail inspections and timekeeping records
 - trackworker standard manual
 - bridge workers manual
 - technical instructions
 - manufacturers or workplace equipment operation manuals and specifications
 - emergency procedure manuals
 - two-way radio/mobile phone operation procedures
 - QA plans, data and document control
 - conditions of service, legislation and industrial agreements including workplace agreements and awards
 - legislated rail safety requirements including acts and regulations from each applicable state and territory together with any nationally approved compliance codes and/or guidelines
 - relevant Australian Standards and related requirements including AS 4292
 - local authority regulations
 - relevant state/territory OH&S legislation
 - relevant state/territory environmental protection legislation

Unit Sector(s)

Not Applicable

Competency Field

Competency Field B - Equipment Checking and Maintenance