



Australian Government

Department of Education, Employment and Workplace Relations

TLIB3095A Check and repair points and crossings

Release: 1

TLIB3095A Check and repair points and crossings

Modification History

Not Applicable

Unit Descriptor

Unit Descriptor

This unit involves the skills and knowledge required to check and repair points and crossings in accordance with approved standards, safeworking and regulatory requirements and workplace procedures. It includes determining job requirements, maintaining components and tolerances, installing components, conducting post-installation checks, and completing all required documentation. Licensing or certification requirements may be 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 checking and repair of points and crossings as part of workplace activities across a variety of operational contexts within the Australian rail system.

Operators of mechanised equipment must have undertaken training and, where appropriate, hold the relevant licence, permit or certificate and be recognised as competent for the class of machinery being used.

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 Determine job requirements	1.1 Faults and deficiencies in points and crossings are identified and work required for restoration of track to required standard is determined 1.2 Appropriate repair methods are identified to enable repairs to be effected 1.3 Job requirements are determined in accordance with workplace procedures, including identification of the scope of work activities and resources required
2 Maintain components and tolerances	2.1 Clearances are adjusted to specifications to ensure correct functioning 2.2 Wearing surfaces are cleaned and lubricated as required to minimise wear and ensure correct functioning
3 Install components	3.1 New components are prepared to specifications ready for installation 3.2 New components are installed in accordance with standards and workplace procedures
4 Conduct post-installation checks	4.1 Functional checks are carried out to ensure correct operation 4.2 Completed work is checked for compliance to acceptance standards in accordance with workplace procedures 4.3 Appropriate operating conditions are applied in accordance with workplace procedures
5 Complete documentation	5.1 Required documentation is completed in accordance with workplace procedures

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 checking and repair of points and crossings
- Problems that may occur during the checking and repair of points and crossings, and action that can be taken to report or resolve the problems
- Hazards that may exist when checking and repairing points and crossings, and ways of controlling the risks involved

REQUIRED KNOWLEDGE AND SKILLS

- Features and principles of operation of points and crossings
- Special maintenance requirements for points and crossings
- Defects that can occur in points and crossings
- Measurement techniques
- Types of lubricants
- Clearances/tolerances
- Tension of fittings
- Defect tolerances and maintenance techniques
- Component replacement techniques
- Installation and maintenance requirements for manual points equipment
- Points and crossings acceptance standards
- Relevant communication systems and procedures
- Authorisation/approval processes and procedures
- Documentation and record keeping requirements

Required skills:

- Communicate effectively with others when checking and repairing points and crossings
- Read and interpret instructions, procedures, information, technical data, standards and drawings relevant to the checking and repair of points and crossings
- Interpret and follow operational instructions and prioritise work
- Complete documentation related to the checking and repair of points and crossings
- Operate electronic communication equipment to required protocol
- Work collaboratively with others when checking and repairing points and crossings
- Promptly report and/or rectify any identified problems, faults or malfunctions that may be identified when checking and repairing points and crossings in accordance with regulatory requirements and workplace procedures
- Implement contingency plans for unexpected events when checking and repairing points and crossings
- Apply precautions and required action to minimise, control or eliminate hazards that may exist during work activities
- Monitor work activities in terms of planned schedule
- 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

Required skills:

- Select and use required personal protective equipment
- Select and use hand tools, power tools and equipment
- Identify/locate defects in points and crossings
- Use relevant plant and mechanised equipment
- Use appropriate equipment and methods to make accurate measurements on points and crossings
- Determine work requirements and work methods
- Select and use appropriate installation and repair techniques and equipment to correct defects in points and crossings
- Select and apply appropriate lubricants
- Undertake functional checks after work has been completed
- Measure and compare completed work to construction or maintenance acceptance limits
- Identify defects in special trackwork affecting safe operation
- Complete relevant documentation accurately

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
- Assessment must include exercises which demonstrate competent performance of the following in a range of situations:
 - identifying faults and appropriate repair methods
 - cleaning and adjusting components, and/or
 - preparing and installing replacement components
 - conducting functional checks on completed works
 - completing documentation to required workplace

EVIDENCE GUIDE

	standards
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

RANGE STATEMENT

- Equipment may include:
- movements of equipment, materials and vehicles
 - off-track plant, cranes
 - mechanical lifting and handling devices
 - hand tools and small plant
 - rail saws, rail drills
- Maintenance may include:
- adjusting switch bearing
 - adjusting switch set
 - adjusting switch housings
 - adjusting clearances at crossings and switches
 - tightening or replacing fastenings
 - replacing switches, switch housings, stockrails, closure rails, crossings and checkrail units
 - drilling switches and stockrails
 - replacing plates, studs and chocks
 - adjusting bearer spacing
- Points and crossing may include:
- turnouts
 - diamond crossings
 - slips
 - catchpoints
 - expansion switches
- Components may include:
- switches
 - crossings
 - stockrails
 - closure rails
 - rail braces
 - bearer plates
 - bolts, clips
 - studs/switch stops
 - heel blocks
 - housings
 - anti-creep devices
 - chairs
 - switch rollers
 - checkrails
 - chocks
 - manual points equipment
- Crossings may include:
- fabricated cant
 - Rail Bound Manganese
 - monoblock
 - Davis

RANGE STATEMENT

- compound crossings
- swing nose
- spring wing type crossings
- single or dual gauge
- Bearers may include:
 - timber
 - concrete
 - steel
- Fastenings may include:
 - slip/friction
 - resilient
- Measuring equipment may include:
 - measuring tapes
 - stringline
 - rail gauges (switch, crossing)
 - gauge boards
- Manual points equipment may be:
 - asymmetrical
 - conventional
 - undercut
 - housed
- Heels of switches may be:
 - fixed
 - flexible
- Operations of switches may be:
 - manual
 - interlocked
- Communication equipment/systems may include:
 - two-way radios
 - computers
 - telephones/mobile phones
 - agreed audible or hand signals
- Safety and personal protective equipment may include:
 - high visibility clothing
 - hearing protection
 - gloves
 - sunscreen
 - sunglasses
 - dust mask
 - safety glasses
 - insect repellent
 - safety headwear
 - safety footwear
 - portable radios/mobile phones
 - hand lamps
 - flags
 - safety devices

RANGE STATEMENT

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
- works orders
- information provided by other workplace personnel
- 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

Liaison may include:

- internal or external personnel from other work areas (e.g. signals staff)

Information may be provided:

- electronically
- in writing, via forms/documents/plans
- orally, via face-to-face communications
- trackside signals

Applicable regulations and legislation may include:

- 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 and AS 3000
- 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