



**Australian Government**

# **TLIB2121B Maintain rail joints**

**Release 1**

## **TLIB2121B Maintain rail joints**

### **Modification History**

Release 1 - Revised unit.

This unit replaces and is equivalent to TLIB2121A Maintain rail joints.

### **Unit Descriptor**

This unit involves the skills and knowledge required to maintain rail joints in accordance with approved standards, safeworking and regulatory requirements, and workplace procedures. It includes identifying and determining parameters or components that require repair, cutting and boring rail, maintaining rail joints, and completing required documentation. Licensing or certification requirements are not applicable to this unit. Persons achieving competence in this unit will need to fulfil legislated rail safety requirements, including acts and regulations from each applicable state and territory, together with any nationally approved compliance codes and/or guidelines.

### **Application of the Unit**

Work is performed under minimal supervision, generally in a team environment. It involves the application of routine operational principles and procedures to maintain rail joints 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**

Not applicable.

### **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

### **1 Determine parameters or components that require adjustment**

1.1 Rail joint condition, component, fastening and anchoring defects affecting rail joints are identified in accordance with organisational procedures

1.2 Appropriate repair method is selected to ensure rail joint meets specifications

1.3 Scope of work is determined and resources are arranged

### **2 Check and maintain rail joint**

2.1 Surfaces and component parts are checked in accordance with specifications and organisational procedures

2.2 Rail joint is maintained to specifications following organisational procedures

### **3 Complete documentation**

3.1 Required documentation is completed in accordance with organisational procedures

## Required Skills and Knowledge

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

### Required knowledge:

- Authorisation/approval processes and procedures
- Documentation requirements
- Fundamentals of track structures relating to rail joints
- Hazards that may exist when maintaining rail joints, and ways of controlling the risks involved
- Problems that may occur when maintaining rail joints, and action that can be taken to report or resolve them
- Rail joint components
- Rail joint defects
- Relevant communication systems and procedures
- Relevant safety, occupational health and safety (OH&S) and environmental procedures and regulations
- Track standards relating to rail joints
- Workplace procedures for maintaining rail joints

### Required skills:

- Apply precautions and required action to minimise, control or eliminate potential hazards during work activities
- Communicate effectively with others when maintaining rail joints
- Complete documentation related to maintaining rail joints
- Determine specifications using appropriate numeric functions
- Identify and locate parameters or components of rail joints requiring adjustment or replacement
- Modify activities depending on operational contingencies, risk situations and environments
- Operate and adapt to differences in equipment in accordance with standard operating procedures
- Operate electronic communication equipment to required protocols
- Read and interpret instructions, procedures, information, technical data, standards and drawings relating to maintaining rail joints
- Report and rectify within limits of own role, problems, faults and malfunctions identified when maintaining rail joints in accordance with regulatory requirements and workplace procedures
- Select and use hand tools, power tools and equipment
- Select and use required personal protective equipment (PPE) conforming to industry and OH&S standards
- Use relevant plant and mechanised equipment
- Work collaboratively with others when maintaining rail joints
- Work systematically with required attention to detail without injury to self or others, or

damage to goods or equipment

## 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 required knowledge and skills
  - relevant legislation and workplace procedures
  - other relevant aspects of the range statement
- Assessment must include exercises that demonstrate competent performance of the following in a range of situations:
  - examining rail joints to determine defects and selecting appropriate repair methods
  - checking component parts and carrying out appropriate maintenance activities
  - completing documentation to organisational requirements

### **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
  - 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.

Equipment may include:

- mechanical handling and lifting equipment
- track machines
- hand tools, including impact or tension wrenches, grinders, friction rail saws, rail punches, rail borers, tie tampers, gauges, track jacks, spiking hammers and bars
- rail tensors
- fastening equipment
- oxy-acetylene equipment

Materials may include:

- resilient and static fastenings
- sleeper plates or pads
- anchors
- bolts
- nuts
- washer clips
- shims
- fishplates
- swage fastenings

Rail joint parts and surroundings to be checked may include:

- joint insulation
- expansion gap
- fishplates
- fish bolts
- sleepers
- sleeper fastening
- rail anchoring and rail bonds
- track geometry

Fastenings may include:

- pandrol clips, fist fastenings, Trac Lok or Rex Lock
- dog spikes and dog screws
- bolts, spring washers and nuts
- double shouldered sleeper plates
- insulated sleeper pads

Types of rail joint may include:

- mechanical joints
- mechanical junction joints
- insulated mechanical joints
- insulated plate joints
- bow plates
- bonded insulated joints

Rail ends on curves may require:

- bending (also known as pressing or crowing)

Special transitional rail joints may be:

- required between changes of mass/wear

Liaison may include:

- internal or external personnel from other work areas, such as train controllers and electricians

Communication systems may include:

- two-way radios
- telephones, including mobile phones
- agreed audible or hand signals

Depending on work context, safety and PPE may include:

- high visibility clothing
- hearing protection
- gloves
- sunscreen
- sunglasses
- safety glasses
- insect repellent
- safety headwear
- safety footwear
- portable radios and mobile phones
- hand lamps
- flags
- safety devices

Depending on the type of organisation concerned and the local terminology used, organisational procedures may be known as:

- company procedures
- enterprise procedures
- workplace procedures
- established procedure

## Unit Sector(s)

Not applicable.

## Competency Field

B – Equipment Checking and Maintenance