



Australian Government

Department of Education, Employment and Workplace Relations

TLIS907B Install mechanical signalling locking and interlocking devices

Release: 1

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Modification History

Not applicable.

Unit Descriptor

This unit involves the skills and knowledge required to install mechanical signalling locking and interlocking devices in accordance with safeworking and regulatory requirements and workplace procedures, including assembling components, installing equipment and components to specifications, and testing and adjusting the equipment in accordance with workplace procedures.

Application of the Unit

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 minimal supervision, generally within a team environment.

It involves the application of routine operational principles and procedures to the installation of mechanical signalling locking and interlocking devices as part of workplace activities across a variety of operational contexts within the Australian rail system.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this competency is packaged will assist in identifying employability skill requirements.

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

Elements and Performance Criteria

Element	Performance Criteria
1 Assemble components	1.1 Correct components are identified and selected to comply with job specifications 1.2 Equipment and components are pre-assembled and positioned for installation in compliance with work orders and job specifications
2 Install equipment and components	2.1 Equipment/component layout is prepared and checked to ensure position matches the job specifications 2.2 All fastening positions are marked and drilled for installation 2.3 Equipment and components are secured in the correct sequence and position, and are in compliance with the job specifications 2.4 Additional requirements or alterations to existing components are identified and appropriate follow-up action is taken 2.5 Manufacturing of additional components is carried out to allow for complete installation 2.6 Alterations to existing components are carried out to provide for the installation of new equipment 2.7 All interlinking components are correctly attached and secured ready for testing in compliance with work specifications
3 Test and adjust equipment	3.1 Required authorisation for tests is confirmed to ensure safe train operations may continue 3.2 Test procedures are coordinated and liaison with appropriate personnel is maintained to ensure overall safety 3.3 Appropriate tests are carried out to ensure all operations are within specifications and appropriate adjustments are made to ensure smooth operation 3.4 Testing is carried out to ensure functionality of all

operations to the locking table

- 3.5 Operational readiness is confirmed and required documentation/certification is correctly completed to allow for commissioning

Required Skills and Knowledge

REQUIRED KNOWLEDGE AND SKILLS

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

Required knowledge:

Applicable legislated rail safety requirements including acts and regulations from each state and territory together with any nationally approved compliance codes and/or guidelines

Relevant OH&S and environmental procedures and regulations

Workplace procedures for the installation of mechanical signalling locking and interlocking devices

Problems that may occur during the installation of mechanical signalling locking and interlocking devices, and action that can be taken to report or resolve the problems

Hazards that may exist when the installing mechanical signalling locking and interlocking devices, and ways of controlling the risks involved

Principles of signalling

Material safety data sheets

Mechanical fitting techniques

Fault finding techniques

Characteristics and applications of chemicals, paints and lubricants

Pneumatic and hydraulic techniques

Machining techniques

Track layout

Relevant mechanical theory and principles

Relevant recording and documentation procedures

Relevant sections of Australian Standards AS 4292 and AS 3000

Required skills:

Communicate effectively with others when installing mechanical signalling locking and interlocking devices

Read and interpret instructions, procedures, information, technical data and drawings relevant to the installation of mechanical signalling locking and interlocking devices

Interpret and follow operational instructions and prioritise work

Complete documentation related to the installation of mechanical signalling locking and interlocking devices

Operate electronic communication equipment to required protocol

Work collaboratively with others when installing mechanical signalling locking and interlocking devices

Adapt appropriately to cultural differences in the workplace, including modes of behaviour and interactions with others

Promptly report and/or rectify any identified problems, faults or malfunctions that may occur when installing mechanical signalling locking and interlocking devices in accordance with regulatory requirements and workplace procedures

Implement contingency plans for unplanned events that may occur when installing mechanical signalling locking and interlocking devices

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

Use and dispose of a range of chemical cleaning agents, protective paints and lubricants

Use high level fitting skills to fit and finely adjust inter-linking mechanical components

Use hand, portable, power and air tools

Assemble inter-linking components

Test and adjust close tolerance mechanically operating equipment

Use portable electric generators and air compressors

Check and confirm compliance with operational specifications

Work in confined spaces

Use appropriate painting techniques

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

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

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 appropriately simulated activities 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 relevant 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
Locking and interlocking devices to be installed and maintained may include:	all those in service in the Australian rail system
Job specifications are:	as defined in relevant technical manuals/documents
Equipment may include:	ground frames locking/interlocking machines (cabins) Annett locks key locks staff locks circuit controller rod leads point indicators CCT controllers
Equipment technology may include:	mechanical pneumatic hydraulic electric
Tools may include:	jigs vices cutting equipment drills spanners files bending devices verniers gauges

clamps

Installation and assembly may include:	application of chemical cleaning agents protective paints and lubricants
Liaison may be required with	internal personnel external personnel
Layout includes:	the physical placement and planning of all equipment, components and connections
Fixing and fastening may include	chemical bonding bolting
Manufacturing and installing may include:	cutting bending shaping welding drilling bolting clamping with ferrous and non-ferrous bar rod tube chain wire rope
Components may include:	bolts shims pins rods bars points floor plates brackets levers
Communication equipment may include:	two-way radios computers and/or telephones
Depending on the type of organisation concerned and the local terminology used, workplace procedures may include:	company procedures enterprise procedures organisational procedures established procedures
Safety and protective equipment may include:	high visibility clothing hearing protection gloves sunscreen sunglasses safety glasses insect repellent

safety headwear
safety footwear
portable radios
hand lamps
flags
safety devices

Information/documents may include:

applicable legislated rail safety requirements including acts and regulations from each state and territory together with any nationally approved compliance codes and/or guidelines
operational instructions, policies and workplace procedures
site and route plans
schematic/wiring diagrams and sketches
traction bonding plans
equipment/operational management information
technical and engineering instructions and specifications
manufacturers or workplace equipment operation manuals and specifications
emergency procedure manuals
two-way radio operation procedures
QA plans, data and document control conditions of service, legislation and industrial agreements including workplace agreements and awards

Applicable procedures and codes may include:

relevant state/territory regulations, codes of practice and safeworking system requirements
relevant Australian Standards and related requirements including AS 4292 and AS 3000
relevant state/territory OH&S legislation
relevant state/territory environmental protection legislation
ADG Code and associated requirements

Unit Sector(s)

Not applicable.

Competency Field

S - Installation and Commissioning