



Australian Government

# **TLIB4071 Install and maintain pole mounted switches and transformers**

Release: 2

# **TLIB4071 Install and maintain pole mounted switches and transformers**

## **Modification History**

Release 2. This is the second release of this unit of competency in the TLI Transport and Logistics Training Package:

- Minor statement change in unit Application
- Minor statement changes in Assessment Conditions.

Release 1. This is the first release of this unit of competency in the TLI Transport and Logistics Training Package.

## **Application**

This unit involves the skills and knowledge required to install and maintain pole mounted switches and transformers in accordance with safeworking and regulatory requirements, and workplace procedures.

It includes planning installation and maintenance, preparing worksite, installing switches and transformers in accordance with workplace specifications, maintaining switches and transformers, and completing work.

People achieving competence in this unit will need to fulfil the applicable state/territory legislated rail safety requirements and to comply with relevant codes of practice, rail industry standards and/or guidelines.

People working on energised overhead or underground systems or electrical equipment must have undertaken training and, where appropriate, hold the relevant licence, permit or certificate and be recognised as competent to carry out the work involved.

Work is performed under minimal supervision, generally within a team environment. It involves the application of routine operational principles and procedures when installing and maintaining pole mounted switches and transformers, as part of workplace activities across a variety of operational contexts within the Australian rail system.

## **Pre-requisite Unit**

Not applicable.

## **Competency Field**

B – Equipment Checking and Maintenance

## Unit Sector

Rail sector.

## Elements and Performance Criteria

### ELEMENTS

Elements describe the essential outcomes.

### PERFORMANCE CRITERIA

Performance criteria describe the performance needed to demonstrate achievement of the element.

#### **1 Plan installation and maintenance**

- 1.1** Works order is analysed and confirmed as required by site inspection
- 1.2** Resources required for the job are identified and scheduled in accordance with operational procedures
- 1.3** Hazards are identified, risks are assessed and control measures are implemented
- 1.4** Switch equipment and transformer are transported to worksite
- 1.5** Liaison and communication issues are resolved in accordance with organisational negotiation procedures

#### **2 Prepare the worksite**

- 2.1** Work plan and resources required are confirmed/checked at worksite
- 2.2** Personnel participating in the activity, including plant operators and contractors, are fully briefed
- 2.3** Road signs, barriers and warning devices are positioned to ensure a safe worksite
- 2.4** Safeworking practices are observed on or about the running track/line
- 2.5** Worksite is laid out in accordance with work plan to ensure minimum waste and rework
- 2.6** Systems/circuits are isolated as required, proved safe to work on in accordance with works order, and electrical permits are received/accepted/returned as required

#### **3 Install switches and transformers**

- 3.1** Switch equipment, transformers and earthing systems are installed and connected
- 3.2** Transformer is tested and voltage output is adjusted

- |                                             |            |                                                                                                                                                     |
|---------------------------------------------|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
|                                             | <b>3.3</b> | Visual inspection is carried out to confirm equipment/apparatus is in a safe condition to test and/or commission                                    |
|                                             | <b>3.4</b> | Commission is carried out in accordance with works order/plan                                                                                       |
| <b>4 Maintain switches and transformers</b> | <b>4.1</b> | Maintenance requirement is confirmed by detailed site diagnosis                                                                                     |
|                                             | <b>4.2</b> | Maintenance, including removal, repair, replacement and reinstatement, is carried out in accordance with works order and the condition of equipment |
| <b>5 Complete work</b>                      | <b>5.1</b> | Worksite is rehabilitated                                                                                                                           |
|                                             | <b>5.2</b> | Appropriate authority is notified on completion of work                                                                                             |
|                                             | <b>5.3</b> | Records and documentation for updating system data are completed and processed                                                                      |

## Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

## Range of Conditions

Range is restricted to essential operating conditions and any other variables essential to the work environment.

Non-essential conditions can be found in the TLI Transport and Logistics Training Package Companion Volume Implementation Guide.

## Unit Mapping Information

This unit replaces and is equivalent to TLIB4071A Install and maintain pole mounted switches and transformers.

## Links

Companion Volume Implementation Guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=df441c6e-213d-43e3-874c-0b3f7036d851>

# Assessment Requirements for TLIB4071 Install and maintain pole mounted switches and transformers

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## Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria on at least one occasion and include:

- applying appropriate repair/testing practices and procedures
- applying relevant workplace procedures
- communicating effectively with others
- communicating plans, intentions and safety criteria to others
- implementing contingency plans
- interpreting and following operational instructions and prioritising work
- modifying activities depending on operational contingencies, risk situations and environments
- monitoring work activities in terms of planned schedule
- operating and adapting to differences in equipment in accordance with operating procedures
- performing calculations required for installation procedures
- reading and interpreting relevant instructions, procedures, information, technical data, manuals and drawings
- reporting and/or rectifying identified problems, faults or malfunctions, in accordance with regulatory requirements and workplace procedures
- selecting and using test equipment and testing techniques
- working collaboratively with others
- working systematically with required attention to detail without injury to self or others, or damage to goods or equipment.

## Knowledge Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria and include knowledge of:

- applicable state/territory legislated rail safety requirements, relevant codes of practice, rail

industry standards and/or guidelines

- characteristics, capabilities and uses of types of pole mounted switches and transformers
- distribution system earthing procedures as they relate to installing and maintaining electrical switches and transformer equipment
- hazards that may exist when installing and maintaining pole mounted switches and transformers
- live/energised line working techniques and equipment
- problems that may occur when installing and maintaining pole mounted switches and transformers
- relevant electrical/electronic theory and principles
- relevant work health and safety (WHS)/occupational health and safety (OHS) and environmental procedures and regulations
- relevant organisation and commercial publications, including construction manuals and technical instructions as they relate to installing and maintaining electrical equipment
- relevant recording and documentation procedures
- relevant sections of railway safety management plans, rail industry standards and the AS/NZS 3000 Electrical installations (known as the Australian/New Zealand Standard Wiring Rules)
- relevant technical regulatory requirements
- statutory/organisation traffic control requirements, work zone regulations and guidance signals for planned operations
- switching or de-energising procedures and maintenance operations
- visual inspection workplace procedures
- workplace procedures for installing and maintaining pole mounted switches and transformers.

## Assessment Conditions

Assessors must hold credentials specified within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must satisfy the Principles of Assessment and Rules of Evidence and all regulatory requirements included within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must occur in workplace operational situations or, where this is not available, in simulated workplace operational situations that replicate workplace conditions.

Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

Resources for assessment must include access to:

- a range of relevant exercises, case studies and/or simulations
- relevant and appropriate materials, tools, equipment and personal protective equipment (PPE) currently used in industry
- applicable documentation including workplace procedures, regulations, rail industry standards, codes of practice and operation manuals.

## Links

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