



Australian Government

Department of Education, Employment and Workplace Relations

TLIB3078A Inspect, prepare and start an electric tram

Release: 1

TLIB3078A Inspect, prepare and start an electric tram

Modification History

Not Applicable

Unit Descriptor

Unit Descriptor

This unit involves the skills and knowledge required to inspect, prepare and start an electric tram in accordance with relevant regulations and workplace practices. It includes the checking and preparing of the electric tram, visually examining the electric tram, conducting on-tram checks, and starting and positioning the electric tram for service in accordance with workplace requirements. This unit replaces part of the previous unit TDTC2101A Drive tram Licensing, legislative, regulatory or certification requirements are applicable to this unit.

Application of the Unit

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, as well as relevant road rules and tramway regulatory requirements of the states/territories concerned.

Work is performed under minimal supervision, generally within a team environment. It involves the application of routine operational principles and procedures to inspect, prepare, start and position an electric tram as part of workplace activities across a variety of operational contexts.

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 Plan and prepare an electric tram	1.1 Roster is checked and interpreted for day's tram driving activities 1.2 Allocation of electric trams is checked in conjunction with tram controllers and roster clerk 1.3 Electric tram inspection and preparation duties are identified and interpreted 1.4 Tram schedules and notices and other operational and regulatory documentation is accessed and interpreted in accordance with workplace procedures 1.5 Communication equipment required for the day's operations is obtained and checked to ensure that it is functional 1.6 Required personal protective equipment is obtained for use during the day's tram driving activities 1.7 Electric tram to be inspected and prepared is located in the depot 1.8 Depot safety and basic electrical equipment awareness procedures are followed while locating the tram in the depot.
2 Visually inspect and prepare electric tram	2.1 Features, functions and location of electric tram and associated equipment are identified 2.2 Log book is checked to confirm serviceability of unit 2.3 Pre-start internal and external safety and maintenance checks are conducted, in accordance with OH&S and other workplace policies and procedures 2.4 Electric tram and equipment are checked by visual inspection and defects and deficiencies are recorded and rectified, isolated, tagged (where applicable) or reported as per workplace procedures and regulatory requirements 2.5 Availability of traction power and sand if required are checked against journey requirements as per workplace procedures and regulatory requirements 2.6 Relevant OH&S and regulatory requirements are followed
3 Conduct on-tram checks	3.1 Electric tram is checked in correct sequence and all lights are confirmed operating to optimum requirements 3.2 Pre-departure mechanical checks are correctly performed and correct functioning of all equipment is confirmed as per workplace procedures and manufacturers operating requirements 3.3 Supervisory controls and indicators are checked to ensure they are functioning correctly and appropriate action is taken if they are not working correctly 3.4 Communication equipment is checked to ensure that it is

ELEMENT**PERFORMANCE CRITERIA**

functioning correctly and appropriate action is taken if it is not working correctly

3.5 Seat, windows, blinds and other personal in-cab equipment are checked and adjusted for correct functionality, safety and comfort

3.6 Ancillary equipment is checked and is confirmed to be operational in accordance with operating requirements

3.7 Fire extinguisher, point bars and any other required tools are checked to confirm that they are in position and meet operational requirements

4 Start electric tram

4.1 Electric tram is started in accordance with instructions and any operating faults are recognised, diagnosed, reported and recorded in appropriate records for follow-up

4.2 In the case of safety, critical or serious equipment faults that cannot be readily rectified, the electric tram is shut down and reported for rectification in accordance with procedures

4.3 All instruments and gauges are observed and readings interpreted to confirm effective operation, including air and electrical. Where a problem is indicated, action is taken to determine the cause and to rectify or report the situation

4.4 Sand operation (if applicable) is checked after starting and appropriate action is taken if not effectively functioning

4.5 Pre-departure checks are carried out to ensure electric tram is braking and powering effectively and is safe to move

5 Position electric tram

5.1 Authority to move and position electric tram is obtained and relevant personnel are advised of intention and procedures

5.2 Electric tram is operated in accordance with standard procedures and regulatory requirements and within operating and operational constraints

5.3 Electric tram is positioned in accordance with operational requirements and directions

5.4 Tram performance is monitored during operation in order to confirm effective operation or to identify defects

5.5 Equipment defects are identified, rectified and recorded or relevant personnel are advised for assistance

5.6 Relevant OH&S and regulatory requirements are followed to ensure safety and to prevent injury and damage

5.7 Relevant personnel are advised that the electric tram is secured in the required position and is ready for service

6 Complete documentation

6.1 All required documentation concerning the inspection, preparation and start-up of the electric tram is completed in accordance with workplace procedures and regulatory

ELEMENT	PERFORMANCE CRITERIA
	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:

- 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 state/territory roads and traffic authority and tramway operating procedures
- Relevant OH&S and environmental procedures and regulations
- Electric tram controls, instruments and indicators and their purpose, location and use
- Monitoring devices; braking and power equipment; safety systems; ancillary systems; and any signalling systems
- Visual inspection procedures for an electric tram
- On-tram pre-operational checks for an electric tram
- Start-up procedures for an electric tram
- Braking and safety system procedures for electric trams
- Operating controls to start, accelerate, decelerate and stop an electric tram
- Procedures for adjusting controls to optimise the operation of an electric tram
- Procedures for managing and controlling hazardous situations when preparing and starting up an electric tram
- Procedures for starting and operating ancillary systems on an electric tram
- Functions of sand as used on an electric tram and the procedures for checking and refilling sand levels and carrying out sand system testing processes on an electric tram
- Principles, purpose and location of controls, monitoring devices, braking, power source and traction systems
- External features of an electric tram that must be checked during a pre-operational visual inspection
- Procedures for minor maintenance including cleaning
- Procedures for identifying equipment defects and assessing for appropriate action
- Typical defects that can occur on an electric tram and related action that should be taken
- Requirements for completing relevant documentation when inspecting, preparing and starting an electric tram
- Procedures to be followed in the event of an emergency

REQUIRED KNOWLEDGE AND SKILLS

- Functions of all supervisory indicators and controls and related checks for correct operation
- Communication equipment checks
- Cleaning requirements for an electric tram
- Functions of ancillary systems on an electric tram and related checks for correct operation
- Procedures for raising and lowering a pantograph or trolley pole on an electric tram
- Procedures for operating any electronic communications equipment with required protocol
- Fatigue management knowledge and techniques including: causes and effects of fatigue; strategies to manage fatigue; factors which increase fatigue-related accidents; and lifestyles which promote the effective long term management of fatigue

Required skills:

- Communicate effectively with others when inspecting, preparing, starting up and positioning an electric tram
- Operate any electronic communication equipment to required protocol
- Read and interpret instructions, procedures and information and signs relevant to the visual inspection, preparation, starting and positioning of an electric tram
- Document outcomes of visual inspection of an electric tram
- Complete documentation related to the inspection, preparation, start up and positioning of an electric tram
- Work collaboratively with others during the inspection, preparation, start up and positioning of an electric tram
- Interpret and follow instructions and prioritise work
- Identify and assess tram defects and deficiencies and take appropriate action to report, isolate, repair or replace any identified defective equipment as per workplace procedures
- Implement contingency plans for unplanned events
- Modify activities depending on differing operational contingencies, risk situations and environments
- Adapt to differences in trams and associated equipment and procedures
- Monitor and anticipate operational problems and hazards and take appropriate action
- Select and use required personal protective equipment conforming to industry and OH&S standards
- Check and replenish sand (where applicable) on an electric tram
- Conduct a visual inspection of an electric tram and associated equipment
- Prepare and start an electric tram prior to service
- Position an electric tram in readiness for service
- Apply fatigue management knowledge and techniques

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

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 relevant weather conditions
- Electric trams include all electric trams in service within Australian transport systems and may include:
- hand-operated or foot pedal control systems or both
- Electric tram equipment may include:
- ancillary systems
 - automatic control systems
 - braking systems
 - drive systems
 - instrumentation
 - manual controls
 - communication systems
 - warning equipment
 - power source
 - vigilance systems
 - traction systems
- Pre-operation checks may include:
- sand levels
 - brake testing
 - lights - internal and external
 - air systems
 - interlocks and door controls
- Visual inspection of an electric tram may include:
- lights
 - hoses
 - couplings
 - destination indicators or signs
 - doors and door locks
 - springs
 - brake equipment
 - wheels
 - seals
 - sand
 - pantographs or trolley poles
 - electrical cables
 - glass windows and doors
 - audible faults (e.g. hiss of escaping air)

RANGE STATEMENT

In-cab pre-operational checks may include:

- visible faults (e.g. oil leaks, tears and cracks)
- brake checks
- driver's safety control test
- functionality checks of supervisory controls and indicators
- traction controls
- in-cab check of communication equipment (depending on type of tram this may include radio, intercom, PA systems, passenger emergency intercom, passenger emergency systems, etc.)
- radio communication check with tram controller
- seat (ergonomic setting for safety, function and comfort)
- windows and blinds
- door locks
- fire extinguishers
- point bars, any other tools and tool boxes

Electric tram start-up sequence may include:

- check log book
- pantograph or trolley pole up
- switch on batteries, if any
- switch on compressor, if any
- close all power control switches
- close all light switches and set lights for proposed direction of travel
- check sand levels and functions
- check handbrake/park brake is functioning correctly
- observe and interpret gauges
- take appropriate action if gauge readings outside normal operation range
- start tram

Risk minimisation may require differentiating between faults, defects and deficiencies that:

- do not present a hazard and could be attended to under running maintenance or in a normal maintenance schedule
- present a potential hazard and need to be attended to under running maintenance or at the next most practical opportunity
- present an immediate hazard and require immediate attention

Relevant personnel may include:

- tram crew
- tram controllers
- rostering supervisors and staff
- other tram drivers and crews
- depot coordinators
- supervisors and other operational personnel

RANGE STATEMENT

Action taken upon the identification of faults, defects or deficiencies may include:	• maintenance personnel • immediate internal or external customers • internal and external suppliers • reporting the problem and carrying out repairs (depending on the level and extent of work required), or isolating the faulty equipment and advising appropriate personnel of the fault and need for repair or replacement
Depending on the organisation concerned workplace procedures may be called:	• standard operating procedures • company procedures • enterprise procedures • organisational procedures • established procedures
Information and documents may include:	• relevant national and state or territory transport regulations and codes of practice • notices in drivers' notice board/box • reference cards • tram driver roster sheet and/or table card • operational instructions, policies and procedures: • emergency procedures manual • conditions of service, legislation and industrial agreements including workplace agreements and awards
Applicable legislation, regulations and codes 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 • relevant state/territory road rules and tramway codes of practice • relevant Australian Standards and related requirements • 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