



Australian Government

TLIB4077 Inspect and prepare a heritage steam locomotive

Release: 2

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Modification History

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

- Minor statement changes in Knowledge Evidence
- 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 inspect and prepare a heritage steam locomotive in accordance with relevant workplace practices, rail regulations and codes of practice.

It includes checking and preparing a heritage steam locomotive, visually examining a locomotive, conducting in-cab checks, and moving and positioning a locomotive for service in accordance with workplace procedures.

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 and/or guidelines.

Work is performed under minimal supervision, generally within a team environment.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Not applicable.

Competency Field

B – Equipment Checking and Maintenance.

Unit Sector

Rail sector.

Elements and Performance Criteria

ELEMENTS

PERFORMANCE CRITERIA

Elements describe the essential outcomes.

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

1 Light fire and raise steam

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|------------|--|
| 1.1 | Roster is checked and interpreted for day's train driving activities |
| 1.2 | Allocation of locomotives is checked in accordance with notices and in conjunction with network control officer and roster clerk |
| 1.3 | Locomotive to be inspected and prepared is located in the yard |
| 1.4 | Pre-light-up procedures applicable to the type of fire box are identified and followed to enable safe boiler operation |
| 1.5 | Light-up procedures and safety practices are followed to build up steam within the boiler and to ensure 'smoking' is minimised |
| 1.6 | Instruments and equipment are monitored to ensure safe and efficient operation as steam pressure is raised to operating level |
| 1.7 | Where a problem is indicated, actions are taken to determine the cause and to rectify or report the situation |

2 Prepare for heritage steam locomotive work activities

- | | |
|------------|--|
| 2.1 | Roster is checked and interpreted for day's train driving activities |
| 2.2 | Allocation of locomotives is checked as identified by notices and in conjunction with network control officer and roster clerk |
| 2.3 | Hazards are identified, risks are assessed and risk control measures are implemented |
| 2.4 | Trackside safety and basic electrification awareness procedures are |

		followed while locating allocated locomotive in the yard
	2.5	Locomotive inspection and preparation duties are identified and interpreted
	2.6	Train schedules, notices and other operational and regulatory documentation are accessed and interpreted
	2.7	Communication equipment required for day's operations is obtained and checked to ensure it is functional
	2.8	Required personal protective equipment (PPE) is obtained for use prior to day's train driving activities
	2.9	Locomotive to be inspected and prepared is located in the yard
3 Inspect and prepare heritage steam locomotive	3.1	Features, functions and location of locomotive and associated equipment are identified
	3.2	Logbook is checked to confirm serviceability of locomotive
	3.3	Preparation and safety checks are conducted in accordance with work health and safety (WHS)/occupational health and safety (OHS) and other workplace policies and procedures
	3.4	Locomotive, kit and equipment are checked and defects and deficiencies recorded and rectified, isolated, tagged or reported in accordance with workplace procedures and regulatory requirements
	3.5	Availability of appropriate fuel, lubricating oils, water and sand quantities are checked against journey requirements and appropriate actions are taken to replenish them, as required
	3.6	Relevant WHS/OHS and regulatory

		requirements are followed
4 Conduct in-cab checks	4.1	Locomotive is checked in correct sequence and all equipment is confirmed to be operating to optimum requirements
	4.2	Cab layout is checked and confirmed that it meets operating requirements
	4.3	Pre-departure mechanical checks are correctly performed and correct functioning of equipment confirmed in accordance with workplace procedures and operating requirements
	4.4	Operational controls and indicators are checked to ensure they are functioning correctly and appropriate actions taken if not working correctly
	4.5	Communication equipment is checked to ensure it is functioning correctly and appropriate actions taken if not working correctly
	4.6	Auxiliary equipment is checked and confirmed to be operational in accordance with operating requirements
	4.7	Fire extinguisher, safety equipment, emergency toolbox and any other required equipment are checked to confirm they are in position and meet operational requirements
	4.8	Pre-departure checks are carried out to ensure locomotive is braking and powering effectively and is safe to move
5 Complete documentation	5.1	Required documentation concerning inspecting, preparing and starting up locomotive is completed in accordance with workplace procedures and regulatory requirements
	5.2	Logbook and other service records on the locomotive are completed in

6 Position heritage steam locomotive		accordance with workplace procedures and regulatory requirements
	6.1	Authority to move and position locomotive is obtained and relevant personnel are advised of intention and procedures
	6.2	Locomotive is operated in accordance with workplace procedures and regulatory requirements, within operating and operational constraints
	6.3	Locomotive is positioned in accordance with operational requirements and directions
	6.4	Locomotive performance is monitored during operation to confirm effective operation or to identify defects
	6.5	Equipment defects are identified, rectified and recorded or relevant personnel are advised for assistance
	6.6	Relevant WHS/OHS and regulatory requirements are followed to ensure safety and to prevent injury and damage
	6.7	Network control officer and other relevant personnel are advised that locomotive is secured in the required position and is ready for service

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.

Unit Mapping Information

This unit replaces and is equivalent to TLIB4077A Inspect and prepare a heritage steam locomotive.

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 TLIB4077 Inspect and prepare a heritage steam locomotive

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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:

- adapting to differences in heritage steam locomotives and associated equipment and procedures
- checking and replenishing fluids and carrying out lubrication requirements on a heritage steam locomotive
- conducting an inspection and pre-operational check of a heritage steam locomotive and associated equipment
- identifying and assessing heritage steam locomotive defects and deficiencies and taking appropriate actions to report, isolate, repair or replace identified defective equipment in accordance with workplace procedures
- identifying job hazards and taking required actions to minimise, control or eliminate identified hazards
- interpreting and following instructions and prioritising work
- modifying activities depending on operational contingencies, risk situations and environments
- monitoring and anticipating operational problems and hazards and taking appropriate actions
- operating electronic communications equipment to required protocol
- positioning a heritage steam locomotive in readiness for service
- preparing a heritage steam locomotive prior to service
- reading and interpreting relevant instructions, procedures, information and signs.

Knowledge Evidence

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

- applicable state/territory legislated rail safety requirements, relevant codes of practice and/or guidelines
- cleaning requirements for a heritage steam locomotive
- communication equipment checks and operating procedures
- external features of a heritage steam locomotive that must be checked during a pre-operational visual inspection
- fuel capacity and range (where applicable)
- functions of all supervisory indicators and controls and related checks for correct operation
- functions of auxiliary systems on a heritage steam locomotive and related checks for correct operation
- in-cab pre-operational checks for a heritage steam locomotive
- inspection procedures for a heritage steam locomotive
- locomotive controls, instruments and indicators and their purpose, location and use
- lubrication requirements for a heritage steam locomotive
- operating controls to start, accelerate, decelerate and stop a heritage steam locomotive
- operating procedures for a heritage steam locomotive
- principles, purpose and location of controls, monitoring devices, braking, power source and traction systems
- procedures for:
 - adjusting controls to optimise the operation of a heritage steam locomotive
 - braking and safety system for a heritage steam locomotive
 - checking fuel and fluid levels and carrying out lubrication processes on a heritage steam locomotive
 - emergency response procedures
 - identifying equipment defects, assessing and reporting for appropriate actions
 - lighting fire and raising steam on a heritage steam locomotive
 - managing and controlling hazardous situations when preparing and firing up a heritage steam locomotive
 - minor maintenance including cleaning, brake shoe/pad replacement and sand box requirements
 - operating communications equipment in accordance with required protocol
 - starting and operating auxiliary systems on a heritage steam locomotive
- relevant work health and safety (WHS)/occupational health and safety (OHS), and environmental procedures and regulations
- requirements for completing relevant documentation when inspecting and preparing a heritage steam locomotive
- typical defects that can occur on a heritage steam locomotive and related actions that should be taken

- workplace procedures and operating requirements.

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 where it is appropriate to do so; where this is not appropriate, assessment must occur in simulated workplace operational situations that replicate rail corridor 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, codes of practice and operation manuals.

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