



Australian Government

TLIC3073 Fire a steam locomotive

Release: 1

TLIC3073 Fire a steam locomotive

Modification History

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 conduct the duties of an assistant on a steam locomotive in accordance with workplace procedures and the requirements of relevant rail regulations and codes of practice.

It includes preparing for operations, preparing and starting the locomotive, assisting with un/coupling and securing the locomotive, and assisting in operating and stabling the locomotive in accordance with organisational requirements.

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 to fire a steam locomotive.

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

Pre-requisite Unit

Not applicable.

Competency Field

C - Vehicle Operation

Unit Sector

Not applicable.

Elements and Performance Criteria

Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
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| 1 Prepare to assist with operating a | 1.1 Roster is checked and interpreted for day's operational activities |
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steam locomotive

- 1.2 Allocation of locomotive is checked
- 1.3 Train schedules/notices and other operational and regulatory documentation are accessed and interpreted in accordance with workplace procedures
- 1.4 Personal protective equipment required to operate the locomotive is obtained
- 1.5 Trackside safety and electrification awareness procedures are followed while locating allocated locomotive

2 Prepare and start a steam locomotive

- 2.1 Logbook is checked to confirm serviceability of locomotive
- 2.2 Locomotive is confirmed as being securely stabled prior to commencing preparation and safety checks
- 2.3 Preparation and safety checks are conducted in accordance with work health and safety (WHS)/occupational health and safety (OHS) and other organisational policies and procedures
- 2.4 Water levels and fuels are checked and replenished as required
- 2.5 Mechanical equipment is checked and appropriate action is taken as required
- 2.6 Fire is lit and steam is raised in accordance with organisational instructions, with consideration for thermal expansion and in accordance with environmental procedures and practices
- 2.7 For critical or serious equipment faults that cannot be readily rectified, fire is dropped, faulty equipment is isolated and problem is reported for rectification
- 2.8 All indicators and gauges are continuously monitored and readings are interpreted to confirm effective pressure, water level and air operation, and where a problem is indicated, action is taken to determine the cause and to rectify or report the situation
- 2.9 Operation of locomotive equipment is established and verified
- 2.10 Locomotive lubrication, cleaning, preparation, and provisioning are undertaken in accordance with organisational requirements
- 2.11 Logbook and other service records on the locomotive are completed in accordance with organisational requirements

3 Assist with

- 3.1 Rail vehicles are positioned to meet coupling requirements in

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| coupling, uncoupling and securing rail vehicles | | accordance with organisational policies and procedures |
| | 3.2 | Coupling systems are identified and applied appropriately to couple and/or uncouple rail vehicles |
| | 3.3 | Connecting hoses and electrical couplings are connected/disconnected in accordance with organisational policies and procedures |
| | 3.4 | Hand brakes and other securing devices are applied/released and attached/removed in accordance with organisational policies and procedures |
| 4 Assist with operating a steam locomotive | 4.1 | Safeworking activities are undertaken in accordance with organisational and/or network owner policies and procedures |
| | 4.2 | Gauges and indicators are monitored and operated in accordance with organisational policies and procedures |
| | 4.3 | Boiler is fired to meet load requirements in accordance with environmental procedures and practices |
| | 4.4 | Water level is maintained to ensure safe boiler operation meets load requirements and track characteristics |
| | 4.5 | Assistance with communications is provided when communicating with Network Control Officer and ground staff |
| | 4.6 | Observation of all aspects of the rail corridor and environs is maintained and communicated to driver in accordance with organisational and/or network owner policies and procedures |
| | 4.7 | In case of driver being incapacitated, train is stopped, Network Control Officer is informed and instructions are followed in accordance with organisational policies and procedures |
| | 4.8 | Assistance with locomotive operation is provided as requested by driver |
| 5 Assist with stabling a steam locomotive | 5.1 | Locomotive is secured in accordance with directions, workplace procedures and rail regulations |
| | 5.2 | Boiler water levels are checked and replenished as required |
| | 5.3 | Locomotive is shut down in accordance with operator instructions |
| | 5.4 | Ash is disposed of responsibly in accordance with network owner and operator policies |

- 5.5 Assistance is provided to conduct a post-operational inspection
- 5.6 Logbook and other service records on the locomotive are completed in accordance with organisational requirements
- 5.7 Controls are secured in accordance with organisational procedures

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 Companion Volume Implementation Guide.

Unit Mapping Information

This unit replaces and is equivalent to TLIC3073A Fire a 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 TLIC3073 Fire a steam locomotive

Modification History

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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 relevant safeworking system and workplace procedures
- assisting with pre-operational activities in accordance with operational procedures
- checking and replenishing fluids and carrying out lubrication requirements on a steam locomotive
- communicating effectively with others when inspecting and preparing a steam locomotive
- completing relevant documentation
- conducting a visual inspection of a steam locomotive and associated equipment
- documenting outcomes of visually inspecting a steam locomotive
- firing a steam locomotive
- identifying job hazards and taking required action to minimise, control or eliminate identified hazards
- inspecting and operating a steam locomotive boiler in accordance with relevant codes of practice and operational procedures
- interpreting and following instructions and prioritising work
- maintaining steam and water levels in accordance with operating requirements
- preparing a steam locomotive prior to service
- reading, interpreting and following 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 and performance criteria and include knowledge of:

- braking and safety system procedures for a steam locomotive
- emergency procedures
- external features of a steam locomotive that must be checked during a pre-operational visual inspection
- functions of auxiliary systems on a motive power unit and related checks for correct operation
- in-cab pre-operational checks for a steam locomotive
- lubrication requirements for a motive power unit
- operating controls to start, accelerate, decelerate and stop a steam locomotive
- principles, purpose and location of controls, monitoring devices, braking, power source and traction systems
- procedures for:
 - checking fuel and fluid levels and carrying out lubrication processes on a steam locomotive
 - identifying equipment defects and assessing appropriate action
 - managing and controlling hazardous situations when preparing and starting up a steam locomotive
 - starting and operating auxiliary systems on a steam locomotive
 - visually inspecting a steam locomotive
- relevant safety, 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 steam locomotive
- steam locomotive boiler code of practice
- start-up procedures for a steam locomotive
- workplace procedures and operating requirements.

Assessment Conditions

As a minimum, assessors must satisfy applicable regulatory requirements, which include requirements in the *Standards for Registered Training Organisations* current at the time of assessment.

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Practical assessment must occur in an appropriate range of situations in the rail corridor workplace.

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 include:

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

Links

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