Australian Government

Department of Education, Employment and Workplace Relations

TLIB3075A Inspect and prepare a motive power unit

Release: 1

TLIB3075A Inspect and prepare a motive power unit

Modification History

Not Applicable

Unit Descriptor

Unit Descriptor

This unit involves the skills and knowledge required to inspect, prepare and start a motive power unit in accordance with relevant workplace practices, rail regulations and codes of practice. It includes the checking and preparing of the motive power unit, visually examining the motive power unit, conducting in-cab checks, and starting and positioning the motive power unit for service in accordance with workplace requirements. Licensing or certification requirements are not 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 applicable state and territory together with any nationally approved compliance codes and/or guidelines.

Work is performed without supervision, generally within a team environment.

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 Start motive power unit	1.1 Roster is checked and interpreted for day's train driving activities
	1.2 Allocation of motive power units is checked in conjunction with appropriate personnel
	1.3 Motive power unit to be inspected and prepared is located
	1.4 Motive power unit is started in accordance with manufacturers instructions and/or workplace procedures and any operating faults are recognised, diagnosed, reported and recorded in appropriate records for follow-up
	1.5 In the case of safety, critical or serious equipment faults that cannot be readily rectified, the motive power unit is shut down, the faulty equipment isolated and tagged and the problem reported for rectification
	1.6 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
	1.7 Where required, fluid levels are rechecked after starting and appropriate action is taken if required
	1.8 Pre-departure checks are carried out to ensure motive power unit is braking and powering effectively and is safe to move
2 Prepare for work activities	2.1 Roster is checked and interpreted for day's train driving activities
	2.2 Allocation of motive power units is checked as per notices in conjunction with train controllers and roster clerk
	2.3 Trackside safety and, if appropriate, basic electrification awareness procedures are followed while locating the allocated motive power unit in the yard
	2.4 Motive power unit inspection and preparation duties are identified and interpreted
	2.5 Train schedules and notices and other operational and regulatory documentation are accessed and interpreted in accordance with workplace procedures
	2.6 Communication equipment required for the day's operations is obtained and checked to ensure that it is functional
	2.7 Required personal protective equipment is obtained for use during the day's train driving activities
	2.8 Motive power unit to be inspected and prepared is located in the yard
3 Inspect and prepare motive power unit	3.1 Features, functions and location of motive power unit and associated equipment are identified

ELEMENT	PERFORMANCE CRITERIA
	3.2 Log book is checked to confirm serviceability of unit
	3.3 Preparation and safety checks are conducted, in accordance with OH&S and other workplace policies and procedures
	3.4 Motive power unit, kit and equipment are checked and defects and deficiencies are recorded and rectified, isolated, tagged (where applicable) or reported as per workplace procedures and regulatory requirements
	3.5 Availability of appropriate fuel, lubricating oils, water, coolant and sand quantities (where applicable) are checked against journey requirements and appropriate action is taken to replenish them if required
	3.6 Relevant OH&S and regulatory requirements are followed
4 Conduct in-cab checks	4.1 Motive power unit is checked in correct sequence and all equipment is confirmed to be operating to optimum requirements
	4.2 Cab layout is checked and confirmed to meet operating requirements
	4.3 Pre-departure mechanical checks are correctly performed and correct functioning of all equipment is confirmed as per workplace procedures and manufacturers operating requirements
	4.4 Supervisory controls and indicators are checked to ensure they are functioning correctly and appropriate action is taken if they are not working correctly
	4.5 Communication equipment is checked to ensure that it is functioning correctly and appropriate action is taken if it is not working correctly
	4.6 Seat, windows, blinds, air conditioners, heaters and other personal in-cab equipment are checked and adjusted for correct functionality, safety and comfort
	4.7 Auxiliary equipment is checked and is confirmed to be operational in accordance with operating requirements
	4.8 Fire extinguisher and emergency toolbox are checked to confirm that they are in position and meet operational requirements
5 Complete documentation	5.1 All required documentation concerning the inspection of the motive power unit is completed in accordance with workplace procedures and regulatory requirements
	5.2 Log book and other service records on the motive power unit are completed in accordance with workplace procedures and regulatory requirements
6 Position motive power unit	6.1 Authority to move and position motive power unit is obtained and relevant personnel are advised of intention and procedures

ELEMENT	PERFORMANCE CRITERIA
	6.2 Motive power unit is operated in accordance with standard procedures and regulatory requirements and within operating and operational constraints
	6.3 Motive power unit is positioned in accordance with operational requirements and directions
	6.4 Motive power unit performance is monitored during operation in order to confirm effective operation or to identify defects
	6.5 Equipment defects are identified, reported, rectified and recorded or relevant personnel are advised for assistance
	6.6 Relevant OH&S and regulatory requirements are followed to ensure safety and to prevent injury and damage
	6.7 Train controller and other relevant personnel are advised that the motive power unit is secured in the required position and is ready for service

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
- Principles, purpose and location of controls, monitoring devices, braking, power source and traction systems
- Inspection procedures for a motive power unit
- In-cab pre-operational checks for a motive power unit
- Start-up procedures for motive power units
- Operating procedures for motive power units
- Braking and safety system procedures for motive power units
- Operating controls to start, accelerate, decelerate and stop a motive power unit
- Procedures for adjusting controls to optimise the operation of a motive power unit
- Procedures for managing and controlling hazardous situations when preparing and starting up a motive power unit
- Procedures for starting and operating auxiliary systems on a motive power unit
- Procedures for checking fuel and fluid levels and carrying out lubrication processes on a motive power unit

REQUIRED KNOWLEDGE AND SKILLS

- External features of a motive power unit that must be checked during a pre-operational visual inspection
- Procedures for minor maintenance including cleaning, brake shoe/pad replacement and sand box requirements
- Procedures for identifying equipment defects and assessing for appropriate action
- Typical defects that can occur on a motive power unit and related action that should be taken
- Requirements for completing relevant documentation when inspecting and preparing a motive power unit
- Procedures to be followed in the event of an emergency
- Functions of all supervisory indicators and controls and related checks for correct operation
- Communication equipment checks
- Lubrication requirements for a motive power unit
- Cleaning requirements for a motive power unit
- Functions of auxiliary systems on a motive power unit and related checks for correct operation
- Fuel tank capacity and range (where applicable)
- Procedures for raising and lowering a pantograph on electric motive power units
- Local procedures and operating requirements
- Procedures for operating electronic communications equipment with required protocol

Required skills:

- Communicate effectively with others when inspecting and preparing a motive power unit
- Operate electronic communication equipment to required protocol
- Read and interpret instructions, procedures and information and signs relevant to the visual inspection, preparation, start-up and positioning of a motive power unit
- Document outcomes of inspection of a motive power unit
- Complete documentation related to the preparation and positioning of a motive power unit
- Work collaboratively with others inspecting and preparing a motive power unit
- Interpret and follow instructions and prioritise work
- Identify and assess motive power unit 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 motive power units and associated equipment and procedures
- Monitor and anticipate operational problems and hazards and take appropriate action
- Check and replenish fluids and carry out lubrication requirements on a motive power unit

Required skills:

- Conduct a visual inspection of a motive power unit and associated equipment
- Prepare a motive power unit prior to service
- Position a motive power unit in readiness for service

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
	• Assessment must include exercises which demonstrate competency performance of the following in a range of situations:
	  • carrying out pre-operational checks on motive power units in accordance with workplace procedures
	  • identifying typical faults or defects that may occur
	  • identifying rectification/reporting procedures for typical faults or defects

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

EVIDENCE GUIDE

	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, 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 weather conditions
Motive power units may include all motive power units in service within Australian rail systems and may include:	• diesel locomotives • electric locomotives • railcars • multiple units (including electric multiple units)
Motive power equipment may include:	• auxiliary systems • automatic control systems • braking systems • drive systems • instrumentation • manual controls • remote train and signal control systems • communication systems • warning equipment • power source • vigilance systems • traction systems • head and marker lights
Inspection of a motive power unit may include:	• lights • hoses

RANGE STATEMENT

	• couplings • destination boards (electric urban train services) • doors and door locks • springs • brake equipment • wheels • seals • sand and fuel (regional diesel train services) • electrical cables • glass windows and doors • compressor oil levels • automatic power cut-out sensors • audible faults (e.g. hiss of escaping air) • visible faults (e.g. oil leaks, tears and cracks)
In-cab pre-operational checks will include:	• brake checks • driver's safety control test • functionality checks of supervisory controls and indicators • traction • in-cab check of communication equipment • radio communication check • seat • windows and blinds • air conditioners and heaters • door locks • fire extinguishers • emergency toolbox • passenger service resources
Electric motive power unit start-up sequence will include:	• check that handbrake is on • check log book • switch batteries on • switch auxiliary compressor on • pantograph up • close main circuit breaker • observe and interpret gauges (electric and air) • take appropriate action if gauge readings are outside normal operation range • recheck fluid levels • start motive power unit
Diesel motive power unit start-up sequence will include:	• check that handbrake is on • check log book

RANGE STATEMENT

	• check all fluid levels (including radiator, crankcase oil, water, compressor oil and governor oil) and take appropriate action if outside required levels • battery switch on • isolation switch to 'start' • all circuit breakers on • observe and interpret gauges (electric and air) • take appropriate action if gauge readings are outside normal operation range • recheck fluid levels • start motive power unit
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:	• train crew • train controllers and signallers • rostering supervisors and staff • other train drivers and crews • depot coordinators • yard masters, supervisors and other operational personnel • service delivery supervisors • electric train service supervisor • station yard staff • maintenance and cleaning personnel • immediate internal or external customers
Action taken upon the identification of faults, defects or deficiencies may include:	• reporting the problem and carrying out repairs (depending on the level and extent of work required), or isolating and tagging 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
Safety and personal protective equipment may include:	• gloves • sunscreen and sunglasses • safety glasses

RANGE STATEMENT

	• insect repellent • safety headwear and footwear • two-way radios • hand lamps • flags • safety devices • audible indicators • breathing equipment • fire extinguishers • high visibility clothing • hearing protection
Positioning of motive power unit may involve:	• operation of manual points • operation of turntable • coupling/uncoupling to other rolling stock
Information and documents may include:	• notices in drivers' notice board/box • reference cards • train 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:	• legislated rail safety requirements including acts and regulations from each applicable state and territory together with any nationally approved compliance codes and/or guidelines • 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