



Australian Government

TLIB3123A Apply awareness of motive power unit fundamentals

Release 1

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Modification History

Release 1 - New unit of competency

Unit Descriptor

This unit involves the skills and knowledge required to apply an awareness of motive power unit fundamentals including components, equipment and their basic operation. Licensing or certification requirements are not applicable to this unit.

Application of the Unit

This unit is intended as an introduction to motive power units for people entering the rail industry who will be working on or around them.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

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

- | | |
|---|---|
| 1 Identify basic motive power unit types | 1.1 Different motive power unit types and/or gauges currently in operation are identified |
| | 1.2 Basic layout of different types of motive power unit is identified |
| 2 Identify air/vacuum systems and operation | 2.1 Basic air/vacuum components relevant to motive power unit type are located and identified |
| | 2.2 Uses and operation of air/vacuum system are identified |
| 3 Identify electrical systems and operation | 3.1 Basic electrical components relevant to motive power unit type are located and identified |
| | 3.2 Uses and operation of electrical system are identified |
| 4 Identify mechanical systems and operation | 4.1 Basic mechanical components relevant to motive power unit type are located and identified |
| | 4.2 Uses and operation of mechanical system are identified |
| 5 Identify control systems and operation | 5.1 Basic control system components relevant to motive power unit type are located and identified |
| | 5.2 Uses and operation of control systems are identified |
| 6 Identify cooling and lubricating systems and operation | 6.1 Basic cooling and lubricating system components relevant to motive power unit type are located and identified |
| | 6.2 Uses and operation of cooling and lubricating systems are identified |
| 7 Identify auxiliary equipment and its operation | 7.1 Basic auxiliary equipment components relevant to motive power unit type are located and identified |
| | 7.2 Uses and operation of auxiliary equipment are identified |
| 8 Identify safety system equipment and their operation | 8.1 Safety system equipment and components relevant to motive power types are identified |
| | 8.2 Uses and operation of safety system equipment are identified |

Required Skills and Knowledge

This section describes the knowledge and skills required for this unit.

Required knowledge:

- Basic railway terminology
- Fundamentals of track layout
- Overhead and/or electrical components where applicable
- Relevant safety, occupational health and safety (OH&S) and environmental procedures and regulations

Required skills:

- Communicate effectively with others
- Interpret and follow operational instructions

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 required knowledge and skills
 - relevant legislation and workplace procedures
 - other relevant aspects of the range statement

Context of and specific resources for assessment

- Resources for assessment include:
 - a range of relevant exercises, case studies and 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/or equipment, and/or
 - applicable documentation including workplace procedures, regulations, codes of practice and operation manuals

Method of assessment

- 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

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance.

Motive power unit types may include:

- diesel electric
- diesel hydraulic
- electric
- hybrid
- electric multiple unit
- diesel multiple unit
- steam

Air/vacuum equipment may include:

- compressor
- exhauster
- reservoirs
- pipes
- hoses
- isolating cocks/valves

Electrical equipment may include:

- generators
- motors
- batteries and isolating switches
- wiring
- gauges
- circuit breakers
- pantographs

Mechanical equipment may include:

- engine
- pumps
- couplers/uncoupling devices

Control systems may include:

- brake valves
- throttle
- reverser
- dynamic brake

Cooling and lubricating systems may include:

- radiators
- pipes
- pumps
- header tanks
- radiator fans
- filling points

Auxiliary equipment may include:

- sanding equipment
- headlights
- ancillary lighting
- blowers

Safety system equipment and components may include:

- crew comfort
- wipers and washers
- horns
- vigilance control system
- deadman devices
- data loggers
- audible track warning devices
- flags
- chocks

Unit Sector(s)

Not applicable.

Competency Field

B – Equipment Checking and Maintenance