



Australian Government

TLIPC0011 Identify rolling stock

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Modification History

Release	Comments
1	This unit of competency was first released in TLI Transport and Logistics Training Package Release 18.0.

Application

This unit describes the skills and knowledge required to identify the major types of rolling stock used within rail networks and their contribution to rail operations.

It includes identifying the characteristics and purpose of different types of rolling stock, major mechanical systems, rolling stock maintenance activities, manufacturing processes, and the roles of persons involved in the design, manufacture and maintenance of rolling stock.

The unit applies to individuals preparing for entry-level employment or further vocational education and training in the rail industry. It does not provide competence to undertake rail safety work or operate rail systems.

Licensing/Regulatory Information

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

Pre-requisite unit(s)

Not applicable.

Competency field(s)

N/A

Unit sector(s)

Rail Sector.

Elements and Performance Criteria

Element S	Performance criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.

1	Identify types of rail rolling stock	1.1	Apply correct rolling stock terminology
		1.2	Identify types of electric trains in regular use on an urban rail network and provide brief details of each
		1.3	Identify types of trams or light rail stock in regular use on a selected network and provide brief details of each
		1.4	Identify types of diesel-electric locomotives in regular use on a national or regional network and provide brief details of each type
		1.5	Identify specialised types of rolling stock including examples of passenger carriages and freight wagons and document the function of each
2	Identify rolling stock systems	2.1	Identify major mechanical systems of electric trains
		2.2	Identify major mechanical systems of diesel-electric locomotives
		2.3	Identify major mechanical systems of light rail vehicles
		2.4	Identify the purpose of bogies and couplers
		2.5	Identify safety systems incorporated into modern rolling stock
3	Identify rolling stock maintenance activities	3.1	Identify location of storage and maintenance depots for a selected train/tram fleet
		3.2	Describe the type of work carried out at storage and maintenance depots
		3.3	Explain the process to wash and clean rolling stock
		3.4	Identify the role and responsibilities of key rail persons employed in rolling stock storage and maintenance

4	Identify rolling stock manufacturing	4.1	Identify enterprises which manufacture rail rolling stock and major rolling stock components
		4.2	Outline major stages in the process to design and manufacture rolling stock
		4.3	Identify the roles of key persons involved in the design and manufacture of rolling stock
5	Identify contemporary rolling stock design	5.1	Identify design features that improve passenger safety
		5.2	Identify design features that improve passenger comfort and accessibility
		5.3	Identify design features that improve operational efficiency and sustainability
		5.4	Identify emerging developments in rolling stock design
6	Report on rolling stock	6.1	Collate information and prepare draft report
		6.2	Review draft report to identify areas requiring further information or improvement
		6.3	Amend draft report and finalise for submission

Foundation Skills

Foundation Skills essential to successful completion of this unit are mapped to the Australian Core Skills Framework (ACSF) and the European Digital Competence Framework (DigComp 3.0). Further information is available in the TLI Training Package Foundation Skills Companion Volume.

Assessment Requirements for TLIPC0011 Identify rolling stock

Performance Evidence

Evidence required to demonstrate competence in this unit must satisfy all of the requirements of the elements and performance criteria on at least one occasion.

Evidence must demonstrate the ability to:

- identify 3-4 examples of rolling stock used within Australian rail networks such as:
 - electric passenger trains
 - diesel-electric locomotives
 - light rail vehicles
 - passenger carriages
 - freight wagons
- identify the purpose and key characteristics of selected examples of rolling stock used for passenger, freight and light rail operations
- identify the major mechanical systems of:
 - an electric train
 - a diesel-electric locomotive
 - a light rail vehicle
- describe the purpose of major rolling stock components, including propulsion systems, bogies, couplers and selected safety systems
- identify the purpose of rolling stock storage and maintenance depots and the activities undertaken within those facilities
- identify the roles and responsibilities of personnel involved in:
 - rolling stock maintenance
 - rolling stock manufacturing
 - rolling stock design
- identify contemporary features incorporated into rolling stock design that improve:
 - passenger safety
 - accessibility
 - passenger comfort
 - operational efficiency
- research, organise and document information using appropriate sources
- prepare a report that:
 - accurately describes the major types of rolling stock and associated systems
 - uses appropriate rail industry terminology
 - identifies employment opportunities associated with rolling stock operations, maintenance and manufacturing

- incorporates feedback or self-review before final submission.

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:

The learner must be able to demonstrate essential knowledge required to effectively do the task outlined in elements and performance criteria of this unit manage the task and manage contingencies in the context of the work role. This includes knowledge of:

- rolling stock terminology such as (but not limited to) bogie shunting line speed wheel rail interface
- types of heavy and light rolling stock in regular use metropolitan and regional networks
- types of passenger and freight carriages and infrastructure maintenance vehicles:
 - passenger carriages such as:
 - saloon car
 - dining car
 - sleeper car
 - lounge car
 - buffet car
 - freight carriages such as:
 - goods wagon (louvre vans)
 - hopper car (for grains, coal, ore, sugar, fertilisers, cement etc.)
 - vehicle carrier
 - livestock carrier
 - container flats
 - crew car
 - infrastructure maintenance vehicles such as:
 - IEV100 rail track recorder
 - tamping machine
 - ballast regulator
 - ballast consolidator
 - track inspection vehicles
 - major components of electric and diesel electric rail propulsion systems for:
 - electric trains such as:
 - pantograph
 - circuit breaker

- transformer
- rectifiers
- inverters
- cooling blowers
- battery
- 3-phase AC traction motors
- electric tram such as:
 - pantograph
 - circuit breaker
 - transformer
 - rectifiers
 - inverters
 - cooling blowers
 - battery
 - 3-phase AC motors
 - brake actuators
 - compressor systems (W Class Tram)
 - chopper systems (W Class Tram)
- diesel electric locomotives include:
 - diesel engine
 - turbo charger
 - radiator and cooling fan
 - gear box and drive shaft
 - fuel tank
 - alternator
 - rectifier
 - inverters
 - motor blower
 - batteries
 - electronic controls
 - control stand
 - traction motors
- servicing and maintenance requirements of heavy and light rail rolling stock
- manufacturers of rolling stock and major rolling stock components
- layout design and materials used in a modern rail carriage and tram safety systems incorporated in modern rolling stock in current use may include:
 - driver check-in at regular intervals (intercity)
 - driver facial monitoring
 - computerised signalling

- automatic train control system
- automatic train protection
- vigilance system
- speed monitoring
- occupational skills required for the design and manufacture of heavy and light rail rolling stock and major components
- typical components of a report template purpose and benefits of a document review process types of document review processes such as peer review self-review, trainer review spell check
- basic online research techniques

Assessment Conditions

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 workplace conditions.

Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the task being performed and the needs of the candidate.

Resources for assessment include:

- suitable learning environment such as a classroom equipped with data projector and screen
- computer hardware software with access to the internet
- pictorial resources and or actual examples of electric and diesel electric rail rolling stock and major components
- relevant template to document report information
- personal protective equipment PPE for on-site visits

Unit Mapping Information

Links

Companion volumes, including implementation guides, are found on the national training register - <https://training.gov.au/training/details/TLI>.