

<b>Title</b>	<b>Drive and manoeuvre a steam driven rail vehicle</b>		
<b>Level</b>	<b>4</b>	<b>Credits</b>	<b>10</b>

<b>Purpose</b>	<p>This unit standard covers the knowledge and skills required to drive and manoeuvre steam driven rail vehicles, especially steam driven trains with a number of rail service vehicles in the consist.</p> <p>People credited with this unit standard are able to: demonstrate knowledge and skills required to operate the controls of a steam driven rail vehicle; explain safe braking procedures for a steam driven rail vehicle; demonstrate knowledge and skills required to control a steam driven rail vehicle safely; and demonstrate knowledge of signals and signs used on a steam driven rail vehicle site.</p>
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<b>Classification</b>	Commercial Road Transport > Steam Driven Vehicles
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<b>Available grade</b>	Achieved
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<b>Entry information</b>	
<b>Recommended skills and knowledge</b>	Unit 21755, <i>Prepare, bring to steam, and operate a steam driven vehicle</i> , or demonstrate equivalent knowledge and skills.

### Explanatory notes

1. This unit standard applies only to steam driven rail vehicles, including steam locomotives, steam trams, and rail mounted steam cranes. Steam driven rail vehicles fitted with boilers not exceeding 50 litres water capacity, are excluded.
2. All tasks are to be carried out in accordance with the Land Transport Rule: Traction Engines 2010 (the Rule) <http://www.nzta.govt.nz/resources/rules/traction-engines-2010-index.html>. Activities must also comply with the rail operator's approved safety system, or safety case for the site, whichever is applicable.
3. Definitions  
*Organisational requirements* include any legal requirements, standards, codes of practice, organisational and/or site policies and procedures, industry best practice and manufacturers' instructions. These must be available to candidates, providers, and assessors. The applicable standard is the highest standard specified.

4. Before assessment commences, the boiler must be checked to ensure it has a current boiler certificate.
5. A person who wishes to drive and manoeuvre a steam driven rail vehicle at a site must meet all the requirements of any applicable approved rail safety system or safety case for that site.

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## Outcomes and evidence requirements

### Outcome 1

Demonstrate knowledge and skills required to operate the controls of a steam driven rail vehicle.

### Evidence requirements

- 1.1 The controls of the vehicle are identified and their use is explained in terms of vehicle behaviour.  
  
Range: may include but is not limited to – air compressor(s) and operating pressures, throttle or regulator, locking pin arrangement, operation of engine cylinder drain cocks, brakes, reversing lever, whistle, bell, use of sand.
- 1.2 The response and behaviour of the vehicle to the operation of the controls is described and demonstrated safely.  
  
Range: may include is but not limited to – throttle or regulator, locking pin arrangement, operation of engine cylinder drain cocks, brakes, reversing lever, use of sand, use of lubricators, enroute lubrication.
- 1.3 Components of the braking system are described in terms of their function in the braking system.  
  
Range: may include but is not limited to – air compressor operations, automatic brake valve, distributing valve, triple valve, main reservoir, equalising reservoir, auxiliary reservoir, drain cocks, steam brakes, uncoupling and coupling of vehicle's brake system.
- 1.4 Effective and efficient use of the brake system is explained and demonstrated in terms of safe and smooth operation of the vehicle and conserving energy.  
  
Range: may include but is not limited to – handbrake, straight air brake, independent brake, automatic air brake, steam brakes, uncoupling and coupling of vehicle's brake system.

### Outcome 2

Explain safe braking procedures for a steam driven rail vehicle.

**Evidence requirements**

- 2.1 Safe control and speed on descending grades are described in accordance with organisational requirements.
- 2.2 Precautions when shunting, including rail condition are described in accordance with organisational requirements.
- 2.3 Method of testing, including the test result and any faults are described in accordance with organisational requirements.
- 2.4 Checks to be made prior to moving any motive power are described in accordance with organisational requirements.

**Outcome 3**

Demonstrate knowledge and skills required to control a steam driven rail vehicle safely.

Range: with and without rail service vehicles attached.

**Evidence requirements**

- 3.1 Smooth starting, acceleration, deceleration, manoeuvring through curves, stopping, and securing the vehicle when stopped are explained and demonstrated safely.  
  
Range: forward direction, reverse direction;  
includes according to site – level surface, grades, undulating surface.
- 3.2 Smooth manoeuvring of the vehicle and control of slack actions while towing other rail service vehicles is explained and demonstrated.  
  
Range: forward direction, reverse direction;  
includes according to site – level surface, grades, undulating surface, starting and stopping on grades.
- 3.3 Controlled manoeuvring of the vehicle while shunting is explained and demonstrated.  
  
Range: may include but is not limited to – through a set of points, shunting individually, operating in conjunction with another shunter, uncoupling and coupling of rail service vehicles.

**Outcome 4**

Demonstrate knowledge of signals and signs used on a steam driven rail vehicle site.

## Evidence requirements

- 4.1 The explanation includes the use and interpretation of signals and signs used on a steam driven rail vehicle site in accordance with organisational requirements.

Range: may include but is not limited to – day and night hand signals, locomotive whistle signals, fixed signals, temporary speed boards, communication system between driver and conductor of steam driven trams, signals or actions of shunter, communication system between driver, shunter, and number two crew-person.

<b>Planned review date</b>	31 December 2019
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### Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	23 January 1998	31 December 2001
Revision	2	16 May 2003	31 December 2016
Review	3	27 May 2005	31 December 2016
Review	4	16 July 2015	N/A

<b>Consent and Moderation Requirements (CMR) reference</b>	0092
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

### Please note

Providers must be granted consent to assess against standards (accredited) by NZQA, before they can report credits from assessment against unit standards or deliver courses of study leading to that assessment.

Industry Training Organisations must be granted consent to assess against standards by NZQA before they can register credits from assessment against unit standards.

Providers and Industry Training Organisations, which have been granted consent and which are assessing against unit standards must engage with the moderation system that applies to those standards.

Requirements for consent to assess and an outline of the moderation system that applies to this standard are outlined in the Consent and Moderation Requirements (CMR). The CMR also includes useful information about special requirements for organisations wishing to develop education and training programmes, such as minimum qualifications for tutors and assessors, and special resource requirements.

### **Comments on this unit standard**

Please contact NZ Motor Industry Training Organisation (Incorporated) [info@mito.org.nz](mailto:info@mito.org.nz) if you wish to suggest changes to the content of this unit standard.