

Title	Demonstrate knowledge of heavy trailer systems		
Level	4	Credits	5

Purpose	<p>This theory-based unit standard is intended for people in the automotive heavy repair industry.</p> <p>People credited with this unit standard are able to demonstrate knowledge of drawbar trailer and semi-trailer configuration and suspension; describe trailer and semi-trailer air braking systems; describe coupling devices for articulated vehicles; and describe trailer steering systems.</p>
----------------	---

Classification	Motor Industry > Automotive Trailers
-----------------------	--------------------------------------

Available grade	Achieved
------------------------	----------

Guidance Information

1 Legislation and references

Legislation and regulations include but are not limited to the:

Health and Safety at Work Act 2015;

Vehicle Inspection Requirements Manual (VIRM) In-service Certification;

Goods-service Vehicle (Constructional) Regulations 1936;

Traffic Regulations 1976;

Heavy Motor Vehicle Regulations 1974;

Land Transport Rule: Heavy Vehicle Brakes 2006;

Land Transport Rule: Heavy Vehicles 2004;

Land Transport Rule: Vehicle Repair 1998;

Land Transport Rule: Vehicle Standards Compliance 2002;

Land Transport Rule: Vehicle Dimension and Mass (VDAM) 2016;

New Zealand Standard NZS 5446:2007 *Heavy vehicle towing connections - Drawbeams and drawbars.*

Standards New Zealand <https://www.standards.govt.nz/>

The VIRM is available online at <http://vehicleinspection.nzta.govt.nz/>.

The VDAM is available online at <https://www.nzta.govt.nz/vehicles/vehicle-types/vehicle-classes-and-standards/vehicle-dimensions-and-mass/>

Land Transport Rule: Heavy Vehicle Brakes 2006 is available online at;

<https://www.nzta.govt.nz/resources/rules/heavy-vehicle-brakes-2006-index/>

Land Transport Rule: Heavy Vehicles 2004 is available online at

<https://www.nzta.govt.nz/resources/rules/heavy-vehicles-2004/>

Land Transport Rule: Vehicle Repair 1998 is available online at

<https://www.nzta.govt.nz/assets/resources/rules/docs/vehicle-repair-1998-as-enacted.pdf>

Land Transport Rule: Vehicle Standards Compliance 2002

<https://www.nzta.govt.nz/resources/rules/vehicle-standards-compliance-2002-index/#:~:text=This%20rule%20sets%20out%20standards,safety%20of%20other%20road%20users.>

2 Assessment

Evidence presented for assessment against this unit standard must be consistent with safe working practices and be in accordance with applicable service information, and company requirements and legislative requirements. This includes the knowledge and use of suitable tools and equipment.

Outcomes and performance criteria

Outcome 1

Demonstrate knowledge of drawbar trailer and semi-trailer configuration and suspension.

Performance criteria

1.1 Tractor, semi-trailer and trailer configurations are described.

Range A Train, B Train.

1.2 Drawbar trailer axle systems are described.

Range two axle, three axle, four axle, five axle.

1.3 Semi-trailer axle systems are described.

Range single axle, two axle, three axle, four axle.

1.4 Drawbar trailer and semi-trailer suspension systems are described.

Range single axle, tandem axle, tri-axle, four axle.

1.5 Legislative requirements when repairing trailer and semi-trailer drawbars and suspension are identified.

Outcome 2

Describe trailer and semi-trailer air braking systems.

Performance criteria

2.1 The operation of the trailer and semi-trailer air braking systems are described.

Range air lines, air supply and storage, automatic drain valve, brake chamber, slack adjuster, spring brake, relay-breakaway valve, tractor protection valve, air operated trailer coupling, air operated levelling system.

Outcome 3

Describe coupling devices for articulated vehicles.

Performance criteria

3.1 Drawbar trailer towing and turning systems are described.

Range turntables, drawbars, draw beams, couplings, hinge kit, tow-eyes, pintle hooks, pintle eyes.

3.2 Semi-trailer fifth wheel assemblies are described.

Range lube type, low lube type, single oscillating, double oscillating, compensating, rigid, sliding, stabilised.

3.3 Semi-trailer kingpin types and locking devices are described.

Range drop in, drop out, welded, skid plate.

Outcome 4

Describe trailer steering systems.

Performance criteria

4.1 Trailer steering systems are described.

Range castoring axle, self-steering axle, forced steering, steering control and damping, reverse locking.

Replacement information	This unit standard and unit standard 23932 replaced unit standard 2341.
--------------------------------	---

Planned review date	31 December 2028
----------------------------	------------------

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	21 September 2007	31 December 2022
Review	2	27 May 2021	31 December 2025
Review	3	28 March 2024	N/A

Consent and Moderation Requirements (CMR) reference	0014
--	------

This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

Comments on this unit standard

Please contact Hanga-Aro-Rau Manufacturing, Engineering and Logistics Workforce Development Council qualifications@hangaarorau.nz if you wish to suggest changes to the content of this unit standard.