Title	**Describe overweight and overdimension vehicle dynamics for safe driving**		
Level	**4**	**Credits**	**6**

Purpose	People credited with this unit standard are able to describe: the swept path of a specified loaded vehicle; how a load's position on the vehicle trailer(s) affects stability; the preparation and techniques for maintaining load stability; the effects of weather conditions in terms of transporting a heavy haulage load; and the driving techniques for travelling downhill when transporting a heavy haulage load.

Classification	Commercial Road Transport > Heavy Haulage

Available grade	Achieved

Guidance Information

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

2 Legislation, regulations and/or industry standards relevant to this unit standard include but are not limited to the:

- Health and Safety at Work Act 2015;
- Heavy Motor Vehicle Regulations 1974;
- Land Transport Act 1998;
- Land Transport (Driver Licensing) Rule 1999;
- Land Transport (Driver Licensing) Amendment Rule 2006;
- Land Transport Rule: Heavy Vehicles 2004;
- Land Transport (Road User) Rule 2004;
- Land Transport Rule: Vehicle Dimensions and Mass 2016 (*the Rule*); and any subsequent amendments and replacements.

3 Any new, amended, or replacement Acts, regulations, Rules, standards, codes of practice, Land Transport New Zealand or Transit New Zealand requirements or conditions affecting the outcome of this unit standard will take precedence for assessment purposes, pending review of this unit standard.

4 References
The *Official New Zealand Truck Loading Code – Code of Practice for the Safety of Loads on Heavy Vehicles* (Wellington: New Zealand Transport Agency, current edition), available from booksellers and at http://www.nzta.govt.nz/assets/resources/roadcode/truck-loading-code/docs/tlc.pdf;

The NZTA Vehicle dimension and mass permitting manual (VDAM) ISBN 978-1-98-851243-3 (set), available at http://www.nzta.govt.nz/resources/vehicle-dimension-and-mass-permitting-manual/.

5 Definitions
Company requirements refer to instructions to staff on policy and procedures that are available in the workplace. These requirements may include – company policies and procedures, work instructions, product quality specifications and legislative requirements;
RCA refers to the Road Controlling Authority;
Road furniture is pedestrian refuges, power poles, stop and give-way signs, street signs, telephone poles, threshold signs, traffic control signs such as traffic lights, and any other items that are positioned on or near a road and that need to be considered by an operator in relation to an overdimension load vehicle fitting the route;
Road geometrics include but are not limited to – width, camber, crossfall, gradient, surface, horizontal and vertical curvature;
Swept path means the maximum road width required by a vehicle when it negotiates a turn;
A *vehicle* is a combination vehicle.

6 It is recommended that people first hold credit for Unit 18079, *Demonstrate knowledge of heavy combination vehicle dynamics and handling for safe driving*, or demonstrate equivalent knowledge and skills, before being assessed against this unit standard.

Outcomes and performance criteria

Outcome 1

Describe the swept path of a specified loaded vehicle.

Performance criteria

1.1 The amount of road space required to pass through, the trailer swing arc, and load tail swing outwards are described.

1.2 The boundaries of available roadway for both vehicle and load are identified.

1.3 The amount of roadway required between road furniture and structures to allow the load to safely pass is described.

Outcome 2

Describe how a load's position on the vehicle trailer(s) affects stability.

Performance criteria

2.1 The stability triangle in relation to load positioning is described.

2.2 The effect of load position on vehicle traction is described.

2.3 The effect of load position on jack-knifing is described.

2.4 The effect of the alignment of the load divider and the trailer on stability is described.

Outcome 3

Describe preparation and techniques for maintaining load stability.

Performance criteria

3.1 Completing a route survey and temporary removal of road furniture in accordance with the Rule and RCA consent requirements is described.

3.2 Driving techniques to maintain load stability in relation to road geometrics and permanent road fixtures such as kerbs and traffic islands are described.

3.3 Trailer adaptation and steerable axle positioning to maintain load stability is described.

3.4 The use of braking systems to maintain load stability is described.

Outcome 4

Describe the effects of weather conditions in terms of transporting a heavy haulage load.

Performance criteria

4.1 The need to monitor weather forecasts and weather conditions en route is described.

4.2 Techniques to counter the effect of tail winds on vehicle engine cooling are described.

4.3 Techniques to counter the effect of rain, snow, and fog on visibility and load stability are described.

4.4 Situations where the vehicle must be stopped en route because of weather conditions as per the Rule requirements are described.

4.5 Techniques to prevent damage to a sealed road surface in bleeding tar conditions are described.

4.6 Techniques to counter the effect of ice on the road surface are described.

Outcome 5

Describe driving techniques for travelling downhill when transporting a heavy haulage load.

Performance criteria

5.1 Speed selection in relation to the gradient and gradient length, load mass and size, load position, and load stability triangle is described.

5.2 Gear selection, engine braking, use of a fitted retarder, use of service brakes, and ancillary braking systems when travelling downhill is described.

Planned review date	31 December 2024

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	21 September 2007	31 December 2021
Review	2	26 September 2019	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 MITO New Zealand Incorporated info@mito.org.nz if you wish to suggest changes to the content of this unit standard.