

Title	Demonstrate advanced knowledge of railway signals		
Level	4	Credits	15

Purpose	People credited with this unit standard are able to: demonstrate advanced knowledge of fixed railway signals, automatic signalling, and hand train-running signals; describe procedures for operating a rail vehicle during a signal system failure; and demonstrate advanced knowledge of track and associated works signals and locomotive whistle signals.
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Classification	Rail Transport > Rail Operations
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Available grade	Achieved
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Guidance Information

- 1 Recommended skills and knowledge for entry:
Unit 18864, *Demonstrate knowledge of railway signals*.
- 2 Assessment against this unit standard must be carried out within the context of an organisation operating under a current, valid Rail Licence issued in accordance with the provisions of the Railways Act 2005. The organisation's operating rules, codes, and instructions, referred to in this unit standard, are those the organisation has in place to meet the requirements of the Rail Licence.
- 3 Legislation relevant to this unit standard includes:
Health and Safety at Work Act 2015.
Railways Act 2005 and subsequent amendments.
- 4 Definitions
Automatic Signalling Rules refer to a train signalling system which enables complete control of the points and signals over a section of line from a control centre.
Hand train-running signals are hand signals that provide permission for movements of passenger and freight trains, as opposed to hand signals for shunting movements.
Locomotive whistle refers to any audible warning device installed on motive power units.
Organisational procedures refer to documents that include: operating rules, codes, instructions, and practices; equipment operating instructions; documented quality management systems; and health and safety requirements.
Rail vehicle refers to any flanged wheeled vehicle which uses the railway line.
- 5 Assessment information
All activities and evidence must be in accordance with organisational procedures.

Outcomes and performance criteria

Outcome 1

Demonstrate advanced knowledge of fixed railway signals.

Performance criteria

- 1.1 Signalling systems are described in terms of method of operation and information communicated.
- Range two position signals and/or three position signals.
- 1.2 Fixed signal classes are described in terms of their use and meaning.
- Range two and/or three position signal classes include – home, departure, intermediate, starting, approach, shunting; evidence is required for at least five signal classes.
- 1.3 Colour-light signals are classified in terms of design and function.
- Range automatic running signals, shunting signals.
- 1.4 The concept of station limits is described in terms of train movement management.
- Range may include but is not limited to – double line track area, single line track with fixed signals, single line track without fixed signals, automatic signalling areas.
- 1.5 Mechanical signals and indicators are described in terms of their role in the control of train movements.
- Range may include but is not limited to – trap points and trap points indicators, arrow and colour light indicators, catch points, safety points, high-column switch stands, switch-locked points, frame lever hand operated track warrant points.

Outcome 2

Demonstrate advanced knowledge of automatic signalling.

Performance criteria

- 2.1 Automatic signalling is described in terms of its objective.
- 2.2 The concept of single line sections is described in terms of how they are managed by automatic signals.

- 2.3 Automatic running signals are described in terms of their classification.
- Range permissive signals, absolute signals, departure signals, 'A' lights, 'L' lights, "R" lights.
- 2.4 Automatic running signal aspects are described.
- Range low speed aspects, medium speed aspects, intermediate speed aspects, normal speed aspects.
- 2.5 Situations that require the overriding of automatic signals are described.
- 2.6 Situations causing interference with normal automatic signalling operation are described.
- Range may include but is not limited to – sand, ballast, track-worker tools, broken or displaced rails, presence of a train or vehicle in a section, track bonds broken or missing, axel counters.

Outcome 3

Demonstrate advanced knowledge of hand train-running signals.

Range hand signals to be demonstrated may include but are not limited to – danger stop, clear-proceed, caution-move slowly, stop at station, points properly set.

Performance criteria

- 3.1 Methods for giving hand signals are described.
- Range may include but is not limited to – correct equipment used, body and hand position, signalling technique, incorrectly displayed signals.
- 3.2 Hand signals for operation are demonstrated.

Outcome 4

Describe procedures for operating a rail vehicle during a signal system failure.

Range may include but is not limited to – signal 'blacked out', signal displaying a 'stop' aspect in territories not under the control of – single line automatic signalling, track warrant control system, Automatic Signalling Rules.

Performance criteria

- 4.1 The description is consistent with the type of signal failure.

Outcome 5

Demonstrate advanced knowledge of track and associated works signals.

Performance criteria

5.1 Types of track and associated work signals for reduction of speed are described in terms of their appearance and meaning.

Range temporary outer speed board, temporary inner speed board, permanent speed board.

5.2 Track and associated works signals for reduction of speed are described in terms of how they control train movements in track arrangements.

Range spacing between signs, single line, multiple track area.

5.3 Track and associated work signals for track protection are described in terms of their appearance and meaning.

Range advanced warning board, compulsory stop board, inner warning board.

5.4 Track and associated works signals for track protection are described in terms of how they control train movements in track arrangements.

Range spacing between boards, single line, multiple track area.

Outcome 6

Demonstrate advanced knowledge of locomotive whistle signals.

Performance criteria

6.1 Locomotive whistles are described in terms of signal indicated.

Range 1 long, 1 short, 2 short, 3 short (repeated if required).

6.2 Use of locomotive whistle at level crossings is described.

Planned review date	31 December 2025
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	21 March 2002	31 December 2022
Review	2	20 November 2009	31 December 2022
Review	3	29 April 2021	N/A

Consent and Moderation Requirements (CMR) reference	0013
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

Comments on this unit standard

Please contact Competenz qualifications@competenz.org.nz if you wish to suggest changes to the content of this unit standard.