Title	**Drive a large passenger service vehicle in a fuel efficient manner**		
Level	**3**	**Credits**	**5**

Purpose	People credited with this unit standard are able to: describe factors that affect the fuel efficiency of large passenger service vehicles; and drive a large passenger service vehicle in a fuel efficient manner.

Classification	Commercial Road Transport > Passenger Service

Available grade	Achieved

Prerequisites	Unit 15158, *Carry out pre-start vehicle checks on a heavy motor vehicle, prepare vehicle for use, and shut it down*.

Guidance Information

1 Evidence presented for assessment against this unit standard must be consistent with safe working practices and be in accordance with company requirements, school requirements and legislative requirements.

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;
Land Transport Act 1998;
Land Transport (Driver Licensing) Rule 1999;
Land Transport (Road User) Rule 2004;
Land Transport Rule: Operator Licensing 2007;
Land Transport Rule: Passenger Service Vehicles 1999*;*
Land Transport Rule: Work Time and Logbooks 2007;
and any subsequent amendments and replacements.

Any new, amended or replacement Acts, regulations, standards, codes of practice, guidelines, or authority requirements or conditions affecting this unit standard will take precedence for assessment purposes, pending review of this unit standard.

3 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, site procedures, industry best practice and legislative requirements.
Driving conditions are road, traffic, vehicle, driver, weather, and light. A driver's reactions will always be to potential hazards arising from these six conditions.

Large passenger service vehicle refers to any passenger service vehicle that is designed or adapted to carry more than 12 persons (including the driver). For the purposes of this unit standard, it also includes any passenger service vehicle over 3500kg that carries less that 12 passengers because its configuration has been adapted to carry passengers in wheelchairs.
System of vehicle control refers to placing the vehicle in the correct place on the road, at the right speed and in the right gear in all driving situations, but particularly when approaching and negotiating hazards.

4 This unit standard does not apply to electrically powered vehicles.

5 People who drive passenger service vehicles on a road for hire or reward or a large passenger service vehicle (regardless of hire and reward) must hold a full driver licence appropriate to the vehicle driven and have a Passenger (P) licence endorsement as required by the Land Transport (Driver Licensing) Rule 1999.

Outcomes and performance criteria

Outcome 1

Describe factors that affect the fuel efficiency of large passenger service vehicles.

Performance criteria

1.1 The effects of inertia and friction on fuel efficiency are described.

Range different types of inertia and friction include – inertial resistance, rolling resistance, aerodynamic resistance, grade resistance.

1.2 The effects of vehicle speed and mass on fuel efficiency are described.

1.3 The relationship between torque, power, and engine speed is described in terms of fuel efficiency.

1.4 Advantages and disadvantages of manual and automated transmissions are described in terms of fuel efficiency.

1.5 Electronic fuel management systems are described in terms of operation and fuel efficiency.

1.6 The benefits of regular vehicle checks on fuel efficiency are described.

Range pre-trip and post-trip inspections, on-road spot checks, regular servicing, reporting of faults.

1.7 The influence of the driver's driving behaviour on fuel efficiency is described.

Range influences on driving behaviour include – attitude; experience, knowledge and skills; fatigue; drugs and alcohol; illness and injury.

Outcome 2

Drive a large passenger service vehicle in a fuel efficient manner.

Range a continuous drive of at least 40 minutes that includes driving on rural or urban roads and a motorway or highway.

Performance criteria

2.1 Driving conditions are continually monitored to enable the driver to implement optimum fuel efficient driving strategies.

Range strategies include – use of momentum, throttle control, system of vehicle control, lane use, not overtaking unnecessarily, maintaining correct following distances, avoiding excessive speed, allowing the engine to pull back into the lower end of the operating or economy range, cornering techniques, grade techniques.

2.2 Engine speed and transmission use are managed to optimise fuel efficiency and safe vehicle operation.

Range may include – tachometer use, throttle use, avoidance of excessive idle times, avoidance of unnecessary downshifting when slowing and stopping, achieving highest gear possible as soon as possible, maintaining the highest possible gear, using auxiliary brakes or compression to minimise service brake use; for manual or automated buses with stick shift may include – progressive shifting, skip/block shifting.

2.3 Where fitted, and where driving conditions permit, cruise control is employed to achieve improvements in fuel efficiency.

Planned review date	31 December 2027

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	25 May 1999	31 May 2016
Review	2	8 February 2001	31 May 2016
Review	3	24 July 2002	31 May 2016
Review	4	20 May 2011	31 December 2019
Review	5	16 April 2015	31 December 2023
Review	6	26 May 2022	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.