



Australian Government

Department of Education, Employment and Workplace Relations

TLIC2507B Operate four wheel drive vehicle

Release: 1

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Modification History

Not applicable.

Unit Descriptor

This unit involves the skills and knowledge required to operate a four wheel drive vehicle safely in a range of conditions. These include driving a four wheel drive vehicle on normal roads, traversing slopes, ascending and descending steep slopes and stall recovery. It also includes operation of the vehicle in rugged terrain, the use of a jack and the completion of all pre- and post-operational checks. Assessment of this unit may be undertaken within a licensing examination conducted by, or under the authority of, the relevant state/territory road traffic authority.

Application of the Unit

Driving must be carried out in compliance with the licence requirements and regulations of the relevant state/territory roads and traffic authority.

Driving is performed with limited or minimum supervision, with limited accountability and responsibility for self and others in achieving the prescribed outcomes.

Driving involves the application of four wheel drive vehicle operating principles and procedures to maintain the safety and operation of a commercial four wheel drive vehicle across a variety of on-road and off-road contexts.

Licensing/Regulatory Information

Refer to Unit Descriptor

Pre-Requisites

Not applicable.

Employability Skills Information

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this competency is packaged will assist in identifying employability skill requirements.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

Elements and Performance Criteria

Element	Performance Criteria
1 Operate four wheel drive vehicles on normal roads	<ul style="list-style-type: none">1.1 Pre-start checks of vehicle and equipment are carried out to manufacturers specifications and roadworthy requirements1.2 Tyres are checked for pressure suitable for terrain and/or changed in accordance with workplace procedures1.3 Loads are secured in accordance with workplace and legislative requirements1.4 Vehicle is driven on and off road to legislative and workplace requirements, at appropriate speeds for conditions and hazards1.5 Vehicle is parked and shut down in accordance with workplace and manufacturers requirements
2 Operate vehicle on, or across, a slope	<ul style="list-style-type: none">2.1 Pre-start checks of vehicle and equipment are carried out to manufacturers specifications and roadworthy requirements2.2 Tyres are checked for pressure suitable for terrain and/or changed to operational guidelines2.3 Loads are secured in accordance with workplace and legislative requirements2.4 Vehicle is driven on and off road to regulatory and workplace requirements at appropriate speeds for conditions and hazards
3 Operate vehicle ascending a steep slope including stall recovery	<ul style="list-style-type: none">3.1 Intended vehicle path is inspected prior to negotiation of slope3.2 Appropriate gear is selected to ascend grade, and engine revolutions maintained to ensure constant

traction

- 3.3 Air-conditioning unit is turned off to avoid engine acceleration
 - 3.4 Foot brake is applied as vehicle stalls, handbrake applied and ignition turned off
 - 3.5 Clutch is depressed and reverse gear selected
 - 3.6 Clutch is released and handbrake is slowly released
 - 3.7 Ignition is turned on and brakes are released
 - 3.8 Vehicle is started and allowed to reverse down the slope
 - 3.9 Brakes are applied as necessary to control descent
- 4 **Operate vehicle descending a steep slope including stall recovery**
- 4.1 Intended vehicle path is inspected prior to negotiation of the slope
 - 4.2 Appropriate gear is selected to ascend grade, and engine revolutions maintained to ensure constant traction
 - 4.3 Air-conditioning unit is turned off to avoid engine acceleration
 - 4.4 Braking is used to control decent and skidding is avoided by the application of brakes to emulate ABS
 - 4.5 Ignition is turned off, foot brake is applied, and handbrake engaged
 - 4.6 Clutch is depressed and low gear is selected
 - 4.7 Clutch is released and handbrake is slowly released
 - 4.8 Ignition is turned on and brakes are released
 - 4.9 Vehicle is started and allowed to continue down the slope
 - 4.1 Brakes are applied as necessary to control descent
 - 0 and skids are steered into

- 5 Operate vehicle in rugged terrain**
 - 5.1 Intended vehicle path is inspected prior to negotiation of rugged terrain
 - 5.2 Correct gear/range is selected to negotiate terrain
 - 5.3 Freewheel hubs are engaged and disengaged in accordance with driving conditions
 - 5.4 Vehicle controls are set in accordance with manufacturers instructions for operation in the surrounding terrain
 - 5.5 Traction is maintained in accordance with requirements of the vehicle and the surrounding terrain
 - 5.6 Selection of appropriate gear/range before negotiating terrain is demonstrated
 - 5.7 Where necessary, chains are fitted to vehicle in accordance with manufacturers instructions
 - 5.8 Vehicle load is inspected, positioned and secured to maximise traction for four wheel driving.
 - 5.9 Terrain is negotiated in accordance with requirements for specific driving conditions
- 6 Operate jack**
 - 6.1 Jack is located under vehicle in accordance with vehicle manufacturers specifications and workplace procedures
 - 6.2 Jack is used and operated in accordance with manufacturers specifications and workplace procedures
- 7 Complete operations**
 - 7.1 Vehicle is parked and shut down to workplace and manufacturers requirements
 - 7.2 Faults or malfunctions are corrected and/or reported in accordance with workplace requirements
 - 7.3 Vehicle and equipment are cleaned and stored after use in accordance with workplace requirements
 - 7.4 Any log books or reports required by the workplace are completed in accordance with workplace procedures

Required Skills and Knowledge

REQUIRED KNOWLEDGE AND SKILLS

This describes the essential knowledge and skills and their level required for this unit.

Required knowledge:

Road rules, regulations, permit and licence requirements of the relevant state/territory road traffic authority

Relevant OH&S and environmental procedures and regulations

Workplace procedures for the operation of four wheel drive vehicle in both on-road and off-road situations

Problems that may occur when operating a four wheel drive vehicle, and action that can be taken to report or resolve the problems

Hazards that may exist when operating a four wheel drive vehicle in both on-road and off-road situations, and ways of controlling the risks involved

Vehicle controls, instruments and indicators and their use

Vehicle handling procedures and techniques for a range of conditions, including rock, mud, sand, ice and snow

Procedures to be followed in the event of a driving emergency

Efficient driving techniques and safe driving strategies

The effect on the centre of gravity of changing fluid loads

Hazards and risks associated with traversing cross slopes

Effects of hard surface driving (e.g. Highway wind up) on the 4x4 system

The appropriate use of diff locks

Pre-and post-operational checks and related action

Documentation and record keeping requirements

Required skills:

Communicate effectively with others when operating a four wheel drive vehicle

Read and interpret instructions, procedures, information and signs relevant to the operation of a four wheel drive vehicle

Interpret and follow operational instructions and prioritise work

Complete documentation related to work activities

Operate electronic communication equipment to required protocol

Work collaboratively with others when operating a four wheel drive vehicle

Adapt appropriately to cultural differences in the workplace, including modes of behaviour and interactions with others

Promptly report and/or rectify any identified problems, faults or malfunctions that may occur when operating a four wheel drive vehicle in accordance with regulatory requirements and workplace procedures

Implement contingency plans for unexpected situations that may arise when operating a four wheel drive vehicle

Apply precautions and required action to minimise, control or eliminate hazards that may exist during work activities

Monitor work activities in terms of planned schedule

Modify activities depending on differing operational contingencies, risk situations and environments

Apply fatigue management knowledge and techniques

Work systematically with required attention to detail without injury to self or others, or damage to goods or equipment

Operate and adapt to differences in equipment in accordance with standard operating procedures

Select and use required personal protective equipment conforming to industry and OH&S standards

Monitor performance of four wheel drive vehicle and its equipment and take appropriate action if required

Conduct pre-start checks

Monitor and anticipate traffic hazards and take appropriate action drive vehicles in a range of conditions

Demonstrate emergency procedures in the operation of vehicles

Identify and correct minor operational faults

Clean and store vehicles and equipment

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required knowledge and skills, the range statement and the assessment guidelines for this Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The evidence required to demonstrate competency in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria of this unit and include demonstration of applying:

the underpinning knowledge and skills

relevant legislation and workplace procedures

other relevant aspects of the range statement

Context of and specific resources for assessment

Performance is demonstrated consistently over a period of time and in a suitable range of contexts

Resources for assessment include:

a range of relevant exercises, case studies and other simulated practical and knowledge assessment, and/or

access to an appropriate range of relevant operational situations in the workplace

In both real and simulated environments, access is required to:

relevant and appropriate materials and/or equipment, and/or

applicable documentation including workplace procedures, regulations, codes of practice and operation manuals

Method of assessment

Assessment of this unit must be undertaken by a registered training organisation

As a minimum, assessment of knowledge must be conducted through appropriate written/oral tests

Practical assessment must occur:

through appropriately simulated activities at

the registered training organisation, and/or
in an appropriate range of situations in the
workplace

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance.

Vehicles include:	<ul style="list-style-type: none">all terrain vehiclescars and utilitiesa range of trailerslight trucks
Operations may be carried out in typical four wheel drive situations, including:	<ul style="list-style-type: none">operations may be conducted day or nighttypical weather conditionson the open roadin rugged terrain off-road conditions that can be smooth, rough, uneven, slippery, boggy, sandy, steep or hillyon a steep slopeduring emergency responsewhile at a client's workplace or worksite
Vehicle handling procedures may include:	<ul style="list-style-type: none">starting a vehiclesteering and manoeuvring a vehicleaccelerating and brakingpositioning and stopping a vehiclereversing a vehicleoperating vehicle controls, instruments and indicatorsusing defensive driving techniquesmanaging engine performance
Considerations when driving may include:	<ul style="list-style-type: none">operational characteristics of the type of four wheel drive vehicleworkplace procedurestraffic conditionslevels of emergency responseadverse weathertraffic regulations

	warning devices
	adverse terrain
Traffic conditions to be taken into account when driving may include:	speed limits for operation
	legal parking
	traffic pattern and density
	known peak periods and special community functions
	effects of weather on roads
	road surface/off-road terrain
	visibility
Operational hazards may include (examples only):	steep slopes and rugged terrain
	wet and iced road/terrain
	flooded road/terrain
	oil on road
	fire in vehicle
	leaking fuel
	faulty brakes
	parked vehicles on the road
	faulty steering mechanism on vehicle
	pedestrians crossing the road
	animals and objects on road
	windy or foggy sections of road/terrain
Workplace guidelines/procedures may include:	pre- and post-operation checks
	standards of operation
	storage and usage of fuels and lubricants
	policies and routines relating to wear and damage
	precautions and safeguards
	emergency response driving
	driving in adverse terrain
	driving in special environments
	reporting routines
Pre-start checks may include:	fuel, water, oil

brake and transmission fluid levels
battery water levels and electrolyte checks
tyres
belts
leads
hydraulic lines and connections
air cleaners
air-conditioners
brakes
off-road safety equipment in line with
manufacturers recommendations

Manufacturers specifications may include:

engine characteristics
systems warning function
four wheel drive operation
radius of turning circle
safety procedures

Installed devices may include:

warning lights
tachometer
temperature gauge
electrical charging
ancillary systems indicator
speedometer
oil pressure
brake warning lights
audible warning devices
hose

Minor routine servicing may include:

the replacement of blown globes in vehicle
lights
replacement of broken fan belt
replacement of blown fuse
door mirrors
repairs to rear tail-light lens
changing of tyres

Depending on the type of organisation concerned and the local terminology used, workplace procedures may include:

repair of tyre punctures
replacement of broken coolant
company procedures
enterprise procedures
organisational procedures
established procedures

Documentation/records may include:

state/territory driving license requirements
state/territory road rules
workplace driving instructions and procedures
vehicle manufacturers instructions, specifications and recommended driving procedures including preoperational checks of vehicle
emergency procedures
vehicle log book or record book (where required)

Applicable procedures and codes may include:

relevant state/territory roads and traffic authority driving regulations and license requirements pertaining to the class of four wheel drive vehicle
relevant state/territory road rules
relevant state/territory permit regulations and requirements
relevant state/territory OH&S legislation
relevant state/territory fatigue management regulations
relevant state/territory environmental protection legislation

Unit Sector(s)

Not applicable.

Competency Field

C - Driving Vehicle