



Australian Government

Department of Education, Employment and Workplace Relations

FPICOT3259 Operate a four wheel drive on unsealed roads

Release: 1

FPICOT3259 Operate a four wheel drive on unsealed roads

Modification History

Version	Detail
1	Unit replaces FPICOT2234B Operate 4x4 vehicle

Unit Descriptor

This unit describes the outcomes required to safely operate a four wheel drive (4x4) vehicle on unsealed roads and tracks.

Application of the Unit

The unit involves operating a 4x4 vehicle in a variety of work settings. The skills and knowledge required for competent workplace performance are to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Licensing, legislative, regulatory or certification requirements may be required in various jurisdictions.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency. Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

Element	Performance Criteria
1 Identify four-wheel drive specific terms and terminology	<p>1.1 Access, interpret and apply <i>documentation</i> relevant to the work activity</p> <p>1.2 Identify the <i>structural</i> and handling differences between a conventional two-wheel drive vehicle and a four-wheel drive vehicle</p> <p>1.3 Use terminology specific to operating a <i>four-wheel drive vehicle</i></p> <p>1.4 Identify four-wheel drive techniques</p>
2 Conduct checks of 4x4 vehicle and equipment	<p>2.1 Perform <i>pre-start checks</i></p> <p>2.2 Secure loads in line with organisational and legislative requirements</p> <p>2.3 Select suitable navigation equipment where necessary</p> <p>2.4 Advise passengers of any special safety precautions to be taken when traversing rough terrain</p> <p>2.5 Check that tyre pressure is suitable for terrain and that it is changed as required in line with organisational procedures</p> <p>2.6 Select and access <i>maintenance equipment</i> prior to departure after considering the contextual issues</p>
3 Prepare for 4x4 operations	<p>3.1 Identify and follow <i>occupational health and safety</i> (OHS), <i>environmental</i>, <i>legislative</i> and <i>organisational requirements</i> relevant to operating a 4x4 vehicle</p> <p>3.2 Determine type of operation and ensure <i>safe operating conditions</i></p> <p>3.3 Establish <i>communication</i> with others and choose the required safety <i>mechanisms</i> in line with organisational requirements</p>
4 Operate 4x4 vehicle on a range of terrain types	<p>4.1 Continually monitor the track to identify <i>hazards</i>, assess <i>risks</i>, and select the best route in line with OHS and environmental requirements</p> <p>4.2 Identify situations where the engagement of four-wheel drive is required and engage front <i>hubs</i> or centre differential lock where fitted</p> <p>4.3 Use appropriate range, gear, speed, driving and braking technique to negotiate a <i>range of terrain</i> types while maintaining control of vehicle at all times</p> <p>4.4 Check brakes and undercarriage after negotiating varying terrain</p> <p>4.5 Park and shut down 4x4 vehicle in line with</p>

- manufacturer specifications* and organisational requirements
- 5 Operate 4x4 vehicle on a steep slope
- 5.1 Inspect intended 4x4 vehicle path prior to negotiation of slope
 - 5.2 Use appropriate range, gear, speed, driving and braking technique to negotiate a steep slope, while maintaining control of vehicle
 - 5.3 Use control braking to ascend and descend, and avoid skidding
 - 5.4 Maintain traction in line with requirements of 4x4 vehicle
 - 5.5 Apply appropriate *automatic and manual techniques* when 4x4 vehicle cannot proceed any further on a steep slope due to traction problems
 - 5.6 Park and shut down 4x4 vehicle in line with manufacturer specifications and organisational requirements
- 6 Perform maintenance and minor repairs on 4x4 vehicles
- 6.1 Perform *routine maintenance* and repair tasks and report defects to the appropriate person
 - 6.2 Demonstrate safe use of a jack to support a four-wheel drive vehicle on uneven ground while changing a tyre
 - 6.3 Clean and store 4x4 vehicle and equipment after use in line with manufacturer specifications and organisational procedures
 - 6.4 Document maintenance and minor repairs in line with organisational procedures

Required Skills and Knowledge

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

Required skills:

- Technical skills to:
 - apply four-wheel driving techniques in different terrain to safely operate a 4x4 vehicle
 - use and maintain relevant tools, machinery and equipment
 - safely negotiate steep slopes
 - clean and store 4x4 vehicle and equipment
 - attach required equipment to a 4x4 vehicle
 - operate a jack
- Communication skills to use appropriate communication and interpersonal techniques with colleagues and others
- Literacy skills to:
 - record and report workplace information in line with organisational requirements
 - maintain documentation
 - interpret written directions
 - use the vehicle manual for information
- Numeracy skills to measure, estimate and calculate:
 - water depth, journey time and fuel consumption
 - time required to complete a journey
- Problem-solving skills to:
 - identify problems and equipment faults
 - demonstrate appropriate response procedures
 - identify potential hazards and operational faults
 - conserve vehicle energy with appropriate throttle use

Required knowledge:

- Applicable federal, state or territory legislation, regulations, standards, codes of practice and established safe practices relevant to the full range of processes for operating a 4x4 vehicle
- Environmental protection requirements, including the safe disposal of waste material, and the minimisation of carbon emissions
- Environmental risks and hazards associated with operating a 4x4 vehicle on unsealed roads
- 4x4 driving techniques and handling characteristics in different terrain
- Operational knowledge of a 4x4 vehicle, including controls, instruments, indicators and their use
- Tyre management principles
- Road rules, regulations, permit and licence requirements of the relevant state or

territory

- Established communication channels and protocols
- Techniques for travelling in convoy
- Problem identification and resolution strategies, and common fault-finding techniques
- Types of tools and equipment relating to a 4x4 vehicle, and procedures for their safe use and maintenance
- Procedures for recording and reporting workplace information

Evidence Guide

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

Overview of assessment A person who demonstrates competency in this unit must be able to provide evidence that they can operate a 4x4 vehicle on unsealed roads safely and in line with organisational requirements

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 of this unit and include demonstration of:

- following applicable federal, state or territory legislative and regulatory requirements and codes of practice relevant to operating a 4x4 vehicle
- following organisational policies and procedures relevant to operating a 4x4 vehicle
- communicating and working safely with others in rough terrain
- performing pre-start checks of vehicle and equipment
- safely operating a 4x4 vehicle in a range of unsealed road conditions, including negotiating steep slopes

Context of and specific resources for assessment

- Competency is to be assessed in the workplace or a realistically simulated workplace
- Assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints
- Assessment of required knowledge, other than confirmatory questions, will usually be conducted in an off-site context
- Assessment is to follow relevant regulatory requirements and Australian standards
- The following resources should be made available:
 - workplace location or simulated workplace
 - materials and equipment relevant to undertaking work applicable to this unit
 - specifications and work instructions
 - 4x4 vehicle

Method of assessment

- Assessment methods must satisfy the endorsed Assessment Guidelines of the FPI11 Training Package
- Assessment methods must confirm consistency and accuracy of together with application of required knowledge
- Assessment must be by direct observation of tasks, with questioning on required knowledge and it must also reinforce the integration of employability skills
- Assessment methods must confirm the ability to access, interpret and apply the required knowledge
- Assessment may be applied under project-related conditions (real or simulated) and require evidence of process
- Assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances
- Assessment may be in conjunction with assessment of other units of competency
- The assessment environment should not disadvantage the candidate
- Assessment practices should take into account any relevant language or cultural issues related to Aboriginality, gender or language backgrounds other than English
- Where the participant has a disability, reasonable adjustment may be applied during assessment
- Language and literacy demands of the assessment task should not be higher than those of the work role

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. Bold italicised wording in the Performance Criteria is detailed below.

- Documentation** must include:
- owner's manual
 - manufacturer guidelines and specifications
- Structural** must include:
- recovery hooks and mounting features
 - purpose and use of front wheel hubs if fitted
 - factors affecting tyre size, fitment, rating and pressure
- Four-wheel drive vehicles** may include:
- manual and automatic four-wheel drive
 - all-wheel drive
- Pre-start checks** must include:
- fuel, including diesel, gas and petrol
 - 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
 - fitting of traction devices
- Maintenance equipment** may include:
- spares
 - fluids
- OHS requirements:**
- are to be in line with federal, state or territory legislation and regulations, and organisational safety policies and

procedures, and may include:

- personal protective equipment (PPE) and clothing
- safety equipment
- current first aid equipment in vehicle
- current vehicle firefighting equipment
- hazard and risk control
- fatigue management
- elimination of hazardous materials and substances
- safe forest practices, including required actions relating to forest fire
- techniques for manual handling, including shifting, lifting and carrying

Environmental requirements may include:

- legislation
- organisational policies and procedures
- workplace practices

Legislative requirements:

- are to be in line with applicable federal, state or territory legislation, regulations, certification requirements and codes of practice and may include:
 - award and organisational agreements
 - industrial relations
 - Australian standards
 - confidentiality and privacy
 - OHS
 - the environment
 - equal employment opportunity
 - anti-discrimination
 - relevant industry codes of practice
 - duty of care

Organisational requirements may include:

- legal compliance documentation
- organisational and site guidelines
- policies and procedures relating to own role and responsibility

- procedural manuals
- quality and continuous improvement processes and standards
- OHS, emergency and evacuation procedures
- ethical standards
- recording and reporting requirements
- equipment use, maintenance and storage requirements
- environmental management requirements, including waste minimisation and disposal, recycling and re-use guidelines

Safe operating conditions must include:

- interpreting weather conditions to determine suitability for driving
- determining food, water, PPE (sunglasses, high-visibility vest, etc.) and clothing requirements for journey
- selecting routes to minimise damage to the environment
- on and off-road conditions
- traffic pattern and density
- visibility
- loading of four-wheel drive, including techniques to reduce overloading

Communication may include:

- verbal and non-verbal language
- radio protocols

Mechanisms may include:

- personal location beacon (PLB)
- flares
- markers
- phone
- radio
- V-Sheet

Hazards and risks may include:

- rocks and other unexpected obstacles
- damage to vehicle
- tidal influences
- fire in vehicle

- faulty brakes
- leaking fuel
- faulty steering mechanism on vehicle
- animals and objects in vehicle path
- crocodiles and snakes in some areas
- windy or foggy sections of terrain
- steep slopes
- side slopes
- slippery surfaces
- land slides
- overhead tree limbs
- black ice
- towing trailers
- other vehicles
- fallen trees, limbs and logs
- icy terrain
- flooded terrain
- oil on road
- parked vehicles on road
- pedestrians on or near the road
- poor visibility

Hubs may include:

- manual
- electronic

Range of terrain types may include:

- smooth
- rough
- uneven
- slippery
- wet
- boggy
- sandy
- steep or hilly
- rock
- icy
- snow
- mud, including:
 - brown clay
 - black silt
 - salt pan mud

- red
- hard ground
- water

Manufacturer specifications may include:

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

Automatic and manual techniques may include:

- manual gear box stall stop
- appropriate automatic transmission safety

Routine maintenance may include:

- changing wheels in uneven terrain
- fluid top-up

Unit Sector(s)

Common Technical.

Competency field

Competency field

Common Technical