

## RIIVEH305A

## Operate and maintain a four wheel drive vehicle

### Unit Descriptor

This unit covers the operation and maintenance of four-wheel drive vehicles in the resources and infrastructure industries. It includes identifying four-wheel drive specific terms, terminology and techniques, planning for minimal environmental impact, performing pre-departure checks, using the features of a four-wheel drive vehicle to drive in a variety of terrain types, and performing maintenance and minor repairs on four-wheel drive vehicles. Licensing, legislative, regulatory and certification requirements that apply to this unit can vary between states, territories, and industry sectors. Relevant information must be sourced prior to application of the unit.

### Employability Skills

This unit contains employability skills.

### Application of the Unit

This unit is appropriate for those working in an operational role at worksites within:

- Civil construction
- Coal mining
- Drilling
- Extractive industries
- Metalliferous mining

### Unit Sector

Vehicle Operations

### ELEMENT

### PERFORMANCE CRITERIA

- |   |  |
|---|--|
| 1. Identify four-wheel drive specific terms, terminology and techniques | 1.1 Access, interpret and apply <b>compliance documentation</b> relevant to the work activity<br>1.2 Identify the structural and handling differences between a conventional two wheel drive and a four-wheel drive vehicle<br>1.3 Identify and demonstrate the purpose and use of front wheel hubs<br>1.4 Identify factors affecting tyre size, fitment, rating, and pressure<br>1.5 Correctly identify, recovery hooks and mounting features<br>1.6 Identify hazards associated with incorrect use of vehicle features or equipment  |
| 2. Plan for minimal environmental impact                                | 2.1 Determine <b>types of impact</b> likely to occur during four-wheel driving and associated activities<br>2.2 Demonstrate compliance with land management principles and policies when planning exploration activities<br>2.3 Comply with policies and management plans relevant to the activity area<br>2.4 Plan and conduct activities in a manner which minimises environmental impact<br>2.5 Adopt and implement procedures to ensure minimisation of harm to the environment from four-wheel drive activities<br>2.6 Demonstrate cooperation and consideration towards other land users |

- |    |   |  |
|----|---|--|
| 3. | Perform pre-departure checks  | <ul style="list-style-type: none"> <li>3.1 Perform routine pre-departure checks under the bonnet, under the body, and on external and internal items and accessories</li> <li>3.2 Take action to correct any deficiency</li> <li>3.3 Determine food and water requirements for journey</li> <li>3.4 Select suitable navigation equipment where necessary</li> <li>3.5 Interpret weather conditions to determine suitability for driving</li> <li>3.6 Apply safe vehicle loading practices</li> <li>3.7 Secure items of personal luggage safely</li> <li>3.8 Advise passengers of any special safety precautions to be taken when traversing rough terrain</li> </ul>   |
| 4. | Use the features of a four-wheel drive vehicle to drive in a variety of terrain types | <ul style="list-style-type: none"> <li>4.1 Operate four-wheel drive vehicles correctly and safely both on and off road, in accordance with road rules, principles of four-wheel driving and OHS regulations</li> <li>4.2 Apply smooth accelerator control strategies over a range of terrain types</li> <li>4.3 Demonstrate recommended braking techniques for hard top surfaces and off road conditions</li> <li>4.4 Correctly identify situations where the engagement of four-wheel drive is required</li> <li>4.5 Engage correctly, where fitted, front hubs or centre differential lock (constant four-wheel drive vehicles)</li> <li>4.6 Survey track to identify hazards, assess risk and select a best route</li> <li>4.7 Select routes to minimise damage to the environment</li> <li>4.8 Use appropriate range, gear, speed, driving and braking technique to negotiate a <b>range of terrain types</b> and whilst maintaining control of vehicle at all times, being aware of <b>contextual issues</b></li> <li>4.9 Perform a stop stall key start recovery procedure on a moderate incline</li> <li>4.10 Check brakes and undercarriage after negotiating varying terrain</li> <li>4.11 Perform repairs to damaged tracks if necessary</li> <li>4.12 Use standardised operating procedures when travelling in company with other vehicles</li> <li>4.13 Maintain appropriate hand positioning on steering wheel</li> </ul> |
| 5. | Use a single snatch strap to recover a vehicle  | <ul style="list-style-type: none"> <li>5.1 Identify risks associated with vehicle recovery and develop and implement strategies to minimise risks</li> <li>5.2 Identify recovery hooks</li> <li>5.3 Confirm use of recommended mounting strategy on the four-wheel drive vehicle and use of rated recovery equipment when practicable</li> <li>5.4 Demonstrate procedures for preparing vehicles for recovery</li> <li>5.5 Demonstrate techniques to minimise impact on the environment during vehicle recovery</li> <li>5.6 Demonstrate techniques for joining two snatch straps</li> <li>5.7 Coordinate safe recovery of a four-wheel drive vehicle using a single snatch strap</li> <li>5.8 Correctly perform post recovery checks and repairs</li> </ul>   |

- 6. Perform maintenance and minor repairs on four-wheel drive vehicles
  - 6.1 Select/access maintenance equipment correctly, including spares and fluids, prior to departure after consideration of contextual issues
  - 6.2 Check vehicles regularly prior to and during trip and correctly perform ***routine maintenance*** /repair tasks
  - 6.3 Make vehicle performance reports to the designated person
  - 6.4 Demonstrate safe use of a jack to support a four-wheel drive vehicle on uneven ground

## REQUIRED SKILLS AND KNOWLEDGE

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

### Required skills

Specific skills are required to achieve the Performance Criteria of this unit, particularly for its application in the various circumstances in which this unit may be used. This includes the ability to carry out the following as required to operate and maintain a four-wheel drive vehicle:

- apply legislative, organisation and site requirements and procedures for operating and maintaining a four-wheel drive vehicle
- apply four-wheel driving techniques in different terrain
- reduce environmental impact
- research and evaluation of impact through observation and questioning
- solve problems and apply solution focused strategies
- apply communication and recording skills
- perform basic manual and mechanical maintenance skills
- acquire required licences and permits
- apply diagnostic and troubleshooting procedures

### Required knowledge

Specific knowledge is required to achieve the Performance Criteria of this unit, particularly for its application in the various circumstances in which this unit may be used. This includes knowledge of the following as required to operate and maintain a four-wheel drive vehicle:

- features driving techniques and handling characteristics of four-wheel drives in different terrain
- terms used to describe four-wheel drive capabilities including:
  - approach departure angles
  - ramp over angle
  - ground clearance
  - suspension travel
- differences between optional four-wheel drive and constant four-wheel drive vehicles and their impacts on vehicle operation and capability
- tyre management principles
- environmental impact of four-wheel driving
- OHS legislation relevant to the use of four-wheel drive vehicles
- use of single snatch straps to recover vehicles and hazards associated with vehicle recovery
- techniques for travelling in convoy
- minimum impact codes
- legal and statutory requirements (of land management agencies)
- specific problems of fragile environments or threatened species
- area restrictions
- natural processes and interrelationships occurring within natural environments and the manner in which interrelationships between natural processes can be affected
- cultural protocols for making contact and communicating with indigenous people and organisations
- practices which may be implemented to minimise impact (e.g. avoidance of sensitive areas, appropriate site and route selection, limited party size, keeping to marked tracks or routes, campfire management and rehabilitation)
- practices and procedures used by land management authorities to reduce impact including:
  - restricting access/limiting group size

- seasonal restrictions
- use of permits
- enforcing code of ethics and conduct

## 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, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

**Compliance documentation** may include:

- legislative, organisation and site requirements and procedures
- manufacturer's guidelines and specifications
- Australian standards
- Employment and workplace relations legislation
- Equal Employment Opportunity and Disability Discrimination legislation

**Types of impact** may include:

- pollution with foreign matter (human waste, rubbish, soap, detergent)
- vegetation trampling and breakage
- breakage and dislodgment of rock and other formations
- compaction of soil and other deposits
- disturbance of fauna
- introduction of new flora and fauna
- chemical alteration of environments
- damage to, or inappropriate behaviour in, cultural sites
- graffiti
- reduction in decomposing timber
- campfire scars
- noise
- intrusion into private lives and culture
- development of facilities and signs

**Range of terrain types** may include:

- moderate inclines (up and down)
- sloping terrain
- very soft ground
- rocky areas
- sand
- axle deep water crossings
- mud/black soil/snow/ice

**Contextual issues** may include:

- duration of trip
- type of terrain to be covered
- remoteness of area to be visited

**Routine maintenance**

may include:

- changing wheels in uneven terrain
- fluid top-up

**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****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 worksite operations and satisfy all of the requirements of the performance criteria, required skills and knowledge and the range statement of this unit and include evidence of the following:

- knowledge of the requirements, procedures and instructions for operating and maintenance of a four-wheel drive vehicle
- implementation of requirements, procedures and techniques for the safe, effective and efficient operation and maintenance of a four-wheel drive vehicle
- working with others to undertake and complete the operating and maintenance of a four-wheel drive vehicle that meets all of the required outcomes
- consistent timely maintenance and operation of a four-wheel drive vehicle that safely, effectively and efficiently meets the required outcomes

**Context of and specific resources for assessment**

- This unit must be assessed in the context of the work environment. Where personal safety or environmental damage are limiting factors, assessment may occur in a simulated environment provided it is realistic and sufficiently rigorous to cover all aspects of workplace performance, including task skills, task management skills, contingency management skills and job role environment skills.
- Assessment of this competency requires typical resources normally used in a resources and infrastructure sector environment. Selection and use of resources for particular worksites may differ due to the site circumstances.
- The assessment environment should not disadvantage the participant. For example, language, literacy and numeracy demands of assessment should not be greater than those required on the job.
- Customisation of assessment and delivery environment should sensitively accommodate cultural diversity.
- Aboriginal people and other people from a non English speaking background may have second language issues.
- Where applicable, physical resources should include equipment modified for people with disabilities. Access must be provided to appropriate learning and/or assessment support when required.

**Method of assessment**

This unit may be assessed in a holistic way with other units of competency. The assessment strategy for this unit must verify required knowledge and skill and practical application using more than one of the following assessment methods:

- written and/or oral assessment of the candidate's required knowledge
- observed, documented and/or first hand testimonial evidence of the candidate's:
  - implementation of appropriate requirements, procedures and techniques for the safe, effective and efficient achievement of required outcomes
  - consistent achievement of required outcomes
- first hand testimonial evidence of the candidate's:
  - working with others to undertake and complete the maintenance of a four-wheel drive vehicle

**Guidance information for assessment**

Consult the SkillsDMC User Guide for further information on assessment including access and equity issues.