

**Modification history**

Release	Comments
Release 1	This version released with FWP Forest and Wood Products Training Package Version 7.0.

FWPCOT3XXX	Perform complex four wheel drive operations
<b>Application</b>	<p>This unit of competency describes the skills and knowledge required to safely operate four wheel drive vehicles in difficult terrain. Difficult terrain has surface conditions which include frequent steep and/or rock, slippery or sandy track section, including possible water crossings.</p> <p>The unit applies to individuals who operate four wheel drive vehicles in a variety of work settings and industry sectors as part of forestry operations.</p> <p>All work must be carried out to comply with workplace procedures, according to state/territory health and safety regulations, legislation and standards that apply to the workplace.</p> <p>Individuals seeking recognition for this unit should have prior experience in operating four wheel drive vehicles on unsealed surfaces.</p> <p>Individuals must hold a recognised or provisional driver's licence prior to commencing this unit of competency.</p>
<b>Prerequisite Unit</b>	
<b>Unit Sector</b>	Common Technical (COT)

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Prepare for complex four wheel drive operations	1.1 Identify and assess types of trip and terrain being accessed for safe operating conditions 1.2 Check vehicle for suitability for the task 1.3 Identify and check operation of suitable communication equipment and protocols in the event of misadventure 1.4 Identify suitable personal protective equipment 1.5 Ensure loads are correctly restrained 1.6 Ensure emergency rations food/water and clothing are carried
2. Operate vehicle in steep terrain	2.1 Assess the steep terrain and determine what may cause loss of traction 2.2 Perform steep ascent and descent using appropriate driving methods 2.3 Perform forward and reverse stop start recovery on an incline according to the type of transmission 2.4 Set vehicle controls according to manufacturer specifications
3. Operate vehicle over difficult terrain	3.1 Assess difficult terrain 3.2 Select appropriate wheel placement 3.3 Negotiate difficult terrain using vehicle's traction aids 3.4 Identify impact that wet weather or wet tracks will have on driving style 3.5 Set vehicle controls according to manufacturer specifications 3.6 Check vehicle for damage after driving

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
4. Operate vehicle through water crossing	4.1 Assess the water crossing 4.2 Identify wading depth of vehicle according to manufacturer specifications 4.3 Identify vulnerable mechanical aspects of the vehicle and prepare the vehicle for water crossing 4.4 Select appropriate range and gear and other traction aids for the water crossing 4.5 Perform water crossing by maintaining steady constant speed 4.6 Drain water from vehicle back into water crossing 4.7 Dry brakes after water crossing
5. Perform post trip tasks	5.1 Notify relevant personal of trip completion 5.2 Complete post trip inspection of vehicle 5.3 Record and report any repairs or replacement or damaged items to relevant personnel

Foundation Skills	
<i>This section describes those language, literacy, numeracy and employment skills that are essential for performance in this unit of competency but are not explicit in the performance criteria.</i>	
Skill	Description
Reading	<ul style="list-style-type: none"> <li>Interpret basic factual information on road signs and in manufacturer manual</li> </ul>
Writing	<ul style="list-style-type: none"> <li>Complete workplace forms using required format, industry terminology and structure</li> </ul>
Oral communication	<ul style="list-style-type: none"> <li>Use effective verbal communication techniques and questioning to convey information to passengers</li> </ul>
Numeracy	<ul style="list-style-type: none"> <li>Estimate distances, travelling times, fuel volume and consumption and speeds</li> </ul>

Unit Mapping Information			
Code and title current version	Code and title previous version	Comments	Equivalence status
FWPCOT3XXX Perform complex four wheel drive operations	FWPFGM3215 Perform complex four wheel drive operations	Updated Elements and Performance Criteria  Updated and added new Knowledge and Performance Evidence  Reworded Foundation Skills  Updated Assessment Conditions	Not equivalent

<b>Links</b>	Companion Volumes, including Implementation Guides, are available at VETNet: <a href="https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=0d96fe23-5747-4c01-9d6f-3509ff8d3d47">https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=0d96fe23-5747-4c01-9d6f-3509ff8d3d47</a>
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TITLE	Assessment requirements for FWPCOT3XXX Perform complex four wheel drive operations
<b>Performance Evidence</b>	
<p>An individual demonstrating competency must satisfy all of the elements and performance criteria in this unit.</p> <p>There must be evidence that the individual has:</p> <ul style="list-style-type: none"> <li>• assessed three separate ascents and three separate descents greater than 15 degrees for the safest route and the most appropriate wheel placement</li> <li>• driven three separate ascents and three separate descents greater than 15 degrees having selected appropriate range and gearing and using the most appropriate wheel placement</li> <li>• used traction aids and brakes when driving ascents and descents greater than 15 degrees on one occasion</li> <li>• performed a forward and a reverse stop start recovery on an incline according to the type of transmission on two occasions</li> <li>• demonstrated the setting of vehicle controls for operation in complex terrain on one occasion. This may include: <ul style="list-style-type: none"> <li>• the use of free wheel hubs, if fitted</li> <li>• selection of low range in either manual or auto vehicles</li> <li>• use of terrain selection system, if fitted</li> <li>• use of differential locks, if fitted</li> <li>• activation of traction control or terrain selection mode if fitted and where effective</li> </ul> </li> <li>• driven vehicle in difficult terrain and operated vehicle controls and technology to avoid traction loss in three of the following conditions: <ul style="list-style-type: none"> <li>• mud</li> <li>• rocky</li> <li>• sand</li> <li>• snow</li> <li>• side slopes</li> <li>• rutted</li> </ul> </li> <li>• completed two different water crossing of at least axle depth.</li> </ul>	
<b>Knowledge Evidence</b>	
<p>An individual must be able to demonstrate the knowledge required to perform the tasks outlined in the elements and performance criteria of this unit. This includes knowledge of:</p> <ul style="list-style-type: none"> <li>• four wheel drive systems <ul style="list-style-type: none"> <li>• differences between four wheel drive, two wheel drive and all-wheel drive vehicles</li> <li>• types and operating principles of different four wheel drive systems</li> </ul> </li> <li>• planning trips</li> <li>• sources of information for weather forecasts and road/track conditions: <ul style="list-style-type: none"> <li>• water and food requirements for trip</li> <li>• emergency communication methods</li> <li>• first aid and first aid kit</li> </ul> </li> <li>• procedures for: <ul style="list-style-type: none"> <li>• pre departure vehicles check</li> <li>• track assessment</li> <li>• wheel placement over rutted, broken ground</li> <li>• using traction aids</li> <li>• driving ascents and descents up to 15 degrees</li> <li>• performing a safe stop and start forward down a slope (up to 15 degrees) and in reverse down a slope in manual or automatic vehicle</li> <li>• performing a water crossing of at least axle depth</li> <li>• driving in loose ground including mud and sand</li> <li>• vehicle shutdown</li> </ul> </li> <li>• vehicle selection for complex four wheel drive activity: <ul style="list-style-type: none"> <li>• high and low range or similar capability</li> </ul> </li> </ul>	

<b>Knowledge Evidence</b>	
<ul style="list-style-type: none"> <li>• requirement for wading depth according to manufacturer specifications</li> <li>• types, purpose and use of traction aids</li> <li>• types and uses of tyres for complex four wheel drive activity</li> <li>• impact of tyre pressure on traction</li> <li>• Gross Vehicle Mass (GVM) or Weight (GVW)</li> <li>• impact of loading and accessories on Gross Vehicle Mass (GVM) or Weight (GVW)</li> <li>• type and use of personal protective equipment required for complex four wheel drive activity</li> <li>• type of emergency equipment used in complex four wheel drive activity</li> <li>• type and use of communications equipment used in remote locations</li> <li>• purpose and procedures for securing loads</li> <li>• types of road surfaces and impact on traction when ascending or descending steep slopes</li> <li>• impact of wet weather on track conditions</li> <li>• environmental impact of four wheel drive use on wet unsealed roads</li> <li>• techniques for four wheel driving in difficult terrain</li> <li>• reasons and procedure for post trip vehicle inspection</li> <li>• water crossings:                             <ul style="list-style-type: none"> <li>• assessment of water crossings, including water base, water depth, flow rate and debris</li> <li>• vulnerable aspects of vehicle when completing water crossings</li> <li>• environmental impact of water crossings.</li> </ul> </li> </ul>	
<b>Assessment Conditions</b>	
<p>Assessment of the skills in this unit of competency must take place under the following conditions:</p> <ul style="list-style-type: none"> <li>• physical conditions:                             <ul style="list-style-type: none"> <li>• skills must be demonstrated in a work environment or an environment that accurately represents workplace conditions</li> </ul> </li> <li>• resources, equipment and materials:                             <ul style="list-style-type: none"> <li>• site with access to a water crossing and difficult terrain with safe entry into and out of a waterway, shallow run-ins and a firm base. Simulated water crossings are acceptable for assessment if no suitable crossing is available due to little or no water level or flooded and unsafe to cross.</li> <li>• manual or automatic four wheel drive vehicle with a low range transmission or equivalent</li> <li>• personal protective equipment required for operating a four wheel drive in difficult conditions and waterways</li> </ul> </li> <li>• specifications:                             <ul style="list-style-type: none"> <li>• workplace safety and environmental policies and procedures applicable to the use of four wheel drive vehicles in difficult conditions and waterways.</li> </ul> </li> </ul> <p>Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.</p>	
<b>Links</b>	<p>Companion Volumes, including Implementation Guides, are available at VETNet:  <a href="https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=0d96fe23-5747-4c01-9d6f-3509ff8d3d47">https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=0d96fe23-5747-4c01-9d6f-3509ff8d3d47</a></p>