



Australian Government

DEFCA014 Navigate in remote and unmodified landscapes

Release 1

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Modification History

Release	TP Version	Comments
1	DEF12 V2	Primary release.

Unit Descriptor

This unit covers the competency required to navigate in remote and unmodified landscapes. In the context of this unit an unmodified landscape is one with few modifications to the natural surface or the natural environment so that track alignment is indistinct and signage is generally not provided. The area may include steep sections of unmodified surfaces and other difficult terrain and man-made hazards.

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication. In a Defence context, this means that there is no civilian need to hold this unit in order to meet licensing, legislative, regulatory or certification requirements.

Application of the Unit

This competency was developed for military personnel required to operate in remote and unmodified landscapes usually in a deployed operational environment, but is applicable to any individual who is required to navigate in remote and unmodified landscapes

Note: this unit of competency requires the individual to navigate by both day and night to a destination, within standard tolerances of accuracy, without the use of electronic navigation aids; such as GPS.

In a military context the navigation can be conducted on foot (for example; infantry) or by vehicle (for example; armour).

All activities are carried out in accordance with relevant organisational policies and procedures.

Licensing/Regulatory Information

Not applicable.

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 required performance needed to demonstrate achievement of the element. Where ***bold italicised*** text is used, further information is detailed in the Range Statement. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<p>1. Use a map</p>	<p>1.1 Select the type of map(s) suitable for the activity.</p> <p>1.2 Identify possible sources of error and inaccuracies on the map.</p> <p>1.3 Identify <i>symbols and information</i> contained on the <i>map</i> that may be used in navigation.</p> <p>1.4 Identify the way in which relevant symbols and information on the map can be used in navigation.</p>
<p>2. Use a compass</p>	<p>2.1 Identify the essential features of a compass.</p> <p>2.2 Demonstrate the manner in which a compass is used to maintain a designated course.</p> <p>2.3 Demonstrate how compass use reflects understanding of the factors that affect accuracy.</p>
<p>3. Plan a route in unmodified landscapes</p>	<p>3.1 Apply symbols and information contained on the map to plan an efficient route/course suitable to navigation and activity-specific abilities</p> <p>3.2 Obtain additional information to assist in the preparation of a <i>navigation data sheet</i> from the map and from other suitable <i>sources of information</i>.</p> <p>3.3 Identify <i>hazards and obstacles</i> to the route.</p> <p>3.4 Prepare a navigation data sheet/route card.</p> <p>3.5 Identify emergency or contingency routes.</p>
<p>4. Navigate in unmodified landscapes</p>	<p>4.1 Maintain orientation of map to surroundings.</p> <p>4.2 Identify possible sources of navigation error in specific locations.</p> <p>4.3 Demonstrate combined use of map, compass and other techniques whilst following a route in unmodified landscapes.</p> <p>4.4 Demonstrate techniques for <i>distance estimations</i> of travel in the absence of identifying features.</p> <p>4.5 Maintain the designated course whilst bypassing hazards and obstacles.</p> <p>4.6 Demonstrate maintenance of a course in unmodified landscapes.</p> <p>4.7 Fix position accurately and regularly using a combination of appropriate <i>navigation techniques</i>.</p> <p>4.8 Demonstrate an efficient route choice for the surroundings and conditions.</p> <p>4.9 Demonstrate suitable combinations of navigation techniques to fix position and identify unknown</p>

	features when lost.
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Required Skills and Knowledge

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

Required Skills

- problem solving
- maintenance of a compass bearing in poor visibility and/or extreme conditions
- observation of surroundings
- decision making

Required Knowledge

- cartographic symbols and legends
- grid/magnetic conversion
- map and chart types
- methods for determining current location
- route planning techniques and calculations
- factors affecting navigation techniques in extreme environmental conditions
- map types and sources of error
- use of a compass and factors that affect their accuracy
- route planning and issues that should be considered in extreme environmental conditions
- estimation of travelling times in unmodified landscape and/or difficult terrain/conditions
- techniques for estimating distance travelled in poor visibility
- backbearings and resections
- techniques to navigate around obstacles

Evidence Guide

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

- Assessment must confirm the ability to:
- plot a navigation route accurately and within accepted tolerances when following a route
- maintain positional awareness
- react effectively to changes in the operating environment that require re-planning
- navigate both by day and night
- navigate to a destination within standard tolerances of accuracy
- to be able to navigate without the use of electronic navigation aids; such as GPS

Consistency in performance

Competency should be demonstrated navigating a route on a minimum of three occasions; with at least two navigations being conducted at night. The route should contain a number of legs requiring one or more changes in direction.

Context of and specific resources for assessment

Context of assessment

Competency must be assessed in an area that has an unmodified landscape

Specific resources for assessment

Access is required to:

- equipment used in operational navigation (such as maps, compass, watch and data sheets)
- Suitable area for navigation (unmodified landscape)

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.

<p><i>Symbols and information</i> may include:</p>	<ul style="list-style-type: none"> • grid lines and numbers • contour lines • magnetic variation • scale • map legend • topographic features
<p><i>Map</i> may include:</p>	<ul style="list-style-type: none"> • topographic • aerial photographs • local authority maps • navigational charts • cadastral maps • orthophoto maps • satellite imagery
<p><i>Navigation data sheet</i> may include:</p>	<ul style="list-style-type: none"> • grid reference points • grid and magnetic bearings • distances • estimated travelling times • height gain/loss • gradient • identifiable features • escape routes
<p><i>Sources of information</i> may include:</p>	<ul style="list-style-type: none"> • guide books • local inhabitants • peers • aerial information • intelligence reports
<p><i>Hazards and obstacles</i> may include:</p>	<ul style="list-style-type: none"> • river crossings and rising water levels • open water crossings • cliff lines • wet and slippery rocks • extreme heat • extreme cold • fog and mist • snow • severe storms/squalls • strong winds

	<ul style="list-style-type: none"> • heavy rain • currents • man-made features • no-go zones
<i>Distance estimations</i> may include:	<ul style="list-style-type: none"> • pacing • time • odometer (if in vehicle)
<i>Navigation techniques</i> may include:	<ul style="list-style-type: none"> • use of compass • linear features • point features • attack points • aiming off • collecting features • spiral search • sweep search • backbearings and resections • use of Global Positioning Systems (GPS) • use of stars and sun • use of natural feature

Unit Sector(s)

Not applicable.