



Australian Government

Department of Education, Employment and Workplace Relations

SRONA V003B Navigate in unmodified landscapes in extreme environmental conditions

Release: 1

Modification History

Not Available

INTRODUCTION

Unit Descriptor

This unit has been developed for the Outdoor Recreation Industry Training Package.

This unit covers the knowledge and skills required to conduct navigation in unmodified landscapes where extreme environmental conditions and/or poor visibility are likely to occur and the activity participants need to operate independently.

Unmodified landscapes are those which are totally natural and there are no modifications to the natural surface so that track alignment is indistinct, there is no clearance along the track, there is no signage, the track is not managed for public risk and where the onset of extreme environmental conditions may have a significant adverse impact upon the activity.

This unit incorporates the unit SRONAV002B Navigate in difficult or trackless areas, and this should be taken into consideration when planning to meet pre-and co-requisite requirements.

ELEMENT

PERFORMANCE CRITERIA

Use a map

Select the type of map(s) suitable for the activity

Identify possible sources of error and inaccuracies on the map

Identify symbols and information contained on the map that may be used in navigation

Identify the way in which relevant symbols and information on the map can be used in navigation

Use a compass

Identify the essential features of a compass

Demonstrate the manner in which a compass is used to maintain a designated course

Demonstrate how compass use reflects understanding of the factors that affect accuracy

Plan a route in unmodified landscapes

Apply symbols and information contained on the map to plan an efficient route/course suitable to navigation and activity-specific abilities

Obtain additional information to assist in the preparation of a navigation data sheet from the map and from other suitable sources of information

- Identify hazards in extreme environmental conditions
- Consider other contextual issues in the planning of a route
- Prepare a navigation data sheet/route card
- Identify emergency or contingency escape routes
- Consider environmental impact issues in the planning of a route

Navigate in unmodified landscapes in poor visibility and/or extreme environmental conditions

- Maintain orientation of map to surroundings
- Identify possible sources of navigation error in specific locations
- Demonstrate combined use of map , compass and other techniques whilst following a route in unmodified landscapes
- Demonstrate techniques for distance estimations of travel in the absence of identifying features
- Maintain the designated course whilst bypassing obstacles
- Demonstrate maintenance of a course in extreme environmental conditions and/or poor visibility
- Fix position accurately and regularly using a combination of appropriate navigation techniques
- Demonstrate an efficient route choice for the surroundings and conditions
- Demonstrate suitable combinations of navigation techniques to fix position and identify unknown features when lost

RANGE STATEMENT

The Range Statements provide advice to interpret the scope and context of this unit of competence, allowing for differences between enterprises and workplaces. The Range Statements relate to the unit as a whole and helps facilitate holistic assessment. In addition, the following variables may be present for this particular unit of competency:

Distance estimations	[all categories] <ul style="list-style-type: none">• pacing• time
Hazards in extreme environmental conditions	<ul style="list-style-type: none">• may include<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• heavy rain• currents• man-made features
Map	[all categories] <ul style="list-style-type: none">• topographic• aerial photographs[all categories]
Navigation data sheet	[all categories] <ul style="list-style-type: none">• may include<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

Navigation techniques	<p>[all categories]</p> <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 features
Obstacles	<p>[all categories relevant to location of activity]</p> <ul style="list-style-type: none">• thick vegetation• drops and climbs• marshes and bogs• fog• rivers, lakes and dams
Other contextual issues	<p>[all categories]</p> <ul style="list-style-type: none">• navigation and activity-specific abilities• available clothing, equipment and resources• fitness levels• type of terrain or features of the location• access and escape routes• group size• natural protection or shelter
Suitable sources of information	<p>[all categories]</p> <ul style="list-style-type: none">• guide books• local inhabitants• peers• local clubs
Symbols and information	<p>[all categories]</p> <ul style="list-style-type: none">• grid lines and numbers• contour lines• magnetic variation• scale• map legend• topographic features
Unmodified landscapes	<ul style="list-style-type: none">• an area where all of the following occur<ul style="list-style-type: none">• there are no modifications to the natural surface or the

natural environment so that track alignment is indistinct

- there is no clearance along the track
- signage is generally not provided
- there may include steep sections of unmodified surfaces and other terrain and man-made hazards
- the track is not managed for public risk
- there is an appreciable risk of onset of poor visibility

(These align to Class 6 Tracks within the Australian Standard for Walking Tracks AS 2156.1. Standards Australia 2001)

EVIDENCE GUIDE

The Evidence Guide identifies the critical aspects, knowledge and skills to be demonstrated to confirm competence for this unit. This is an integral part of the assessment of competence and should be read in conjunction with the Range Statements.

Critical aspects of evidence to be considered

- Assessment must confirm sufficient knowledge of factors affecting navigation techniques and route planning in unmodified landscapes in circumstances where extreme environmental conditions may occur
- Assessment of performance should be over a minimum of three (3) occasions covering all categories from the Range Statements that are applicable to navigating in unmodified landscapes within an activity-specific context in the learner's environment
- Assessment must confirm the ability to apply this knowledge and appropriate techniques to
 - independently navigate in an activity-specific context in unmodified landscapes
 - navigate in extreme weather conditions/poor visibility
 - apply varying navigation skills and techniques relevant to the
 - context to different remote locations/types of location within an activity-specific context
 - navigate in areas with different hazards, obstacles and topographic features

Interdependent assessment of units

- This unit must be assessed after attainment of competency in the following unit(s)
 - Nil
- This unit must be assessed in conjunction with the following unit(s)
 - Nil
- For the purpose of integrated assessment, this unit may be assessed in conjunction with the following unit(s)
 - Relevant units specific to participation in a particular outdoor activity

Required knowledge and skills

- Required knowledge
 - 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

Required skills

- Problem solving
- Maintenance of a compass bearing in poor visibility and/or extreme conditions
- Observation of surroundings
- Decision making

Resource implications

- Physical resources - assessment of this unit of competency requires access to
 - suitable outdoor activity locations/venues
 - maps
 - compass
 - watch
 - data sheet
 - Global Positioning System (GPS)
- Human resources - assessment of this unit of competency will require human resources consistent with those outlined in the Assessment Guidelines. That is, assessors (or persons within the assessment team) must
 - be competent in this unit
 - be competent, as a minimum, in the units SRXFAD001A, SRXRIK001A and SRXEMR001A to ensure adequate risk management during the assessment
 - be current in their knowledge and understanding of the industry through provision of evidence of professional activity in the relevant area
 - have attained the mandatory competency requirements for assessors under the Australian Quality Training Framework (AQTF) as specified in Standard 7.3 of the Standards for Registered Training Organisations

Consistency in performance

- Due to issues such as differing terrain/location types, situations, this unit of competency must be assessed over a minimum of three (3) occasions in order to ensure consistency of performance over the Range Statements and contexts applicable to navigating in unmodified landscapes in situations where extreme environmental conditions may occur

Context for assessment

- This unit of competency must be assessed in the context of an outdoor recreation activity in unmodified landscapes. Competency in extreme environmental conditions/poor visibility may be demonstrated in a real or simulated environment whilst participating in an outdoor activity
- This unit of competency should be assessed through the observation of processes and procedures, oral and/or written questioning on required knowledge and skills and consideration of required attitudes
- Where performance is not directly observed and/or is

required to be demonstrated over a "period of time" and/or in a "number of locations", any evidence should be authenticated by colleagues, supervisors, clients or other appropriate persons

KEY COMPETENCY LEVELS

These levels do not relate to the Australian Qualifications Framework. They relate to the seven areas of generic competency that underpin effective workplace practices.

The three levels of performance (1, 2 and 3) denote the level of competency required to perform the task:

1. Use routine approaches
 2. Select from routine approaches
 3. Establish new approaches
- Collecting, analysing and organising information - Sourcing adequate maps for the activity area
 - Communicating ideas and information - Obtaining additional information from locals
 - Planning and organising activities - Planning and navigating routes
 - Working with teams and others - Participating in outdoor recreation activities with others
 - Using mathematical ideas and techniques - Calculating distances from a map
 - Solving problems - Dealing with navigational errors
 - Using technology - Using maps and compass

Please refer to the Assessment Guidelines for advice on how to use the Key Competencies.

Collect, Analyse & Organise Information	Communicate Ideas & Information	Plan & Organise Activities	Work with Others & in Teams	Use Mathematical Ideas & Techniques	Solve Problems	Use Technology
Level 3	Level 2	Level 3	Level 1	Level 3	Level 3	Level 2