Australian Government

Department of Education, Employment and Workplace Relations

RIIEGS305B Navigate in remote or trackless areas

Release: 1

INDUSTRY
SKILLS
COUNCILS
Creating Australia's Future

RIIEGS305B Navigate in remote or trackless areas

Modification History

Not applicable.

Unit Descriptor

This unit covers navigation in remote or trackless areas in the metalliferous mining industry. It includes using maps, using a compass, planning a route for remote or trackless areas, and navigating in remote or trackless areas.   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.

Application of the Unit

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

- Metalliferous Mining

Licensing/Regulatory Information

Refer to Unit Descriptor.

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. Use maps	1.1. Access, interpret and apply *compliance documentation* relevant to the work activity
	1.2. Select the type of map(s) suitable for the activity
	1.3. Identify possible sources of error and inaccuracies on the *map*
	1.4. Identify *symbols and information* contained on the *map* that may be used in navigation
	1.5. Identify the way in which relevant *symbols and information* on the *map* can be used in navigation
2. Use a compass	2.1. Identify the essential features of a compass
	2.2. Demonstrate the manner in which a compass is used to maintain a designated course
	2.3. Demonstrate how compass use reflects understanding of the factors that affect accuracy
3. Plan a route for remote or trackless areas	3.1. Apply *symbols and information* contained on the *map* to plan an efficient route/course suitable to navigation and activity-specific abilities
	3.2. Obtain additional information to assist in the preparation of a *navigation data sheet* from the map and from other suitable *sources of information*
	3.3. Identify *potential hazards* associated with navigating through adverse environmental conditions
	3.4. Consider *other contextual issues* in the planning of a route
	3.5. Prepare a *navigation data sheet*/route card
	3.6. Identify emergency or contingency escape routes
	3.7. Consider environmental impact issues in the planning of a route
4. Navigate in remote or trackless areas	4.1. Maintain orientation of *map* to surroundings
	4.2. Identify possible sources of navigation

	error in specific locations
	4.3. Use combined ***map***, compass and other techniques whilst following a route in ***unmodified landscapes***
	4.4. Employ techniques for ***distance estimations*** of travel in the absence of identifying features
	4.5. Maintain the designated course whilst bypassing ***obstacles***
	4.6. Maintain a course in adverse environmental conditions and/or poor visibility
	4.7. Fix position accurately and regularly using a combination of appropriate ***navigation techniques***
	4.8. Select an efficient route choice for the surroundings and conditions
	4.9. Employ suitable combinations of ***navigation techniques*** to fix position and identify unknown features when lost

Required Skills and Knowledge

This section describes the skills and knowledge 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 navigate in remote or trackless areas:

- apply legislative, organisation and site requirements and procedures for navigation in remote or trackless areas
- solve problems
- maintain a compass bearing in poor visibility and/or extreme conditions
- observe surroundings
- make decisions
- apply communication 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 navigate in remote or trackless areas:

- factors affecting navigation techniques in extreme environmental conditions
- map types and sources of error
- use of a compass and factors that affect their accuracy
- navigation techniques and aids
- navigation data sheets
- 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
- back-bearings and resections
- techniques to navigate around obstacles

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 navigating in remote or trackless areas • implementation of requirements, procedures and techniques for the safe, effective and efficient completion of remote or trackless area navigation • working with others to undertake and complete the navigation of remote or trackless areas that meets all of the required outcomes • consistent timely completion of remote or trackless area navigation 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 to 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 requirement, 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 navigation of remote or trackless areas

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

Range Statement

Relevant compliance documentation may include:	• legislative, organisational and site requirements and procedures • manufacturer's guidelines and specifications • Australian standards • Employment and workplace relations legislation • Equal Employment Opportunity and Disability Discrimination legislation
Maps may include:	• topographic • aerial photographs • digital maps
Symbols and information may include:	• grid lines and numbers • contour lines • magnetic variation • scale • map legend • topographic features
Navigation data sheet information may include:	• grid reference points • grid and magnetic bearings • distances • estimated travelling times • height gain/loss • gradient • identifiable features • escape routes
Sources of information may include:	• guide books • local inhabitants • peers/local clubs • digital resources
Potential hazards may include:	• 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 • man-made features

Other contextual issues may include:	• navigation and activity-specific abilities • available clothing, equipment and resources • fitness levels • type of terrain or features of the location/access and escape routes • number of people travelling • natural protection or shelter
Unmodified landscapes align to Class 6 Tracks within the Australian standard for Walking Tracks AS 2156.1. Standards Australia 2001, and may include those where:	• 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
Obstacles may include:	• thick vegetation • drops and climbs • marshes and bogs • fog • rivers, lakes and dams
Distance estimations may include:	• pacing • time
Navigation techniques may include:	• use of compass • linear features/point features • attack points • aiming off • collecting features • spiral search • sweep search • back-bearings and resections • use of Global Positioning Systems (GPS) • use of stars and sun • use of natural features

Unit Sector(s)

Exploration and Field Work

Competency field

Refer to Unit Sector(s).

Co-requisite units

Not applicable.