



Australian Government

Department of Education, Employment and Workplace Relations

RIISTD201A Read and interpret maps

Release: 1

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Modification History

Not applicable.

Unit Descriptor

This unit covers reading and interpreting maps in resources and infrastructure industries. It includes: preparing for navigation; planning the route; and conducting navigation.

Application of the Unit

This unit is appropriate for those working in a operational roles, within:

- Civil construction
- Coal mining
- Drilling
- Extractive industries
- 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.
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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare for navigation	1.1. Access, interpret and apply <i>compliance documentation</i> relevant to reading and interpreting maps 1.2. <i>Information</i> is gathered and relevant factors identified and checked with appropriate personnel 1.3. Suitable <i>maps, equipment</i> and <i>navigation aids</i> are selected and checked for accuracy, currency and operational effectiveness 1.4. Faults or errors in maps and equipment are detected and corrected 1.5. Communication with others is established and maintained
2. Plan the route	2.1. Traverse route to destination is selected using information from map or plan and field observations 2.2. Maps are examined to identify relevant <i>symbols and information</i> and <i>navigation data</i> 2.3. Current position in the field is identified on map or plan 2.4. Current position in the field is located using landmarks and key geographical features. 2.5. Required destination is identified on map or plan 2.6. Hazards and potential hazards in traversing from location to destination are recognised and interpreted from map or plan, field observations, and local knowledge. 2.7. Distance to required destination is estimated using map scale and selected traverse route
3. Conduct navigation	3.1. Navigation is undertaken in accordance with planned route and schedule 3.2. Maps are correctly orientated to <i>surroundings</i> in accordance with planned route 3.3. Equipment and navigation aids are used correctly 3.4. Alternative routes are navigated to bypass

	obstacles and improve efficiency of route or course
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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 in this unit, particularly for the application in the various circumstances in which this unit may be applied. This includes the ability to carry out the following as required to read and interpret maps:

- apply legislative, organisation and site requirements and procedures
- speak clearly and directly
- apply active listening
- access, interpret and apply technical and operational information, including: work instructions, quality assurance procedures, manufacturer's instructions, materials safety data sheets and equipment instructions
- apply teamwork to a range of situations, particularly in a safety context
- solve problems, such as: recognising clear discrepancies between available maps or other data and the actual site and taking action to correct these
- show initiative in adapting to changing work conditions or contexts, particularly when working across a variety of work areas
- manage time, particularly in organising priorities and planning work
- take responsibility for self organisation of work priorities
- use a range of mediums to learn
- apply mathematical skills, including: basic angles and geometry for compass bearings, estimation and measurement

Required knowledge

Specific knowledge is required to achieve the Performance Criteria of this unit, particularly its application in a variety of circumstances in which the unit may be used. This includes knowledge of the following, as required to read and interpret maps:

- types of maps, charts and scales and their uses
- representation of topographic features on maps and plans
- common scales used on maps and plans
- features and use of a compass and factors that affect compass accuracy
- advantages and disadvantages of different map and chart types and sources of error
- techniques for estimating distance travelled

Evidence Guide

<p>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.</p>	
<p>Overview of assessment</p>	
<p>Critical aspects for assessment and evidence required to demonstrate competency in this unit</p>	<p>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:</p> <ul style="list-style-type: none"> • knowledge of the requirements, procedures and instructions for reading and interpreting maps • implementation of requirements, procedures and techniques for the safe, effective and efficient reading and interpreting of maps • working with others to read and interpret maps and meet all of the required outcomes • consistent timely reading and interpreting of maps that safely, effectively and efficiently meets the required outcomes
<p>Context of and specific resources for assessment</p>	<ul style="list-style-type: none"> • 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. • 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. • Assessment of this competency requires typical

	<p>resources normally used in the work environment. Selection and use of resources for particular worksites may differ due to site circumstances.</p> <ul style="list-style-type: none"> • 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	<p>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:</p> <ul style="list-style-type: none"> • written and/or oral assessment of the candidate's required knowledge • observed, documented and/or Australian first hand testimonial evidence of the candidate's: <ul style="list-style-type: none"> • implementation of appropriate requirement, procedures and techniques for the safe, effective and efficient achievement of required outcomes • consistently achieving the required outcomes • first hand Australian testimonial evidence of the candidate: <ul style="list-style-type: none"> • working with others to read and interpret maps
Guidance information for assessment	<p>Consult the SkillsDMC User Guide for further information on assessment including access and equity issues.</p>

Range Statement

<p>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.</p>	
<p>Relevant compliance documentation may include:</p>	<ul style="list-style-type: none"> • legislative, organisation and site requirements and procedures • manufacturer's guidelines and specifications • Australian standards • code of practice • Employment and workplace relations legislation • Equal Employment Opportunity and Disability Discrimination legislation
<p>Information may include:</p>	<ul style="list-style-type: none"> • details of local inhabitants, type of terrain or features of the route, access and exit routes, natural protection or shelter, land management and legislative requirements, guide books
<p>Maps may include:</p>	<ul style="list-style-type: none"> • cadastral and topographic maps, charts, guide books, aerial photographs, sketches and cave maps, and diagrams
<p>Equipment may include:</p>	<ul style="list-style-type: none"> • compass, track and survey markers, beacons, personal protective equipment and clothing, GPS units
<p>Navigation aids may include:</p>	<ul style="list-style-type: none"> • track and creek junctions and crossings, survey markers, beacons, track markers, cairns, paths, signs, arrows, compass and man-made objects or features
<p>Symbols and information may include:</p>	<ul style="list-style-type: none"> • grid lines and numbers, contour lines, magnetic variation, scale, map legend, topographic features, markers and beacons, water depth
<p>Navigation data 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 and exit routes
<p>Surroundings may include:</p>	<ul style="list-style-type: none"> • ground/terrain, bodies of water, beacons and markers, natural formations, landmarks and man-made features
<p>Obstacles may include:</p>	<ul style="list-style-type: none"> • thick vegetation, drops and climbs, marshes and bogs, fog, rivers, lakes and dams, tides

	and hazards
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Unit Sector(s)

Sampling, Testing and Data Processing and Recording

Competency field

Refer to Unit Sector(s).

Co-requisite units

Not applicable.