



Australian Government

SISOFLD005 Navigate waterway courses

Release: 1

SISOFLD005 Navigate waterway courses

Modification History

Not applicable.

Application

This unit describes the performance outcomes, skills and knowledge required to plan and navigate courses for small recreational craft in waterway environments. It also covers knowledge of waterway rules applicable to small craft utilised for recreational purposes.

Waterway navigation skills are required in a range of activity contexts which could include canoeing, kayaking, sea kayaking, and when riding personal watercraft. Techniques and equipment will vary according to the type of craft and waterway environment.

This unit applies to any type of organisation that delivers outdoor recreation activities including commercial, not-for-profit and government organisations.

It applies to leaders, guides or instructors, who use these skills when leading participants during activities where waterway navigation skills are required.

No occupational licensing, certification or specific legislative requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil

Competency Field

Field Operations

Unit Sector

Outdoor Recreation

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes

1. Plan the course.

PERFORMANCE CRITERIA

Performance criteria describe the performance needed to demonstrate achievement of the element.

1.1. Obtain and interpret waterway charts appropriate for the area of navigation.

1.2. Determine expected wind, tidal, or current conditions for the intended course.

1.3. Identify navigational hazards, position of landmarks and

- any buoyage to assist in planning and navigating the course.
- 1.4. Utilise all information to plan an efficient course according to specific activity and waterway requirements.
 - 1.5. Identify and plot critical points along the course, midpoint and end destinations.
 - 1.6. Prepare a navigation data sheet, and identify emergency or contingency escape routes.
2. Navigate waterway courses.
- 2.1. Select instrumentation and equipment suitable for navigation requirements.
 - 2.2. Follow the planned course using charts, natural and constructed features and any buoyage to assist.
 - 2.3. Use instrumentation and equipment as navigational aids to maintain course.
 - 2.4. Make required adjustments to course according to prevailing environmental conditions.
 - 2.5. Comply with waterway rules throughout all activities, including use of craft within permitted areas.
3. Fix position of craft.
- 3.1. Fix position of craft at regular intervals to maintain planned course.
 - 3.2. Use techniques to estimate distance travelled, accounting for prevailing environmental conditions.
 - 3.3. Utilise navigation techniques to identify unfamiliar features and fix position when lost.
 - 3.4. Adjust and resume planned course where position indicates a deviation.

Foundation Skills

Foundation skills essential to performance in this unit, but not explicit in the performance criteria are listed here, along with a brief context statement.

SKILLS	DESCRIPTION
Reading skills to:	- interpret detailed and potentially unfamiliar information on waterway charts. - interpret potentially unfamiliar and complex information about waterway rules.
Writing skills to:	develop detailed navigation data sheets using correct terminology and symbols.

- Numeracy skills to:
- interpret and calculate detailed numerical data involving, distances, times and speeds.
- Technology skills to:
- use a range of technologies to access information about courses.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume Implementation Guides -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=1ca50016-24d2-4161-a044-d3faa200268b>

Assessment Requirements for SISOFLD005 Navigate waterway courses

Modification History

Not applicable.

Performance Evidence

Evidence of the ability to complete tasks outlined in elements and performance criteria of this unit in the context of the job role, and:

- plan and document three different waterway courses for small recreational craft
- navigate each of the above three planned courses using charts, instrumentation and equipment appropriate for the waterway environment and small craft utilised
- on two occasions, determine when the craft is deviating from a planned course, adjust and resume the planned course after fixing position using:
 - manual techniques on one occasion
 - a GPS device on one occasion
- during each navigation activity, consistently follow waterway rules.

Knowledge Evidence

Demonstrated knowledge required to complete the tasks outlined in elements and performance criteria of this unit:

- trusted sources of waterway charts for the region or locality
- different technologies used to access charts
- characteristics of different chart types, their different uses, advantages and disadvantages, accuracy and sources of errors
- information found on waterway charts including symbols and what they represent:
 - survey or edition date
 - map legend
 - scale and distance
 - latitude and longitude
 - compass rose or cardinal points and bearings
 - hydrographic features such as depth, high and low water mark, rocks, wrecks, obstructions
 - topographic features of surrounding land
 - buoyage
 - constructed features such as bridges, weirs, breakwaters, wharves and jetties
 - magnetic variation and annual change
- principal colours used on waterway charts and what they represent
- other information and key features that can assist with waterway navigation:

- satellite imagery
- aerial photographs
- wave, wind, tide and current charts
- navigational warning notices
- features, functions and operation of navigation instruments either inbuilt or available for small watercraft
- features, functions and operation of global positioning systems (GPS):
 - when these might be used, advantages and disadvantages
 - reliability of signal, device and battery
 - system structure at fundamental level of understanding
 - how to identify and use datum grids
 - how to create, enter and transfer waypoints
 - how to create courses and grid references
 - accuracy and sources of errors
- different types of compasses used for waterway navigation, their features and factors which affect accuracy
- for waterway environments, chart and compass techniques used to:
 - calculate grid, magnetic and true north bearings
 - measure distance on a chart
- techniques used to fix location and navigate waterways, and applicability to different craft and environments:
 - using chart, identifying natural landmarks and constructed features and determining distance travelled
 - using dead reckoning, taking into account environmental factors such as winds, tides, currents and estimated speed
 - using simultaneous bearings, transits of coastal features and by running fix
 - using GPS devices
- inclusions of navigation data sheets and their purpose:
 - grid reference points
 - grid and magnetic bearings
 - distances
 - estimated travelling times and times of arrival
 - identifiable features
 - escape routes
- types of navigational buoyage, how these assist with navigation and rules for complying with buoyage:
 - marks – buoys and beacons
 - zone signage
- how different types of navigational buoyage are distinguished by their specific colour, shape and topmark including colours for:
 - lateral: port and starboard marks

- cardinal marks
- safe water marks
- danger zone marks
- special zone marks
- flashing lights and patterns
- specific to the local state or territory:
 - categories of waterways determined by law and maritime authority:
 - description of waterways and limits
 - how to interpret basic limit charts issued by the local authority
 - safety equipment required for small craft within the limits, including V sheets and how these are used
 - life jackets required within the limits
 - rules specific to the operation of small watercraft:
 - give way rules – passing, crossing and overtaking powered and non-powered vessels
 - distance limitations (“distance off”) – rules for swimmers, designated swimming zones, dive flags, unpowered and powered vessels stationary or underway, moored or anchored vessels, built structures (bridges, jetties, navigation markers)
 - prohibited local areas – also called “exclusion” and “no go zones”
 - alcohol and drug restrictions
 - requirements for lights after sunset
 - incident reporting requirements including those for verbal and written reports.

Assessment Conditions

Navigation skills can be demonstrated on any type of waterway found within the particular region or locality. Inland rivers are not considered a waterway for the purposes of this unit.

The following resources must be available to replicate industry conditions of operation:

- first aid equipment
- communication equipment for emergency response.

Assessment must ensure use of:

- compasses
- equipment used to plot courses which can include:
 - scale measure
 - Portland square
 - parallel ruler
 - dividers
 - protractors
- global positioning system (GPS) devices

- activity plans
- waterway charts
- wave, wind, tide or current charts, as relevant to the type of waterway
- navigational warning notices
- template navigation data sheets
- boating guide issued by the local state or territory maritime authority.

Assessors must satisfy the Standards for Registered Training Organisations requirements for assessors, and:

- have a collective period of at least three years' experience with an organisation providing recreational programs where they have applied the skills and knowledge covered in this unit of competency; the three years' experience can incorporate full and or part time experience.

Links

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