

PIROBS3.04C – Perform basic navigation and electronic communication

Functional area

Observer operations

Prerequisites

None required

Descriptor

This unit covers the performance outcomes, skills and knowledge necessary for a person to use navigational aids to obtain a vessel's position, calculate a vessel's estimated time of arrival (ETA), record a vessel's navigational and other electronic equipment, provide a report electronically and activate a personal safety device.

Elements

Performance criteria

1. Obtain time and position and vessel heading from available navigation aids

- 1.1 Define latitude and longitude and how they relate to a vessel's position
- 1.2 Obtain UTC and ship's time and date using available navigational aids and record in appropriate format
- 1.3 Obtain a latitude and longitude position and a vessel's heading from available navigational equipment such as a GPS and a compass and correctly plot on a chart
- 1.4 Compare the latitude and longitude position plotted on the chart with licence conditions and fisheries management boundaries

2. Plot a future position and calculate estimated time of arrival (ETA) for the vessel from available navigation aids

- 2.1 Measure distance on a chart using the correct scale
- 2.2 Determine a predicted future position correctly using available navigational equipment and plot that position on a chart
- 2.3 Determine the estimated time of arrival at the predicted position using the formula related to speed, time and distance

3. Recognise common and emerging fishing and navigational aids and record their use on fishing and associated vessels

- 3.1 Identify and describe the functions and use of electronic fishing and navigational aids
- 3.2 Record appropriate information of electronic fishing and navigational aids and instances of use
- 3.3 Identify and describe the functions and use of any emerging electronic fishing and navigational aids

4. Provide a report electronically and activate personal safety devices

- 4.1 Report to the required agency using available electronic equipment according to communication protocols
- 4.2 Activate any personal safety and communication devices according to standard operating procedures

Evidence guide

Each unit of competency has an evidence guide that relates directly to the performance criteria. Its purpose is to guide assessment of the unit in the workplace and/or training program. The following components provide information to assist this purpose.

Required knowledge

The essential knowledge and understanding a person needs to perform work to the required standard include:

- Latitude and longitude and their relationship on a chart
- UTC and various time zones and correct time format
- Common navigational equipment used on fishing vessels to calculate a vessel's position
- Formulae used to calculate a vessel's estimated time of arrival at a predetermined position
- Licence conditions, fisheries management boundaries and other information relevant to the particular fishing operation
- Common electronic aids used on fishing vessels to assist in fishing operations
- Observer communication protocols relevant to the fishing operation

Required skills

The essential skills a person needs to perform work to the required standard include:

- Obtaining a vessel's position from available navigational equipment such as a GPS
 - Calculate ship's time and date from UTC and vice versa
 - Determining latitude and longitude and plotting a position on a chart
 - Comparing a plotted position with relevant licence conditions and fisheries management boundaries
 - Calculating a vessel's estimated time of arrival at a particular position
 - Identifying make and model of common navigational and electronic aids and recording their use during fishing operations
 - Reporting relevant information as required using available communication equipment
 - Activating any personal safety and communication devices
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- Identifying make and model of electronic equipment
 - Reporting

- Navigation calculations

Technology skills used for:

- Operating communication and personal safety equipment

Critical aspects of competence

Assessment must confirm the ability to:

- Use a GPS to obtain, plot and record a vessel's position, calculate UTC time
- Calculate a vessel's estimated time of arrival at a predetermined position
- Identify common navigational and electronic equipment used by fishing vessels
- Communicate electronically according to communication protocols
- Activate relevant personal safety and communication devices

Assessment must confirm knowledge of:

- Basic navigational terms and calculations
- Common navigational and other electronic equipment used on fishing vessels
- Licence conditions and fisheries management boundaries common in the WCPO fisheries
- Observer reporting and communication protocols commonly used in the WCPO fisheries

Context of assessment

While assessment would ideally be conducted on a vessel during observer operations it is likely to be undertaken in a simulated workplace environment. Every effort should be made to ensure the simulated assessment is as realistic as possible.

Method of assessment

The following assessment methods are suggested:

- Observation of the candidate calculating and plotting a range of positions and ETAs and comparing a vessel's position to relevant fisheries management boundaries
- Written or oral short answer questions to assess underpinning knowledge
- Examples of navigational calculations undertaken by the candidate
- Practical exercises involving the observation of the candidate operating communication equipment and activating personal safety devices
- Third-party reports, including reports from observer programme coordinators and observer programme trainers

Interdependent assessment of units

This unit can be assessed in conjunction with other relevant units relating to observer operations.

Resources required for assessment

Resources may include:

- GPS and other relevant electronic navigational equipment
- Navigational charts and basic navigational equipment such as parallel rules, dividers and pencils
- Electronic fish finding aids
- Common fishing licences and regional fisheries management conventions relevant to the WCPO fisheries
- Electronic reporting equipment and personal safety and communication devices that may be used by observers