

PIRFO Draft Competency Standards

NEW PIRFO 3 - 4.01	Demonstrate basic use of navigation equipment and knowledge of electronic fishing aids
Prerequisites:	nil
Descriptor	<p>This module requires that navigation equipment found on fishing vessels is used to determine and plot the current position of the vessel and to perform basic calculations of time, speed and distance in order to predict a future position.</p> <p>The module also requires basic knowledge of the function and type of information provided by electronic fishing aids used by fishing vessels.</p>
Learning Outcomes	Assessment Criteria
1. Obtain a position and vessel heading from navigation aids and manually transfer this to a chart	1.1 Use and understand latitude and longitude to correctly plot a position on a chart 1.2 Position is obtained from a GPS or chart plotter and transferred to a chart correctly. 1.3 The position plotted on the chart is compared with established EEZ, CCM, and other regional fisheries management boundaries 1.4 Vessel heading is obtained from a GPS, chart plotter or compass (gyro or magnetic) and transferred correctly on to a chart using the compass rose and a parallel ruler 1.5 Distinguish between True and Magnetic North with reference to the heading of the vessel provided by different navigational aids
2. Demonstrate knowledge of the limitations of the use of navigation aids, if used by untrained personnel	2.1 Understands the dangers associated with misinterpreting information obtained from navigational aids. 2.2 Procedures and strategies to manage the hazards associated with long line fishing operations are described
3. Ask to calculate a future position and estimated time of arrival (ETA) for the vessel using information provided by navigation aids.	3.1 Predicted position is calculated correctly. 3.2 Estimated time of arrival is calculated correctly.
4. Describe the principal functions of electronic fishing aids and the information they provide	4.1 Descriptions identify the functions of, and principal information provided by: sonar; echo sounder; GPS; chart plotter; gyro compass; magnetic compass; net depth instruments; Doppler current meter; bird radar; SST meter; GPS buoys; echo sounding buoys; radio beacon buoys; and XBT (Bathythermograph)

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Evidence and Assessment Guide

Context and Method of assessment

Assessment can be conducted at the workplace or in a simulated workplace environment or on an appropriate vessel

The following assessment methods are suggested:

- written or oral short answer testing
- practical exercises
- project work or assignments
- work in small groups
- observation of practical demonstration

Resources for assessment may include:

- audio/visual materials
- site inspections
- videos and DVDs
- learning materials
- charts and navigational accessories (e.g. parallel rulers, dividers, etc)
- WCPFC/CCM, 2007/14.

Underpinning knowledge

Candidates are required to show knowledge of the purpose and function of aids to navigation and fishing found aboard fishing vessels.

They are required to use navigational information from these aids to establish the position and heading of the vessel; calculate future vessel position at a given time; and estimate the time of arrival at a given position.

This module is intended for fisheries observers who need to assess vessel position with respect to fisheries management boundaries, and itemize and monitor the use of electronic aids used in fishing activities.

Learning Outcome	Evidence Guide
1. Obtain a position and vessel heading from navigation aids and manually transfer this to a chart	Able to practically demonstrate: A knowledge of how the latitude and longitude scale are constructed Fixing a position on a chart from a latitude and longitude provided by a GPS or track plotter Obtain the latitude and longitude of a position on a chart Laying off a course on a chart using the compass rose and a parallel ruler Plotting a bearing on a chart using the compass rose and a parallel ruler
2. Demonstrate knowledge of the limitations of the use of navigation aids, if used by untrained personnel	Understands the dangers associated with misinterpreting information obtained from navigational aids

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3. Calculate a future position and estimated time of arrival (ETA) for the vessel using information provided by navigation aids.	Measure distance on a chart using the correct scale (latitude) Calculate speed, time and distance using the correct formula (Distance = Speed X Time) Accurately plot an estimated position on a chart Accurately calculate an ETA for a vessel
4. Describe the principal functions of electronic fishing aids and the information they provide	Identify the basic functions and purpose of: sonar; echo sounder; GPS; chart plotter; gyro compass; magnetic compass; net depth instruments; Doppler current meter; bird radar; SST meter; GPS buoys; echo sounding buoys; radio beacon buoys; and XBT (Bathythermograph)

Practical skills

This module requires identification of the navigational aids and electronic fishing aids commonly found in use on fishing vessels in the Western and Central Pacific Ocean.

Candidates must be able to plot a current position and heading for the vessel; calculate time, speed and distance; and find a future position and estimated time of arrival (ETA)

Critical aspects of evidence

Assessment must confirm the ability to use information from navigational aids to fix position of a vessel; calculate an estimated position for a vessel; and calculate the estimated time of arrival of a vessel at a given position

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