



Australian Government

MARH025 Apply knowledge of dynamic positioning fundamentals

Release: 1

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Modification History

Release 1. This is the first release of this unit of competency in the MAR Maritime Training Package.

Application

This unit involves the skills and knowledge required to apply knowledge of the fundamentals of dynamic positioning control systems.

This unit includes explaining dynamic positioning rules, regulations and guidelines, applying dynamic positioning principles and dynamic positioning system principles.

This unit applies to people working in the maritime industry in the capacity of:

- Dynamic Positioning Operator.

Work is performed under limited supervision and applies to those responsible for operating dynamic positioning control systems in the work environment and who are responsible for their own work.

Before undertaking this unit, seafarers will need to hold or be working towards the achievement of one of the following:

- Chief engineer officers and second engineer officers on ships powered by main propulsion machinery of 3,000 kW propulsion power or more
- Chief engineer officers and second engineer officers on ships powered by main propulsion machinery of between 750 kW and 3,000 kW propulsion power
- Electro-technical officer
- Master or chief mate on ships of 3,000 Gross Tonnage (GT) or more
- Officers in charge of a navigation watch on ships of 500 GT or more
- Officers in charge of a navigational watch and Masters on ships of less than 500 GT
- Officers in charge of an engineering watch in a manned engine room or designated duty engineers in a periodically unmanned engine room.

Licensing/Regulatory Information

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

Pre-requisite Unit

Not Applicable

Competency Field

H - Navigation

Unit Sector

Maritime Sector

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

1 Explain dynamic positioning rules, regulations and guidelines

PERFORMANCE CRITERIA

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

- 1.1** Statutory requirements, international regulations and guidelines used during dynamic positioning operations are confirmed
- 1.2** Relationship between international regulations, rules and guidelines are outlined
- 1.3** Equipment classes and their application to International Maritime Organization (IMO) Guidelines for Vessels with dynamic positioning systems are identified
- 1.4** Principles and requirements of dynamic positioning redundancy are outlined for different dynamic positioning classes
- 1.5** Documentation used during dynamic positioning operations is identified and confirmed

2 Apply dynamic positioning principles

- 2.1** Dynamic positioning principle are defined
- 2.2** Six freedoms of movement of a vessel are applied
- 2.3** Main components of dynamic positioning systems are described
- 2.4** Mathematical modelling is described, including advantages and disadvantages of each technique
- 2.5** Method by which the dynamic positioning systems determines the residual error is described
- 2.6** Reasons for discrepancy between the displayed value for

dynamic positioning current/sea force on the dynamic positioning system and the true current/tide are described

2.7 Control systems associated with a dynamic positioning system are described

2.8 Position reference systems associated with dynamic positioning installations are described

2.9 Sensor systems associated with dynamic positioning installations are described

3 Apply dynamic positioning system principles

3.1 Dynamic positioning modes of operation and common specialist functions are identified and applied

3.2 Dynamic positioning gain and its application in a dynamic positioning system is explained

3.3 Centre of rotation and provision of alternative centres of rotation are outlined and explained

3.4 Controls used to manoeuvre the vessel and to bring it to a stop in accordance with vessel procedures are explained

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

Range is restricted to essential operating conditions and any other variables essential to the work environment.

Non-essential conditions may be found in the MAR Training Package Companion Volume Implementation Guide.

Unit Mapping Information

This is a new unit. No equivalent unit.

Links

Companion Volume Implementation Guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=772efb7b-4cce-47fe-9bbd-ee3b1d1eb4c2>

