



Australian Government

MARH6001A Forecast weather and oceanographic conditions to plan a safe passage

Release 1

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Modification History

Release 1

This is the first release of this unit.

This unit replaces and is equivalent to TDMMH907B Forecast weather and oceanographic conditions.

Unit Descriptor

This unit involves the skills and knowledge required to forecast weather and oceanographic conditions to plan a safe passage.

Application of the Unit

This unit applies to maritime workers working in the maritime industry as a Master Unlimited.

Licensing/Regulatory Information

Not applicable.

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 required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

- | | |
|--|---|
| 1 Forecast area weather | <ul style="list-style-type: none">1.1 Synoptic chart is interpreted1.2 Information received by weather fax is interpreted1.3 Weather reports are obtained and interpreted1.4 Observations of weather and cloud formations are made and interpreted1.5 Statistical data and observations are used to predict likely weather conditions for a determined period |
| 2 Use information to predict oceanographic conditions | <ul style="list-style-type: none">2.1 Information on ocean current systems is interpreted2.2 Nautical publications on tides and currents are used to calculate tidal conditions2.3 Wave height and swell forecast is made using available information2.4 Potentially dangerous oceanographic conditions are identified and appropriate action is taken to maintain safety of navigation and to minimise risk to safety of vessel |
| 3 Maintain records of weather and oceanographic information and forecasts | <ul style="list-style-type: none">3.1 Statistical data and observations are recorded and filed according to organisational procedures3.2 Actions taken to maintain safety of navigation and to minimise risk to safety of vessel as a result of weather and oceanographic forecasts, are documented according to organisational procedures3.3 Meteorological and nautical publications are updated and stored according to organisational procedures |

Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

Required Skills:

- Calculate tidal conditions
- Observe, interpret and forecast weather and oceanographic conditions
- Read, interpret and apply weather and oceanographic information
- Select and use shipboard instruments to assist in forecasting weather and oceanographic conditions
- Use appropriate nautical publications on tides and currents
- Use tide tables to calculate height of tide

Required Knowledge:

- Air masses and fronts
- Basic principles for making meteorological and oceanographic measurements
- Characteristics of various weather systems including tropical revolving storms, and avoidance of storm centres and the dangerous quadrants
- Cloud classifications
- Cyclones, storms and gales
- Effects on navigation and vessel handling of wind, currents and bottom topography
- Heat exchange process
- Ocean currents
- Principles and procedures of weather forecasting using information obtained from observations, charts, satellite images, reports and instruments
- Pressure systems and cold fronts
- Procedures for filing and maintaining weather and oceanographic information
- Procedures to be followed during gale conditions and tropical revolving storms
- Sea state
- Sources of weather and oceanographic information, and methods for their interpretation
- Synoptic chart analysis
- Tide prediction
- Tropical revolving storms
- Typical problems in forecasting weather and oceanographic conditions
- Use of tide tables
- Vertical division of the atmosphere
- Weather data provided by shipboard instruments
- Work health and safety (WHS)/occupational health and safety (OHS) requirements and work

practices

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, the required skills and knowledge, the range statement and the Assessment Guidelines for the Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the Elements, Performance Criteria, Required Skills, Required Knowledge and include:

- supporting reasons for intended action with statistical data and observations of actual conditions
- ensuring currency of relevant reference material.

Context of and specific resources for assessment

Performance is demonstrated consistently over time and in a suitable range of contexts.

Resources for assessment include access to:

- industry-approved marine operations site where forecasting weather and oceanographic conditions to plan a safe passage may be conducted
- tools, equipment and personal protective equipment currently used in industry
- relevant regulatory and equipment documentation that impacts on work activities
- range of relevant exercises, case studies and/or other simulated practical and knowledge assessments
- appropriate range of relevant operational situations in the workplace.

In both real and simulated environments, access is required to:

- relevant and appropriate materials and equipment
- applicable documentation including workplace procedures, regulations, codes of practice and operation manuals.

Method of assessment

Practical assessment must occur in an:

- appropriately simulated workplace environment and/or
- appropriate range of situations in the workplace.

A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate to this unit:

- direct observation of the candidate forecasting weather and

oceanographic conditions to plan a safe passage

- direct observation of the candidate applying relevant WHS/OHS requirements and work practices.

Guidance information for assessment

Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.

In all cases where practical assessment is used it should be combined with targeted questioning to assess Required Knowledge.

Assessment processes and techniques must be appropriate to the language and literacy requirements of the work being performed and the capacity of the candidate.

Range Statement

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.

- Weather conditions must include:
- Air masses and fronts
 - Cloud classifications
 - Cyclones, storms and gales
 - Heat exchange process
 - Ocean currents
 - Pressure systems and cold fronts
 - Sea state
 - Synoptic chart analysis
 - Tide prediction
 - Tropical revolving storms
 - Use of tide tables
 - Vertical division of the atmosphere
 - Weather data provided by shipboard instruments
- Dangerous oceanographic conditions may include:
- Excessively high sea state and swells
 - Ice formations
 - Tornados, tropical revolving storms, hurricanes and gales
- Appropriate action may include:
- Avoiding storm centres and dangerous quadrants by adjusting course and speed
 - Ensuring all crew and passengers are informed
 - Ensuring all vessel equipment is properly secured
 - Securing cargo and stores
 - Taking action to avoid extreme adverse weather conditions

Unit Sector(s)

Not applicable.

Competency Field

Navigation