



Australian Government

Department of Education, Employment and Workplace Relations

TDMMH1307B APPLY WEATHER INFORMATION WHEN NAVIGATING A SMALL VESSEL WITHIN THE LIMITS OF RESPONSIBILITY OF A MASTER 5

Release: 1

TDMMH1307B APPLY WEATHER INFORMATION WHEN NAVIGATING A SMALL VESSEL WITHIN THE LIMITS OF RESPONSIBILITY OF A MASTER 5

Modification History

Not applicable.

Unit Descriptor

UNIT DESCRIPTOR:

This unit involves the skills and knowledge required of a Master 5 or Skipper 3 to predict meteorological and ocean conditions and apply them to ensure the safe navigation of a small domestic commercial vessel, including interpreting and applying information obtained from observations, reports and instruments and forecasting weather for an intended near coastal voyage using all available data.

Application of the Unit

Application of the unit	The unit has applications in the qualification for a Master 5/Skipper 3 as per relevant sections of Part D of the National Standard for Commercial Vessels (NSCV), i.e. Certificate III in Transport&Distribution (Coastal Maritime Operations - Master 5).
--------------------------------	---

Licensing/Regulatory Information

Licensing/legislative requirements	The unit is consistent with the relevant sections of State and Territory maritime regulations and NSCV/USL Code for a Master 5/Skipper 3.
---	---

Pre-Requisites

Not applicable.

Employability Skills Information

Not applicable.

Elements and Performance Criteria Pre-Content

<i>Elements describe the essential outcomes of a unit of competency.</i>	<i>Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.</i>
--	--

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Obtain weather and oceanographic information	- a Coastal and ocean weather forecasts are obtained and correctly interpreted - b Ocean and weather conditions are observed and correctly interpreted in accordance with established nautical and meteorological practice - c Basic measurements of meteorological conditions are correctly made and recorded using established procedures - d Relevant meteorological charts, publications and related documentation are obtained, used, updated, stored and maintained
2 Apply weather and oceanographic data to safe navigation	- a Weather and ocean condition hazards relevant to a proposed coastal voyage are identified using relevant forecasts based on interpretation of meteorological observations, reports and measurements - b The route for a voyage is modified as required to take into account weather and sea condition hazards in accordance with established navigational practice and operational instructions

TDMMH1307B APPLY WEATHER INFORMATION WHEN NAVIGATING A SMALL VESSEL WITHIN THE LIMITS OF RESPONSIBILITY OF A MASTER 5

3 Maintain records of weather and oceanographic information

- a Meteorological measurements, observations, reports and forecasts are recorded and stored in accordance with company procedures and regulatory requirements

Required Skills and Knowledge

REQUIRED KNOWLEDGE

This describes the knowledge required for this unit.

- 1 Relevant sections of State and Territory regulations, NSCV and USL Code dealing with responsibilities of a Master 5 or Skipper 3
- 2 Principles and procedures of weather forecasting using information obtained from observations, reports and instruments, including:
 - a vertical division of the atmosphere
 - b air masses and fronts
 - c cloud classifications
 - d heat exchange process
 - e synoptic chart analysis
 - f pressure systems, cold and warm fronts
 - g cyclones, storms and gales
 - h tropical meteorology
 - i ocean currents
 - j weather data provided by shipboard instruments

REQUIRED KNOWLEDGE

- k sea state
- l effects of weather on predicted tidal information

REQUIRED KNOWLEDGE

- 3 Basic principles and procedures for making meteorological and oceanographic measurements using appropriate instruments and interpreting and deciphering the results
- 4 Sources of weather and oceanographic reports and methods for their interpretation
- 5 Procedures for the application of forecast of likely weather and ocean conditions to the development of a typical coastal passage plan
- 6 Effects on navigation and vessel handling of wind, currents and bottom topography
- 7 Problems in the forecasting of weather and oceanographic information to navigation of a vessel and appropriate action and solutions
- 8 Procedures to be followed during gale conditions and cyclones, including the means of securing a vessel in a cyclone mooring
- 9 Maritime communication techniques

TDMMH1307B APPLY WEATHER INFORMATION WHEN NAVIGATING A SMALL VESSEL WITHIN THE LIMITS OF RESPONSIBILITY OF A MASTER 5
--

REQUIRED SKILLS

This describes the basic skills required for this unit.

- 1 Use relevant communication skills required when navigating a small vessel within limits of responsibility of a Master 5 or Skipper 3
- 2 Read, interpret and apply weather information and oceanographic reports
- 3 Read and interpret standard procedures for making meteorological and oceanographic measurements using appropriate instruments and interpreting and deciphering the results
- 4 Observe and interpret weather and oceanographic conditions
- 5 Complete any required records
- 6 Work collaboratively with others when interpreting and applying weather information to navigation

REQUIRED SKILLS

- 7 Select and use relevant instruments and equipment as per instructions
- 8 Recognise problems that may occur when interpreting and applying weather information to navigation and take appropriate action
- 9 Adapt to differences in vessels, equipment and standard operating procedures
- 10 Interpret and apply weather information when navigating a small vessel within limits of responsibility of a Master 5

Evidence Guide

Evidence Guide

TDMMH1307B APPLY WEATHER INFORMATION WHEN NAVIGATING A SMALL VESSEL WITHIN THE LIMITS OF RESPONSIBILITY OF A MASTER 5

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

1 Critical aspects of evidence required to demonstrate competency in this unit	Assessment must confirm appropriate knowledge and skills to: - a Obtain and interpret weather and oceanographic data collected from observations, reports, charts, satellite images and instruments - b Identify and evaluate weather forecasting problems and determine appropriate solutions - c Access, use and maintain meteorological charts, meteorological publications and related weather and oceanographical documentation - d Use weather forecasts to ensure safe navigation
2 Evidence required for demonstration of consistent	- a Performance is demonstrated consistently over a period of time and in a suitable range of contexts - b Consistently applies underpinning knowledge and skills

performance

when:

- 1 observing weather and ocean conditions
- 2 using shipboard instruments to collect basic meteorological and oceanographic data
- 3 obtaining and interpreting weather and oceanographic data collected from observations, charts, reports, satellite images and instruments
- 4 applying the forecasts to the planning and conduct of a near coastal passage
- 5 identifying and evaluating weather forecasting problems and determining appropriate solutions

c Shows evidence of application of relevant workplace and regulatory procedures, including:

- 1 relevant sections of State and Territory marine regulations, NSCV/USL Code
- 2 established procedures for the forecasting local weather and ocean conditions in near coastal waters
- 3 navigational regulations and hazard prevention policies and procedures
- 4 reporting of vessel's position, route and navigational contingencies
- 5 job procedures and instructions on the use of meteorological instruments, reports and observations
- 6 use of relevant meteorological publications, charts and satellite images

Evidence Guide (continued)

**TDMMH1307B APPLY WEATHER INFORMATION WHEN
NAVIGATING A SMALL VESSEL WITHIN THE LIMITS OF
RESPONSIBILITY OF A MASTER 5**

**2 Evidence
required for
demonstration
of consistent**

- 7 procedures for the storage and maintenance of meteorological publications and charts

d Action is taken promptly to report and take account of

performance (continued)	adverse weather forecasts in accordance with established procedures e Work is completed systematically with required attention to detail f Recognises and adapts appropriately to cultural differences in the workplace, including modes of behaviour and interactions among crew and others
3 Context of assessment	a Assessment of competency must comply with the assessment requirements of the relevant maritime regulations b Assessment of this unit must be undertaken within relevant marine authority approved and audited arrangements by a registered training organisation: 1 As a minimum, assessment of knowledge must be conducted through appropriate written/oral examinations, and 2 Appropriate practical assessment must occur: - i at the registered training organisation; and/or - ii on an appropriate working or training vessel
4 Specific resource required for assessment	Access is required to opportunities to: a participate in a range of suitably simulated practical and knowledge assignments and exercises that demonstrate the ability to collect appropriate weather and oceanographic data from observations, reports and basic measurements using shipboard instruments and apply them to the safe navigation of a vessel; and/or b collect weather and oceanographic data from observations, reports and basic measurements and apply them to the safe navigation of an operational commercial or training vessel on a near coastal voyage

Range Statement

Range Statement

**TDMMH1307B APPLY WEATHER INFORMATION WHEN
NAVIGATING A SMALL VESSEL WITHIN THE LIMITS OF
RESPONSIBILITY OF A MASTER 5**

The Range Statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance.

VARIABLE

SCOPE

1. GENERAL CONTEXT

a. Work must be carried out:	1 in compliance with the relevant sections of State and Territory marine regulations, NSCV and USL Code
b. Work is performed:	1 within a defined range of operations and routine procedures, with responsibility for own outputs in relation to specified quality standards
c. Work involves:	1 the interpretation of meteorological, observations, reports and instrument measurements to the forecasting of weather and ocean conditions and the application of those forecasts to safe navigation
d. Work requires:	1 some discretion and judgement in interpreting meteorological data and forecasts, related navigational hazards and contingencies and the actions to be taken in these eventualities

2. WORKSITE ENVIRONMENT

The Range Statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance.

a Vessel may include:	1 any commercial vessel less than 80 m engaged on near coastal voyages
b Voyages being planned and conducted may include:	1 any near coastal voyage navigable by the size and type of vessel concerned 2 passages through - i traffic separation schemes in near coastal areas - ii tidal restricted areas - iii VTS controlled areas - iv pilotage water under conditions of restricted visibility

Range Statement (continued)

**TDMMH1307B APPLY WEATHER INFORMATION WHEN
NAVIGATING A SMALL VESSEL WITHIN THE LIMITS OF
RESPONSIBILITY OF A MASTER 5**

VARIABLE	SCOPE
c Navigation may occur in conditions of:	1 <i>day and night</i> 2 <i>clear visibility</i> 3 <i>restricted visibility</i>
d Instruments may include:	1 air and sea thermometers 2 barometers 3 hydrometers 4 hygrometers 5 wind strength and direction instruments, e.g. anemometers

VARIABLE	SCOPE
	6 instruments for measuring sea swell height, direction and period
e Meteorological and oceanographic parameters may include:	1 atmospheric pressure 2 pressure gradient and isobar patterns 3 air temperature 4 relative humidity 5 wind strength 6 wind direction 7 swell height, fetch, direction and period 8 visibility (in conditions of fog, mist, rain and snow) 9 cloud
f Documentation and records may include:	1 operational orders 2 navigational charts of near coastal waters 3 meteorological and oceanographic publications 4 coastal weather reports, charts and satellite images 5 publications from the Australian Hydrographer, including radio signals, light lists, sailing directions, tide tables, annual and weekly notices to mariners and chart catalogues 6 navigational warnings 7 relevant sections of State and Territory marine regulations, NSCV and USL Code 8 vessel's log

Range Statement (continued)

TDMMH1307B APPLY WEATHER INFORMATION WHEN NAVIGATING A SMALL VESSEL WITHIN THE LIMITS OF RESPONSIBILITY OF A MASTER 5

VARIABLE	SCOPE
f Documentation and records may include: (continued)	9 company procedures
	10 vessel manufacturer's instructions and recommended procedures
	11 notices and instructions of relevant maritime authorities
g Applicable legislation, regulations and codes may include:	1 relevant sections of State and Territory marine regulations, NSCV and USL Code
	2 regulations for preventing collisions at sea

Unit Sector(s)

Not applicable.

Field

Field MH Navigation

Relationship to other units

Relationship to other units	The unit may be assessed in conjunction with other units that relate to the functions of the occupation(s) concerned.
------------------------------------	---