



Australian Government

MARH3001A Apply weather information when navigating inland waters as Master

Release 1

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Modification History

Release 1

This is the first release of this unit.

Unit Descriptor

This unit involves the skills and knowledge required to predict meteorological conditions and apply them to ensure the safe navigation of a vessel. It includes interpreting and applying information obtained from observations, reports and instruments and forecasting weather for an intended inland waters passage using all available data.

Application of the Unit

This unit applies to those working in the capacity of a Master Inland Waters on any commercial vessel up to 24 metres engaged in inland waters navigation.

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 Obtain weather information**
 - 1.1 Relevant weather forecasts are obtained from a range of *sources* and correctly interpreted
 - 1.2 Weather conditions are observed and correctly interpreted according to established nautical and meteorological practice
 - 1.3 Basic measurements of meteorological conditions are correctly made and recorded using established procedures
 - 1.4 Relevant meteorological charts, publications and related *documentation* are obtained, used, updated, stored and maintained
- 2 Apply weather data to safe navigation**
 - 2.1 Weather condition hazards relevant to a proposed voyage are identified using relevant forecasts based on interpretation of meteorological observations, reports and measurements
 - 2.2 Voyage is modified as required to take into account weather and water condition hazards according to established navigational practice and operational instructions
- 3 Maintain records of weather and oceanographic information**
 - 3.1 Meteorological measurements, observations, reports and forecasts are recorded and stored according to organisational procedures and regulatory requirements
 - 3.2 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 procedures

Required Skills and Knowledge

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

Required Skills:

- Complete required records
- Read, interpret and apply weather information
- Recognise problems that may occur when interpreting and applying weather information to navigation and take appropriate action
- Select and use relevant instruments and equipment according to instructions
- Use relevant communication skills when navigating a small vessel as Master

Required Knowledge:

- Basic principles and procedures interpreting meteorological information
- Effects on navigation and vessel handling of wind, currents and bottom topography
- Maritime communication techniques
- Meteorological and oceanographic parameters:
 - atmospheric pressure
 - pressure gradient and isobar patterns
 - air temperature
 - relative humidity
 - wind strength
 - wind direction
 - visibility (in conditions of fog, mist, rain and snow)
 - cloud
- Problems in forecasting weather information to navigate a vessel and appropriate action and solutions
- Procedures for applying forecast of likely weather and water conditions to the development of a typical voyage
- Procedures to be followed during gale conditions and cyclones, including the means of securing a vessel in a cyclone mooring
- Principles of weather forecasting using information obtained from observations, reports and instruments, including:
 - vertical division of the atmosphere
 - air masses and fronts
 - cloud classifications
 - heat exchange process
 - synoptic chart analysis
 - pressure systems, cold and warm fronts

- cyclones, storms and gales
- tropical meteorology
- sources of weather data
- Relevant sections of state and territory regulations, National Standard for Commercial Vessels (NSCV) and Uniform Shipping Laws (USL) Code dealing with responsibilities of a Master Inland Waters
- Sources of weather reports and methods for their interpretation

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:

- identifying and evaluating weather forecasting problems and determining appropriate solutions
- using weather forecasts to ensure safe navigation
- attention to detail when completing documentation
- navigating under a range of conditions - day and night, clear visibility and restricted visibility.

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 applying weather information when navigating inland waters as Master can 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 applying weather information when navigating inland waters as Master.

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.

Sources may include:

- Charts
- Instruments
- Observations
- Reports
- Satellite images

Documentation may include:

- Meteorological publications
- Navigational charts of inland waterways
- Notices and instructions of relevant maritime authorities
- Operational orders
- Organisational procedures
- Relevant sections of state and territory marine regulations, NSCV and USL Code
- Vessel log
- Vessel manufacturer instructions and recommended procedures
- Weather reports, charts and satellite images

Unit Sector(s)

Not applicable.

Competency Field

Navigation