



Australian Government

Department of Education, Employment and Workplace Relations

TDMMH107B PLAN A VOYAGE AND CONDUCT NAVIGATION

Revision Number: 1

TDMMH107B PLAN A VOYAGE AND CONDUCT NAVIGATION

Modification History

Not applicable.

Unit Descriptor

UNIT DESCRIPTOR:

This unit involves the skills and knowledge required to plan the voyage of a commercial vessel of less than 500 gross tonnage and conduct navigation, including planning and navigation for all conditions by acceptable methods of plotting ocean tracks, routeing in accordance with the General Principles on Ships' Routeing and reporting as required by the Guidelines and Criteria for Ship Reporting Systems.

Application of the Unit

Application of the unit	The unit has application in qualifications for Master on a vessel of 500 gross tonnage or more operating in international waters, i.e. Advanced Diploma of Transport&Distribution(Maritime Operations - Master Unlimited).
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Licensing/Regulatory Information

Licensing/legislative requirements	The unit is consistent with the relevant sections of STCW 95, the International Ship and Port Facility Security (ISPS) Code and Marine Orders under the Australian Navigation Act 1912, describing requirements for a Master on a vessel of less than 500 gross tonnage operating in international waters.
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Pre-Requisites

Not applicable.

Employability Skills Information

Not applicable.

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

ELEMENT	PERFORMANCE CRITERIA
1 Maintain navigational charts, nautical publications and related documentation	a Navigational charts, nautical publications and related documentation are stored and maintained in accordance with company procedures and chart/publication publisher's instructions b Navigational charts, nautical publications and related documentation are filed in accordance with company procedures c An inventory of navigational charts, nautical publications and related documentation is established and kept as required by company procedures d Chart correction records are kept and applied to ensure charts in use reflect up to date information e Navigational charts, nautical publications and related documentation are handled and used in ways that ensure continued availability, utility and length of life f Navigational charts, nautical publications and related documentation are appropriately ordered/updated from relevant sources to ensure that available data needed for voyage planning and identification of navigational hazards is current

ELEMENT	PERFORMANCE CRITERIA
2 Plan route for voyage	- a Navigational hazards relevant to a proposed voyage are identified using relevant navigational charts, nautical publications and related documentation - b The route for a voyage is determined as per operational instructions and navigational principles and taking due account of identified navigational hazards - c Critical points along the proposed route of the voyage are identified and recorded - d Actions to deal with the identified critical points are developed in accordance with navigational principles and practice and company procedures - e Potential navigational contingencies and problems that may occur along the planned route are identified and strategies for dealing with them are developed and recorded
3 Fix vessel's position	- a Primary position fixing method is selected in accordance with prevailing conditions - b Position is fixed using the selected method - c Appropriate allowance is made for random, instrument, system and data errors - d Time interval between fixes is appropriate to the prevailing navigational conditions - e Verification of primary position fixing is regularly carried out using appropriate methods - f Performance checks and tests of navigation position fixing instruments and systems are carried out in accordance with company procedures and manufacturer's instructions - g Position of vessel is recorded as per procedures and regulatory requirements

ELEMENT	PERFORMANCE CRITERIA
4 Document and report planned route	- a Planned route for a vessel's voyage is recorded and reported in accordance with company procedures and regulatory requirements - b Plans and strategies for dealing with critical situations and contingencies along the route of a voyage are recorded
5 Maintain and adjust vessel's course	- a Required alterations to the vessel's course or speed are made taking into account prevailing weather and sea conditions, the proximity and course of other vessels, navigational hazards and overall passage plan requirements - b Alterations to the vessel's course and speed comply with Australian and international regulations for the avoidance of collision at sea

ELEMENT	PERFORMANCE CRITERIA
5 Maintain and adjust vessel's course (continued)	- c Alterations to the vessel's course and speed are appropriate to prevailing circumstances and conditions - d Alterations to the vessel's course and speed are effective and do not put at risk the safety of the vessel or its passengers and crew or that of other vessels, passengers or crew - e Signals relevant for navigational manoeuvres are made at the appropriate time in accordance with Australian and international regulations - f Operational limits of vessel propulsion, steering, power systems and overall trim and stability are not exceeded during navigational manoeuvres

Required Skills and Knowledge

REQUIRED KNOWLEDGE

This describes the knowledge required for this unit.

- 1 Relevant sections of IMO STCW 95 Convention and Code and AMSA Marine Orders applicable for vessels of 500 gross tonnage and over
- 2 Common methods of time measurement
- 3 Methods used to approximate to the shape of the earth
- 4 Procedures for fixing a celestial object's position with reference to a horizon-based system of coordinates
- 5 Procedures for converting one set of coordinates to another
- 6 Common astronomical phenomena as described in the Nautical Almanac, including: the phases of the moon, twilight, solar eclipses, lunar eclipses, visible sunrise/set, tabulated times for sunrise/set, theoretical sunrise/set
- 7 Procedures for the calculation of the height of tide for a given time at any place listed using tide tables
- 8 Procedures for the use of Nautical Almanac data and information when planning and conducting a voyage, including calculation of errors due to common navigational approximations
- 9 Equilibrium theory of tides for the major tide raising constituents
- 10 Typical errors in common position fixing systems and their effect on observed positions
- 11 Requirements for effective passage planning, including contingency planning
- 12 Information required for a typical effective passage plan
- 13 Ordering procedures for navigational charts, nautical publications and related documentation
- 14 Procedures for filing and maintaining navigational charts, nautical publications and related documentation in serviceable condition
- 15 Vessel reporting systems and their use in planning and conducting a voyage
- 16 Special techniques required for navigation in high latitudes
- 17 Maritime communication techniques, including issuing of helm and engine orders and tug communications

REQUIRED SKILLS

This describes the basic skills required for this unit.

- 1 Use verbal communication skills required when planning and navigating a passage within limits of responsibility of a Master (Unlimited)
- 2 Read and interpret charts and other published information relevant to planning and navigating a passage within limits of responsibility of a Master (Unlimited)
- 3 Read and interpret instrument and equipment readings and indications relevant to planning and navigating a passage within limits of responsibility of a Master (Unlimited)
- 4 Complete any required operational records
- 5 Work safely and collaboratively with others when planning and navigating a passage
- 6 Select and use relevant equipment required when planning and navigating a passage as per standard operating procedures
- 7 Recognise faulty equipment and readings and take appropriate action as per standard operating procedures
- 8 Recognise problems that may be experienced when planning and navigating a passage and take appropriate action
- 9 Adapt to differences in vessels, equipment and related standard operating procedures
- 10 Plan and navigate a passage for a vessel within limits of responsibility of a Master (Unlimited)

Evidence Guide

Not applicable.

Range Statement

Range Statement

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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 relevant sections of applicable maritime regulations
b. Work is performed:	1 relatively independently under broad operational requirements, with accountability and responsibility for self and others in achieving the prescribed outcomes
c. Work involves:	1 the application of a significant range of fundamental navigational principles and procedures across a wide variety of navigational contexts, including navigation at high latitudes. Contribution to the development of a plan for a voyage is required with appropriate allowance for possible contingencies
d. Work requires:	1 significant judgement in planning, technical and leadership functions related to planning and conducting a voyage for a vessel of 500 gross tonnage or more

2. WORKSITE ENVIRONMENT

a Vessel may include:	1 any Australian or international commercial vessel of 500 gross tonnage or more

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b Voyages to be planned and conducted may include:	1	any voyage navigable by the size and type of vessel concerned
	2	voyages in high latitudes
	3	passages through
	4	traffic separation schemes
	5	tidal restricted areas
	6	VTs controlled areas
	7	pilotage water under conditions of restricted visibility

Range Statement (continued)**TDMMH107B PLAN A VOYAGE AND CONDUCT NAVIGATION**

VARIABLE	SCOPE
c Navigation may occur in conditions of:	1 clear visibility using visual navigational techniques 2 restricted visibility using parallel indexing and/or electronic chart systems 3 clear visibility using a combination of visual and electronic techniques
d Position fixing techniques may include:	1 visual 2 radar 3 continuous position monitoring

Range Statement (continued)**TDMMH107B PLAN A VOYAGE AND CONDUCT NAVIGATION**

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|---|---|
| e Documentation and records may include: | <ol style="list-style-type: none"> 1 ISM Code safety management system plans, procedures, checklists and instructions 2 operational orders 3 navigational charts 4 Nautical Institute publications 5 Nautical Almanac 6 General Principles on Ships' Routeing 7 Guidelines and Criteria for Ship Reporting Systems 8 publications from the Australian Hydrographer or British Admiralty, including radio signals, light lists, sailing directions, tide tables and chart catalogues 9 navigational warning records 10 IMO STCW Convention and Code 11 AMSA Marine Orders 12 annual and weekly notices to mariners 13 vessel's log 14 company procedures 15 vessel manufacturer's instructions and recommended procedures 16 instructions of relevant maritime authorities 17 pilot instructions where relevant 18 relevant Australian and international standards |
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Range Statement (continued)**TDMMH107B PLAN A VOYAGE AND CONDUCT NAVIGATION**

VARIABLE	SCOPE
f Applicable legislation, regulations and codes may include:	1 IMO STCW Convention and Code related to vessels of 500 gross tonnage or more 2 relevant sections of AMSA Marine Orders International Regulations for Preventing Collisions at Sea relevant international, Commonwealth, State and Territory OH&S legislation 3 Guidelines and Criteria for Ship Reporting Systems

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.
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