Australian Government

Department of Education, Employment and Workplace Relations

TDMMF3007B MAINTAIN A SAFE NAVIGATIONAL WATCH

Revision Number: 1

INDUSTRY SKILLS COUNCILS

Creating Australia's Future

TDMMF3007B MAINTAIN A SAFE NAVIGATIONAL WATCH

Modification History

Not applicable.

Unit Descriptor

UNIT DESCRIPTOR: **This unit involves the skills and knowledge required to maintain a safe navigational watch on a commercial vessel in compliance with Australian and international regulations and guidelines to ensure the safety of navigation, protection of the marine environment and the safety of the vessel and persons on board.**

Application of the Unit

Application of the unit	The unit has application in the qualifications for a Master (Unlimited), Watchkeeper (Deck) and Master (Less than 500 GT), i.e. Advanced Diploma of Transport&Distribution(Maritime Operations - Master Unlimited) and Diploma of Transport&Distribution(Maritime Operations - Deck Watchkeeper).

Licensing/Regulatory Information

Licensing/legislative requirements	The unit is consistent with the relevant sections of STCW 95 and Marine Orders under the Australian Navigation Act 1912, describing the role and responsibilities of a Watchkeeper (Deck).

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 Carry out watchkeeping procedures	a The conduct, handover and relief of the watch conforms with accepted principles and vessel's procedures b A proper look-out is maintained at all times and in such a way as to conform to accepted principles and procedures and regulatory requirements c The vessel is navigated safely using appropriate visual and electronic techniques to check position and to keep it on the track laid down d The progress of the vessel along a prepared track is analysed and speed and course adjusted as appropriate to maintain a required estimated time of arrival at a point on the track e Lights, shapes and sound signals conform with the requirements contained in the International Regulations for Preventing Collisions at Sea and are correctly recognised f The frequency and extent of monitoring of traffic, the vessel and the environment conform with accepted principles and procedures g Responsibility for the safety of navigation is clearly defined at all times, including periods when the master is on the bridge and while under pilotage h Safe navigational practice is achieved through the implementation of accepted bridge resource management principles and procedures

ELEMENT	PERFORMANCE CRITERIA
	i Fatigue management strategies are correctly applied within the bridge management team

ELEMENT	PERFORMANCE CRITERIA
2 Respond to potential collision and emergency situations	a Potential collision situations are analysed and appropriate action is taken in ample time and in accordance with regulatory requirements b Correct responses are made to emergencies and situations that pose a danger to the vessel and personnel on board c Distress signals are recognised and appropriate action is taken to initiate search and rescue procedures d Master is called in the event of a navigational incident which falls outside the officer's limits of responsibility
3 Maintain watchkeeping records	a A proper and accurate record is maintained of the movements and activities relating to the navigation of the vessel b Appropriate entries pertaining to the watch are recorded in the vessel's log or computer records

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 dealing with bridge watchkeeping principles, arrangements, procedures, roles and responsibilities

2 Relevant OH&S legislation and policies

3 Bridge resource management systems

4 Implications of a range of factors that can affect watchkeeping functions

5 Causes of groundings, collisions and casualties

6 Navigational hazards and implications for watchkeeping

7 Operating procedures for typical navigational aids and skills and the knowledge needed to use them effectively

8 Watch handover procedures

9 Watchkeeping problems and emergency situations for commercial vessels of 500 gross tonnage or more and appropriate action and solutions

10 Principles and use of navigational recording devices for keeping records of the operation, behaviour and performance of the vessel and navigation equipment

11 Procedures for the use of vessel routeing and reporting systems for safe navigation

12 Manual and electronic navigational aids available to the bridge team and the procedures for their operation and use during a watch

13 Typical bridge instrumentation, controls and alarms and their functions

14 Functions of unmanned machinery space (UMS) controls, alarms and indicators

15 Rudder and propeller control and vessel manoeuvring characteristics

16 Precautions necessary when navigating in or near traffic separation schemes or other routeing measures

17 Signs of fatigue

18 Fatigue management principles and techniques

REQUIRED KNOWLEDGE

19 Maritime communication techniques

REQUIRED SKILLS

This describes the basic skills required for this unit.

1 Communicate effectively with others on watchkeeping issues, arrangements and requirements

2 Read, interpret and apply instructions, procedures and information relevant to the role and responsibilities of a watchkeeper

3 Select and use appropriate internal and external communications equipment during watchkeeping duties

4 Provide leadership as a member of the bridge team during watchkeeping duties

5 Take appropriate initiatives related to the protection of the environment during watchkeeping duties

6 Interpret and apply required practices during watchkeeping duties

7 Modify activities dependent on differing vessel contingencies, risk situations and environments

8 Identify and solve problems that may arise during watchkeeping duties and report problems and issues and take appropriate action based on available information

9 Monitor and anticipate hazards and risks that may arise during watchkeeping duties and take appropriate action

10 Adapt to differences in vessels, bridge equipment and watchkeeping procedures

Evidence Guide

Evidence Guide

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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 Implement watchkeeping arrangements and procedures b Fulfil watchkeeping responsibilities c Take appropriate action in the event of a potential collision or other emergency situation arising during a watch d Communicate effectively with others in the course of watchkeeping duties
2 Evidence required for demonstration of consistent performance	a Performance is demonstrated consistently over a period of time and in a suitable range of contexts b Consistently applies underpinning knowledge and skills when: 1 maintaining a safe watch 2 identifying and evaluating watchkeeping problems and determining appropriate courses of action 3 identifying and implementing improvements to bridge management procedures 4 applying safety precautions relevant to watchkeeping operations 5 dealing with potential collisions and other potentially dangerous situations arising during a watch c Shows evidence of application of relevant workplace procedures, including: 1 relevant sections of applicable maritime regulations

Evidence Guide

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		2 vessel's safety management system and procedures 3 OH&S regulations and hazard prevention policies and procedures 4 job procedures and work instructions 5 relevant guidelines relating to bridge management and watchkeeping arrangements on board a vessel 6 security procedures 7 bridge housekeeping processes 8 waste, pollution and recycling management processes

Evidence Guide (continued)

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2	**Evidence required for demonstration of consistent performance (continued)**	d Action is taken promptly to report and/or rectify watchkeeping incidents 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

Evidence Guide (continued) **TDMMF3007B MAINTAIN A SAFE NAVIGATIONAL WATCH**	
	2 Appropriate practical assessment must occur: i at the registered training organisation; and/or ii on an appropriate working or training vessel
4 Specific resources required for assessment	Access is required to opportunities to: a demonstrate the ability to maintain a safe watch in range of suitably simulated watchkeeping situations, case studies and exercises ; and/or b maintain a safe watch on an suitable commercial vessel in an appropriate range of situations and weather and sea conditions

Range Statement

Range Statement **TDMMF3007B MAINTAIN A SAFE NAVIGATIONAL WATCH**

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 maritime regulations

Range Statement **TDMMF3007B MAINTAIN A SAFE NAVIGATIONAL WATCH**		
b. **Work is performed**:	1	as a member of a bridge team under broad operational requirements, with limited accountability and responsibility for self and others in achieving the prescribed outcomes
c. **Work involves**:	1	the application of a significant range of fundamental nautical principles and watchkeeping techniques across a wide and often unpredictable variety of operational contexts. Implementation of the vessel's watchkeeping plan is required
d. **Work requires**:	1	judgement and teamwork in carrying out watchkeeping duties and procedures for vessels of 500 gross tonnage or more

2. **WORKSITE ENVIRONMENT**

a Vessel may include:	1	any Australian or international commercial vessel
b Watchkeeping arrangements and procedures may be implemented:	1	by day or night in both normal and emergency situations
	2	under any possible conditions of weather and loading
	3	while underway
	4	during berthing and unberthing operations
	5	while anchoring or mooring
	6	while in port
	7	while berthed, moored or at anchor

Range Statement (continued)

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VARIABLE	SCOPE
c Watchkeeping principles (as described in the AMSA Marine Orders) include:	1 proper lookout must be maintained at all times 2 duties of look-out and helmsman must be kept separate 3 look-out must give full attention to keeping a proper look-out and must not be given other duties which could interfere with the task 4 all necessary precautions must be taken to avoid pollution of the marine environment 5 appropriate assistance must be available to be summoned to the bridge if required by a change in the vessel's situation
d Fatigue management strategies may include:	1 recognition of symptoms of fatigue 2 arranging to take a break when symptoms of fatigue are identified 3 maintenance of personal fitness and health 4 appropriate dietary habits 5 avoidance of excessive consumption of alcohol prior to watchkeeping duties
e Emergencies and potentially dangerous navigational situations may include:	1 fire 2 stranding 3 possible collision 4 heavy weather 5 synchronous rolling

Range Statement (**continued**)

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	6 distress signal
	7 failure of bridge equipment, steering equipment, navigational lights
	8 loss of main engines
	9 person overboard
	10 fog and restricted visibility
	11 cargo shift
	12 ice formation on hull and superstructure
	13 floating ice
	14 retrieval of survivors from the water
	15 loss of watertight integrity
	16 intoxicated persons on board a vessel

Range Statement (**continued**)

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VARIABLE	**SCOPE**
e Emergencies and potentially dangerous navigational situations may include: (**continued**)	17 dragging anchor or fouled hawse 18 loss of mooring lines or winches when berthing 19 entry into confined spaces 20 personnel working aloft or overside 21 sudden list or loll

Range Statement (**continued**)

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f Available navigational aids may include:	1 radar 2 electronic position indicating devices 3 other equipment affecting the safe navigation of the vessel
g Factors to be taken into account when carrying out watchkeeping duties include:	1 bridge must never be left unattended 2 weather and sea conditions, visibility and whether there is daylight or darkness 3 proximity of navigational hazards 4 use and operational condition of navigational aids 5 the operational status of bridge instrumentation, controls and alarms 6 provision on the bridge of unmanned machinery space (UMS) controls, alarms and indicators 7 unusual demands on the navigational watch arising from operational conditions 8 traffic density and other activities occurring in the area in which the vessel is navigating 9 the size of the vessel and the field of vision available from the conning position 10 the attention necessary when navigating in or near traffic separation schemes or other routeing measures 11 rudder and propeller control and vessel manoeuvring characteristics
h Documentation and records may include:	1 ISM Code safety management system plans, procedures, checklists and instructions 2 operational orders

Range Statement (**continued**) **TDMMF3007B MAINTAIN A SAFE NAVIGATIONAL WATCH**	
	3 navigational charts 4 IMO STCW 95 Convention and Code

Range Statement (**continued**) **TDMMF3007B MAINTAIN A SAFE NAVIGATIONAL WATCH**	
VARIABLE	**SCOPE**
h Documentation and records may include: (**continued**)	5 AMSA Marine Orders as they relate to watchkeeping functions and operations 6 vessel's log 7 company procedures 8 instructions of relevant maritime authorities 9 relevant Australian and international standards
i Applicable legislation, regulations and codes may include:	1 IMO STCW 95 Convention and Code 2 relevant sections of AMSA Marine Orders 3 International Regulations for Preventing Collisions at Sea 4 relevant international, Commonwealth, State and Territory OH&S legislation

Unit Sector(s)

Not applicable.

Field

Field MF Operational Quality and Safety

Relationship to other units

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