Australian Government

MARL008 Demonstrate basic knowledge of ships and ship routines

Release: 1

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Modification History

Release 1. New unit of competency.

Application

This unit involves the skills and knowledge required to maintain a safe engineering watch on a commercial vessel.

This unit applies to people working in the maritime industry as a Marine Engineering Watchkeeper on commercial vessels greater than 750 kW or as an Engineer Class 3 Near Coastal.

This unit has links to legislative and certification requirements.

Pre-requisite Unit

Not applicable.

Competency Field

L - Marine Engineering

Unit Sector

Not applicable.

Elements and Performance Criteria

Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
1 Outline key features of different types of commercial ships	1.1 Annotated sketch of profile and midship section of a range of ship types is constructed
	1.2 Terms used to quote size of a ship are used appropriately
	1.3 Plate materials and joining methods used in ship construction are detailed
	1.4 Basic principles of watertight integrity are identified and applied
	1.5 Shipping terms are applied to describe characteristics of

			commercial vessels
2	**Explain dangers associated with entry into engine room spaces**	2.1	How atmosphere in engine room spaces may be hazardous is detailed
		2.2	Procedures for obtaining permission to enter engine room spaces are outlined
		2.3	Administrative procedures applying to work in engine room after normal hours are outlined
3	**Explain need for standards and other monitoring requirements for ships**	3.1	International standards relating to construction, equipment and conditions of commercial vessels are outlined
		3.2	National legislation and International Maritime Organization (IMO) conventions concerning safety of life at sea, security and protection of marine environment are outlined
		3.3	Requirements of International Management Code for the Safe Operation of Ships and for Pollution Prevention (ISM) Code and safety management system are outlined
		3.4	Qualifications and experience requirements for key personnel on a ship are outlined
		3.5	Personal and ship certificates, and other documents required to be carried on board ship by international conventions, how they are obtained, how they may be verified and period of their legal validity are identified
		3.6	Roles and functions of key national and international shipping authorities and organisations are outlined
		3.7	Purpose of surveys and dry-docking of ships are explained
4	**Explain responsibilities of personnel on board ship**	4.1	Roles and responsibilities of personnel on board ship are clarified
		4.2	Organisational structure, lines of responsibility and communication on board ship are outlined
		4.3	International maritime conventions, recommendations and national legislation concerning shipboard personnel and training are clarified
		4.4	Daily work and shipboard routines relating to engineering watchkeeping are outlined
		4.5	Personal and social responsibilities of personnel on board ship are confirmed

5	**Explain engineering watchkeeping procedures**	5.1 Established marine engineering practice and regulatory requirements for conduct, handover and relief of an engineering watch are outlined
		5.2 Operational procedures and requirements for main propulsion, auxiliary systems and associated controls are outlined
		5.3 Operational procedures and requirements for monitoring the performance of main propulsion, auxiliary systems and associated controls are outlined
		5.4 Procedures for identifying, rectifying and reporting problems associated with performance of main propulsion, auxiliary systems and associated controls are outlined
		5.5 Basic operation, monitoring and maintenance of shafting installations and propeller systems is detailed
		5.6 Engine room resource management principles and procedures required for a safe engineering watch are outlined
		5.7 Safety precautions to be observed during a watch and immediate action to be taken in the event of fire or accident are clarified
		5.8 Requirements for recording activities and incidents that occur during keeping an engineering watch are detailed
		5.9 Fatigue management strategies for engine room management team are identified
		5.10 Personal task and workload management techniques appropriate for an engineering watchkeeper are outlined
6	**Outline procedures and responses to malfunctions and emergency situations**	6.1 Potential malfunctions and emergencies relating to main propulsion and auxiliary systems are identified
		6.2 Correct response and required action relating to potential malfunctions and emergencies in main propulsion and auxiliary systems are detailed
		6.3 Regulatory requirements and reporting requirements for incidents and emergency situations outside watchkeeper limits of responsibility are confirmed

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

Specifies different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

Range is restricted to essential operating conditions and any other variables essential to the work environment.

Ship types include one or more of the following:	• bulk carrier • container • general dry cargo • passenger • ro-ro • tanker
Shipping terms include one or more of the following:	• hogging • panting • pounding • racking • sagging
Key personnel includes one or more of the following:	• crew • master • officers
Shipping organisations and authorities include one or more of the following:	• Australian Maritime Safety Authority (AMSA) • classification societies • IMO • National Maritime Safety Committee • state and territory marine authorities

Personal and social responsibilities include one or more of the following:	• alcohol and drug abuse • discipline • finance • health and fitness • hygiene • relationships • safety
Engine room resource management principles include one or more of the following:	• allocation, assignment and prioritisation of resources • assertiveness and leadership • considering team experience • effective communication • obtaining and maintaining situational awareness
Personal task and workload management techniques include one or more of the following:	• coordination • managing resource constraints • managing time constraints • personnel assignment • planning
Potential malfunctions and emergencies include one or more of the following:	• accidents • breakdowns • collisions • explosion fire • flooding • groundings

Unit Mapping Information

This is a new unit. This unit is equivalent to MARL5011A Demonstrate basic knowledge of ships and ship routines.

Links

Companion Volume implementation guides are found in VETNet - https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=772efb7b-4cce-47fe-9bbd-ee3b1d1eb4c2