Australian Government

MARF3005A Prevent and fight fires on board a vessel

Release 1

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MARF3005A Prevent and fight fires on board a vessel

Modification History

Release 1
This is the first release of this unit.
This unit replaces and is equivalent to TDMMF6207A Prevent, control and fight fires on board an ocean-going vessel.

Unit Descriptor

This unit involves the skills and knowledge required to prevent fires and to respond effectively to any fire emergency on board a vessel.

Application of the Unit

This unit applies to deck and engine workers working in the maritime industry requiring a Certificate of Safety Training.

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 Actively prevent fire	1.1	*Fire hazards* (pre-conditions for fire) on board a vessel are identified and rectified according to workplace procedures
	1.2	Onboard procedures for preventing fire are accessed and implemented
2 Prepare response to fire	2.1	Location and *class of fire* is identified
	2.2	Alarm is raised
	2.3	Condition of *firefighting equipment and systems* in work area is monitored according to planned maintenance schedules
	2.4	Realistic drills and musters are practised to ensure pre-incident readiness of response personnel
	2.5	Appropriate *protective clothing and equipment* including self contained breathing apparatus (SCBA) is made ready
	2.6	All available means to limit the spread of fire and smoke are employed
	2.7	Appropriate pump/s and ancillary equipment are readied to support firefighting operations
	2.8	*Extinguishing media/agent* is selected according to the class/classes of fire
3 Combat fire	3.1	Threats to life or health are identified within the emergency area
	3.2	*Activities and tactics* to combat the fire are selected so that the safety of the vessel and all on board is not compromised
	3.3	Fire is located and access is gained in the safest and most timely manner
	3.4	Fire is attacked using the extinguishing media/agent and application techniques appropriate to the class and size of fire
	3.5	SCBA is donned and used correctly while undertaking fire extinguishment and rescue
	3.6	Effectiveness of combat activities and tactics is evaluated and altered as required
	3.7	Communication is maintained to ensure safety and efficiency of firefighting operation

4 Complete post-fire activities	4.1	Fire watch is maintained to prevent further outbreak
	4.2	Equipment is *restored* to operational condition
	4.3	Fire scene is preserved prior to investigation, if appropriate
	4.4	Information relating to the incident is provided as part of fire debriefing session

Required Skills and Knowledge

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

Required Skills:

- Apply extinguishing media to fire

- Apply safe working practices at all times

- Assist in the setting up and use of foam making equipment

- Correctly don and use SCB while undertaking fire extinguishment and rescue in a heated smoke filled compartment

- Enter and move through a compartment filled with high expansion foam with the aid of a lifeline and without breathing apparatus

- Extinguish a fire with a fire blanket

- Log SCBA wearers correctly on a control board

- Operate charged hose-lines and nozzles

- Operate portable firefighting extinguishers

- Perform after use maintenance on SCBA

Required Knowledge:

- Action to be taken:
- in an emergency
- on board ship

- Alarms and signals during onboard emergencies

- Chemistry of fire, including the fire tetrahedron and its relationship to materials typically found on vessels

- Classification of fire and applicable extinguishing agents

- Correct use of all lifesaving appliances and firefighting appliances

- Different classes of fire, their characteristics and strategies and equipment needed for their extinguishment

- Elements of fire and explosion (the fire triangle)

- Extinguishing media including firefighting foams

- Fire and smoke detection and automatic alarm systems

- Firefighting tactics, techniques and procedures

- Flammable materials, fire hazards and spread of fire

- Hazards and threats to life or health during onboard firefighting operations

- Lifeline signals

- Location of firefighting appliances and emergency escape routes

- Maintenance of lifesaving appliances and firefighting appliances

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- Need for constant vigilance

- Onboard Emergency Response Organisation and procedures

- Portable fire extinguishers

- Principles and methods of fire extinguishment

- Principles underlying the spread of fire

- Relevant Australian Standards

- Safe working practices

- Shipboard firefighting organisation

- Statutory requirements pertaining to lifesaving appliances and firefighting appliances

- Types and sources of ignition

- Types of fire detection, firefighting equipment and systems used on vessels, their features, principles of operation, procedures for their use and problems that can occur

- Ventilation procedures

- Vessel construction as it relates to fire prevention/protection

- Work health and safety (WHS)/occupational health and safety (OHS) requirements and work practices

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: • working as part of a team • being aware of own ability and limits.
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 where fighting and extinguishing fires in a simulated environment using live fire and smoke 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 fighting and extinguishing fires • direct observation of the candidate applying relevant WHS/OHS requirements and work practices.
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.

Fire hazards must cover:	• Accommodation • Cargo areas • Engine rooms • Electrical distribution systems • Fuel handling systems • Galleys • Lack of maintenance • Laundry • Poor housekeeping • Smoking • Stores areas
Classes of fire include:	• A Carbonaceous Solids • B Flammable Liquids • C Flammable Gases • D Combustible Metals • E Energised Electrical Equipment • F Cooking Oils and Fats
Firefighting equipment and systems must include:	• Hoses • Fixed fitted detection and suppression systems • Foam applicators • International ship-to-shore connection • Nozzles • Portable and semi-portable extinguishers • Stretchers/ropes and lines
Protective clothing and equipment must include:	• Head protection/helmet • Hand protection/gloves • Radiant heat protection/coat • Foot protection/ boots • Firefighter outfit as per current Fire Safety Systems Code (as applicable) • SCBA
Extinguishing media/agent must include:	• Extinguishing powder • Foam • Gaseous extinguishing agents • Water
Firefighting activities must include:	• Boundary control • Containing the spread of fire

| Firefighting tactics must include: | • Evacuation of casualties from heated smoke filled environments
• Extinguishment
• Overhaul/fire watch
• Combination of attack
• Cooling the fuels
• Direct offensive (attack team)
• Direction of attack
• Exclusion of oxygen – smothering
• Indirect defensive (fixed system)
• Interrupting the chemical chain reaction
• Removal of fuels - starvation |
| Restored must include: | • Cleaning
• Re-stowing
• Recharging according to Australian Standards
• Servicing |

Unit Sector(s)

Not applicable.

Competency Field

Operational Quality and Safety