



Australian Government

MARF008 Prevent and fight fires on board a vessel

Release: 2

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Modification History

Release 2. ISC upgrade. KE amended to better align with the STCW and working effectively as part of a team included in KE and PE.

Release 1. New unit of competency.

Application

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

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

This unit has links to legislative and certification requirements.

Pre-requisite Unit

Not applicable.

Competency Field

F - Operational Quality and Safety

Unit Sector

Not applicable.

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

- 1 Actively prevent fire**
- 2 Prepare response to fire**

PERFORMANCE CRITERIA

Performance criteria describe the performance needed to demonstrate achievement of the element.

- | | |
|-----|---|
| 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 |
| 2.1 | 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

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.

- | | |
|-------------------------------|---|
| Fire hazards must include: | <ul style="list-style-type: none">• accommodation• cargo areas• engine rooms• electrical distribution systems• fuel handling systems• galleys• lack of maintenance• laundry• poor housekeeping• smoking• stores areas |
| Classes of fire must include: | <ul style="list-style-type: none">• A Carbonaceous Solids• B Flammable Liquids• C Flammable Gases• D Combustible Metals• E Energised Electrical Equipment• F Cooking Oils and Fats |
| Firefighting equipment | <ul style="list-style-type: none">• hoses• fixed fitted detection and suppression systems |

- and systems must include:
- 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
 - evacuation of casualties from heated smoke filled environments
 - extinguishment
 - overhaul/fire watch
- Firefighting tactics must include:
- 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
- Restoring equipment must include:
- cleaning
 - re-stowing
 - recharging according to Australian Standards
 - servicing

Unit Mapping Information

This is a new unit. This unit is equivalent to MARF3005A Prevent and fight fires on board a vessel.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=772efb7b-4cce-47fe-9bbd-ee3b1d1eb4c2>

Assessment Requirements for MARF008 Prevent and fight fires on board a vessel

Modification History

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Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria on at least one occasion and include:

- applying extinguishing media to fire
- applying safe working practices at all times
- assisting in the setting up and use of foam making equipment
- correctly donning and using self contained breathing apparatus (SCBA) while undertaking fire extinguishment and rescue in a heated smoke filled compartment
- entering and moving through a compartment filled with high expansion foam with the aid of a lifeline and without breathing apparatus
- extinguishing a fire with a fire blanket
- logging SCBA wearers correctly on a control board
- operating charged hose-lines and nozzles
- operating portable firefighting extinguishers
- performing after-use maintenance on SCBA
- working effectively with team members when responding to a fire.

Knowledge Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria and include knowledge of:

- 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
- need for constant vigilance
- onboard Emergency Response Organisation and procedures
- own ability and limits
- portable fire extinguishers
- purpose, function and location of fixed installations/systems
- principles and methods of fire extinguishment
- principles underlying the spread of fire
- relevant Australian Standards
- role and responsibility of self and team members
- 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

Assessment Conditions

Assessors must satisfy National Vocational Education and Training Regulator (NVR)/Australian Quality Training Framework (AQTF) assessor requirements.

Assessment must occur in workplace operational situations where it is appropriate to do so; where this is not appropriate, assessment must occur in simulated workplace operational situations that reflect workplace conditions.

Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

Resources for assessment must include access to:

- tools, equipment, machinery, materials and personal protective equipment currently used in industry

- applicable documentation such as legislation, regulations, codes of practice, workplace procedures and operational manuals
- range of relevant exercises, case studies and/or simulations.

Links

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<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=772efb7b-4cce-47fe-9bbd-ee3b1d1eb4c2>