



Australian Government

MARF011 Manage firefighting and fire prevention activities on board a vessel

Release: 1

MARF011 Manage firefighting and fire prevention activities on board a vessel

Modification History

Release 1. New unit of competency.

Application

This unit involves the skills and knowledge required to manage firefighting and fire prevention activities on board a vessel.

This unit applies to deck and engine officers who are required by Marine Order 3 to be in charge of firefighting activities on board a vessel.

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 describe the essential outcomes.

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

1 Manage fire prevention activities

- 1.1 Hazards including dangerous goods on board a vessel are identified and appropriate action is implemented as determined by industry standard documentation
- 1.2 Legislative requirements and current industry standards relating to the maintenance and operation of fire detection, firefighting equipment and systems on board are met and complied with
- 1.3 Inductions or other educational activities are organised to ensure awareness of causal factors of on-board fires, prevention methods and standard operating procedures when fire alarms are activated

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| 2 Plan for fire emergencies | <ul style="list-style-type: none">2.1 Vessel fire control plan is consulted to review and develop appropriate response to any fire2.2 Contingencies are anticipated, planned for and practised2.3 Evacuations are prepared for and practised according to regulatory requirements2.4 Roles/functions of command and firefighting team members, as related to fire prevention and suppression, are established and reviewed according to regulatory and organisational requirements2.5 Firefighting training exercises are developed and implemented according to regulatory and organisational requirements2.6 Training exercises are prepared, practised and debriefed according to regulatory and organisational requirements, to ensure readiness for any fire emergency |
| 3 Coordinate tactical firefighting activities in response to a fire emergency | <ul style="list-style-type: none">3.1 Gathering of full and accurate information on the nature and extent of the fire by the command team is overseen3.2 Order of priority and sequence of actions appropriate to the requirements of the incident is determined and communicated to the responding crew clearly and accurately3.3 Evacuation of personnel, if appropriate, is conducted according to regulatory requirements3.4 Search and rescue operations are conducted using established marine firefighting best practice3.5 Controlled ventilation techniques are correctly applied during fire suppression and rescue operations3.6 Treatment of injured personnel is timely and according to current best casualty management practice3.7 Operational tactics are monitored for their effectiveness and adjusted when required to ensure best outcomes3.8 Operational tactics are monitored to ensure vessel stability and integrity is maintained3.9 All shore-side involvement in an on-board fire emergency is coordinated and monitored effectively |

4 Manage post fire activities

- 4.1 Fire watch is coordinated to prevent re-ignition
- 4.2 Fire affected area is secured prior to investigation according to regulatory and organisational requirements
- 4.3 Equipment is restored to operational condition where applicable
- 4.4 Cause of the fire is investigated and determined according to regulatory and organisational requirements
- 4.5 Incident reports are completed according to regulatory and organisational requirements

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.

Hazards must include:

- contents of adjacent spaces
- dangerous goods
- electricity and wiring systems
- flammable or explosive atmospheres
- oxygen deficiency or enrichment
- physical obstructions
- poor visibility
- restricted access
- toxic liquids, solids, gases, vapours and dusts

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- Fire detection, firefighting equipment and systems include one or more of the following:
 - common on board suppression systems
 - hoses and nozzles
 - pumps
 - rescue equipment
 - self contained breathing apparatus (SCBA)
 - thermal and smoke detectors
- Fire control plan must include:
 - applications of the BC Code
 - applications of the International Maritime Dangerous Goods (IMDG) Code
 - communication strategy
 - contingency plans for fires involving hazardous materials
 - evacuation plan
 - handling and treatment of injured personnel
 - hazard control strategies
 - search and rescue operations
 - strategies for liaison with shore-based agencies (such as environmental protection agencies, fire services, medical teams, port authorities)
 - strategies for shipboard firefighting management in port
 - tactical methods for fighting fires involving hazardous materials
 - tactical plan of action
- Contingencies include one or more of the following:
 - change in fire behaviour or extent
 - equipment failure or unavailability
 - unexpected personnel involvement
- Restored must include:
 - after use, maintaining SCBA to industry standards
 - cleaning
 - recharging extinguishers according to Australian Standards
 - re-stowing
 - servicing

Unit Mapping Information

This is a new unit. This unit is equivalent to MARF4001A Manage firefighting and fire prevention activities 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 MARF011 Manage firefighting and fire prevention activities on board a vessel

Modification History

Release 1. New unit of competency.

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:

- communicating effectively with crew and passengers during fire emergencies
- determining the type and extent of the fire and initiating appropriate, timely, actions
- ensuring order of priority, timing and sequence of actions are appropriate to the overall requirements of the incident and minimise damage and potential damage to the vessel, injuries to personnel, and impairment of the operational effectiveness of the vessel
- evaluating effectiveness of firefighting activities and tactics during fire emergencies
- initiating appropriate action and providing solutions to problems with firefighting equipment and operations during fire emergencies
- liaising with shore-based emergency organisations during fire emergencies
- managing fire prevention and suppression activities on a vessel
- managing on-board firefighting training for shipboard firefighting teams
- managing shipboard firefighting teams and their tactical activities during fire emergencies
- managing the maintenance of firefighting equipment and systems
- providing leadership to shipboard personnel and passengers during fire emergencies
- recognising and interpreting fire alarms and initiating appropriate response
- safeguarding personal safety during fire control activities at all times
- taking actions to control fires based on a full and accurate assessment of the incident, using all available sources of information
- transmitting information promptly, accurately, completely and clearly.

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:

- assessment of cause of incidents involving fire
- chemistry of fire and its relationship to combustible materials typically found on vessels
- communication and coordination during firefighting operations
- composition and allocation of personnel to fire parties
- control of fuel and electrical systems
- different classes of fire and the most appropriate extinguishing agents, application equipment and methods of extinguishment for each

- fire-detection systems: fixed fire-extinguishing systems; portable and mobile fire-extinguishing systems, including appliances, pumps and rescue, salvage, life-support, personal protective and communication equipment
- fire precautions and hazards associated with the storage and handling of materials (paints etc.)
- firefighting procedures at sea and in port, with particular emphasis on organisation, tactics and command
- firefighting process hazards (dry distillation, chemical reactions, boiler uptake fires etc.)
- firefighting involving dangerous goods
- implications of shipboard firefighting management in port and the procedures that must be followed to comply with port and state regulations
- importance of maintenance of fire detection and firefighting equipment on board vessels
- life and health risks associated with fires on vessels
- management and control of injured persons
- maritime communication techniques applicable to the management of fire prevention and firefighting activities on board a vessel
- methods for checking and replacing consumable materials in fire detection, fire-fighting equipment and systems on board vessels
- preparation of contingency plans
- principle of operation of fixed fire suppression systems
- principles underlying the spread of fire and its extinguishment
- problems likely to be encountered during the management of a shipboard fire and related tactics and solutions that can be applied
- procedure for safe activation of fixed firefighting systems
- procedures for coordination of shore-based firefighters
- relevant regulations, codes of practice, policies and procedures relating to the maintenance of fire detection, firefighting equipment and systems on board vessels
- requirements for on-board firefighting training
- requirements for statutory and classification surveys
- safety data sheets/material safety data sheets relevant to the various products and substances carried on vessels
- strategies and tactics for control of fires in various parts of the vessel
- strategies for rapid briefing of shore-based emergency organisations using the vessel fire control plan
- types of fire detection, firefighting equipment and systems used on vessels, their features, principles of operation, the procedures for their use and remediating problems that can occur during use
- typical actions of passengers in a shipboard fire
- use of water for fire extinguishing, the effect on ship stability, precautions and corrective procedures
- ventilation control, including smoke extraction
- work health and safety (WHS)/occupational health and safety (OHS) requirements and safe 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.

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