



Australian Government

Department of Education, Employment and Workplace Relations

TDMMF5302A Fight and extinguish fires on board a small vessel

Release: 1

Modification History

Not Available

INTRODUCTION

Field MF

Operational Quality and Safety

Unit Descriptor

This unit involves the skills and knowledge required to fight and extinguish fires onboard a commercial vessel, including operating portable fire-fighting equipment, recharging portable fire extinguishers and carrying out fire-fighting operations. The unit is consistent with the related functional standard in Table A VI/1-2 of the STCW 95 Code, AMSA Marine Orders Part 3, Issue 5, Appendix 4, and the NSCV/Australian USL Code. It forms part of mandatory minimum requirements for familiarization and basic safety competence required for all seafarers.

ELEMENT

PERFORMANCE CRITERIA

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| 1. Operate portable fire- fighting equipment | <ul style="list-style-type: none"> a. A, B, C, D, E and F classes of fires are correctly identified in accordance with accepted fire-fighting practice b. Correct portable fire-fighting equipment is selected and used to fight specific classes of fires c. Class F fires are correctly extinguished with a fire blanket in accordance with accepted fire-fighting practice d. Correct techniques are applied for the use of hose lines to extinguish fires on board a vessel e. Where applicable, correct techniques are applied for the setting up of foam making equipment to extinguish B Class fires on board a vessel |
| 2. Recharge portable fire extinguishers (where applicable) | <ul style="list-style-type: none"> a. Where applicable, correct techniques are used to recharge the various types of portable fire extinguisher b. Portable fire-fighting equipment is confirmed as operational following recharging |
| 3. Carry out fire-fighting operations | <ul style="list-style-type: none"> a. Correct procedures and techniques are followed when fighting fires in simulated or real fire emergencies b. Safety clothing, appliances and equipment are appropriate to the nature of the fire-fighting operations c. Extinguishment of a fire is achieved using appropriate procedures, techniques, equipment and fire- fighting agents d. Correct portable fire-extinguisher(s) are selected and used for the class of fire involved in a fire emergency |

- e. Appropriate safety precautions and procedures are applied when fighting fires in accordance with regulatory requirements, vessel's procedures and established fire-fighting practice
- f. The timing and sequence of individual actions when fighting fires onboard a vessel are appropriate to the prevailing circumstances and conditions
- g. Upper deck and below deck fires are extinguished using appropriate fire fighting equipment and procedures as a member of a fire-fighting team in accordance with accepted fire-fighting practice
- h. Lifeline signals are correctly used during interior fire-fighting operations
- i. A compartment filled with high expansion foam is correctly entered as per accepted fire-fighting practice

RANGE STATEMENT

FIGHT AND EXTINGUISH FIRES ON BOARD A SMALL VESSEL

1. General context
 - a. Work must be carried out in compliance with the relevant maritime regulations.
 - b. Work is performed as a member of a team within defined fire-fighting situations, with some responsibility for self and others in achieving the prescribed outcomes.
 - c. Work involves the application of prescribed principles and practice to the prevention and fighting of fires on board a vessel. Participation as a member of a fire-fighting team is involved.
 - d. Work requires some judgement and teamwork in the execution of prescribed procedures for the fighting of fires that may occur onboard a vessel.

2. Worksite environment
 - a. Vessel may include any Australian or international commercial vessel
 - b. Fires on board a vessel may occur:
 - by day or night in both normal and emergency situations
 - under any possible conditions of weather and loading
 - b.3. while underway
 - during berthing and unberthing operations
 - while anchoring or mooring
 - while in port
 - while moored or at anchor
 - loading or unloading
 - c. Types of fires which may occur on board a vessel include Classes A, B, C, D, E and F in the standard classification of fires
 - d. Fire-fighting equipment, appliances and systems may include:
 - portable fire extinguishers including foam, water, CO₂, dry chemical and wet foam
 - d.2. fire blankets
 - CO₂ fixed systems
 - foam installations including semi-portable and fixed systems
 - sprinkler systems
 - fire pumps (main and emergency fire pump)
 - fire hoses, hydrants, branches and international shore

connection

- e. Personal protection clothing and equipment may include:
 - firemans outfit
 - self contained breathing apparatus
 - fire-resistant clothing
 - masks
 - eye and ear protection
 - gloves
 - boots
- f. Consumable materials and items that may used in fire detection and fire fighting equipment may include:
 - Dry and wet chemicals used in fire extinguishers
 - Batteries for fire detectors

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| 3. Sources of information/documents | a. Sources of information and documentation may include: <ul style="list-style-type: none"> • relevant maritime regulations • fire-fighting and safety equipment operational and maintenance instructions and recommended procedures • instructions of relevant Maritime Authorities related to the maintenance and serviceability of ship-board fire-fighting and safety equipment and systems • |
| 4. Applicable International, Australian and State/Territory regulations and legislation | a. Applicable regulations and legislation may include: <ul style="list-style-type: none"> • IMO STCW 95 Code and Convention • relevant sections of AMSA Marine Orders a.3. the NSCV/Australian USL Code • international regulations for the maintenance of to fire-detection, fire- fighting and safety equipment and systems • relevant international, Australian and State/Territory marine and OH&S legislation |

EVIDENCE GUIDE

FIGHT AND EXTINGUISH FIRES ON BOARD A SMALL VESSEL

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| 1. Critical aspects of evidence to be considered | a. Assessment must confirm appropriate knowledge and skills to: <ul style="list-style-type: none"> • Participate in simulated on-board fire-fighting activities • Participate in search and rescue and fire-fighting teams • Implement OHS principles and policies when carrying out fire-fighting duties • Communicate effectively with others as required during fire emergencies |
| 2. Interdependent assessment of units | a. This unit of competency must be assessed in conjunction with other mandatory units that form part of a job role of any seafarer. (It is a mandatory requirement for all seagoing personnel) |
| 3. Required knowledge and skills | a. Knowledge of relevant maritime regulations |

- b. ISM Code and associated ship's Safety Management System and procedures, where relevant
- c. The chemistry of fire and its relationship to materials typically carried on vessels
- d. Principles underlying the spread of fire and its extinguishment
- e. The different classes of fire, their characteristics and strategies and equipment needed for their extinguishment
- f. Fire-fighting clothing, outfits and personal safety equipment used when fighting a fire onboard a vessel
- g. Types fire-fighting appliances, equipment and systems used on board vessels, their features, principles of operation and the procedures for their use and maintenance
- h. Fixed fire prevention and extinguishing installations used on vessels and their principles of operation i. Fire-fighting techniques, agents and precautions applicable to different classes of fire on board a vessel
- j. Maritime communication techniques applicable to fire-fighting activities onboard a vessel
- k. Typical problems that can occur with shipboard fire-fighting equipment and operations and appropriate remedial action and solutions
- l. Sources of information on shipboard fire prevention and extinguishment

4. Resource implications

- a. Access is required to opportunities to either:
 - carry out a range of suitably simulated practical and knowledge assessments that demonstrate the skills and knowledge to carry out fire fighting activities on board a vessel, and/or
 - assist in fire-fighting drills on board an operational vessel

Note:

Simulated fire-fighting assessment exercises may require access to a fire training and assessment facility capable of simulating fire-fighting activities in a marine environment. Assessments must be conducted in accordance with relevant OH&S requirements. Protective clothing must be worn in accordance with current maritime practices and Australian OHS standards. Simulated conditions should provide truly realistic simulated shipboard conditions including, where practical, conduct of activities in darkness.

5. Consistency in performance

- a. Applies underpinning knowledge and skills when:
 - implementing the implementation of fire prevention measures and procedures
 - identifying and evaluating fire fighting problems and determining appropriate courses of action
 - participating as a member of an interior search and rescue and fire-fighting team on board a vessel
 - assessing the operational capability of fire-fighting appliances, equipment and systems and taking any required maintenance or replenishment action
- b. Shows evidence of application of relevant workplace procedures including:
 - relevant maritime regulations
 - ISM Code Safety Management System procedures, where applicable
 - OHS regulations and hazard prevention policies and procedures
 - relevant manufacturer's guidelines relating to the use of fire-detection and fire-fighting equipment and systems, including instructions on equipment capability and limitations
 - on-board housekeeping practices and fire-hazard prevention measures
 - fire prevention procedures and policies

- c. Action taken promptly to report and/or rectify fire hazards and faulty fire-detection and fire-fighting, equipment and systems in accordance with established procedures
- d. Work is completed systematically with required attention to detail

6. Context for assessment

- a. Assessment of competence 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:
 - As a minimum, assessment of knowledge must be conducted through appropriate written/oral examinations
 - Appropriate practical assessment must occur:
 - at the registered training organisation, and/or
 - on an appropriate working or training vessel

KEY COMPETENCY LEVELS

Collect, Analyse & Organise Information	Communicate ideas & Information	Plan & Organise Activities	Work with Others & in Teams	Use Mathematical Ideas & Techniques	Solve Problems	Use Technology
Level 1	Level 2	Level 1	Level 3	Level 1	Level 1	Level 2