



Australian Government

MARA014 Contribute to basic operations of a ship subject to IGF Code

Release: 1

MARAO14 Contribute to basic operations of a ship subject to IGF Code

Modification History

Release 1. This is the first release of this unit of competency in the MAR Maritime Training Package.

Application

This unit involves the skills and knowledge required to contribute to safe operations of a ship subject to International Code of Safety for Ships Using Gases or Other Low-Flashpoint Fuels (IGF Code).

This unit applies to people working in the maritime industry in the capacity of:

- Chief Mate
- Deck Officers
- Engineering Officers
- Engineers
- Masters
- Ratings.

Licensing/Regulatory Information

This unit is equivalent and delivers the objectives of the following STCW provisions:

- STCW Reg V/3 (4 and 5), Code Section A-V/3 (1), Table A-V/3-1.

Legislative and regulatory requirements are applicable to this unit.

- This unit is one of the requirements to obtain Australian Maritime Safety Authority (AMSA) certification as a Chief Mate, Deck Officers, Engineering Officers, Engineers, Masters and Ratings for basic operations on ships subject to IGF Code and to meet regulatory requirements this unit must be delivered consistent with Marine Orders and with the relevant sections of the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW).
- Those regulatory requirements include STCW International Maritime Organization (IMO) model course competencies and areas of knowledge, understanding and proficiency, together with the estimated total hours required for lectures and practical exercises. Teaching staff should note that timings are suggestions only and should be adapted to suit individual groups of trainees depending on their experience, ability, equipment and staff available for training.

Pre-requisite Unit

Not applicable.

Competency Field

A – Handling Cargo and Vessel Stability

Unit Sector

Not applicable.

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

1 Contribute to safe operation of ship

2 Take precautions to prevent hazardous situation

3 Apply work health and safety (WHS)/occupational health and safety (OHS) measures

PERFORMANCE CRITERIA

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

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|------------|---|
| 1.1 | Communication with personnel is clear, concise and accurate and information is understood and acted upon |
| 1.2 | Cargo operations are planned, risk is managed and work carried out in accordance with accepted principles and procedures to ensure safety of operations and avoid pollution of the marine environment |
| 2.1 | Hazards to ship and personnel are correctly identified using safety data sheets (SDS)/material safety data sheets (MSDS) and appropriate actions are taken in accordance with workplace procedures |
| 2.2 | Hazardous situations are identified and appropriate actions are taken in accordance with workplace procedures |
| 3.1 | Procedures designed to safeguard personnel and the ship are observed at all times |
| 3.2 | Appropriate safety procedures are followed and personal protective equipment (PPE) is used correctly |
| 3.3 | First aid requirements are identified and followed in |

		accordance with SDS/MSDS, as required
4	Carry out firefighting operations	4.1 Emergency procedures are followed in the event of an emergency 4.2 Mustering signals are identified correctly and actions are taken in accordance with workplace procedures 4.3 PPE and devices are selected and are appropriate to firefighting operations 4.4 Timing and sequence of individual actions are appropriate to the prevailing circumstances and conditions 4.5 Fire is extinguished using appropriate procedures, techniques and firefighting agents
5	Respond to emergency	5.1 Type and urgency of emergency is identified correctly and in accordance with emergency procedures 5.2 Actions taken are in accordance with emergency procedures and contingency plans
6	Take precautions to prevent environmental pollution	6.1 Procedures to prevent pollution are identified and observed at all times 6.2 All required spillage, leakage and venting procedures are correctly implemented according to regulatory requirements and workplace procedures

Foundation Skills

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

Range of Conditions

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

Unit Mapping Information

This is a new unit. No equivalent unit.

Links

Companion Volume implementation guide can be found in VetNet -

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

Assessment Requirements for MARAO14 Contribute to basic operations of a ship subject to IGF Code

Modification History

Release 1. This is the first release of this unit of competency in the MAR Maritime Training Package.

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 basic knowledge of hazard controls protection against cryogenic damages
- applying fuel storage system operations
- applying hazard identification and risk control measures
- applying physical properties of fuels
- applying relevant international regulations, codes, industry guidelines and industry standards relevant to the safe operations on ships subject to International Code of Safety for Ships Using Gases or Other Low-Flashpoint Fuels (IGF Code)
- applying safety requirements and safety management systems
- correctly identifying and applying safety data sheets (SDS)/material safety data sheets (MSDS) to identify fuel characteristics on IGF ships
- following safe work practices, workplace procedures and emergency response procedures
- identifying and acting on hazardous situations
- identifying and using correct firefighting agents and methods to control and extinguish fires relevant to fuels onboard IGF ships
- identifying hazards that can arise when working with fuel systems and handling fuel
- identifying hazards and treating basic first aid incidents, as appropriate
- interpreting and applying knowledge of tanker layouts, tanker cargo features, characteristics and hazards to inform decision making
- selecting and using safety equipment and protective devices
- using gas-measuring instruments and equipment to test gas
- using personal protective equipment (PPE) and devices appropriate to an emergency situation.

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:

- awareness of function of gas measuring instruments and gas-measuring instruments, including gas testing
- basic knowledge of emergency procedures, including emergency shutdown (ESD) procedures
- emergency response procedures, including:
 - leakage
 - spillage
 - venting
- firefighting operations, including:
 - fire organisation and actions to be taken in the event of a fire
 - firefighting methods and agents to control and extinguish fires in conjunction with the different fuels
 - firefighting system operations
 - special hazards associated with fuel systems and handling
- fundamental knowledge of fuel systems and fuel storage systems subject to IGF Code, including:
 - fuels addressed in the IGF Code
 - general arrangement of fuel storage systems
 - hazard zones and areas
 - monitoring, control and safety systems onboard IGF ship
 - standard fire safety plan
 - storage of fuels onboard IGF ships, including:
 - atmospheric
 - compressed storage of fuels
 - cryogenic
 - types of fuel systems
- fundamentals of fuels and fuel storage systems operations, including:
 - atmospheric, compressed and cryogenic storage
 - basic bunkering operations
 - basic bunkering systems
 - fuel leak monitoring and detection
 - piping systems and valves
 - protection against cryogenic accidents
 - relief systems and protection screens
- fundamental knowledge of measures to be taken in the event of fuel leakage, spillage and venting of fuels, including reporting relevant information to responsible persons
- fundamental knowledge of physical properties of fuels onboard IGF ships, including:
 - properties and characteristics
 - pressure and temperature

- vapour pressure/temperature relationship
- fuel storage systems and storage systems, including:
 - atmospheric, cryogenic and compressed fuel storage
 - fire safety plan
 - general arrangement of fuel storage systems
 - hazard zones and areas
 - monitoring, control and safety systems
 - using IGF Code to identify fuels and fuel systems relevant to the IGF ship
- hazards, including:
 - corrosion
 - electrostatic
 - environmental
 - explosion
 - extremely low temperatures
 - flammability
 - fuel batch differences
 - health hazards
 - ignition
 - pressure
 - reactivity
 - sources of ignition
 - toxicity
 - vapour clouds
 - vapour leaks
- hazard risk controls, including:
 - anti-static measures
 - atmospheric control
 - emptying, inerting, drying and monitoring techniques
 - gas testing
 - inhibition
 - measures to prevent:
 - explosion
 - fire
 - ignition
- safety requirements and safety management systems
- selection and use of specialised safety equipment and protective devices, including:
 - breathing apparatus
 - protection against cryogenic damages (LNG)
 - protective clothing
 - rescue and escape equipment

- resuscitators
- segregation
- ventilation
- safe working practices and procedures in accordance with legislation and industry guidelines and personal shipboard safety, including:
 - precautions to be taken before and during repair and maintenance work
 - precautions to be taken before entering hazardous spaces and zones
 - safety measures for hot and cold work
- selection of personal protective equipment (PPE) when responding to a spillage and leakage of fuels
- using SDS/MSDS to understand fuel characteristics on IGF ships and basic first aid treatments.

Assessment Conditions

Assessors must hold credentials specified within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must satisfy the Principles of Assessment and Rules of Evidence and all regulatory requirements included within the Standards for Registered Training Organisations current at the time of assessment.

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.

Practical assessment must occur in a workplace or realistic simulated workplace, under the normal range of workplace conditions.

Simulations and scenarios may be used where situations cannot be provided in the workplace or may occur only rarely, in particular for situations relating to emergency procedures and adverse weather conditions where assessment would be unsafe, impractical or may lead to environmental damage.

Resources for assessment must include access to:

- applicable documentation, such as legislation, regulations, codes of practice, workplace procedures and operational manuals
- tools, equipment, machinery, materials and relevant personal protective equipment (PPE) currently used in industry.

Links

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