



Australian Government

MARN006 Manage cargo operations

Release: 1

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Modification History

Release 1. This is the first release of this unit of competency in the MAR Maritime Training Package Release 3.0.

Application

This unit involves the skills and knowledge required to plan and ensure safe loading, stowage, securing and care during the voyage and unloading of cargo.

This unit applies to maritime workers in the maritime industry.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Not applicable.

Competency Field

N – Seamanship

Unit Sector

Not applicable.

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

1 Develop cargo plan

PERFORMANCE CRITERIA

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

- 1.1 Cargo properties and characteristics are identified and their impact on safety, the environment and vessel operations are outlined
- 1.2 Communication is conducted with terminal personnel to establish loading and unloading arrangements
- 1.3 Information and equipment is used in planning, to ensure hull stress is kept within acceptable limits
- 1.4 Cargo plan is prepared according to legislative and organisational requirements

2 Oversee cargo operations

- 2.1 Preparations for loading are monitored according to the cargo plan and organisational procedures
- 2.2 Regulations, procedures and instructions are interpreted to ensure that cargo is correctly identified, inspected and confirmed against documentation
- 2.3 Communication is maintained with crew and terminal personnel involved in cargo loading/unloading to facilitate loading/unloading
- 2.4 Cargo operations are managed to ensure they comply with regulations, procedures and instructions
- 2.5 Vessel stability is monitored during loading/unloading operations
- 2.6 Ballast management procedures are carried out according to organisational procedures and port authority requirements
- 2.7 Action is taken in a cargo handling incident or emergency to secure the cargo and the vessel and to maintain the safety of persons involved
- 2.8 All cargo handling documentation is completed according to organisational procedures and regulatory requirements

3 Comply with legislation for dangerous cargo

- 3.1 Regulations, procedures and instructions are interpreted to ensure that dangerous cargo is correctly identified, inspected and confirmed against documentation, prior to cargo operations
- 3.2 Information regarding dangerous cargo is made readily available in an incident
- 3.3 Cargo operations are managed to ensure they comply with regulations, operational and security procedures, and cargo plan
- 3.4 Safety data sheets (SDSs)/material safety data sheets (MSDSs) are accessed and interpreted to identify relevant cargo-related hazards to vessel and to personnel
- 3.5 Procedures for safety and safety management are identified and documented
- 3.6 Hazards associated with dangerous cargo are identified and action is taken to minimise risk to personnel, cargo, vessel and the environment

- 3.7 Action is taken in a dangerous cargo handling incident or emergency to secure cargo and vessel, and to maintain the safety of persons involved
- 3.8 All documentation is completed according to organisational procedures and regulatory requirements
- 4 Manage the care of cargo during the voyage**
 - 4.1 Plan for the care of cargo during the voyage is prepared according to organisational and customer requirements, and relevant regulations
 - 4.2 Cargo care operations are managed to ensure they comply with regulations, procedures and instructions
 - 4.3 Cargo stowage and security is managed to ensure stability and stress conditions remain within safe limits at all times during the voyage
 - 4.4 Extent and frequency of cargo condition monitoring is determined appropriate to its nature and prevailing conditions
 - 4.5 Hazards associated with cargo stowage are identified and action is taken to minimise risk to personnel, cargo, vessel and the environment
 - 4.6 Unacceptable or unforeseen variations in the condition or specification of the cargo is promptly recognised and remedial action is taken immediately to safeguard the safety of the vessel and those on board
 - 4.7 All documentation is completed according to organisational procedures and regulatory requirements
- 5 Manage emergencies related to cargo**
 - 5.1 On becoming aware of emergency, initial actions are taken according to contingency plans, urgency of the situation and nature of the emergency
 - 5.2 Onboard personnel are given information and instructions clearly and accurately
 - 5.3 Procedures are implemented to combat emergency and protect persons on board
 - 5.4 Communications are established with others to facilitate the emergency response process
 - 5.5 Injured persons are provided with assistance
 - 5.6 Contact is maintained with others at all times to keep them

briefed on the emergency response process

5.7 Preparation for abandoning vessel is undertaken, if required

5.8 Cessation of emergency is communicated to appropriate personnel

6 Prevent pollution of the environment

6.1 Procedures to prevent pollution are identified and observed at all times

6.2 Measures to prevent pollution during normal and emergency situations are applied according to regulatory requirements and organisational procedures

6.3 All relevant information is immediately reported to appropriate persons when a vapour leak or cloud is detected or a malfunction has occurred that poses a risk of a vapour leak or cloud

6.4 Shore-based response personnel are promptly notified when a vapour leak or cloud occurs

7 Complete documentation related to cargo

7.1 Correct logbook entries are made relating to cargo operations and incidents according to regulatory requirements and organisational procedures

7.2 Letter of protest is completed in an incident relating to cargo operations and care

7.3 Cargo reports and documentation are completed and maintained according to regulatory requirements and organisational procedures

7.4 Independent cargo surveyor reports are received and acknowledged as required

7.5 Cargo samples are correctly documented and secured as required

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.

Cargo includes one or more of the following:

- chemicals and oils
- explosives
- general cargo, break bulk, unitised or in containers
- hazardous or dangerous goods
- heavy lifts
- liquids in portable containers
- liquefied gas
- livestock
- mineral concentrates
- refrigerated cargo
- scrap, pig iron ingots, steel coils and sheets
- solid bulk materials
- timber and deck cargo

Information and equipment includes one or more of the following:

- automatic data-based (ADB) equipment
- bulk Cargo Codes
- calculations relating to drafts, deadweight, stability, trim and stress
- cargo and lashing codes
- International Maritime Dangerous Goods (IMDG) Code
- knowledge of ballasting and deballasting procedures
- relevant Australian Maritime Safety Authority (AMSA) Marine Orders
- requirements for loading and care of various cargo types
- requirements for the carriage of grain, grain stability and timber cargo
- shipboard data including drawings, load limitations, safe working loads
- stability and trim diagrams
- stress-calculating equipment

Cargo plan includes:

- allocating cargo containers requiring refrigeration appropriate spaces
- avoiding incompatible cargo stowage
- calculations relating to stability and stress
- ensuring cargo is evenly distributed to maintain acceptable trim at all phases of the voyage
- ensuring the unloading sequence is effective
- observing regulations relating to hazardous material/dangerous goods stowage

Preparations for loading include one or more of the following:

- checking hatch covers for water tightness
- checking holds to ensure they are clean, dry and free of smell
- covering bilges with tarpaulins/wrappers before loading as required
- ensuring survey certification for all cargo handling equipment is valid and cargo record book is available for inspection
- following confined space entry procedures as required
- inspecting access arrangements in holds to ensure they are in a safe condition
- reviewing supplies of dunnage, mats and cargo securing equipment to ensure sufficient are available

Cargo handling incidents or emergencies include one or more of the following:

- cargo shift
- damaged cargo
- damaged dangerous goods and escaping cargo or fumes
- failure of cargo handling equipment, including lashings
- failure of refrigeration machinery
- fire in cargo spaces
- incorrect ventilation
- incorrectly stowed cargo
- spontaneous combustion

Cargo handling documentation includes one or more of the following:

- cargo gear register
- cargo plan
- letter of protest
- logbook
- ship/shore safety and security checklists
- stability, trim and stress records

- Cargo care operations include one or more of the following:
- checking cargo lashings
 - maintaining ventilation requirements
 - monitoring cargo temperatures liable to spontaneous combustion
 - monitoring refrigerated cargo temperatures
- Initial actions include one or more of the following:
- contact with relevant authorities and organisational personnel
 - locating fire as a result of fire, smoke or fire alarms
 - positioning vessel to minimise effects of weather and sea conditions
 - securing cargo when safe to do so

Unit Mapping Information

This unit replaces and is equivalent to MARN6001A Manage cargo operations.

Links

Companion Volume implementation guides are found in VETNet -

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