Australian Government

Assessment Requirements for MARA022 Manage loading, discharging and stowing of cargo

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.

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:

- developing effective cargo stowage plans, including:
  - cargo weight
  - correct description and stowage of hazardous and dangerous goods
  - description of cargo to be loaded
  - load/discharge port
  - segregation of non-compatible cargo
- monitoring use of cargo handling gear and equipment involved in loading, stowage, security and unloading of cargo
- using and applying instructions, regulations, procedures and information relevant to loading, stowage, security and unloading of cargo
- using stability manual and ensuring stability calculations are within appropriate parameters for proposed cargo operation.

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:

- actions to be taken in the event of cargo-related incidents or emergencies, including:
  - cargo handling gear failure
  - cargo shift
  - leakage
  - spontaneous combustion
- ballast management issues and procedures, including:
  - ballast water management plan
  - confirming that the stowage plan conforms to stability requirements at all stages of loading and discharging
  - contaminated ballast
  - failure of ballast pumps

- cargo handling documentation requirements
- design of vessel hold
- effects on cargo handling of sea conditions, wind and weather
- effects of different types of cargo operations on vessel trim and stability
- effects upon stability during loading and discharging operations, including heeling moments from gear and loads
- emergency procedures for incidents involving dangerous and hazardous cargo, including:
  - enhanced survey regime
  - safety data sheets (SDS)/material safety data sheets (MSDS)
  - monitoring of cargo stowage areas for damage, defects and corrosion, including causes and prevention
  - safe working loads
- hazardous materials/dangerous goods, including:
  - any cargo described in the International Maritime Dangerous Goods (IMDG) Code as hazardous or dangerous
  - relevant documentation
- homogeneous loading
- main stresses set up by cargo, hogging, sagging and shearing
- methods of handling various types of cargo
- methods of handling and problems related to loading, stowage, security and unloading of cargo, including:
  - bulk cargo
  - containerised cargo
  - deck cargo
  - liquid cargo
  - refrigerated cargo
  - any other material, equipment or machinery that may be safely handled and stowed on the vessel
- operational characteristics of different types of shipboard and terminal-based cargo handling equipment and facilities
- principles of cargo care for various types of cargo monitoring procedures and scheduling of inspections
- procedures for carrying out calculations involving weights, capacities, stowage factors and load densities
- regulations relating to hazardous materials/dangerous goods, including the IMDG Code
- relevant sections of applicable maritime regulations
- relevant work health and safety (WHS)/occupational health and safety (OHS) and cargo handling legislation, codes of practice, policies and procedures
- shipboard and terminal-based cargo handling equipment involved in loading, stowage, security and unloading of cargo, including:
  - cargo pumps
  - cranes

  - derricks
  - grabs
  - hooks, wires and shackles
  - slings
- standard stowage position numbering systems used on container vessels
- static and dynamic loads
- survey and inspection requirements for cargo handling equipment
- types of lashing and securing devices
- typical types and sizes of shipping containers
- use of cargo handling gear, including purchases and tackles
- usual methods of packing, loading and discharging, stowage and dunnage
- various types of cargo likely to be carried; their peculiar characteristics, liability to damage, decay or deterioration; their measurements; their hazards and problems, and appropriate preventative and remedial action and solutions
- ways of restricting vessel stress levels within permitted levels within permitted limits during loading/discharging cargo.

Assessment Conditions

Assessors must satisfy applicable regulatory requirements, which include requirements in the Standards for Registered Training Organisations current at the time of assessment.

As a minimum, assessment must satisfy applicable regulatory requirements, which include requirements in 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, 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:

- a commercial vessel greater than or equal to12 metres in length
- applicable documentation, such as legislation, regulations, codes of practice, safety management system (SMS), workplace procedures and operational manuals, including:
  - IMDG Code
  - International Maritime Solid Bulk Cargoes Code (IMSBC)
  - stability books
- tools, equipment, machinery, materials and personal protective equipment (PPE) currently used in industry.

Links

Companion Volume implementation guide can be found in VetNet - https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=772efb7b-4cce-47fe-9bbd-ee3b1d1eb4c2