



Australian Government

MARH029 Perform marine towage operations

Release: 1

MARH029 Perform marine towage operations

Modification History

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

Application

This unit contains the principles required to perform marine towage operations.

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

- Master.

Before undertaking this unit, persons will need to hold current Australian Maritime Safety Authority (AMSA) certification as a Master and have obtained:

- MARSS00033 Safety Training Certification Skill Set, or equivalent units of competency, or relevant AMSA certificate of competency,

or

- MARSS00008 Shipboard Safety Skill Set, or equivalent units of competency, or relevant AMSA certificate of competency.

Licensing/Regulatory Information

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

Pre-requisite Unit

Not applicable

Competency Field

H - Navigation

Unit Sector

Not applicable

Elements and Performance Criteria

ELEMENTS

PERFORMANCE CRITERIA

Elements describe the essential Performance criteria describe the performance needed to

outcomes.

demonstrate achievement of the element.

1 Prepare work for the prevailing working conditions

- 1.1** Weather and working conditions are constantly monitored and adjusted to allow for safe marine towage operation
- 1.2** Hazards are identified, risks are assessed, and hazard control measures are implemented
- 1.3** Marine towage plan, towing arrangements, techniques and configurations are adjusted accordingly, as required, by work conditions
- 1.4** Occurrences that may affect the safety and efficiency of operations are reported to relevant personnel in accordance with workplace procedures and safe work practices
- 1.5** Suitable personal protective equipment (PPE) is selected and used in accordance with workplace procedures and safe work practices

2 Manage set-up for marine towage operation

- 2.1** Pre-operational checks of towage equipment, gear and machinery are conducted in accordance with manufacturer specifications, workplace procedures and safe work practices
- 2.2** Equipment is operated in accordance with manufacturer specifications and workplace procedures and safe work practices
- 2.3** Towage vessel is manoeuvred into position using relevant equipment in accordance with marine towage plan, workplace procedures and safe work practices
- 2.4** Conditions that impact on marine towage operations are continually monitored and orders are issued in response to the assessment of prevailing working conditions
- 2.5** Tow gear is attached to the object to be towed in accordance with marine towage plan, manufacturer specifications and workplace procedures and safe work practices
- 2.6** Object to be moved is assessed for watertight integrity, structural integrity and the viability of the object is assessed and determined as meeting stability criteria in accordance with marine towage plan

- 2.7 Marine towage plan, securing arrangements, techniques and configurations are adjusted accordingly in response to adverse working conditions
 - 2.8 Towage equipment, gear and machinery are monitored during marine towage operations
- 3 Conduct towage plan briefing meeting**
 - 3.1 Marine towage plan is communicated accurately to crew and other individuals to ensure their understanding of the planned marine towage operation
 - 3.2 Tasks and work requirements are allocated to crew to ensure marine towage operations are carried out efficiently and effectively
 - 3.3 Crew member understanding of marine towage operations are checked to ensure responsibilities and duties are already understood
 - 3.4 Requirements to report faults or damage to machinery, equipment and gear are confirmed
- 4 Safely conduct marine towage operations**
 - 4.1 Situational awareness, including danger zones and snap back zones, is maintained to ensure safety of crew at all times
 - 4.2 Communication is maintained with crew and personnel at all times in accordance with workplace procedures and safe work practices
 - 4.3 Tow is conducted in accordance with marine towage plan, workplace procedures and safe work practices
 - 4.4 Control, lengthening and shortening of working tow line is maintained at all times during the tow
 - 4.5 Vessel is towed in accordance with planned route and arrival location in accordance with marine towage plan and passage plan
 - 4.6 Working load limit (WLL) of lines and equipment are not exceeded and are maintained within acceptable limits at all times
 - 4.7 Handover and securing of tow at the arrival location is completed in accordance with workplace procedures and safe work practices
 - 4.8 Records and logs are clear, accurate and maintained in

		accordance with workplace procedures
5 Manage the tow in emergency situations	5.1	Nature of emergency is established, and initial action is taken in accordance with emergency plans
	5.2	An assessment is made of risk to personnel and vessels
	5.3	Appropriate manoeuvres are made to maintain the safety of personnel and vessels
	5.4	Communication with crew and personnel are established and maintained to facilitate the emergency response
	5.5	Safe operating limits are not exceeded and are maintained within acceptable limits at all times
6 Complete marine towage operations	6.1	Tow is delivered in accordance with on/off hire documents
	6.2	Recovery and stowage of towage equipment and gear is conducted in accordance with manufacturer instructions and marine towage operations
	6.3	Inspection of towage equipment, machinery and gear is carried out and results recorded in towage log/records in accordance with workplace procedures and safe work practices
	6.4	Malfunctions, faults, irregular performance or damage to equipment, machinery and gear are reported in accordance with workplace procedures and safe work practices
7 Prevent pollution of the environment	7.1	Procedures to prevent pollution and environmental damage are identified and observed at all times
	7.2	Measures to prevent pollution are applied according to regulatory requirements and workplace procedures and safe work practices
8 Maintain records	8.1	Required records and documentation are maintained in accordance with workplace procedures
	8.2	Records and documentation are stored in accordance with 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.

Non-essential conditions may be found in the MAR Maritime Training Package Companion Volume Implementation Guide.

Unit Mapping Information

This is a new unit. No equivalent unit.

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 MARH029 Perform marine towage operations

Modification History

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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 precautions and implementing risk control procedures in accordance with marine towage plan
- applying stability criteria for the towing vessel in accordance with marine towage plan
- communicating effectively with others
- completing relevant documentation in accordance with marine towage plan
- ensuring correct tension and balance between lines in accordance with safe working practices in accordance with workplace procedures
- instructing crew in accordance with marine towage operations and marine towage plan
- managing safety, environmental and hazard control precautions and procedures during the marine towage operation, including danger zones and snap back zones
- managing the placing lines for towing alongside, preparing and throwing of lines and preparing lines for towing alongside in accordance with workplace procedures
- modifying activities depending on operational contingencies, risk situations and environments in accordance with standard operating procedures and contingency plans
- passing and securing a towage line in accordance with workplace procedures
- undertaking towing operations in accordance with marine towage plan
- using personal protective equipment (PPE) in accordance with workplace procedures.

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:

- application of domestic and international conventions, regulations and legislation relevant to marine towage operations, including:
 - Convention of the International Regulations for Preventing Collisions at Sea (COLRegs)
 - International Convention for the Prevention of Pollution from Ships (MARPOL)
 - International Convention for the Safety of Life at Sea (SOLAS)
 - International Maritime Dangerous Goods (IMDG) Code
 - Marine Orders

- state/territory and port regulations
- survey and classifications
- contingency plans and procedures responding to emergency situations when supervising crew and conducting marine towage operations, including:
 - adverse weather conditions
 - collision
 - fire
 - girding/girting risk
 - person overboard
 - pollution
 - loss of propulsion
 - loss of steerage
 - towline failure
 - working line failure
- documentation, including:
 - contracts
 - insurance
 - surveys:
 - off-hire
 - on-hire
 - tow gear
 - towage certificates
- factors to be taken into consideration when supervising crew and conducting marine towage operations, including:
 - characteristics and features of marine towing operations, item to be manoeuvred and towing configurations
 - manning requirements and crew allocation
 - requirements of marine towage plan
 - working load limit (WLL)/safe working loads (SWL) of lines and equipment
 - vessel strong points used for emergency towing
- hazards and dangers, including:
 - collision
 - congested waters
 - environmental conditions:
 - air draft
 - current
 - displacement
 - drift of the tow
 - hydrodynamic effects
 - overhead clearances

- tidal streams
 - water depths
 - windage
- dangers, including:
 - bight of the line
 - danger zones, deck space and snap back zones
 - dangerous goods and cargo
 - depth of water
 - dangers of handling of towage equipment and gear
 - faulty, damaged or malfunctioning equipment and gear
 - line tension, variation in line tension and abnormalities
 - towlines including:
 - adjusting towing line
 - lengthening towing line
 - movement of tow line
 - positioning of tow line
 - selection of tow line
 - shortening towage line
 - tow line failure
 - working line failure
 - structures and cables including:
 - communication cables
 - pipelines
 - restricted sea room
 - road and rail bridges
 - subsea power cables
 - use of coupling equipment to couple and uncouple tow
- making fast the item to be moved, including the impact of:
 - current strength
 - draught
 - light
 - location
 - shape
 - size
 - weather
- obligations for personnel to use personal protective equipment (PPE) during towing operations and emergency situations, including:
 - immersion suits
 - lifebuoy
 - lifejackets

- personal locating beacons (PLB)
- portable lights
- radiocommunication equipment
- wet weather protection
- records, logs and documentation, including:
 - towage log
 - engine log
- relevant work health and safety (WHS)/occupational health and safety (OHS) and environmental protection procedures and guidelines
- risk assessment processes and procedures
- Safety Management System (SMS), including:
 - marine towage plan
 - passage plan
 - towage operation manuals
 - stability book
- WLL/SWL of lines and equipment
- towline/s, including:
 - wire ropes
 - synthetic ropes
- towage gear and equipment, including:
 - bitts including:
 - bitts for low stress tasks
 - bitts for towage
 - bridles
 - capstan
 - chafing gear
 - emergency release system
 - emergency towage rigging
 - emergency towage equipment
 - hooks
 - hydraulic systems such as shark jaws
 - rings
 - ropes
 - shackles
 - surge pendant
 - thimbles
 - towing hooks and arrangements
 - towage fittings
 - towage lines:
 - gob lines

- working lines
 - towage attachment
 - towing pendant
 - towing pins
 - towing winch brakes
 - winches
 - wires
- SMS, workplace procedures and standard operating procedures for towage operations.

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.

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 replicate workplace conditions.

Resources for assessment must include access to:

- a vessel capable of conducting marine towage operations
- applicable documentation such as legislation, regulations, codes of practice, workplace procedures and operational manuals
- tools, equipment, machinery, materials and relevant PPE currently used in industry.

Links

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