



Australian Government

Assessment Requirements for MARN018 Contribute to basic marine dredging 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.

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 separate occasion and include:

- determining relevant work health and safety (WHS)/occupational health and safety (OHS) requirements and workplace procedures, instructions, and manufacturers' specifications
- identifying the three different types of marine dredges
- participating in risk assessment in accordance with workplace procedures, instructions, and safe work practices
- reading and interpreting written information relevant to work tasks in accordance with workplace procedures
- selecting and testing appropriate communication equipment in accordance with workplace procedures
- selecting appropriate 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:

- documentation and records including:
 - dredging management plan
 - dredging permit
 - incident report
 - pre-operational checklists
 - work requirements
- environmental considerations associated with dredging including:
 - capturing/damaging marine life, flora and fauna into dredging equipment
 - contaminants in dredging materials
 - contamination of dredging material dumping site
 - discharging of pumping (dredging) materials

- impact of noise and vibration
- incorrect disposal of waste
- marine pollution
- silt plumes
- spillage
- features and characteristics of dredging works including:
 - capital dredging (new work dredging) including:
 - dredging new channels
 - reclaiming land
 - maintenance dredging including deepening and/or widening of:
 - existing channels or berths
 - pre-existing ports and harbours
- gear and equipment used for dredging operations including:
 - anchor and spud system
 - bottom doors
 - bow connection
 - cranes
 - cutter head
 - suction/drag head
 - dredge pipe
 - dredging plant
 - floating line
 - hopper (split hopper)
 - pipes
 - pneumatic gear
 - pontoon line
 - scows
 - submerge line
 - winches including suction/drag head winch
- hazards and dangers associated with dredging including:
 - adverse weather and sea conditions
 - bunker fuel and provision transfer while in operation
 - crew transfers while in operations
 - danger zones including:
 - exclusion zones
 - drop zones
 - deck and deck space including:
 - overhead hazards
 - slippery surface

- uneven surface
- equipment getting fouled with submerged objects
- faulty, damaged or malfunctioning equipment and gear including:
 - hoisting failure
 - winch failure
- movement of machinery and equipment including:
 - cranes
 - dredging arm
 - gantries
 - trunnion
 - winches
- pinch points
- restricted areas and confined spaces
- sea and weather conditions including:
 - light
 - low visibility
 - sea swell
 - tides
 - water awash on deck
 - wind
- transferring crew and provisions including bunker fuel during dredging operations
- wires and debris caught in suction/drag head including:
 - falling rocks and clay
 - flying particles
- working in proximity of HV cables, sewer pipes, moorings, buoys, high pressure oil and gas pipelines
- inspection of work area, dredging equipment and gear including pre-operational checks of gear and equipment
- maintenance, clearing and cleaning of dredging gear and equipment including methods and techniques used to remove debris from dredging equipment
- methods and techniques used to remove obstacles including use of suction/drag head winch
- operating and handling dredging equipment and gear in accordance with workplace procedures, instructions, and safe work practices
- PPE used during dredging operations and/or emergency situations, including:
 - earplugs when using pneumatic tools
 - gloves
 - lifejackets
 - lifebuoy
 - personal locating beacons (PLB)
 - portable lights

- radiocommunication equipment
 - safety goggles
 - wet weather protection
- reporting and/or rectifying hazards or safety incidents in accordance with workplace procedures, instructions and scope of own job responsibilities
- Safety Management System (SMS) including:
 - alarms and gauges
 - contingency plans
 - workplace procedures for hazards recovered in dredge gear
- types of dredges, dredging features and excavation methods used to complete dredging operations including:
 - bucket ladder dredge
 - cutter dredge
 - dipper and backhoe dredge
 - grab (clamshell) dredge
 - plain suction dredge
 - trailing suction hopper dredge
- working load limits (WLL)/safe working loads (SWL) of gear and equipment.
- workplace procedures including:
 - communicating with the bridge and chain of command
 - emergency procedures
 - environmental protection procedures
 - housekeeping procedures
 - incident reporting
 - inspection procedures for dredging gear and equipment
 - maintenance, clearing and cleaning of dredging gear and equipment
 - reporting of faulty, damaged or malfunction of equipment
 - reporting of emergencies and hazards
 - following instructions with regards to COLREG signals

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 this is not appropriate, assessment must occur in simulated workplace operational situations that replicate workplace

conditions.

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 personal protective equipment (PPE) currently used in industry.

Links

Companion Volume Implementation Guides are found in VETNet -

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