



Australian Government

Assessment Requirements for MARA005 Maintain vessel stability

Release: 2

Assessment Requirements for MARA005 Maintain vessel stability

Modification History

Release 2. Application, Elements and Performance Criteria and other minor edits were corrected to include relevant information.

Release 1. New unit of competency.

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 knowledge of stability, trim and stress tables, diagrams and stress calculating equipment
- carrying out calculations required when determining vessel stability and trim
- managing the loading and weight distribution of a vessel to ensure assigned load line conditions are not exceeded
- managing vessel stability in a range of conditions
- reading and interpreting vessel specifications and design drawings
- recognising problems affecting vessel stability and trim.

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:

- calculation of vessels stability using the inclining experiment
- effects of angle of loll
- effects of beam and form coefficient on the stability of a vessel
- effects of density of sea water on the draught and freeboard of a vessel
- effects of free surface on the stability of a vessel
- features of the load-line and draught marks of a vessel and methods for performing related calculations
- fundamental actions to be taken in the event of partial loss of intact buoyancy
- fundamentals of watertight integrity
- principal stresses that act on the structure of a vessel
- principal structural members of a vessel and the proper names for various parts
- problems related to the control of trim, stability and stresses of vessels and appropriate action and solutions
- sections of the International Maritime Organization (IMO), Standards of Training, Certification & Watchkeeping (STCW) and Australian Maritime Safety Authority (AMSA) Marine Orders related to intact stability criteria
- stability, trim and stress tables, diagrams and stress calculating equipment

- theory and calculations of vessel stability and dynamics
- use of computer programs in calculating stability
- work health and safety (WHS)/occupational health and safety (OHS) requirements and work practices.

Assessment Conditions

Assessors must satisfy National Vocational Education and Training Regulator (NVR)/Australian Quality Training Framework (AQTF) assessor requirements.

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 reflect workplace conditions.

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.

Resources for assessment must include access to:

- tools, equipment, machinery, materials and personal protective equipment currently used in industry
- applicable documentation such as legislation, regulations, codes of practice, workplace procedures and operational manuals
- range of relevant exercises, case studies and/or simulations.

Links

Companion Volume implementation guides are found in VETNet -

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