



Australian Government

**Assessment Requirements for MARA009
Manage stability of a vessel 500 gross
tonnage or more**

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.

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements, performance criteria and range of conditions on at least one occasion and include:

- applying International Maritime Organization (IMO) recommendations concerning vessel stability
- applying relevant work health and safety (WHS)/occupational health and safety (OHS) requirements and work practices
- attending to appropriate level of detail in recordkeeping
- determining stability and trim requirements for docking or slipping the vessel
- determining the effect on trim and stability of vessel in the event of damage to and consequent flooding of a compartment, and countermeasures to be taken
- interpreting and applying information on the fundamental principles of vessel construction and the theories and factors affecting trim and stability, and measures necessary to preserve trim and stability
- maintaining stability and stress conditions within safe limits at all times
- producing accurate and reliable documentation
- using automatic data-based equipment.

Knowledge Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements, performance criteria and range of conditions and include knowledge of:

- causes and repercussions of a heeling vessel
- effects of angle of loll including centre of buoyancy, how a ship behaves at the angle of loll, inherent dangers, corrective action and the difference between a loll and a list
- effects of density of sea water on the draught and freeboard of a vessel
- features of the load-line and draught marks of a vessel and procedures for carrying out related calculations
- fundamental principles of ship construction and the theories and factors that impact on trim and stability, and measures necessary to preserve trim and stability

- IMO recommendations concerning vessel stability
- levelling arrangements for damaged side compartments
- principle stresses that act on the structure of a vessel, including panting and pounding
- principles of parametric rolling and control methods
- principles of synchronous rolling and methods for its control
- procedures for calculating the required load distribution to achieve the desired trim
- typical problems related to the control of trim and stability for vessels of 500 gross tonnage and more
- WHS/OHS requirements and work practices.

Assessment Conditions

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

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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 or where this is not available, in an industry-approved marine operations site or simulation where managing stability of a vessel of 500 gross tonnage or more may be demonstrated.

Resources for assessment include access to:

- relevant documentation including workplace procedures, regulations, codes of practice and operation manuals
- tools, equipment, materials and personal protective equipment currently used in industry.

Performance should be demonstrated consistently over time and in a suitable range of contexts.

Links

Companion Volume implementation guides are found in VETNet -

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