



**Australian Government**

# **Assessment Requirements for MARA004 Manage vessel stability**

**Release: 1**

# Assessment Requirements for MARA004 Manage vessel stability

## Modification History

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:

- attending to appropriate level of detail in recordkeeping
- carrying out basic calculations associated with maintaining vessel stability
- managing loading and weight distribution of vessel to ensure assigned load line conditions are not exceeded
- managing stability of vessel in a range of conditions
- producing reliable documentation
- recognising problems affecting vessel stability.

## 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:

- bilging and permeability
- centroids and centre of gravity
- change of draught and trim (MCT)
- conditions of stable, neutral and unstable equilibrium and effects of disturbing vessel from upright
- construction features and stress characteristics for vessels
- density and specific gravity
- dockwater and freshwater allowance
- effects of free surface of liquids
- factors that affect the rolling period of vessel
- forces and moments
- information contained in stability data books
- loading and discharging weights
- principal stresses that act on the structure of a vessel
- principles of vessel stability
- procedures for carrying out basic calculations associated with vessel stability
- relationship between light displacement, loaded displacement and deadweight tonnage
- stability curves
- steps involved in bringing an unstable vessel to a stable condition

- tonnes per centimetre immersion (TPC)
- transverse and longitudinal dynamics
- 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>