



**Australian Government**

# **MARA004 Manage vessel stability**

**Release: 1**

## MARA004 Manage vessel stability

### Modification History

Release 1. New unit of competency.

### Application

This unit involves the skills and knowledge required to manage the dynamic factors affecting the stability of a vessel up to 80 metres.

This unit applies to people working in the capacity of Master on a range of vessels up to 80 metres.

This unit has links to legislative and certification requirements.

### Pre-requisite Unit

Not applicable.

### Competency Field

A - Handling Cargo and Vessel Stability

### Unit Sector

Not applicable.

### Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

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|------------------------------|--|
| <b>1 Calculate stability</b> | 1.1 Vessel stability data book is made available and checked for endorsement                               |
|                              | 1.2 Data is interpreted to determine safety parameters for vessel  |
|                              | 1.3 Stability is accurately calculated using data extracted from vessel stability data book                |
|                              | 1.4 Stability calculations are checked to ensure they correlate with data set out in vessel stability book |
|                              | 1.5 Miscalculations or unsafe conditions are recognised and recalculated or checked                        |
|                              | 1.6 Calculated stability data is recorded using appropriate units  |

and correct number of significant figures

- |   |  |
|---|--|
| <b>2 Control vessel stress and stability</b>      | <p>2.1 Information from vessel stability information is used to determine loading limits and displacement from draft</p> <p>2.2 Vessel weight distribution is managed to maintain stability condition within safe limits at all times and regulatory requirements are complied with under all conditions of loading</p> <p>2.3 Relevant stability information is correctly communicated to others as required</p> <p>2.4 Stability conditions of vessel are managed in adverse weather conditions</p> <p>2.5 Emergencies that may jeopardise vessel stability are recognised and appropriate action is taken</p> |
| <b>3 Maintain records of stability management</b> | <p>3.1 Data and information related to stability management is accurately recorded</p> <p>3.2 Data and information related to stability management is filed and stored according to organisational procedures</p>  |

## Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

## Range of Conditions

Specifies different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

Range is restricted to essential operating conditions and any other variables essential to the work environment.

Stability calculations must • correlation against stability book data

include:

- draft
- final height of the centre of gravity above the keel of a vessel (KG)
- trim

Loading limits include one or more of the following:

- not exceeding allowable passenger carrying capacity and distribution
- not exceeding vessel designed cargo carrying capacity
- understanding the effect of fuel, fresh water and ballast on cargo capacity

Emergencies include one or more of the following:

- cargo shift
- damaged hull
- flooding of cargo spaces

## Unit Mapping Information

This is a new unit. This unit is equivalent to MARA4002A Manage vessel stability.

## Links

Companion Volume implementation guides are found in VETNet -

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