



Australian Government
Australian Maritime Safety Authority

AMSA MO 2016/10

Marine Order 12 (Construction — subdivision and stability, machinery and electrical installations) 2016

I, Michael Kinley, Chief Executive Officer of the Australian Maritime Safety Authority, make this Order under subsection 342(1) of the *Navigation Act 2012*.

14 June 2016

Michael Kinley

Chief Executive Officer

	Page
Division 1 Preliminary	3
1 Name of Order	3
1A Commencement	3
1B Repeal of <i>Marine Order 12 (Construction — subdivision and stability, machinery and electrical installations) 2009</i>	3
2 Purpose	3
3 Power	3
4 Definitions	4
5 Interpretation	5
6 Application	5
7 Exemptions	5
8 Equivalents	6
Division 2 Construction and stability requirements	6
9 Vessels to which Chapter II-1 applies	6
10 Vessels to which Chapter II-1 does not apply	6
11 Offshore supply vessels — additional requirement	7
12 Intact stability information	7
Division 3 Other safety measures	8
13 Watertight doors	8
14 Portable plates	8
15 Openings to be kept closed at sea	9
16 Closure of cargo loading doors	9
17 Sidescuttles in spaces used for cargo	10
18 Ash-chutes, rubbish-chutes and similar fittings	10
19 Testing and periodic operation of openings	11
20 Instructions and periodic inspection	11
21 Official log-book entries	12
22 Means of access to vessels in port — construction and other requirements	12
23 Access to vessels in port — responsibility of persons boarding or disembarking	13
24 Access to vessels in port — responsibilities of master	13
Schedule 1 Regulated Australian vessels — additional requirements	15
Schedule 2 Accommodation ladders, gangways and safety nets	18

Division 1 Preliminary

1 Name of Order

This Order is *Marine Order 12 (Construction — subdivision and stability, machinery and electrical installations) 2016*.

1A Commencement

This Order commences on 1 July 2016.

1B Repeal of *Marine Order 12 (Construction — subdivision and stability, machinery and electrical installations) 2009*

Marine Order 12 (Construction — subdivision and stability, machinery and electrical installations) 2009 is repealed.

2 Purpose

This Order:

- (a) gives effect to Chapter II-1 of SOLAS other than Regulation 21; and
- (b) prescribes standards for the structure, subdivision, stability, machinery and electrical installations for:
 - (i) vessels to which Chapter II-1 of SOLAS applies; and
 - (ii) vessels to which Chapter II-1 of SOLAS does not apply; and
- (c) gives effect to the IMO's OSV Guidelines.

3 Power

- (1) The following provisions of the Navigation Act provide for this Order to be made:
 - (a) subsection 309(2) which provides that the regulations may provide for the keeping of an official logbook including prescribing the entries to be made and the time of making the entries;
 - (b) paragraphs 339(2)(a) and (b) which provide that the regulations may provide for the design and construction of vessels and for the machinery and equipment to be carried on board vessels;
 - (b) paragraph 339(2)(e) which provides that the regulations may provide for the stability of vessels, including information about, and testing of, the stability of vessels;
 - (c) paragraph 340(1)(a) which provides that the regulations may provide for giving effect to SOLAS;
 - (d) subsection 341(1) which provides that the regulations may provide for the imposition of penalties for a contravention of a provision of the regulations.
- (2) Subsection 339(1) of the Navigation Act provides for regulations to be made prescribing matters required or permitted to be prescribed, or that are necessary or convenient to be prescribed, for carrying out or giving effect to the Act.
- (3) Subsection 342(1) of the Navigation Act provides that AMSA may make a Marine Order about matters that can be provided for by regulation.

4 Definitions

In this Order:

1995 SOLAS Conference means the Conference of Contracting Governments to the International Convention for the Safety of Life at Sea, 1974 as adopted on 29 November 1995.

bulkhead deck means the uppermost continuous deck of a vessel to which all main transverse watertight bulkheads are carried.

bulwark ladder means a set of steps that allows a person to safely ascend to or safely descend from the top of a vessel's bulwark or side rail.

constructed, for a vessel, means a vessel the keel of which is laid or which is at a similar stage of construction.

Category A watertight door and **Category D watertight door** have the same meanings as they have in IMO Circular MSC.1/Circ.1380 *Guidance for watertight doors on passenger ships which may be opened during navigation*, as amended from time to time.

Chapter II-1 means Chapter II-1 of SOLAS.

IMCA means the International Maritime Contractors Association.

IS Code means the *Code on Intact Stability, 2008* adopted by IMO Resolution MSC.267(85), as in force from time to time.

Note A copy of each IMO resolution that adopts or amends this Code is available on AMSA's website at <http://www.amsa.gov.au>.

offshore supply vessel has the same meaning as in the OSV Guidelines.

OSV Guidelines means:

- (a) for a vessel constructed after 30 May 2007 — the *Guidelines for the Design and Construction of Offshore Supply Vessels, 2006* adopted by IMO Resolution MSC.235(82), as in force from time to time; or
- (b) for a vessel constructed before 31 May 2007 — the *Guidelines for the Design and Construction of Offshore Supply Vessels* adopted by IMO Resolution A.469(XII).

stability booklet means the booklet mentioned in Chapter 3 of Part B of the IS Code.

stability instrument means an instrument that comprises hardware and software and is used on board a vessel to ascertain that stability requirements mentioned in the vessel's stability booklet are met.

Note 1 A copy of each IMO resolution that adopts or amends these Guidelines is available on AMSA's website at <http://www.amsa.gov.au>.

Note 2 Some terms used in this Order are defined in *Marine Order 1 (Administration) 2013*, including:

- cargo vessel
- equivalent
- IMO
- national law
- NSCV
- SOLAS
- use (of an equivalent)

- USL Code.

Note 3 Other terms used in this Order are defined in the Navigation Act, including:

- AMSA
- inspector
- official logbook
- overseas voyage
- owner
- recognised organisation (for organisations that have been prescribed for the definition — see *Marine Order 1 (Administration) 2013*)
- regulated Australian vessel
- seafarer.

Note 4 Information on obtaining copies of any IMO Resolution, IMO document or other document that is mentioned in this Order is available from the AMSA website Marine Orders link at <http://www.amsa.gov.au>.

Note 5 For delegation of AMSA's powers under this Order — see the AMSA website at <http://www.amsa.gov.au>.

5 Interpretation

- (1) For this Order, the *Administration* is:
 - (a) for a regulated Australian vessel — AMSA; or
 - (b) for a foreign vessel — the government of the country whose flag the vessel is entitled to fly.
- (2) For this Order, a vessel is taken to have been constructed when:
 - (a) the keel is laid; or
 - (b) construction identifiable with the vessel starts and the lesser of at least 50 tonnes, or 1% of the estimated mass of all structural material, of the vessel is assembled.
- (3) A term that is used in this Order but is not defined for this Order, and is defined in SOLAS or in a code mentioned in this Order, has the same meaning as in SOLAS or the code.

6 Application

This Order applies to a vessel that is:

- (a) a regulated Australian vessel; or
- (b) a foreign vessel.

7 Exemptions

- (1) A person may apply to AMSA, in accordance with the application process set out in *Marine Order 1 (Administration) 2013*, for an exemption of a vessel from a requirement of this Order.
- (2) AMSA may give an exemption only if satisfied that:
 - (a) compliance with the requirement would be unnecessary or unreasonable having regard to the vessel, its equipment and its intended voyage; and
 - (b) giving the exemption would not contravene SOLAS.

Note *Marine Order 1 (Administration) 2013* deals with the following matters about exemptions and equivalents:

- making an application

- seeking further information about an application
- the time allowed for consideration of an application
- imposing conditions on approval of an application
- notification of a decision on an application
- review of decisions.

8 Equivalentents

- (1) A person may apply to AMSA, in accordance with the application process set out in *Marine Order 1 (Administration) 2013*, for approval to use an equivalent.
- (2) AMSA may approve use of an equivalent only if satisfied that:
 - (a) use of the equivalent would be at least as effective as compliance with the requirement to which the equivalent is an alternative; and
 - (b) approving use of the equivalent would not contravene SOLAS.

Division 2 Construction and stability requirements

9 Vessels to which Chapter II-1 applies

- (1) A vessel to which Chapter II-1 applies must:
 - (a) meet the standards for structure, subdivision, stability, machinery and electrical installations that apply to it under Chapter II-1; and
 - (b) if a regulated Australian vessel — comply with Schedule 1; and
 - (c) if a regulated Australian vessel that is a ro-ro passenger vessel — also comply with:
 - (i) the Annex to resolution 14 of the 1995 SOLAS Conference; and
 - (ii) IMO Resolution MSC.141(76), as amended from time to time.

Note for subparagraph (c)(ii) IMO Resolution MSC.141 (76) includes a Revised Model Test Method to be used instead of the model test method in the Appendix to the Annex to resolution 14 of the 1995 SOLAS Conference.

Note 1 Some provisions of Chapter II-1 apply to:

- (a) particular kinds of vessels; or
- (b) vessels constructed before, on, or after a particular time.

Note 2 For explanatory notes on the interpretation of Chapter II-1, see IMO resolution MSC.281(85).

- (2) However:
 - (a) a vessel that is surveyed and certified under a code mentioned in *Marine Order 47 (Mobile offshore drilling units) 2012* or *Marine Order 49 (High-speed craft) 2015* must instead meet the standards mentioned in the code under which it is certified; and
 - (b) an offshore supply vessel must, in addition to complying with subsection (1), comply with any requirements of Parts 2 and 3 of the OSV Guidelines that are not required by Chapter II-1.

10 Vessels to which Chapter II-1 does not apply

- (1) A regulated Australian vessel to which Chapter II-1 does not apply must meet the standards for structure, subdivision, stability, machinery and electrical installations that:
 - (a) apply to the vessel's area of operation under:

- (i) Sections 3 and 6 of Part C of the NSCV if:
 - (A) the vessel was constructed after 30 September 2008; or
 - (B) the vessel was constructed before 1 October 2008 and has been upgraded in service or is subject to initial survey; or
- (ii) for a vessel not mentioned in subparagraph (i) — sections 5 and 8 of the USL Code as in force on 30 September 2008; or
- (b) are applied by the vessel's classification society.
- (2) Subsections (3) and (4) apply to a regulated Australian vessel:
 - (a) to which Chapter II-1 does not apply; and
 - (b) that is not classified by a recognised organisation.
- (3) The indicator system of watertight doors on a vessel must comply with Subsection 6B of Part C of the NSCV, as in force from time to time, if the vessel was constructed or upgraded as mentioned in subparagraph (1)(a)(i).
- (4) A vessel's anchors, chain cables, hawsers and warps must comply with:
 - (a) for a vessel constructed or upgraded as mentioned in subparagraph (1)(a)(i) — Subsection 7D of Part C of the NSCV; or
 - (b) for a vessel not constructed or upgraded as mentioned in subparagraph (1)(a)(i) — Appendices H and I of section 13 of the USL Code as in force on 30 September 2008.
- (5) A foreign vessel to which Chapter II-1 does not apply must carry and comply with any certificate or other document issued by or on behalf of the Administration.

Note The USL Code and the NSCV are available on AMSA's website at <http://www.amsa.gov.au>.

11 Offshore supply vessels — additional requirement

- (1) A regulated Australian vessel that is an offshore supply vessel constructed after 30 May 2007 must comply with the documentation requirements mentioned in Part 8 of the OSV Guidelines.
- (2) A regulated Australian vessel that is an offshore supply vessel constructed before 31 May 2007 must have a document confirming that the vessel complies with the OSV Guidelines.

Note The following documents, as amended from time to time, offer guidance for offshore supply vessels with dynamic positioning systems:

- (a) IMO MSC/Circ.645, dated 6 June 1994, Annex, *Guidelines for Vessels with Dynamic Positioning Systems*; and
- (b) *The Training and Experience of Key DP Personnel*, IMCA, IMCA M 117 Rev.1, February 2006, noted by IMO MSC.1/Circ.738/Rev.1 as a guideline for the training of dynamic positioning system operators (available on the IMCA website at <http://www.imca-int.com>).

12 Intact stability information

- (1) The owner of a vessel must ensure that there is carried on a vessel at all times, information relating to the vessel's intact stability characteristics under different conditions of service.

Penalty: 50 penalty units.

- (2) An offence against subsection (1) is a strict liability offence.

Division 3 Other safety measures

Section 13

- (3) A person is liable to a civil penalty if the person contravenes subsection (1).
Civil penalty: 50 penalty units.
- (4) The information mentioned in subsection (1) must:
- (a) either:
 - (i) for vessels constructed before 1 July 2010 — be substantially in accordance with Appendix 2 of *Marine Orders – Part 12: Construction — Subdivision and stability, machinery and electrical installations, Issue 2* as in force on 31 December 2009; or
 - (ii) for vessels constructed after 30 June 2010 — include details for each item mentioned in paragraph 3.6.4 of Part B of the IS Code; and
 - (b) for a regulated Australian vessel — show that any inclining experiment or lightship measurement was carried out in accordance with Annex 1 of the IS Code; and
 - (c) be approved:
 - (i) for a regulated Australian vessel — by an issuing body; or
 - (ii) for a foreign vessel — by the Administration.
- (5) A stability instrument used for stability calculations must be used in accordance with Chapter 4 of Part B of the IS Code.

Division 3 Other safety measures

13 Watertight doors

- (1) The master of a vessel must ensure that, unless subsection (2) applies, all watertight doors are closed while the vessel is at sea.
Penalty: 50 penalty units.
- (2) A watertight door, other than a category A or category D watertight door, may be opened at sea if:
- (a) it is necessary for the door to be open for the working of the vessel; or
 - (b) the door is opened and closed for testing in accordance with section 19.
- Note for paragraph (a)* For guidance see IMO Circular MSC.1/Circ.1380 *Guidance for watertight doors on passenger ships which may be opened during navigation*, as in force on 1 July 2016.
- (3) The master must ensure that the area around the doorway of a watertight door is unobstructed.
Penalty: 50 penalty units.
- (4) An offence against subsection (1) or (3) is a strict liability offence.
- (5) A person is liable to a civil penalty if the person contravenes subsection (1) or (3).
Civil penalty: 50 penalty units.

14 Portable plates

- (1) The master of a vessel must ensure that, before each voyage starts, any portable plate over an opening in the internal watertight structure of a vessel is fitted.

- (2) The master of a vessel may order the removal of a portable plate when a vessel is at sea if he or she considers that the removal of the plate is an urgent necessity.
- (3) A person may remove a portable plate when a vessel is at sea only on the direct order of the master.
Penalty: 50 penalty units.
- (4) An offence against subsection (3) is a strict liability offence.
- (5) A person is liable to a civil penalty if the person contravenes subsection (3).
Civil penalty: 50 penalty units.

15 Openings to be kept closed at sea

- (1) The master of a vessel must ensure that each of the following vessel openings is closed watertight and secured before the vessel leaves each berth or anchorage:
 - (a) a watertight door in a watertight bulkhead separating cargo spaces or separating a cargo space from a passenger space;
 - (b) a watertight door that does not comply with paragraphs 5.1, 5.2, 5.3 and 6 of Regulation 13 of Chapter II-1 of SOLAS;
 - (c) a sidescuttle that is below the freeboard deck;
 - (d) a sidescuttle that is not accessible while the vessel is at sea, and its deadlights;
 - (e) a gangway port, cargo port or coaling port or similar side opening below the margin line, or below the freeboard deck in a vessel.Penalty 50 penalty units
- (2) A person must not open an opening mentioned in subsection (1) when the vessel is at sea.
Penalty: 50 penalty units.
- (3) An offence against subsection (1) or (2) is a strict liability offence.
- (4) A person is liable to a civil penalty if the person contravenes subsection (1) or (2).
Civil penalty: 50 penalty units.

16 Closure of cargo loading doors

- (1) The master of a vessel must ensure that the following doors are closed and secured before a vessel starts a voyage:
 - (a) any cargo loading door in the shell or the boundary of an enclosed superstructure;
 - (b) any bow visor fitted in the shell or the boundary of an enclosed superstructure;
 - (c) any cargo loading door in the collision bulkhead;
 - (d) any weather-tight ramp forming an alternative to a closure mentioned in paragraph (a), (b) or (c).Penalty: 50 penalty units.

- (2) A person may unlock or open a door mentioned in subsection (1) only when the vessel is at berth.
Penalty: 50 penalty units.
- (3) However, the master of the vessel may allow:
- (a) a bow or stern door to be opened when the vessel approaches a berth, or left open when the vessel leaves a berth if:
 - (i) the door cannot be opened or closed when the vessel is at berth; and
 - (ii) the door is opened or left open for the shortest amount of time necessary to allow for the operation of the door; and
 - (iii) the inner bow door is kept closed; and
 - (b) a door to be opened if:
 - (i) it is necessary for the operation of the vessel or the embarking or disembarking of a person; and
 - (ii) the vessel is at safe anchorage; and
 - (iii) he or she is satisfied that it will not impair the safety of the vessel.
- (4) The master must ensure that the opening and closing of the doors mentioned in subsection (1) is supervised by an officer.
Penalty: 50 penalty units.
- (5) An offence against subsection (1), (2) or (4) is a strict liability offence.
- (6) A person is liable to a civil penalty if the person contravenes subsection (1), (2) or (4).
Civil penalty: 50 penalty units.

17 Sidescuttles in spaces used for cargo

- (1) The master of a vessel must ensure that any sidescuttle or deadlight on an area of the vessel used for the carriage of cargo is closed, watertight and locked before the cargo is loaded.
Penalty: 50 penalty units.
- (2) A person must not unlock or open a sidescuttle or deadlight mentioned in subsection (1) until the cargo is unloaded.
Penalty: 50 penalty units.
- (3) An offence against subsection (1) or (2) is a strict liability offence.
- (4) A person is liable to a civil penalty if the person contravenes subsection (1) or (2).
Civil penalty: 50 penalty units.

18 Ash-chutes, rubbish-chutes and similar fittings

- (1) The master of a vessel must ensure that each cover and valve of any ash chute, rubbish chute or similar fitting that has an inboard opening below the margin line of the vessel is kept closed and secured when not in use.
Penalty: 50 penalty units.
- (2) An offence against subsection (1) is a strict liability offence.
- (3) A person is liable to a civil penalty if the person contravenes subsection (1).
Civil penalty: 50 penalty units.

19 Testing and periodic operation of openings

- (1) The master of a vessel must ensure that the following items fitted on the vessel are tested in accordance with subsection (2):
 - (a) a watertight door, other than one mentioned in subsection (3);
 - (b) a sidescuttle;
 - (c) the valves and closing mechanisms of a scupper;
 - (d) an ash chute;
 - (e) a rubbish chute;
 - (f) the means of communication for a door that cannot be closed from a central control station.
- (2) Each item that a Marine Order does not require to be closed when a vessel is at sea must be tested to ensure it operates correctly:
 - (a) at least once every week; and
 - (b) if the voyage is to exceed 7 days — immediately before the voyage commences; and
 - (c) for a ro-ro passenger vessel — immediately before leaving port.
Penalty: 50 penalty units.
- (3) The master of a vessel must ensure that the opening and closing operation of each watertight door fitted in a transverse watertight bulkhead that must be open for the working of the vessel is tested daily.
Penalty: 50 penalty units.
- (4) An offence against subsection (2) or (3) is a strict liability offence.
- (5) A person is liable to a civil penalty if the person contravenes subsection (2) or (3).
Civil penalty: 50 penalty units.
- (6) The master may carry out the test mentioned in subsection (3) in port before departure of the vessel.

20 Instructions and periodic inspection

- (1) The owner of a vessel must ensure that each of the following appliances and fittings are marked with instructions on how to operate them safely and effectively:
 - (a) any watertight door;
 - (b) any mechanism, indicator or warning device for a watertight door;
 - (c) the means of communication for any watertight door that cannot be closed from a central control station;
 - (d) any valve required for the operation of damage-control cross-connections or for ensuring the watertight integrity of any space within the vessel.
Penalty: 50 penalty units.
- (2) The master of a vessel must ensure that the appliances and fittings mentioned in subsection (1) are inspected at least once a week.
Penalty: 50 penalty units.
- (3) An offence against subsection (1) or (2) is a strict liability offence.

- (4) A person is liable to a civil penalty if the person contravenes subsection (1) or (2).

Civil penalty: 50 penalty units.

21 Official log-book entries

- (1) The master of a vessel must ensure that, before the start of each voyage, the following information is recorded in the official log-book:
- (a) the time of the last closing and securing of any door mentioned in subsection 16(1); and
 - (b) the time of any opening of a door mentioned in paragraph 16(3)(b).
- Penalty: 50 penalty units.
- (2) The master of a vessel must ensure that the following information is recorded in the official log-book:
- (a) the time of the first opening, after the start of the voyage, of any door mentioned in subsection 16(1);
 - (b) the time of the last closing, if any, before the vessel goes to sea, and the time of the next subsequent opening, of each of the openings mentioned in subsection 15(1).
 - (c) whether a portable plate over an opening in the internal watertight structure of the vessel is in place when the vessel proceeds to sea; and
 - (d) for a portable plate mentioned in paragraph (c) — the time of any removal or replacement while the vessel is at sea; and
 - (e) for a test or inspection mentioned in section 19 or 20:
 - (i) the time it is carried out; and
 - (ii) whether the fittings are in good working order; and
 - (iii) if they are not — the action taken to put them in good working order.
- Penalty: 50 penalty units.
- (3) An offence against subsection (1) or (2) is a strict liability offence.
- (4) A person is liable to a civil penalty if the person contravenes subsection (1) or (2).

Civil penalty: 50 penalty units.

22 Means of access to vessels in port — construction and other requirements

- (1) The means of embarkation and disembarkation for a vessel constructed after 31 December 2009 must be in accordance with:
- (a) Regulation 3-9 of Chapter II-1 and the *Guidelines for construction, installation maintenance and inspection/survey of means of embarkation and disembarkation* set out in the Annex to IMO Circular MSC.1/Circ.1331, as amended from time to time; and
 - (b) all of the following standards:
 - (i) ISO 5488:2015 *Ships and marine technology – Accommodation ladders*;
 - (ii) ISO 7061:2015 *Ships and marine technology – Aluminium shore gangways for seagoing vessels*;

(iii) ISO 7364:2016: *Ships and marine technology – Deck machinery – Accommodation ladder winches*; and

- (c) Schedule 2.
- (2) A vessel constructed before 1 January 2010 must comply with Schedule 2.
- (3) However, if an accommodation ladder, gangway or associated davit or fitting is replaced on a vessel constructed before 1 January 2010 the replaced part must comply with the requirements for that part as if the vessel was constructed after 31 December 2009.

23 Access to vessels in port — responsibility of persons boarding or disembarking

- (2) A person boarding or leaving a vessel must use the means of access provided or identified by the master.
- Penalty: 50 penalty units.
- (3) An offence against subsection (2) is a strict liability offence.
- (4) A person is liable to a civil penalty if the person contravenes subsection (2).
- Civil penalty: 50 penalty units.

24 Access to vessels in port — responsibilities of master

- (1) The master of a vessel must ensure that the vessel's means of access is as follows:
- (a) of sufficient strength to support the weight placed on it;
 - (b) clean and free of damage, degradation or wear that may affect its strength;
 - (c) secured to prevent accidental displacement;
 - (d) illuminated sufficiently for people to use it safely at night;
 - (e) clear of the path of cargo being loaded or unloaded from a vessel;
 - (f) kept clean and free of any material that could make its use unsafe;
 - (g) properly rigged and adjusted to allow for any changes in tidal levels and the vessel's trim and freeboard;
 - (h) at an angle allowing safe access to the vessel;
 - (i) firmly landed and clear of the wharf edge and other potential hazards.
- (2) A gangway may be placed on a bulwark or side rail of a vessel only if the master is satisfied that the bulwark or side rail is of sufficient strength to bear the weight of the gangway and persons using it.
- (3) A telescopic accommodation ladder may be used as a means of access only if the master is satisfied that its sections are locked together to prevent variation in length.
- (4) The master must take reasonable and practical measures, including using safety netting, to protect persons from injury caused by falling from an accommodation ladder or a gangway.
- (5) The master must ensure that safety netting is provided along the length of the accommodation ladder or gangway to protect users from falling between the ship and the quayside.

- (6) If a means of access is provided by a port authority or other person, the master must ensure that any operational action necessary to ensure the safety of users is brought to the attention of:
 - (a) the person providing access; and
 - (b) a person requiring access to or from the vessel.
- (7) If access is provided between 2 adjacent vessels, the master with the higher weather deck must ensure that the means of access between the vessels is safe.
- (8) The master must ensure that the means of passage between a vessel's deck and the upper end of a gangway resting on a bulwark or side rail of the vessel is a bulwark ladder with substantial steps and handrails.
- (9) If the master of a vessel at anchor or at a mooring considers that the use of an accommodation ladder is impracticable, the master may provide a pilot ladder as a means of access to or from the vessel if the master ensures only pilots and other persons on the business of the vessel use the ladder.
- (10) However, the master may allow another person to use the ladder in an emergency.
- (11) The master may allow a cargo access ramp to be used as a means of access to and from a vessel in the following circumstances:
 - (a) a non-slip surface is provided and marked for pedestrian use;
 - (b) the sides of the ramp have guard rails or equivalent arrangements to prevent pedestrians from falling from the ramp;
 - (c) either:
 - (i) the pedestrian area is effectively and protectively separated from the vehicular area; or
 - (ii) pedestrians are permitted to use the ramp only when the ramp is not in use by vehicles.
- (12) The master must ensure that a safety net:
 - (a) is secured in position at each corner, and at intermediate points if required, by secured lengths of framing rope; and
 - (b) has the corners of its mesh secured to prevent movement.

Schedule 1 Regulated Australian vessels — additional requirements

(paragraph 9(1)(b))

1.1 Openings in watertight bulkheads

- (1) A cargo vessel must comply with paragraphs 13.2.3, 13.3, 13.4, 13.5.2, 13.5.3, 13.8.2, 13.8.3, and 13.9.1 of Regulation 13 of Chapter II-1 of SOLAS.
- (2) However, for a vessel that is classified by a recognised organisation, AMSA may accept arrangements that comply with IACS Unified Interpretation *Doors in Watertight bulkheads of cargo ships and Passenger Ships*, IACS UI SC 156 (June 2002), as amended from time to time.

Note This IACS Interpretation is available from the International Association of Classification Societies Ltd website at <http://www.iacs.org.uk>.

1.2 Fire precaution

All cargo vessels must comply with paragraph 2 of Regulation 47 of Chapter II-1.

1.3 Periodic unattending of machinery spaces in passenger vessels (SOLAS Regulation II-1/54)

- (1) The owner of a passenger vessel may apply to AMSA, in accordance with the application process set out in *Marine Order 1 (Administration) 2013*, for approval for a machinery space to be left unattended periodically.
- (2) AMSA may:
 - (a) approve the application; and
 - (b) impose conditions on the approval.

1.4 Lifts

A lift on a vessel must comply with AS 1735.1:2003 and AS 1735.1:2003/Amdt 1 – 2006 *Lifts, escalators and moving walks – General requirements*, and ISO 8383:1985 *Lifts on ships – Specific requirements* or equivalent standards accepted by AMSA.

Note Information on obtaining copies of these standards is available from the AMSA website Marine Orders link at <http://www.amsa.gov.au>.

1.5 Machinery space cranes and other lifting gear

A vessel that is not classified by a recognised organisation must comply with standards for machinery space cranes and other lifting gear that are equivalent to those used by recognised organisations.

1.6 Conduct of inclining experiment

Heeling

- (1) If heeling is achieved by the transfer of liquid in accordance with paragraph 2.3.4 of Annex 1 of the IS Code, details of arrangements for the transfer of liquids and the recording system to be used must be given to AMSA at least 2 weeks before the experiment.

- (2) If this method is used:
- (a) the tanks must be fully calibrated over the full range of soundings to be used during the experiment; and
 - (b) the weight, transverse, vertical and longitudinal positions of the centre of gravity and the free surface moments of the contents must be accurately established taking account of the trim and heel of the vessel at inclining; and
 - (c) the density of the liquid used for the heeling of the vessel must be determined using a hydrometer calibrated:
 - (i) if it is made of metal — within the preceding 2 years; or
 - (ii) if it is made of glass — within the preceding 5 years; and
 - (d) the way that liquid is transferred from one tank to the other must be simple and direct so that the transfer is done in a reasonable time and with minimum leakage; and
 - (e) the transfer system must be purged to ensure that the system is working satisfactorily before the inclining experiment is started; and
 - (f) a calibrated sight board must be set up in each tank to measure the liquid level;
 - (g) the sight boards must be accessible and adequately lit so that accurate liquid level readings can be taken; and

Note for paragraph (f) The work of calculation is reduced and the accuracy increased if the sight boards are placed at the intersection of the longitudinal and transverse centres of the liquid surfaces. Therefore, in a rectangular tank, the preferred position of the sight board is at the vertical axis of the tank.

- (3) The owner of a vessel may apply to AMSA in writing for approval to use sounding tubes for measuring the liquid level in a tank, if sight boards do not enable an accurate measurement.

Results of inclining

- (4) For subclauses (5) to (8):
- (a) *w* means weight
d means distance
x means pendulum deflection; and
 - (b) GM means the initial transverse metacentric height when one or more tank is slack, commonly known as the metacentric height.
- (5) In addition to the requirements of section 4.3 of Annex 1 to the IS Code, the following procedures must be applied to the results of the inclining:
- (a) for each pendulum, the ratio of applied heeling moment to the pendulum deflection ($w.d/x$) must be calculated and recorded;
 - (b) if any individual $w.d/x$ value deviates by more than 5% from the average ratio for that pendulum, the following must be checked and rectified if possible and appropriate:
 - (i) that the vessel is still clear of the berth and that the moorings are still slack;
 - (ii) the pendulum readings, making sure that the pendulums are free to swing;

-
- (iii) the value of the weight last moved and the distance through which it was moved;
 - (iv) that nothing aboard the vessel has moved due to heeling; and
 - (v) that the vessel is not aground.

Note A running average w.d/x ratio computed during the conduct of the inclination is often a good early indicator that there is a problem.

- (6) An inclining experiment must be discontinued if it is found that:
 - (a) the pendulum readings of the vessel in the upright position are erratic; or
 - (b) the pendulum deflexions are greater than expected; or
 - (c) there is an inconsistency in the values of the pendulum deflexions for equal weight movements in opposite directions; or
 - (d) the vessel appears to have an unexplained initial list that cannot be corrected.
- (7) If an inclining experiment is discontinued for any of these reasons, AMSA must be notified.
- (8) If none of the circumstances in subclause (6) exist and the reason for a w.d/x ratio deviation cannot be identified:
 - (a) w.d/x ratios must be converted into values of measured GM; and
 - (b) the as inclined GM value for the vessel is the lower bound of a 95% confidence interval of the Normal statistical distribution of those measured GM values.

Schedule 2 Accommodation ladders, gangways and safety nets

(paragraph 22(1)(c), subsection 22(2))

1.1 Accommodation ladders

- (1) An accommodation ladder:
 - (a) may be single-flight, multi-flight or telescopic; and
 - (b) if it is multi-flight — must have any intermediate platforms self-levelling and supported so that it remains horizontal in use; and
 - (c) if it is telescopic — must have the means to allow the ladder sections to be locked together to prevent variation in length.
- (2) The upper end of an accommodation ladder must be hinged from a fixed or revolving platform that is secured to the vessel and supported so that it remains horizontal in use.
- (3) The lower end of an accommodation ladder must be fitted with a platform that is supported so that it remains horizontal in use.

Note It is recommended that the lower end of an accommodation ladder resting on a wharf in use, is fitted with wheels or rollers to enable free movement.
- (4) The sides of every platform, except access openings, must be fenced in accordance with subclause (7).
- (5) The treads of an accommodation ladder must:
 - (a) be at least 550 mm in clear width; and
 - (b) have a non-slip surface of a depth that avoids clogging; and
 - (c) be equally spaced so that the ladder may be easily used; and
 - (d) subject to paragraph (b) — be of a shape and design that gives a person using it a flat or curved surface to step on.
- (6) If a vessel constructed before 25 May 1980 has an accommodation ladder with fixed flat treads and a person using it has to step on a corner edge of the tread, the ladder must be securely fitted with cleated duckboards.
- (7) An accommodation ladder must be fenced on each side of its entire length with upper and intermediate side rails.
- (8) The height of a side rail must be measured from the surface of the treads, perpendicular to the longitudinal axis of the ladder.
- (9) Side rails must not be more than 0.61 m apart and the upper rail must be at a height of at least 1.07 m.
- (10) However, for a foreign vessel, an inspector may allow the use of a side rail that does not comply with subclause (9) if the inspector considers that it provides adequate protection.
- (11) A side rail may be a fixed rail or a taut rope or chain and must be supported by stanchions spaced not more than 2 m apart.
- (12) Any covering material used on a rope or chain must be removable to allow inspection of the condition of the rope or chain.

1.2 Gangways

- (1) A gangway must:
 - (a) have a closely boarded walkway, at least 550 mm in clear width, that is fitted with transverse treads at suitable and equally spaced intervals; and
 - (b) be fenced on each side of its entire length with upper and intermediate side rails that comply with clause 1.1; and
 - (c) if a derrick or crane is needed to position or stow it —have lifting attachments that balance it while it is freely suspended.
- (2) The upper end of a gangway must be fitted with suitable means to secure it effectively to a vessel.
- (3) The lower end of a gangway must be fitted with wheels or rollers to ensure free movement when resting on a wharf.

1.3 Safety nets

A safety net must:

- (a) be long and wide enough to provide adequate protection, given the length and width of accommodation ladders and gangways on the vessel; and
- (b) have apertures of its mesh not more than 190 mm, measured between opposite knots when the mesh is hung or cut to make it square mesh; and
- (c) be made of framing rope and netting, of at least 400 kgwt and 125 kgwt breaking strain and resistant to actinic degradation.

Note

1. All legislative instruments and compilations of legislative instruments are registered on the Federal Register of Legislation under the *Legislation Act 2003*. See <https://www.legislation.gov.au>.