



# *MARINE ORDERS*

## *Part 21*

### *Safety of navigation and Emergency procedures*

#### *Issue 4*

Order No 7 of 2002

Pursuant to Section 425(1AA) of the *Navigation Act 1912*, I hereby make this Order repealing:

- (a) Marine Orders, Part 21, Issue 3;
- (b) Marine Orders, Part 23, Issue 2; and
- (c) Marine Orders, Part 29, Issue 2,

and issuing the attached Marine Orders, Part 21, Issue 4, to come into operation on 1 July 2002.

Roger Timms  
Acting Chief Executive Officer  
21 June 2002

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### *Previous issues*

#### Part 21

Issue 1, Order No.16 of 1983

Issue 2, Order No.7 of 1995

—Amended by Order No.4 of 1996

Issue 3, Order No.17 of 1999

#### Part 23

Issue 1, Order No.15 of 1983

—Amended by Order No.4 of 1987

—Amended by Order No.4 of 1989

Issue 2, Order No.4 of 1994

—Amended by Order No.6 of 1996

#### Part 29

Issue 1, Order No.21 of 1983

—Amended by Order No.4 of 1990

Issue 2, Order No.11 of 1997

—Amended by Order No.11 of 1998

—Amended by Order No.4 of 1999

## 1 Purpose of this Part

**1.1** Section 191 of the *Navigation Act 1912* provides for regulations to make provision for or in relation to giving effect to the Safety Convention.

**1.2** Section 229 of the *Navigation Act 1912* provides for regulations to make provision for or in relation to signals of distress and urgency.

**1.3** Section 232 of the *Navigation Act 1912* provides for regulations to make provision for or in relation to the equipping of ships with compasses and the examination and adjustment of compasses on ships.

**1.4** Subsection 235 of the *Navigation Act 1912* provides for regulations to prescribe requirements for carrying out musters, boat drills, fire drills, collision drills and other prescribed drills, and for recording them in the official log-book.

**1.5** Subsection 269A(1) of the *Navigation Act 1912* provides for regulations to prescribe matters for and in relation to the sending of safety signals and messages.

**1.6** Paragraph 425(1)(db) of the *Navigation Act 1912* provides for the regulations to prescribe matters providing for and in relation to the safe navigation and operation of ships.

**1.7** Paragraph 425(1)(e) of the *Navigation Act 1912* provides for the regulations to prescribe matters providing for and in relation to the safety of persons, including pilots, going on or coming from, or on board, ships.

**1.8** Subsection 425(1AA) of the *Navigation Act 1912* provides that AMSA may make orders with respect to any matter for or in relation to which provision may be made by regulation. This Part of Marine Orders therefore gives effect to Regulations 14 to 21 and 23 to 35 of Chapter V of the Safety Convention and prescribes matters for the purposes of those provisions of the *Navigation Act 1912* referred to in 1.2 to 1.7.

## 2 Definitions of words and phrases used in this Part

**AMSA** means the Australian Maritime Safety Authority established by the *Australian Maritime Safety Authority Act 1990*;

**approved** means:

- in relation to a ship registered in Australia—except in 11.4, approved by the Chief Marine Surveyor or a survey authority;

- in relation to a ship other than a ship registered in Australia, approved by the administration of the country of registry of the ship;

**certificated person** means a person who holds:

- a certificate of proficiency in survival craft and rescue boats other than fast rescue boats issued in accordance with the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978, as amended; or
- a certificate recognised by the Manager as equivalent to such a certificate;

**Chapter V of SOLAS** means Chapter V of SOLAS as adopted by IMO Resolution MSC.99(73);

**Chief Marine Surveyor** means the person occupying the position of Manager, Ship Inspections, in AMSA or, in respect of any particular purpose under this Part, a suitably qualified person authorised by the Manager, Ship Inspections, for that purpose;

**closing appliance** means a door or other closing device designed to prevent, when closed and secured, the entry of water into a ship through a cargo port or similar opening in the bow, stern, side or superstructure of the ship;

**coast radio station** means a radio installation established on land for the exchange of radio communications with ships;

**DSC** means transmission of information using digital codes on any of the frequencies specified in A.2 of Appendix 1 of Marine Orders, Part 27 (Radio equipment);

**EPIRB** means an approved emergency position indicating radio beacon;

**General Manager** means the person occupying the position of General Manager, Maritime Operations, in AMSA;

**IMO** means the International Maritime Organization;

**ITU-R** means the International Telecommunications Union—Sector R;

**licensed compass adjuster** means a person who:

- holds a Licence as Compass Adjuster issued under 11.4.2; or
- holds a qualification determined by the Manager under 11.4.3 as being equivalent to a Licence as Compass Adjuster issued under 11.4.2;

**Manager** means the person occupying the position of Manager, Ship Operations and Qualifications, in AMSA, or in respect of any particular purpose under this Part, a suitably qualified person authorised by the Manager, Ship Operations and Qualifications, for that purpose;

**penal provision** means a penal provision for the purposes of Regulation 4 of the Navigation (Orders) Regulations;<sup>1</sup>

**radio station** means a ship radio station or a coast radio station;

**satellite communication** means transmission of information through the INMARSAT geostationary satellite service;

**Senior SARO Maritime** means the Senior Search and Rescue Officer Maritime of the Australian Search and Rescue Centre;

**ship radio station** means a radio installation on board a ship;

**signal station** means a signal station established on land for the exchange of visual communication with ships;

**silence periods** means periods of 3 minutes beginning at each hour, and at 30 minutes after each hour of each day reckoned according to Co-ordinated Universal Time;

**SOLAS** means the Safety Convention as defined in the *Navigation Act 1912*;

**survey authority** means a survey authority approved for the purposes of the *Navigation Act 1912*<sup>2</sup>;

**survival craft** means an approved life-raft or lifeboat complying with Appendix 3 of Marine Orders, Part 25;

**survival manual** means a copy of the book *Survival at Sea*, published by the Australian Government Publishing Service;

**tanker** means a cargo ship constructed or adapted for the carriage in bulk of liquid cargoes of a flammable nature;

**telescopic accommodation ladder** means an accommodation ladder made in 2 or more parts that slide longitudinally together or apart to vary its length;

**UTC** means Coordinated Universal Time;

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<sup>1</sup> Regulation 4 of the Navigation (Orders) Regulations provides that a person who contravenes a provision of an order made under subsection 425(1AA) of the *Navigation Act 1912* that is expressed to be a penal provision is guilty of an offence and is punishable, upon conviction:—

(a) if the offender is a natural person—by a fine not exceeding \$2,000; or

(b) if the offender is a body corporate—by a fine not exceeding \$5,000.

By virtue of sections 4AB and 4AA of the *Crimes Act 1914*, these penalties are now \$2,200 and \$5,500 respectively.

<sup>2</sup> The following survey authorities are approved: American Bureau of Shipping; Bureau Veritas; Det Norske Veritas; Germanischer Lloyd; Lloyd's Register of Shipping; and Nippon Kaiji Kyokai.

**VHF EPIRB** means an approved EPIRB capable of transmitting on VHF channel 70.

### 3 Interpretation

**3.1** Unless otherwise provided, a word or phrase defined for the purposes of Chapter V of SOLAS has the same meaning for the purposes of this Part.

**3.2** The expression **to the satisfaction of the Chief Marine Surveyor**, or any similar expression appearing in this Part, means that the Chief Marine Surveyor, or a survey authority authorised by the Chief Marine Surveyor for the purpose, may require the fitting, material, appliance, apparatus or arrangement referred to, to be demonstrated to be safe and effective for its intended purpose.

**3.3** A reference to **the Administration** in Chapter V of SOLAS, an IMO resolution or document referred to in this Part is to be read as a reference to the Chief Marine Surveyor.<sup>3</sup>

**3.4** In this Part:

- headings and sub-headings are part of the Part;
- Appendices are part of the Part;
- a footnote is not part of the Part, but may provide additional information or guidance in applying the Part.

### 4 Application

**4.1** Unless otherwise provided, this Part applies to all ships on all voyages, including:

- a ship registered in Australia; and
- a ship registered in a country other than Australia, that is in the territorial sea of Australia or in waters on the landward side of the territorial sea.

**4.2** This Part, other than Provisions 31.2 and 31.3, does not apply to a Safety Convention ship registered in a country other than Australia, except to the extent that the ship fails to comply with SOLAS.

**4.3** A provision of this Part giving effect to a provision of Chapter V of SOLAS applies to all ships, including ships referred to in subsection 2(1) of the *Navigation Act 1912*, except to the extent that a law of a State or the Northern Territory gives effect to that provision of Chapter V of SOLAS in relation to that ship.

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<sup>3</sup> Copies of IMO Resolutions or other documents referred to in this Part are available from AMSA.

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## 5 Exemptions & equivalents<sup>4</sup>

### 5.1 Exemptions

The Chief Marine Surveyor, if satisfied that compliance with a provision of this Part would be unnecessary or unreasonable having regard to a ship, its equipment and its intended voyage, may exempt that ship from compliance with such provision to the extent specified and subject to such conditions as that officer thinks fit.

### 5.2 Equivalents

Where a provision of this Part requires a particular fitting, material, appliance or apparatus, or type thereof to be fitted or carried in a ship or a particular provision to be made in a ship, the Chief Marine Surveyor may allow any other fitting, material, appliance or apparatus, or type thereof, to be fitted or carried, or any other provision to be made, if that officer is satisfied that the other fitting, material, appliance or apparatus, or type thereof, or provision, is at least as effective as that required by that provision of this Part.

### 5.3 Exemptions and equivalents not to contravene SOLAS

The Chief Marine Surveyor must not give an exemption under 5.1 or allow an equivalent under 5.2 if it would contravene SOLAS.

## 6 Review of decisions

### 6.1 Internal review

**6.1.1** If the Chief Marine Surveyor or the Manager makes a decision under this Part, a person affected by the decision may apply to the General Manager for review of that decision.

**6.1.2** An application for internal review under 6.1.1 must be made in writing to the General Manager and must be accompanied by such information as the General Manager requires to enable that officer to make a proper decision.

**6.1.3** The General Manager may:

- affirm the original decision by the Chief Marine Surveyor or the Manager; or
- make any decision that could be made by the Chief Marine Surveyor or the Manager in accordance with this Part.

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<sup>4</sup> Applications for modifications or exemptions should be made to the Chief Marine Surveyor and should be accompanied by relevant information. The Chief Marine Surveyor may seek additional information to assist in reaching a decision.

## 6.2 Review by the AAT

**6.2.1** Application may be made to the Administrative Appeals Tribunal for review of a decision by the General Manager under 6.1.3.

**6.2.2** The General Manager must give his or her decision in writing within 28 days of receiving the application for internal review. The notice must include a statement to the effect that, if the person is dissatisfied with the decision, application may, subject to the *Administrative Appeals Tribunal Act 1975*, be made to the Administrative Appeals Tribunal for review of the decision. The notice must also include a statement to the effect that the person may request a statement under section 28 of that Act.

**6.2.3** Failure to comply with 6.2.2 in relation to a decision does not affect the validity of that decision.

## 7 Transitional

**7.1** An exemption or approval granted or continued, or a licence issued, under a provision of;

- Marine Orders, Part 21, Issue 3; or
- Marine Orders, Part 23, Issue 2; or
- Marine Orders, Part 29, Issue 2,

and in force immediately before this Issue of this Part came into force, is to continue in force as if granted under this Issue of this Part.

**7.2** A Licence as Compass Adjuster issued under the Navigation (Compass) Regulations and current on 31 August 1995 is deemed to be a corresponding licence issued under this Part.

## 8 Control

**8.1** The Chief Marine Surveyor or a survey authority may issue a document called a Certificate of Approval as evidence that a particular item of equipment or arrangement, or make or type of equipment, has been approved under this Part.

**8.2** A Certificate of Approval remains in force until such date as is shown on the certificate, and may be renewed for a further period if the survey authority is satisfied that the item of equipment or arrangement, or make or type of equipment, continues to comply with this Part.

**8.3** A Certificate of Approval may be revoked if the Chief Marine Surveyor or the survey authority is satisfied that the item of equipment or arrangement, or make or type of equipment, no longer complies with this Part.

## **9 Ships' manning**

*[SOLAS V/14]*

**9.1** The Manager may issue in respect of a ship a document complying with Regulation 14 of Chapter V of SOLAS as evidence of the minimum safe manning considered necessary to comply with that Regulation.<sup>5</sup>

**9.2** A safe manning document issued by the General Manager, Ship and Personnel Safety Services, in AMSA prior to 1 July 1998 and setting out minimum manning levels for the purposes of Regulation 13(a) of Chapter V of SOLAS as in force at that time has effect as though it were a document issued under 9.1.

**9.3** The working language of a ship must be established in accordance with Regulation 14 of Chapter V of SOLAS.

## **10 Principles relating to bridge design, design and arrangement of navigational systems and equipment and bridge procedures**

*[SOLAS V/15]*

Principles relating to bridge design, design and arrangements of navigational equipment, and bridge procedures must be in accordance with Regulation 15 of Chapter V of SOLAS.

## **11 Maintenance of equipment**

*[SOLAS V/16]*

### **11.1 General requirement to maintain equipment**

**11.1.1** The master of a ship must take all reasonable steps to have navigational equipment maintained in efficient working order.<sup>6</sup>

This is a penal provision

**11.1.2** The owner of a ship must ensure that appropriate spare parts and suitable tools for repairs to navigational equipment fitted on the ship are provided on the ship.

This is a penal provision

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<sup>5</sup> The Manager will only issue a safe manning document if the manning of the ship complies with IMO Resolution A.890(21), *Principles of Safe Manning*. Copies of this document are obtainable from AMSA.

<sup>6</sup> While all reasonable steps must be taken to maintain the equipment in efficient working order, malfunctions of that equipment will not in themselves be considered as making the ship unseaworthy or as a reason for delaying the ship in ports where repair facilities are not readily available.

**11.1.3** If a defect is discovered at a place where repairs cannot be effected, such repairs must be effected at the next port where suitable repair facilities are available.<sup>7</sup>

## **11.2 Instructions**

The owner of a ship must ensure that adequate information and instructions written in English (or in the case of a foreign ship, a language acceptable to the flag State of the ship) about the use and maintenance of all navigational equipment installations on the ship are provided on the ship.

This is a penal provision

## **11.3 Magnetic compass**

**11.3.1** The master of a ship over 100 gross tonnage must keep a compass deviation book in which is to be recorded the information specified in Appendix 1.

This is a penal provision

**11.3.2** The master of a ship must ensure that observations for the purpose of ascertaining compass errors are made at appropriate intervals and recorded in the compass deviation book.<sup>8</sup>

This is a penal provision

**11.3.3** The master of a ship must ensure that where the observations show the deviations to be excessive,<sup>9</sup> each magnetic compass on the ship is adjusted by a licensed compass adjuster to correct any deviation.<sup>10</sup>

This is a penal provision

**11.3.4** The master of a ship must ensure that for each magnetic compass, the tables or curve of residual deviations from the last adjustment, and details of subsequent changes in deviations, are available for use at all times.

This is a penal provision

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<sup>7</sup> The master should take the inoperative equipment or unavailable information into account in planning and executing a safe voyage to a port where repairs can take place.

<sup>8</sup> In normal circumstances, and when practicable, "appropriate intervals" means at least once on each watch or for each course steered, whichever is the more frequent.

<sup>9</sup> A master should consider deviations to be excessive if the deviation of the standard compass on any heading exceeds 5° or the difference between the standard and steering compass headings exceeds 5° on any heading.

<sup>10</sup> A master should be aware of the possibility of deviations being permanently or temporarily excessive: after a ship has been laid up for a long period; following structural alterations; following grounding; following structural damage as a result of fire; after being hit by lightning; as a result of the vessel passing areas of magnetic anomaly; or as a result of the vessel carrying cargoes of ferromagnetic materials that are magnetised or may become magnetically induced.

**11.3.5** The master of a ship must ensure that the size and position of magnets and soft iron correctors in a compass and the date and nature of any changes made to those items or to their position at any time are recorded in the compass deviation book.<sup>11</sup>

This is a penal provision

**11.3.6** On completion of an examination and adjustment of a ship's compasses under 11.3.3, the adjuster must provide the master with a table of deviations in accordance with Form MO—21/1 in Appendix 2.

**11.3.7** If, in relation to a ship:

- one or more of the requirements of 11.3.2, 11.3.3, 11.3.4 and 11.3.5 has not been complied with; and
- a surveyor has reason to believe that the compasses of the ship are, or may be, unreliable,

the surveyor may direct the master of a ship to have the ship's compasses adjusted in accordance with 11.3.3.

**11.3.8** The master of a ship must comply with a direction under 11.3.7 as soon as practicable.

This is a penal provision

## **11.4 Licence as Compass Adjuster**

**11.4.1** A person may apply to the Manager for the issue of a Licence as Compass Adjuster.<sup>12</sup>

**11.4.2** If the Manager is satisfied that a person who has made application under 11.4.1:

- has successfully completed a course, approved by the Manager, on adjustment of compasses;<sup>13</sup> and
- has assisted in adjusting the compasses of at least 12 ships during the previous three years,

the Manager is to issue that person with a Licence as Compass Adjuster.

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<sup>11</sup> In particular, it may be desirable to alter the height of the vertical magnets in order to reduce oscillations of the compass due to rolling (heeling error) when on northerly or southerly courses. Such alteration of the heeling error corrector may affect the compass deviation on various headings and appropriate precautions should be taken.

<sup>12</sup> An application form is obtainable at any AMSA office. The fee payable for the issue of a Licence as Compass Adjuster is determined under section 47 of the *Australian Maritime Safety Authority Act 1990*. Details are obtainable from AMSA.

<sup>13</sup> Details of courses which have been approved by the Manager may be obtained by writing to the Australian Maritime Safety Authority, GPO Box 2181, Canberra, ACT 2601.

**11.4.3** The Manager may determine that a licence, or a licence in a class of licences, issued by:

- an authority in Australia other than AMSA; or
- an authority in a country other than Australia,

is equivalent to a Licence as Compass Adjuster.

**11.4.4** If, in relation to a Licence as Compass Adjuster, the General Manager determines that the holder is unable from any cause to perform properly the duties appropriate to the licence, the General Manager may cancel the licence.

**11.4.5** The General Manager, or a person authorised by the General Manager for the purpose, may cancel at any time a Licence as Compass Adjuster that has been unlawfully altered by any kind of addition, interpolation or erasure and may cause such further action to be taken, including action for the issue of a replacement licence, as the circumstances of the case require.

**11.4.6** The General Manager, or a person authorised by the General Manager for the purpose, may cancel at any time a Licence as Compass Adjuster that has been obtained by reason of a false representation.<sup>14</sup>

**11.4.7** The Manager may cancel a Licence as Compass Adjuster that contains factual errors and issue a correct licence in its place.

**11.4.8** The holder of a Licence as Compass Adjuster that has been cancelled must surrender it to the Manager within 14 days of that cancellation.

This is a penal provision

**11.4.9** The Manager, if satisfied that a Licence as Compass Adjuster has been lost, damaged or destroyed, may issue a certified copy.

**11.4.10** Subject to 11.4.11, a certified copy of a Licence as Compass Adjuster is deemed for the purposes of this Part to be the original.

**11.4.11** When a lost Licence as Compass Adjuster has been recovered and returned to the holder, the holder must return the certified copy to the Manager within 14 days for cancellation.

This is a penal provision

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<sup>14</sup> A person who forges a licence, or uses a forged licence, is liable to prosecution under the *Crimes Act 1914*, which prescribes heavy penalties for forgery.

## 12 Electromagnetic compatibility

[SOLAS V/17]

**12.1** Electrical and electronic equipment on the bridge or in the vicinity of the bridge of a ship constructed on or after 1 July 2002 must be tested for electromagnetic compatibility.<sup>15</sup>

**12.2** Electrical and electronic equipment installed on or after 1 July 2002 must be installed in such a manner that electromagnetic interference does not affect the proper function of navigational systems and equipment.

**12.3** A person must not operate portable electrical or electronic equipment if it may affect the proper function of navigational systems and equipment.

This is a penal provision

## 13 Approval, surveys and performance standards of navigational systems and equipment and voyage data recorder

[SOLAS V/18]

**13.1** Systems and equipment, including associated back-up arrangements, where applicable, installed on or after 1 July 2002 (including replacements and additions) to perform the functional requirements of Regulations 19 and 20 of Chapter V of SOLAS must conform with the appropriate IMO Resolution(s) in Appendix 3.<sup>16</sup>

**13.2** Systems and equipment referred to in 13.1 must be type approved.

**13.3** Where a ship carries an Electronic Chart Display and Information System (ECDIS) as the means of complying with Regulation 19.2.1.4 of Chapter V of SOLAS:

- the system, and the back-up arrangements required by Regulations 19.2.1.4 and 19.2.1.5 of Chapter V of SOLAS, must be approved; and
- the Master and all deck watchkeeping officers must have satisfactorily completed an approved training course in its use.<sup>17</sup>

**13.4** A voyage data recorder system, including all sensors, must be tested in accordance with Regulation 18.8 of Chapter V of SOLAS.

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<sup>15</sup> Refer to IMO Resolution A.813(19), *General requirements for Electromagnetic Compatibility for all Electrical and Electronic Ship's Equipment*.

<sup>16</sup> Systems fitted before 1 July 2002 must comply with the IMO Resolutions specified in Part 21, Issue 3.

<sup>17</sup> Information on approved training courses and back-up arrangements may be obtained from the Manager.

## **14 Carriage requirements for shipborne navigational systems and equipment**

[SOLAS V/19]

The navigational systems and equipment required to be provided on a ship is that specified in Regulation 19 of Chapter V of SOLAS.

## **15 Voyage data recorders**

[SOLAS V/20]

Voyage data recorders must be fitted to ships in accordance with Regulation 20 of Chapter V of SOLAS.

## **16 International Code of Signals**

[SOLAS V/21]

Ships must carry the International Code of Signals in accordance with Regulation 21 of Chapter V of SOLAS.

## **17 Pilot transfer arrangements**

[SOLAS V/23]

**17.1** A ship engaged on voyages in the course of which pilots are likely to be employed must be provided with pilot transfer arrangements in accordance with Regulation 23 of Chapter V of SOLAS and IMO Resolution A.889(21): *Recommendation on pilot transfer arrangements*.<sup>18</sup>

**17.2** A surveyor may prohibit further use of any pilot boarding arrangements if he or she considers that means of access to be defective or deficient in respect of the requirements of this Part.

**17.3** A master receiving written notice of a prohibition under 17.3 must ensure that the means of access is not used until the defect or deficiency is rectified.

This is a penal provision

## **18 Use of heading and/or track control systems**

[SOLAS V/24]

**18.1** The master of a ship operating in areas of high traffic density, in conditions of restricted visibility or in any other hazardous navigational situations must ensure that

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<sup>18</sup> For pilot ladders, see Australian Standard AS 2933-1987, *Shipbuilding—pilot ladders*.

where the heading and/or track control systems are in use in the ship, manual control of the ship's steering must, at all times, be able to be established immediately.

This is a penal provision

**18.2** In the circumstances specified in 18.1, the officer of the watch must have available to him, at all times and without delay, the services of a qualified helmsman to take manual control of the ship's steering.<sup>19</sup>

**18.3** The master of a ship must ensure that a change from automatic to manual control and from manual to automatic control of a ship's steering is made by or under the supervision of the officer of the watch, or other responsible officer.

This is a penal provision

**18.4** The master of a ship must ensure that the manual steering of a ship is tested after prolonged use of the heading and/or track control systems and before entering an area where navigation demands special caution.

This is a penal provision

## **19 Operation of steering gear**

*[SOLAS V/25]*

In areas where navigation demands special caution, the master of a ship must ensure that the ship has more than one steering gear power unit in operation where such units are fitted and capable of simultaneous operation.

This is a penal provision

## **20 Steering gear: testing and drills**

*[SOLAS V/26]*

**20.1** Within 12 hours prior to a ship's departure from a port, the master must ensure that the ship's steering gear is checked and tested by the ship's crew in accordance with Paragraphs 1 and 2 of Regulation 26 of Chapter V of SOLAS.

This is a penal provision

**20.2** Where applicable to a ship, simple operating instructions with a block diagram showing the change-over procedures for remote steering gear control systems and steering gear power units must be permanently displayed on the navigating bridge and in the steering gear compartment.

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<sup>19</sup> On an Australian ship, a person is considered to be a qualified helmsman if he or she is the holder of a steering certificate under Marine Orders, Part 3 (Seagoing Qualifications).

**20.3** The master of a ship must ensure that all officers concerned with the operation or maintenance of steering gear are familiar with the operation of the steering systems fitted on the ship and with the procedures for changing from one system to another.

This is a penal provision

**20.4** The master of a ship must ensure that, in addition to complying with 20.1, emergency steering drills take place at least once every 3 months in order to practice emergency steering procedures. These drills must include direct control from within the steering gear compartment, the communications procedure with the navigating bridge and, where applicable, the operation of alternative power supplies.

This is a penal provision

**20.5** The Chief Marine Surveyor may exempt a ship or class of ships that regularly plies on voyages of short duration from compliance with 20.1.

**20.6** The master of a ship exempted from compliance with 20.1 must carry out the checks and tests specified so far as those checks and tests are applicable, at least once every week.

This is a penal provision

**20.7** The master of a ship must ensure that the date upon which the checks and tests specified in 20.1 or 20.6 are carried out, and the date and details of emergency steering drills specified in 20.4 are carried out, are recorded in the official log-book.

This is a penal provision

## **21 Nautical charts and nautical publications**

*[SOLAS V/27]*

In accordance with Regulation 27 of Chapter V of SOLAS, nautical charts and nautical publications, such as sailing directions, lists of lights, notices to mariners, tide tables and all other nautical publications necessary for the intended voyage, must be adequate and up to date.

## **22 Records of navigational activities**

*[SOLAS V/28]*

In accordance with Regulation 28 of Chapter V of SOLAS, the master of a ship engaged on international voyages must ensure that there is kept on board the ship a record of navigational activities and incidents which are of importance to safety of navigation and which must contain sufficient detail to restore a complete record of the voyage.

This is a penal provision

## **23 Life-saving signals to be used by ships, aircraft or persons in distress** *[SOLAS V/29]*

The master of a ship must ensure that an illustrated table describing the life-saving signals to be used when communicating with life-saving stations, maritime rescue units and aircraft engaged in search and rescue operations is readily available to the officer of the watch.<sup>20</sup>

This is a penal provision

## **24 Operational limitations** *[SOLAS V/30]*

Operational limitations of passenger ships must be documented in accordance with Regulation 30 of Chapter V of SOLAS.

## **25 Danger messages** *[SOLAS V/31 & V/32]*

### **25.1 Prescribed safety signals**

**25.1.1** The following signals are prescribed safety signals:

- (a) in radiotelephony, the word 'SECURITE' (pronounced 'SAY-CURE-E-TAY') spoken 3 times; and
- (b) by satellite or DSC communication—the safety signal protocol specified by ITU-R.

**25.1.2** A person must not transmit a prescribed safety signal except for the purpose of giving notice that the calling radio station has a danger message to transmit concerning an important navigational or meteorological warning.

This is a penal provision

### **25.2 Danger messages**

**25.2.1** The master of a ship that:

- (a) meets with:
  - dangerous ice; or
  - a dangerous derelict; or
  - any other direct danger to navigation; or

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<sup>20</sup> Such life-saving signals are described in the International Aeronautical and Maritime Search and Rescue Manual (IAMSAR) Vol.III, Mobile Facilities, and illustrated in the International Code of Signals, as amended pursuant to IMO Resolution A.80(IV).

- a tropical cyclone;<sup>21</sup> or

(b) encounters:

- sub-freezing air temperatures associated with gale force winds causing severe ice accretion on superstructures; or
- winds of force 10 or above on the Beaufort scale for which no storm warning has been received,

must communicate the information by all means at his or her disposal to ships in the vicinity and to the nearest appropriate authority. The form in which the information is sent is not obligatory. It may be transmitted either in plain language (preferably English) or by means of the International Code of Signals.

**25.2.2** A danger message must convey the information set out in Regulation 32 of Chapter V of SOLAS.

**25.2.3** The master must send the danger message as soon as he or she has the information required by 25.2.2 and must repeat it immediately after the end of the first available silence period.

This is a penal provision

**25.2.4** Where a danger message is repeated in accordance with 25.2.3, the prescribed safety signal that precedes the repetition of the danger message must be transmitted towards the end of the silence period.

**25.2.5** A danger message must end with the name of the master of the ship transmitting the message and the call sign of the ship radio station.

**25.2.6** The radio frequency to be used for the prescribed safety signal that precedes a danger message is the distress frequency, and the radio frequency to be used for the danger message must be specified at the end of the safety signal.

**25.2.7** Nothing in 25.2 is intended to prevent a danger message being included as part of a meteorological service that is transmitted at fixed times.

**25.2.8** Subsequent observations and reports must be made in accordance with Paragraph 3 of Regulation 32 of Chapter V of SOLAS.

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<sup>21</sup> The term tropical cyclone is the generic term used by national meteorological services of the World Meteorological Organization. The term hurricane, typhoon, cyclone, severe tropical storm, etc., may also be used, depending on the geographical location.

### **25.3 Duties of person receiving prescribed safety signal**

**25.3.1** A person operating a radio station who hears a prescribed safety signal must listen on the radio frequency used for the transmission of the danger message until he or she is satisfied that the message is of no concern to the ship.

This is a penal provision

**25.3.2** A person must not interfere with the transmission of a danger message that follows the transmission of a prescribed safety signal.

This is a penal provision

### **25.4 Priority of safety traffic**

A danger message preceded by the safety signal has priority over all communications other than distress and urgency communications.

### **25.5 Report to shore station**

**25.5.1** The master of a ship who has sent out a prescribed safety signal and danger message in accordance with section 269A of the *Navigation Act 1912* must, at the first opportunity, send by satellite communication the information contained in the danger message, to the person in charge of the authority responsible for promulgating navigation warnings or, if it is not possible to so communicate, transmit the information to a coast radio station or make the report by visual means to the person in charge of the first signal station with which the master is able to communicate and request the person to whom the report is made to transmit the report to the proper authority in the country in which the coast radio station or signal station is located.

**25.5.2** The master of a ship who has sent out a prescribed safety signal and danger message in accordance with section 269A of the *Navigation Act 1912* must, immediately on arrival of the ship at its next port of call, lodge a copy of the report with the proper authority for that port.

### **25.6 Official log-book entries**

The master of a ship must ensure that entries are made in the official log-book recording:

- (a) all new dangers to navigation observed;
- (b) all danger messages and information received in regard to new dangers to navigation; and
- (c) all danger messages and information sent or transmitted in regard to new dangers to navigation and the exact time and position of the ship when the danger message information was sent or transmitted.

This is a penal provision

## **26 Distress and urgency messages**

[SOLAS V/33]

### **26.1 Obligations and procedures**

The master of a ship must discharge the obligations and follow the procedures specified in Regulation 33 of Chapter V of SOLAS.

This is a penal provision

### **26.2 Prescribed signals of distress**

For the purposes of this Part, a prescribed signal of distress is:<sup>22</sup>

- (a) by radiotelephony—the spoken word 'MAYDAY'; and
- (b) by satellite communication, DSC, EPIRB or VHF EPIRB—the distress signal protocol specified by ITU-R.

### **26.3 Use of prescribed signal of distress**

A person must not transmit a prescribed signal of distress by radiotelephone, except in connection with the transmission of:

- (a) a distress call and a distress message;
- (b) the acknowledgment of a distress message; or
- (c) other distress traffic,

as prescribed by this Part.

This is a penal provision

### **26.4 Serious and imminent danger**

Despite anything contained in this Part, a person who is operating the radio station of a ship that is in serious and imminent danger and is unable to comply with the provisions of the Part may use any means available to attract attention, to make known the ship's position and to obtain help.

### **26.5 Duties on activation of a distress frequency watch receiver.**

**26.5.1** Where any of the following equipment is actuated:

- (a) the DSC distress frequency watch receiver;
- (b) the Inmarsat EGC receiver distress alarm,

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<sup>22</sup> Attention is also drawn to the signals referred to in Annex IV in the Appendix to Marine Orders, Part 30 (Prevention of Collisions).

the person in charge of the ship radio station must commence watch on the relevant distress frequency or, if a frequency is specified in the distress or urgency message, on that frequency.

This is a penal provision

**26.5.2** Such watch is to be kept for a sufficient time to ensure that:

- (a) the distress or urgency message is received, or
- (b) a distress or urgency message would have been received if one had been transmitted and the ship had been within range of the transmitting station, or

the person in charge of the ship radio station is satisfied that the actuation was due to:

- (c) a fault in the radio installation, or
- (d) an electrical storm.

This is a penal provision

**26.5.3** A person receiving a distress or urgency message must immediately inform the Master of the details of the message.

This is a penal provision

## **26.6 Duties of a person hearing a distress or urgency signal**

**26.6.1** A person who hears a distress or urgency signal must continue to listen on the appropriate frequency and must not resume normal radio service until:

- (a) if no message follows the signal—the expiration of at least three minutes, or
- (b) if a message follows the signal—the person has informed the master of the details of the message and the master has permitted resumption of normal radio service.

This is a penal provision

**26.6.2** Where a message that follows the activation of a DSC or EGC distress alarm is not addressed to all radio stations, or is addressed to all ships in a geographical area not including the current position of the ship, the person in charge of the ship radio station may resume normal communication on frequencies other than that used for the distress or urgency communication.

## **26.7 Prescribed urgency signals**

**26.7.1** The following signals are prescribed urgency signals:

- (a) in radiotelephony, the words 'PAN PAN' spoken 3 times; and
- (b) by satellite or DSC communication—the urgency signal protocol specified by ITU-R.

**26.7.2** A person must not transmit a prescribed urgency signal except for the purpose of giving notice that the calling radio station has a very urgent message to transmit concerning the safety of a ship, an aircraft, a vehicle or a person.

This is a penal provision

**26.7.3** Subject to 26.8.1, the radio frequency to be used for a prescribed urgency signal and the following message, is the distress frequency.

**26.7.4** A prescribed urgency signal has priority over all other radio communications except distress traffic.

## **26.8 Urgency messages**

**26.8.1** Where the urgency message that follows a prescribed urgency signal is a long message, a medical call or, in an area of heavy radio traffic, a repeated message, the radio frequency used for that message:

- (a) must be a frequency other than that referred to in 26.7.3; and
- (b) must be specified at the end of the urgency signal.

**26.8.2** A person must not interfere with the transmission of an urgency message that follows the transmission of a prescribed urgency signal.

This is a penal provision

**26.8.3** An urgency message, other than a message dealing with medical matters, that follows a prescribed urgency signal must be in plain language.

**26.8.4** When the master of a ship, or if appropriate the Senior SARO Maritime, is satisfied that action called for by an urgency message is no longer necessary, the master or Senior SARO Maritime must cause a further message to be transmitted cancelling the urgency message.

This is a penal provision

## **26.9 Authority for transmission of urgency signal**

**26.9.1** A person on board a ship must not transmit a prescribed urgency signal unless the transmission of that signal is authorised by the master of the ship.

This is a penal provision

**26.9.2** A person at a coast radio station must not transmit a prescribed urgency signal unless the transmission of that signal is authorised by the Senior SARO Maritime.

This is a penal provision

## **27 Safe navigation and avoidance of dangerous situations**

[SOLAS V/34]

**27.1** The master of a ship must ensure that voyage planning has been carried out in accordance with Regulation 34 of Chapter V of SOLAS.

This is a penal provision

**27.2** A person must not prevent or restrict the master of the ship from taking or executing any decision which, in the master's professional judgement, is necessary for safe navigation and protection of the marine environment.

This is a penal provision

## **28 Misuse of distress signals**

[SOLAS V/35]

**28.1** A person must not:

- (a) transmit or display a prescribed signal for distress; or
- (b) transmit a prescribed urgency signal; or
- (c) send out a danger message.

unless the transmission, display or sending out is permitted by this Part or another Part of Marine Orders.

This is a penal provision

**28.2** A person must not, except in the case of actual distress, use any flare, rocket or shell that could be mistaken for a prescribed signal of distress coming from a ship, unless advance notice has been given to the Australian Search and Rescue Centre.<sup>23</sup>

This is a penal provision

**28.3** When a distress signal has been accidentally transmitted from a ship, the Master must advise immediately the relevant marine rescue coordination centre, preferably by satellite communication, of the accidental transmission and that the ship is in no danger.<sup>24</sup>

This is a penal provision

**28.4** If a person removes an EPIRB from a ship for purposes other than test and repair, that person must ensure that the batteries are removed from the EPIRB.

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<sup>23</sup> The address of the Australian Search and Rescue Centre is GPO Box 2181, Canberra ACT 2601. The telephone number is 1800 641 792 and the facsimile number is (02) 6230 6868. Notice should preferably be given 7 days in advance. A person proposing to discharge a flare, rocket or shell may also need to comply with State or Territory requirements.

<sup>24</sup> Where possible, a cancellation message should also be broadcast on the frequency on which the accidental transmission was made.

This is a penal provision

## **29 Shipboard emergency procedures**

### **29.1 General emergency alarm signal**

**29.1.1** The general emergency alarm signal for an emergency stations muster of the passengers and crew of a ship is a signal of 7 or more short blasts followed by one long blast on the ship's whistle or siren.

**29.1.2** The general emergency alarm signal must be repeated on the ship's electrically operated warning bell system and suitable instructions must be given over a public address system, if fitted, or by any other equally effective means available.

### **29.2 Prepare to abandon ship signal**

**29.2.1** The signal to indicate that the ship may shortly be abandoned is one short blast followed by one long blast on the ship's whistle or siren, sounded at least 3 times in succession.

**29.2.2** The signal to indicate that the ship may shortly be abandoned must be repeated on the ship's electrically operated warning bell system and suitable instructions must be given over a public address system, if fitted, or by any other equally effective means available. The engine-room telegraph must be put to 'Finished with Engines'.

**29.2.3** When a ship is to be abandoned, the master must ensure that any machinery or appliance whose operation could impede the safe abandonment of the ship is stopped, disengaged or otherwise rendered inoperative. Stabilisers, if extended and liable to interfere with survival craft, must be retracted.

This is a penal provision

**29.2.4** When a ship is to be abandoned, the master must ensure that all crew members working below deck or in other parts of the ship distant from survival craft, are effectively warned by all means available that the ship is to be abandoned, in sufficient time to allow all crew members to reach their survival craft station.

This is a penal provision

### **29.3 Abandon ship signal**

The abandon ship signal is to be defined by the Master and stated in each muster list. It is to be given by the Master or senior surviving officer in the most effective manner possible and gives authority to those in charge of survival craft to launch as soon as ready.

## 29.4 Emergency practices

### *Signals*

**29.4.1** The signal for an emergency practice is the general emergency alarm signal, supplemented by instructions by the master as to the nature of the practice over a public address system, if fitted, or by any other equally effective means.

**29.4.2** If the master of a ship considers that the sounding of the general emergency alarm signal would constitute a nuisance outside the ship, then:

- (a) the ship's electrically operated warning bell system;
  - (b) suitable instructions given over the ship's public address system, if fitted; or
  - (c) any other equally effective means,
- may be used to initiate the emergency practice.

**29.4.3** Before a signal is given for an emergency practice, all passengers and crew must be warned of:<sup>25</sup>

- (a) the time at which the practice is to be held; and
- (b) the nature of the practice signal.

### *When practices to be held*

**29.4.4** The master of a ship must arrange for practice musters and drills as required by Marine Orders, Part 25 (Equipment—Life-saving).

This is a penal provision

**29.4.5** The master of a ship must arrange for training sessions for the crew in survival and use of equipment, at suitable intervals to ensure that the crew maintain their competence in this respect.<sup>26</sup>

This is a penal provision

**29.4.6** The master of a ship must arrange for practices in other operations, such as closure of watertight doors, damage control and rescue of casualties, at the following intervals:

- (a) in respect of watertight doors—at least once a week;

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<sup>25</sup> On passenger ships, passengers should be advised of what actions they are to take: (i) during the practice; and (ii) in an emergency.

<sup>26</sup> These training sessions are not emergency practices, but may be combined with them. In setting the interval between training sessions, the master should have regard to training carried out ashore by crew members.

- (b) in respect of other damage control matters—at least monthly on passenger ships and so far as possible immediately after a crew change, or where 50 per cent or more of the relevant persons assigned that duty have changed;
- (c) in respect of other matters—when the master considers necessary.

This is a penal provision

#### *Practice procedures*

**29.4.7** The procedures to be followed in conducting an emergency practice are specified in Appendix 5.<sup>27</sup>

### **29.5 Muster list and emergency instructions**

#### *Emergency instructions*

**29.5.1** The master of a ship must provide to every person on board clear instructions to be followed in the event of an emergency.<sup>28</sup>

This is a penal provision

#### *Assignment of passengers to muster stations*

**29.5.2** The master of a ship carrying passengers must:

- (a) assign each passenger to a muster station; and
- (b) record the assignments made under (a) in accordance with Appendix 6 and, exhibit at all times for the information of the members of the crew concerned with the mustering of passengers such number of copies of that record and in such places as a surveyor may require.

This is a penal provision

#### *Marking of muster stations for passengers*

**29.5.3** The master of a ship carrying passengers must ensure that the muster stations for passengers are so indicated to the satisfaction of a surveyor, by painted or other signs, as to be readily visible by day and by night.<sup>29</sup>

This is a penal provision

#### *Assignment of crew*

**29.5.4** The master of a ship must ensure that:

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<sup>27</sup> SOLAS requirements for emergency practices are also contained in Marine Orders, Part 25 (Equipment—life-saving).

<sup>28</sup> Guidelines for passenger safety instructions are contained in IMO document MSC/Circ.699 and, for ro-ro vessels, in IMO document MSC/Circ.681.

<sup>29</sup> Specified signs are contained in IMO Resolution A.760(18), as amended by MSC.82(70).

- (a) each crew member on joining the ship is assigned to an emergency station and to a survival craft according to the cabin berth allocated or by other suitable identification; and
- (b) in the case of a passenger ship, each lifeboat has assigned to it no fewer than the number of certificated persons applicable to the lifeboat as determined in accordance with Table 1.

**Table 1**

<i>Carrying capacity of lifeboat</i>	<i>Number of certificated persons</i>
40 persons or fewer	2
More than 40 persons but fewer than 62	3
More than 62 persons but fewer than 86	4
86 persons or more	5

This is a penal provision

**29.5.5** The master of a ship must assign crew members to, and provide instructions to crew members in respect of, duties relating to emergencies that may occur on the ship.<sup>30</sup>

This is a penal provision

**29.5.6** Assignments made under 29.5.4 and 29.5.5 must be recorded in accordance with Appendix 7 and must be so exhibited in conspicuous positions in crew accommodation and other appropriate parts of the ship so as to be easily visible to the crew.

This is a penal provision

## **29.6 Responsibilities of owner, master and crew**

**29.6.1** The owner of a ship must supply a copy of this Part to:

- (a) the master; and
- (b) in the case of a passenger ship, to each officer or other person who is directly responsible to the master for a department of the ship.

This is a penal provision

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<sup>30</sup> Two forms of organisation are suggested. Where the size of the crew permits, specialised emergency parties could be designated to deal with specific emergencies and duties. In other cases, the whole crew might muster at a specific point (except those whose duties necessitate them remaining at their posts, or whose emergency duties require them to undertake a specific duty, such as person in charge of emergency radio communications) and be given relevant tasks as appropriate.

**29.6.2** The master of a ship must ensure that the requirements of 29.1 to 29.5 are so met that crew members become conversant with their assigned emergency stations and duties, and emergency procedures generally.

This is a penal provision

**29.6.3** The master of a ship must ensure that crew members are trained in the operation and application of all life-saving, fire fighting and other emergency appliances and equipment provided in the ship.

This is a penal provision

**29.6.4** The master of a ship must ensure that a survival manual is provided at or near the cabin berth of each crew member for the exclusive use of that person.

This is a penal provision

**29.6.5** The master of a ship must ensure that entries recording all practice musters and drills, tests and inspections held in accordance with 29.1 to 29.5 are made in the ship's official log-book.

This is a penal provision

**29.6.6** The master of a ship must ensure that where a practice muster or drill, test or inspection required by 29.1 to 29.5 is not held, an entry is made in the ship's official log-book stating the reasons for non-compliance.

This is a penal provision

**29.6.7** An officer or other person referred to in 29.6.1(b) must become conversant with the requirements of 29.1 to 29.5 and must take all necessary measures to ensure that members of the crew under his or her control are instructed in their assigned duties under 29.5.4 and in the survival craft, fire and damage control drills.

This is a penal provision

**29.6.8** Each member of a ship's crew must become conversant with the contents of the survival manual and, except during training sessions, keep it at or near the cabin berth he or she occupies.

This is a penal provision

## **30 Watertight opening in ships—safety procedures**

### **30.1 Watertight doors**

**30.1.1** The master of a ship must ensure that, except as provided in 30.1.2, every watertight door is kept closed while the ship is at sea.

This is a penal provision

**30.1.2** A watertight door, other than a watertight door referred to in 30.3, may be opened:

- when it is necessary for it to be open for the working of the ship; or
- when it is opened and closed for the purposes of testing in accordance with 30.7.

**30.1.3** Where a watertight door is open for the working of the ship, the master must ensure that the vicinity of the doorway is kept clear of any obstruction that may prevent rapid closure of the door.

This is a penal provision

## **30.2 Portable plates**

**30.2.1** The master of a ship must ensure that any portable plate fitted over an opening in the internal watertight structure of a ship is in place and forming a watertight connection to that structure before a voyage commences.

This is a penal provision

**30.2.2** A person must not remove any portable plate referred to in 30.2.1 while the ship is at sea except in cases of urgent necessity on the direct order of the master.

This is a penal provision

## **30.3 Openings to be kept closed at sea**

**30.3.1** The master of a ship must ensure that each of the following openings in the ship are closed watertight and locked before the ship leaves the berth or anchorage:

- (a) watertight doors in a watertight bulkhead separating cargo spaces or separating a cargo space from a passenger space;
- (b) watertight doors that do not comply with 6.1 to 6.4 of Regulation 15 of Chapter II of SOLAS;
- (c) subject to 30.3.2, sidescuttles in a 'tween deck where the sill of any sidescuttle in that space, other than a non-opening sidescuttle, is below the margin line and is below a line drawn parallel to the bulkhead deck at side and having its lowest point 1.4 metres plus a distance equal to 2.5 per cent of the breadth of the ship above the waterline when the ship is first afloat in seawater on proceeding to sea;
- (d) sidescuttles that are not accessible while the ship is at sea, and their deadlights; and
- (e) gangway ports, cargo ports or coaling ports and any similar side openings below the margin line, or below the freeboard deck in a cargo ship.

This is a penal provision

**30.3.2** A person must not open an opening referred to in 30.3.1 before the ship arrives at the next berth or anchorage.

This is a penal provision

**30.3.3** For any ship that has one or more sidescuttles so placed that 30.3.1(c) would apply when it was floating at its deepest subdivision load line, the Chief Marine Surveyor may indicate the limiting mean draught at which these sidescuttles will have their sills above the line drawn parallel to the bulkhead deck at side, and having its lowest point 1.4 metres plus 25 per cent of the breadth of the ship above the waterline corresponding to the limiting mean draft, and at which it will therefore be permissible to depart from port without previously closing and locking them and to open them at sea on the responsibility of the master during the voyage to the next port.<sup>31</sup>

#### **30.4 Closure of cargo loading doors**

**30.4.1** The master of a ship must ensure that the following doors are closed and locked before a ship proceeds on any voyage:

- (a) cargo loading doors in the shell or the boundaries of enclosed superstructures;
- (b) bow visors fitted in the shell or the boundaries of enclosed superstructures;
- (c) cargo loading doors in the collision bulkhead;
- (d) weathertight ramps forming an alternative closure to those specified in (a), (b) and (c).

This is a penal provision

**30.4.2** A person must not unlock or open a door referred to in 30.4.1 until the ship is at its next berth.

This is a penal provision

**30.4.3** Where a bow or stern door cannot be opened or closed while the ship is at the berth, the door may be opened or left open while the ship approaches or draws away from the berth, but only so far as may be necessary to enable the door to be immediately operated. The bow door or visor may only be opened on approach to the berth, or left open on departure, on condition that the inner bow door is kept closed.

**30.4.4** The master may permit particular doors to be opened if necessary for the operation of the ship or the embarking and disembarking of persons provided the ship is at safe anchorage and the master is satisfied that the doors may be opened without impairing the safety of the ship.

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<sup>31</sup> In a tropical zone, the limiting mean draft may be increased by 0.3 metres.

**30.4.5** The master must ensure that an effective system of supervision and reporting of the closing and opening of the doors referred to in 30.4.1 is implemented.

This is a penal provision

### **30.5 Sidescuttles in spaces used for cargo or passengers**

**30.5.1** The master of a ship must ensure that the sidescuttles and deadlights of any space which may be used for the carriage of either cargo or passengers are closed watertight and locked before cargo is loaded in that space.

This is a penal provision

**30.5.2** A person must not unlock or open a sidescuttle or deadlight referred to in 30.5.1 until the cargo is discharged.

This is a penal provision

### **30.6 Ash-chutes, rubbish-chutes and similar fittings**

The master of a ship must ensure that the cover and valve of an ash-chute, rubbish-chute or other similar fitting in a ship having its inboard opening below the margin line of the ship is kept closed and secured watertight whenever the chute or other fitting is not in use.

This is a penal provision

### **30.7 Testing and periodical operation of openings**

**30.7.1** Subject to 30.7.4, the master of a ship must ensure that watertight doors and sidescuttles, the valves and closing mechanisms of scuppers, ash-chutes, rubbish-chutes fitted in a ship, and the means of communication provided in respect of those doors which cannot be closed from a central control station, are tested:

- (a) at least once every week; and
- (b) immediately before a voyage commences, if the voyage is to exceed 7 days; and
- (c) immediately before leaving port, on a ro-ro passenger ship.

This is a penal provision

**30.7.2** Subject to 30.7.3 and 30.7.4, the master of a ship must ensure that each watertight door fitted in a transverse watertight bulkhead, whether hinged or power operated, that is required to be open for the working of the ship, is closed and opened once daily while the ship is at sea for the purpose of testing its operation.

This is a penal provision

**30.7.3** On ships normally engaged on voyages of less than 24 hours, the tests required by 30.7.2 may be carried out in port before departure.

**30.7.4** Provisions 30.7.1 and 30.7.2 do not require the opening and closing while the ship is at sea of any door or other closing appliance fitted that is otherwise required by this Part or any other Part of Marine Orders to be kept closed at all times while the ship is at sea.

### **30.8 Periodical inspection**

**30.8.1** The owner of a ship must ensure that the following appliances and fittings are suitably marked with proper operating instructions to ensure safety and effectiveness when they are operated:

- (a) watertight doors;
- (b) a mechanism, indicator or warning device associated with a watertight door,
- (c) the means of communication provided in connection with a watertight door that cannot be closed from a central control station, as specified in Marine Orders, Part 12 (Ship Construction); and
- (d) any valve required for the operation of damage-control cross-connections or for ensuring the watertight integrity of any space within the ship.

This is a penal provision

**30.8.2** The master of a ship must ensure that the appliances and fittings referred to in 30.8.1 are inspected at least once every week.

This is a penal provision

### **30.9 Official log-book entries**

**30.9.1** The master of a ship must ensure that, before the ship proceeds on any voyage, entries are made in the official log-book recording:

- (a) the times of the last closing of the doors specified in 30.4.1; and
- (b) the times of opening any door referred to in 30.4.4.

This is a penal provision

**30.9.2** The master of a ship must ensure that entries are made in the official log-book of the ship recording:

- (a) the times of the last closing, if any, before the ship proceeds to sea, and of the next subsequent opening, of the fittings to which 30.3 and 30.4 apply;
- (b) the times of the opening and closing, while the ship is at sea, of the watertight doors fitted between bunkers in a 'tween deck space below the bulkhead deck;

- (c) whether the portable plates referred to in 30.2 are in place when the ship proceeds to sea and the times, if any, of the removal and replacement of those plates, or any of them, while the ship is at sea; and
- (d) the times when the tests and inspections required by 30.7 and 30.8 were conducted and whether the fittings so tested and inspected were satisfactory and if not, the extent to which they were not in good working order and the action taken to put them in good working order.

This is a penal provision

## **31 Miscellaneous safety measures**

### **31.1 Miscellaneous equipment**

**31.1.1** A ship must be provided with:

- (a) for each closing appliance, if any, an indicator system complying with Appendix 8;
- (b) equipment independent of any power supply to enable a good lookout to be kept and to enable the safe navigation of the ship in the event of the failure of one or more of the electronic systems;<sup>32</sup>
- (c) such anchors, chain cables, hawsers and warps as are appropriate for the size and operations of the ship.

**31.1.2** A ship of less than 500 gross tonnage must be provided with flags N and C of the International Code of Signals.

**31.1.3** A ship of 500 gross tonnage or more must be provided with a complete set of flags of the International Code of Signals.

**31.1.4** A ship will not be considered to be provided with the equipment referred to in 30.1.1, unless that equipment is in good working condition.

**31.1.5** Except in an emergency, the master of a ship must not use, or permit to be used, any equipment referred to in 31.1.1 that is not in good working condition or that is improperly rigged.

This is a penal provision

### **31.2 Means of access to ships in port**

Access to a ship in port must comply with Appendix 9.

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<sup>32</sup> This would include equipment to enable an adequate lookout to be maintained, position and bearing to be established and essential measurements (such as atmospheric pressure) to be made.

### 31.3 Atmosphere sampling and measuring

The following ships must comply with the appropriate provisions of Appendix 10:

- (a) those which carry cargoes likely to deplete the oxygen concentration in a cargo space;
- (b) those which carry cargoes likely to give off flammable, toxic, corrosive or other chemical gases;
- (c) those which carry cargoes with inert gas capability;
- (d) Australian ships on which the crew may be required to enter a confined space where the oxygen level may be depleted.

\* \* \* \* \*

## Appendix 1

### Compass Deviation Book

#### 1 Information required to be recorded

For the purposes of 11.3.1 of this Part, the following information is required to be recorded:

Date

Ship's position      latitude  
   longitude

Time of observation

Body observed/method of obtaining true bearing

Ship's head by      standard compass  
   steering compass

Azimuth/bearing by standard compass

True azimuth/bearing

Standard compass error

Corrected variation

Standard compass deviation

Steering compass deviation (approximate: by comparison)

Heel to port or starboard

Comment (if any)

Initials of observer

#### 2 Information that may be recorded

For the purposes of 11.3.1 of this Part, the following information may be recorded if desired:

True head

Ship's head by gyro compass

Azimuth/bearing by gyro compass

Gyro compass error

\* \* \* \* \*

## Appendix 2

### Forms

#### Form MO—21/1

#### TABLE OF DEVIATIONS OF THE STANDARD/STEERING\* COMPASS

#### Ship's head by standard/steering compass and corresponding deviation

<i>Head</i>	<i>Deviation</i>	<i>Head</i>	<i>Deviation</i>	<i>Head</i>	<i>Deviation</i>	<i>Head</i>	<i>Deviation</i>
000°		090°		180°		270°	
010°		100°		190°		280°	
020°		110°		200°		290°	
030°		120°		210°		300°	
040°		130°		220°		310°	
045°		135°		225°		315°	
050°		140°		230°		320°	
060°		150°		240°		330°	
070°		160°		250°		340°	
080°		170°		260°		350°	

#### Description, location and size of the correctors:

<i>Corrector</i>	<i>Alignment</i>	<i>No.</i>	<i>Diam</i>	<i>Length</i>	<i>To centre of compass system</i>
Fore and aft magnets	Red end F <input type="checkbox"/> A <input type="checkbox"/>				from centre of magnets Port.....Stbd.....cms
Thwartships magnets	Red end P <input type="checkbox"/> S <input type="checkbox"/>				from centre of magnets .....cms
Vertical magnets	Red end Up <input type="checkbox"/> Down <input type="checkbox"/>				from top end of magnets .....cms
Flinders Bar	F <input type="checkbox"/> A <input type="checkbox"/> of compass				from nearest point of corrector .....cms
Quadrantal correctors	Type				from nearest point of corrector .....cms

The above description of the correctors may be supplemented by a plan showing their position.

The deviations were obtained by means of .....

Type of vertical force instrument used .....

**Declaration: I hereby declare that I have today examined the Standard\* and Steering\* compasses of the above vessel, have adjusted the correctors as necessary, and that the compasses are now in good order.**

Signed .....

*(Person competent to adjust compasses in accordance with Marine Orders, Part 21)*

Date.....Place .....

\* *delete as appropriate*

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\* \* \* \* \*

## Appendix 3

## IMO Resolutions &amp; Circulars

<i>Resolution</i>	<i>Amending Resolution(s)</i>	<i>Title</i>
A.694(17)		<i>Recommendations on general requirements for shipborne radio equipment forming part of the Global Maritime Distress and Safety Systems (GMDSS) and for Electronic Navigational Aids</i>
A.424(XI)		<i>Recommendation on Performance Standards for gyro-compasses</i>
MSC.64(67), annex 4		<i>Recommendation on Performance Standards for radar equipment</i>
A.823(19)		<i>Performance Standards for automatic radar plotting aids</i>
A.817(19)	MSC.64(67), annex 5; MSC.86(70), annex 4	<i>Recommendation on Performance Standards for Electronic Chart Display and Information Systems (ECDIS) as amended by, and, as appropriate</i>
A.529(13)		<i>Recommendation on accuracy standards for navigation</i>
A.818(19)		<i>Recommendation on Performance Standards for shipborne Loran-C and Chayka receivers</i>
A.819(19)	MSC.112(73)	<i>Recommendation on Performance Standards for shipborne global positioning receiver equipment</i>
MSC.53(66)	MSC.113(73)	<i>Recommendation on Performance Standards for shipborne GLONASS receiver equipment</i>
MSC.64(67), annex 2	MSC.114(73)	<i>Recommendation on Performance Standards for shipborne DGPS and DGLONASS maritime radio beacon receiver equipment</i>
MSC.74(69), annex 1	MSC.115(73)	<i>Recommendation on Performance Standards for combined GPS/GLONASS receiver equipment</i>
MSC.64(67), annex 3		<i>Recommendation on Performance Standards for heading control systems</i>
MSC.74(69), annex 2		<i>Recommendation on Performance Standards for track control systems</i>
MSC.74(69), annex 3		<i>Recommendation on Performance Standards for a universal shipborne automatic identification system (AIS)</i>
A.224(VII)	MSC.74(69), annex 4	<i>Recommendation on Performance Standards for echo sounding equipment</i>
A.824(19)	MSC.96(72)	<i>Recommendation on Performance Standards for devices to indicate speed and distance</i>
A.526(13)		<i>Performance Standards for rate-of-turn indicators</i>

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<i>Resolution</i>	<i>Amending Resolution(s)</i>	<i>Title</i>
A.575(14)		<i>Recommendation on unification of Performance Standards for navigational equipment</i>
A.343(IX)		<i>Recommendation on methods of measuring noise levels at listening posts</i>
A.384(X)		<i>Recommendation on Performance Standards for radar reflectors</i>
A.382(X)		<i>Recommendation on Performance Standards for magnetic compasses</i>
MSC.95(72)		<i>Recommendation on Performance Standards for daylight signalling lamps</i>
MSC.86(70), annex 1		<i>Recommendation on Performance Standards for sound reception systems</i>
MSC.86(70), annex 2		<i>Recommendation on Performance Standards for marine transmitting magnetic heading devices (TMHDs)</i>
MSC.116(73)		<i>Recommendation on Performance Standards for marine transmitting heading devices (THDs)</i>
MSC.86(70), annex 3		<i>Recommendation on performance standards for an integrated navigation system (INS)</i>
A.861(20)		<i>Performance standards for shipborne Voyage Data Recorders (VDRs)</i>
A.890(21)		<i>Principles of safe manning</i>
MSC/Circ. 982		<i>Guidelines on ergonomic criteria for bridge equipment and layout</i>
MSC.64(67), annex 1		<i>Recommendation on performance standards for integrated bridge systems (IBS)</i>
A.889(21)		<i>Pilot transfer arrangements</i>
MSC/Circ. 568/Rev.1		<i>Required boarding arrangements for pilots</i>

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**Appendix 4****Beaufort scale of wind force**

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<i>Number</i>	<i>Knots</i>	<i>Metres per second</i>	<i>Description of wind</i>
0	less than 1	less than 0.5	Calm
1	1 to 3	0.5 to 1.5	Light air
2	4 to 6	2.0 to 3.0	Light breeze
3	7 to 10	3.5 to 5.0	Gentle breeze
4	11 to 15	5.5 to 7.5	Moderate breeze
5	16 to 20	8.0 to 10.0	Fresh breeze
6	21 to 26	10.5 to 13.0	Strong breeze
7	27 to 33	13.5 to 16.5	Moderate gale
8	34 to 40	17.0 to 20.0	Fresh gale
9	41 to 47	20.5 to 23.5	Strong gale
10	48 to 55	24.0 to 27.5	Whole gale
11	56 to 65	28.0 to 32.5	Storm
12	above 65	above 32.5	Hurricane

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\* \* \* \* \*

## Appendix 5

### Practice procedures

#### 1 Emergency practice

An emergency practice must be conducted as follows:

- On the general emergency alarm signal being given, the crew (excepting only those who in the opinion of the Master cannot be relieved from immediate duties) must at once assemble at their emergency stations.
- Emergency parties must be trained and practised in their emergency duties, as required by the Master.
- When satisfied with the emergency drill, the *Prepare to Abandon Ship* signal should be given, whereupon all crew members should muster at the survival craft to which they are allocated.
- The person in charge of each survival craft must:
  - call the roll of those persons allocated to the survival craft;
  - be satisfied that each person fully understands the duties allocated to him or her in launching and boarding the craft;
  - be satisfied that each life-jacket has been correctly donned and secured;
  - instruct and examine each person in accordance with the Manual, as required by the Master;
  - report to the Master the total number of persons, including the person in charge, attending at his or her survival craft, and
  - report to the Master when the instruction has been satisfactorily completed.
- In a passenger ship, each member of the crew allocated duties in connection with the marshalling and mustering of passengers must take his or her allotted place in a stairway, passageway or muster station, and those in charge of, or assisting at, muster stations must:
  - instruct each passenger, assisting as necessary, in the correct donning of life-jackets;
  - advise passengers as appropriate on the procedures for abandonment of the ship, including that while the ship is not in a sinking condition it is normally the safest refuge, that conditions may occur when it is necessary to evacuate all passengers, and that crew will be with the passengers in their survival craft to take appropriate action and assist the passengers in boarding rescue ships; and

- report to the Master the number of passengers mustered at the Muster Station.
- The muster should normally be followed by the abandon ship practice, with launching of survival craft as appropriate.

## **2 Survival craft and rescue boat drill**

### **2.1 Lifeboat and rescue boat drills**

**2.1.1** A drill is to be conducted in accordance with:

- the provisions of Marine Orders, Part 25 (Equipment—Life-saving); and
- the ship's Safety Management System.

**2.1.2** Where a boat is fitted with 'on-load release gear' the release gear is to be tested at least once per year, but only with the boat touching the water or partially waterborne. There should still be substantial weight on the falls.

**2.1.3** When a fire-protected boat is lowered into the water, the water spray system is to be tested.

**2.1.4** Where a lifeboat drill is held at sea, and weather prevents swinging out and part lowering of a boat, the boat is to be swung out and partly lowered at the next suitable opportunity.

**2.1.5** Where a ship has a freefall boat, launchings may be made by lowering the boat using the gantry, with minimal crew aboard, provided that the boat is free-fall launched with as many crew aboard as are possible at least once every six months.

**2.1.6** Rescue boats are, as far as practical, to be launched and manoeuvred in the water with their operating crews aboard once a month, and in any case, at least every three months.

### **2.2 Life-raft and marine escape system drills**

**2.2.1** At least one liferaft is to be prepared for launching by releasing all securing lashings. Where a cradle or other device is used to ensure that the liferaft will enter the water clear of the ship, the device is to be tested during or following the drill. It is not necessary actually to launch any liferaft.

**2.2.2** Where liferafts are davit launched, the davit is to be tested by hooking on to one liferaft, if this is practicable without disturbing the waterproofing of the liferaft container. After unhooking the container, the davit is to be swung out and secured in the lowering position. A small weight may be attached to the fall to check the lowering and braking capability of the davit and winch. Where a ship has more than one davit, all davits are to be tested within a period of three months.

**2.2.3** A liferaft is to be inflated and the crew given instruction in the use of the equipment and the maintenance of the liferaft. This liferaft may be a spare raft carried for the purpose, or a demonstration raft supplied by a liferaft service station or training establishment. This may be done on board, on the wharf adjacent to the ship, at the liferaft service station or training establishment's premises, at a swimming pool if the instruction is to be combined with practical training in righting and boarding the raft, or at any other suitable place. This procedure is to be carried out at intervals such that all persons serving on a ship participate in this part of the drill at intervals not exceeding 6 months.

**2.2.4** If a ship is fitted with marine evacuation systems, drills are to include exercising of the procedures required for the deployment of such a system up to the point immediately preceding the actual deployment of the system. This aspect of drills is to be augmented by regular instruction using on-board training aids. Additionally, each member of each party assigned to a marine evacuation system shall, as far as practicable, be further trained by participation in a full deployment of a similar system into water, either on board a ship or ashore, at intervals of no more than 2 years if possible, but in no case more than 3 years.

### **2.3 Testing of power supplies**

The following must be tested:

- the main and emergency lighting:
  - at all muster and survival craft stations;
  - in alleyways, stairways, emergency exits;
  - in accesses to all muster and survival craft stations;
- the emergency power supply to:
  - the ship's whistle or siren;
  - general alarm bell system;
  - public address system, if fitted.

## **3 Fire drill**

A fire drill must be conducted as follows:

- The officer appointed by the master to be the officer in charge of the drill must order a mock attack on a fire that must be assumed, for the purpose of the drill, to have occurred in a selected part of the ship.
- On receipt of the signal or warning in the engine room the fire pumps must be prepared.

- The numbers of the crew forming the fire party must be sent to the seat of the assumed fire.
- In the vicinity of the assumed fire:
  - the fire hoses must be laid out and not less than two hoses connected to the hydrants and tested at full pressure, with water being supplied from the main fire pumps. In a cargo ship, at alternate fire drills, the water is to be supplied from the emergency fire pump. Where isolating valves are fitted in the fire main, these should be shut and opened to confirm proper operation; and
  - the fire extinguishers must be unshipped.
- Not less than once in each period of 3 consecutive months, a practical demonstration of the use of the portable fire extinguishers must be given by expending the charge of at least one extinguisher.
- The crew must be exercised in:
  - the closing of doors, windows, ports, ventilators, ventilating shafts and other openings so as to isolate the assumed fire from other parts of the ship and to reduce the supply of air to the assumed fire. Particular attention must be paid to stairways and lift shafts;
  - the use of breathing apparatus and safety lamps,
  - the rescue of casualties, using stretchers, hoists or other apparatus; and
  - any other emergency practice considered necessary to combat the assumed fire.
- The members of the crew forming the fire party must be instructed in the use of all other fire-fighting appliances provided in the ship.
- The engine room is an area of high fire risk. Masters and Chief Engineers should therefore plan and carry out supplementary fire drills relating to fires in particular areas of the Engine Room, from likely causes. In particular, the following should be practised:
  - shutting down ventilation systems to the engine room, bearing in mind that in a practice it may be necessary to keep some air inlets open to supply air to machinery that cannot be shut down at the time of the practice;
  - operating remote shut off arrangements for fuel valves for tanks and fuel pumps. As far as possible, different remote shut-offs should be operated in rotation, so that all are operated between crew changes;
  - rigging and using hoses in the engine room to use in cooling bulkheads, tanks, &c, where a fire on the other side could hazard the engine room if the bulkhead, tank, &c, is not cooled, remembering the hazards of salt water and electrical machinery, and the need to instruct persons operating fire hoses in the importance of shutting off electrical machinery first;

- rescue of persons overcome by smoke, or caught by smothering gas; and
- moving around the engine room in conditions of total blackout due to smoke.

#### **4 Damage control drill**

A damage control drill must be conducted in accordance with the ship's Safety Management System and, where applicable, as follows:

- On the emergency signal being given, the officer in charge of the drill must indicate a section of the ship where the emergency is assumed to have occurred for the purposes of the drill. Bulkhead doors in the various sections of the ship must immediately be closed by members of the crew assigned to that duty.
- A messenger from each party that has been allotted to a section of the ship must report to the master, or to the officer appointed by the master to be the officer in charge of the drill when all bulkhead doors in that section are closed.
- Doors that were already closed at the commencement of the drill must be opened and then closed. This does not authorise the opening, while the ship is at sea, of any watertight door or other fitting which is required by 30.3 to be kept closed.
- Cross-flooding arrangements must be checked, if practical and safe to do so.
- Members of the crew assigned to sounding duty must immediately sound tanks and bilges in the section of the ship indicated for the purposes of the drill.
- A messenger from the sounding party must communicate with, as required:
  - the officer in charge of the drill; and
  - the chief engineer.
- As many pumps as possible that are related to damage control and operated from the engine room must be connected to the section of the ship indicated for the purposes of the drill.
- A report must be made to the bridge by messenger or other means when the pumps are ready for action.
- If open in port, ship's side doors, sidescuttles, valves and similar fittings must be closed as directed.
- A report must be made to the bridge by messenger or other means when the side doors, sidescuttles, valves and similar fittings have been closed.

#### **5 Recovery of Lifeboats used as Rescue Boats.**

Where a lifeboat is approved for use as a rescue boat, it is essential that after use as a rescue boat it can be safely recovered. Appendix 5 of Marine Orders, Part 25

(Equipment—Life-saving) requires that rope and wire pennants be provided to assist the recovery of a lifeboat which is also a rescue boat in bad weather conditions. Other arrangements may be accepted where they are compatible with the design of the boat and are capable of filling the intended purpose. Training should be carried out at each statutory launching of such a lifeboat. The instructions should be compatible with the particular arrangements on each ship, and documented in the ship's Safety Management System.

## **6 Helicopter Drills.**

**6.1** Drills should be carried out on ships which transfer persons by helicopter, whether or not the helicopter lands on the ship, as necessary to ensure the crew are trained in:

- normal procedures relating to the transfer of persons; and
- emergency procedures as may be required by a helicopter crash or fire.

**6.2** The training procedures should be in accordance with the ship's Safety Management System and Marine Orders, Part 57 (Helicopter operations).

\* \* \* \* \*



## Appendix 7

### Emergency stations list

Name of ship

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*Crew member  
identification*

*Emergency station*

*Emergency duty*

*Survival craft*

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**General Emergency Alarm Signal:** *Seven or more short blasts followed by one long blast on the ship's whistle or siren. This will be repeated on the general alarm bell system, and may be supplemented by instructions on the Public Address System.*

WHEN YOU HEAR THE GENERAL EMERGENCY ALARM SIGNAL, GO DIRECTLY TO YOUR EMERGENCY STATION.

IF THERE ARE ANY INSTRUCTIONS GIVEN ON THE PUBLIC ADDRESS SYSTEM, OBEY THESE INSTRUCTIONS.

**Prepare to Abandon Ship Signal:** *AAA in Morse on the whistle (short, long, short, long, short, long) and repeated on the general emergency alarm bell system, also 'Finished with Engines' on the E/R telegraph. On hearing or seeing this signal, all isolated parties are to cease their current activities and go as quickly as possible to the Boat Deck.*

**Abandon ship signal:** *[as determined by the Master.] It will normally be given by word of mouth from the Master or senior surviving officer*

..... (Master)

..... (Date)

\* \* \* \* \*

## Appendix 8

### Indicator system for a closing appliance<sup>33</sup>

#### 1 Visual indicators

**1.1** An indicator system must include such number of sets of visual indicators as is necessary to ensure that:

- a set is located in the area from which the ship is normally navigated and is clearly visible to the person engaged in navigating the ship;
- a set is located adjacent to the controls for the operation of the closing appliance and is clearly visible to the person engaged in operating the closing appliance; and
- where the securing mechanism for a closing appliance is power operated, a set is located adjacent to the power controls for the operation of the securing device and is clearly visible to the person engaged in operating the controls.

**1.2** Each set of visual indicators is to consist of at least 2 indicators and must be clearly and permanently labelled to indicate the closing appliance to which it relates.

**1.3** Each set of visual indicators must be clearly and permanently labelled to indicate which of the indicators operates when the closing appliance is ‘closed and secured’ and which indicator operates when the closing appliance is ‘unsecured’.

**1.4** The visual indicator provided to operate when the closing appliance is ‘closed and secured’ must be capable of operating only when the closing appliance is closed and secured.

**1.5** The indicator provided to operate when the closing appliance is ‘unsecured’ must be capable of operating only when the closing appliance is open or is closed but not secured.

**1.6** Where a set of visual indicators consists of electric lamps, the lamps:

- must not be capable of being dimmed to an extent that would cause the lamps to be ineffective as indicators; and
- must not be capable of being extinguished independently of the operation of the indicator system.

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<sup>33</sup> There are additional requirements for passenger ships with ro-ro cargo spaces or special category spaces in Regulation 23-2 of Chapter II-1 of SOLAS.

## **2 Aural alarms**

**2.1** An indicator system must include an aural alarm located adjacent to each set of visual indicators.

**2.2** Where 2 or more sets of visual indicators relating to one or more closing appliances are located in close proximity to one another in a single compartment of a ship, the location of one aural alarm alone in close proximity to those sets of visual indicators is sufficient compliance with the requirement of 2.1 of this Appendix.

**2.3** An aural alarm must be so installed that it is incapable of being isolated from the operation of an indicator system of which it forms part.

**2.4** An aural alarm must automatically sound when the closing appliance to which it relates ceases to be closed and secured. The alarm must continue sounding until either the closing appliance to which it relates is closed and secured or it is manually turned off.

**2.5** An aural alarm must be clearly audible above the maximum sound level that may be expected in the part of the ship in which it is situated, when the ship is being prepared for or is engaged on a voyage.

**2.6** An aural alarm must not be fitted with a device that permits the volume or tone of the alarm to be adjusted.

## **3 Indicator actuators**

**3.1** A set of visual indicators and related aural alarm is to be actuated by:

- in a closing appliance fitted with power operated securing devices that operate in a fixed predetermined sequence—at least one indicator actuator;
- in the case of any other closing appliance—at least 2 widely spaced actuators sufficient to indicate accurately whether or not the closing appliance is closed and secured.

**3.2** Where 2 or more indicator actuators are fitted to a closing appliance, they must be so arranged that each actuator must operate before visual indicators indicate that the closing appliance is closed and secured.

**3.3** Cable, piping and other material connecting an indicator actuator to a set of visual indicators or to an aural alarm must be so located and protected as to prevent mechanical or other damage to the indicator system.

## **4 Component standards**

Each component of the indicator system must be:

- suitable for use in a marine environment;
- constructed in a manner that will ensure that the operating capability of the component will not be affected by likely changes in temperature or other climatic conditions;
- constructed in a manner that will ensure that the component will be capable of reliable operation over the range of vibrations to which the component is likely to be subjected; and
- where the component is likely to be exposed to contact with water, constructed in a manner that will ensure that the operating capability of the component will not be affected by such contact.

\* \* \* \* \*

## Appendix 9

### Means of access to ships in port

#### 1 Provision of safe means

**1.1** Where the master of a ship in port provides a means of access, being an accommodation ladder<sup>34</sup>, gangway,<sup>35</sup> or other means permitted by this Part, for persons boarding or disembarking from the ship, that means of access must be safe.

**1.2** Where access is provided between 2 adjacent ships lying alongside, the master of the ship having the higher weather deck must ensure that such means of access is safe.

**1.3** The means of passage between a ship's deck and the upper end of a gangway resting on a bulwark or side rail of the ship, must be a bulwark ladder with handrails.<sup>36</sup>

**1.4** The master of a ship at anchor or at a mooring may provide a pilot ladder as a means of access if he or she considers that the use of an accommodation ladder is impracticable, but must limit the use of such ladder, except in an emergency, to pilots and other persons engaged in or in relation to the business of the ship.

**1.5** A cargo access ramp may be used as a means of access to and from a ship, provided:

- a non-slip surface is provided and marked for pedestrian use;
- the outside is protected by guard rails that provide adequate protection; and
- either:
  - the pedestrian area is effectively and protectively separated from the vehicular area; or
  - pedestrians are permitted to use the ramp only when the ramp is not in use by vehicles.<sup>37</sup>

**1.6** A person boarding or leaving a ship must, where a safe means of access complying with this Part is provided, use such means of access for that purpose.

**1.7** A surveyor may prohibit use of a means of access if he or she considers the means of access defective or deficient in respect of the requirements of this Part.

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<sup>34</sup> See 3 of this Appendix.

<sup>35</sup> See 4 of this Appendix.

<sup>36</sup> A bulwark ladder is a set of substantial steps designed to allow a person to safely ascend to or descend from the top of a ship's bulwark or side rail.

<sup>37</sup> Effectively, this means that pedestrians may only use the ramp during periods when cargo is not being worked, or if traffic signals or signalmen are employed to stop vehicular traffic when the ramp is in use by pedestrians.

**1.8** A master receiving written notice of a prohibition under 1.7 must ensure that the means of access referred to in the notice is not used until the defect or deficiency is rectified.

## **2 Requirements**

**2.1** A safe means of access must be:

- of adequate strength;
- in a good state of repair;
- well secured to prevent accidental displacement;
- adequately illuminated throughout its length during the hours of darkness;
- so positioned that, so far as is practicable, it is not underneath the path of cargo being loaded on to or unloaded from a ship;
- kept clean and free of any material that could render its use unsafe; and
- properly rigged and adjusted to allow for any changes in tidal levels and the ship's trim and freeboard.

**2.2** A gangway must not be placed on a bulwark or side rail of a ship, unless the bulwark or side rail is of sufficient strength to bear the weight of the gangway and persons using it.

**2.3** A telescopic accommodation ladder must not be used as a means of access unless its sections are locked together with substantial pins or other effective means to prevent variation in length.

**2.4** Adequate precautions must be taken to protect persons from injury by falling from an accommodation ladder or a gangway:

- by use of screens or netting properly secured to prevent a person falling through the sides; and
- in the case of a suspended accommodation ladder resting against the ship's side, by use of a safety net<sup>38</sup> positioned under the lower end of the ladder.

## **3 Accommodation ladders**

### **3.1 Design**

**3.1.1** An accommodation ladder may be a single-flight, a multi-flight or a telescopic ladder.

**3.1.2** Where an accommodation ladder is of the multi-flight type, an intermediate platform must be self-levelling.

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<sup>38</sup> See 5 of this Appendix

**3.1.3** A telescopic ladder must be provided with substantial pins or other effective means to enable the ladder sections to be locked together to prevent them moving relative to each other.

## **3.2 Platforms**

**3.2.1** The upper end of an accommodation ladder must be hinged from a fixed or revolving platform, which platform shall be secured to the ship and effectively supported to remain horizontal in use.

**3.2.2** The lower end of an accommodation ladder must be fitted with a platform, which platform, and any intermediate platform fitted in a multi-flight ladder, must be effectively supported to remain horizontal in use.

**3.2.3** The sides of every platform, with the exception of access openings, must be fenced in accordance with 3.4 of this Appendix.

## **3.3 Treads**

**3.3.1** The treads of an accommodation ladder must be:

- at least 550 mm in clear width;
- provided with a non-slip surface of adequate depth;
- spaced at suitable and equally spaced intervals; and
- subject to 3.3.2, of such shape and design that at any working angle of the ladder, a person is not required to step upon a corner edge of a tread but will have available a flat or curved surface.

**3.3.2** Where a ship constructed before 25 May 1980, is equipped with an accommodation ladder, fitted with fixed flat treads, which may be positioned at such an angle as to require a person using it to step upon a corner edge of a tread, that ladder may be used provided that it is fitted with suitable cleated duckboards securely attached to the ladder.

## **3.4 Side rails and stanchions**

**3.4.1** An accommodation ladder must be fenced on each side of its entire length with upper and intermediate side rails.

**3.4.2** The height of a side rail must be measured from the surface of the treads, perpendicular to the longitudinal axis of the ladder.

**3.4.3** Side rails must not be more than 0.61 m apart and the upper rail must be at a height of not less than 1.07 m.

**3.4.4** In the case of a ship that is not registered in Australia, the use of side rails that do not comply with 3.4.3 of this Appendix is permitted if, in the opinion of a surveyor, they provide adequate protection.

**3.4.5** Side rails may be fixed rails or taut ropes or chains and any covering material used on ropes or chains must be capable of removal to allow inspection of the condition of the ropes or chains.

**3.4.6** The side rails must be supported by stanchions spaced not more than 2 m apart.

**3.4.7** Stanchions must be fitted with a locking device to prevent accidental dislodgment.<sup>39</sup>

## **4 Gangway**

**4.1** A gangway must be provided with a closely boarded walkway at least 550 mm in clear width which must be fitted with transverse treads at suitable and equally spaced intervals.

**4.2** A gangway must be fenced on each side of its entire length with upper and intermediate side rails complying with the specifications in respect of side rails in 3 supported by stanchions fitted with a locking device to prevent accidental dislodgment.

**4.3** The upper end of a gangway must be fitted with suitable means to effectively secure it to a ship.

**4.4** A gangway requiring the use of a derrick or crane to position or stow it must be provided with suitable lifting attachments so located as to balance it whilst it is freely suspended.<sup>40</sup>

## **5 Safety net**

**5.1** A safety net must be approximately 5.5 m in length and 2.5 m in width, except where a surveyor permits the use of a smaller net, but in no case must a safety net measure less than 3.7 m in length and 2.5 m in width.

**5.2** An aperture of the mesh of a safety net must be not more than 190 mm measured between opposite knots when the mesh is hung or cut to make it square mesh.

**5.3** A safety net is to consist of a framing rope and netting both resistant to actinic degradation and having at least 400 kgwt and 125 kgwt breaking strain respectively.

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<sup>39</sup> It is recommended that the lower end of an accommodation ladder which is intended to rest on a wharf in use, should be fitted with wheels or rollers to enable free movement.

<sup>40</sup> It is recommended that the lower end of a gangway should be fitted with wheels or rollers to ensure free movement when resting on a wharf.

**5.4** The safety net must be secured in position at each corner, and intermediate points if required, by suitably secured lengths of framing rope.

**5.5** The corners of each mesh of a safety net must be properly secured so as to prevent movement.

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## Appendix 10

### Atmosphere sampling equipment, measuring equipment and related procedures

#### 1 Oxygen content meters

**1.1** All ships which carry cargoes likely to deplete the oxygen concentration in a cargo space must be provided with oxygen content meters, for use in determining the level of oxygen in a confined space.

**1.2** The instrument should display percentage of oxygen by volume in the sample tested.

**1.3** An Australian ship on which the crew may be required to enter a confined space where the oxygen level may be depleted (as, for example, an empty ballast tank) must be provided with an oxygen content meter, irrespective of the cargo carried.

#### 2 Combustible gas indicator

**2.1** All oil and chemical tankers, all gas carriers, and all cargo ships carrying substances that may give off flammable gases, must be provided with a combustible (flammable) gas indicator,<sup>41</sup> with instructions for use, and a calibration test kit, containing the appropriate test gases, approved by the manufacturer.

**2.2** The combustible gas indicator should indicate the flammable gas concentration as a percentage of the Lower Explosive Limit (LEL)<sup>42</sup> or Lower Flammable Limit (LFL).

#### 3 Hydrocarbon content meter

**3.1** All oil tankers and chemical tankers with inert gas capability and all liquefied gas carriers must be provided with a Hydrocarbon Content Meter, with instructions for use, and a calibration test kit, containing the appropriate test gases, approved by the manufacturer.

**3.2** The meter should indicate the percentage of hydrocarbon gases in an inert atmosphere.

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<sup>41</sup> Combustible gas indicators should comply with AS 61779.1:2000—*Electrical apparatus for the detection and measurement of flammable gases – General requirements and test methods*.

<sup>42</sup> Data on LELs for flammable substances are contained in NFPA document 325—*Fire Hazard Properties of Flammable Liquids, Gases and Volatile Solids*, which is obtainable from the Standards Association of Australia.

**3.3** Owners of ships with flue gas generated inert gas systems must ensure that the Hydrocarbon Content Meter supplied is designed to operate in inert gas containing a high proportion of carbon dioxide.

#### **4 Detection of other gases**

All ships carrying cargoes which are liable to give off toxic, corrosive or other chemical gases must carry:

- an instrument or instruments, with instructions for use, capable of detecting those gases and indicating their proportions, either as a direct reading of parts per million (ppm), or milligrams per cubic metre (mg/m<sup>3</sup>); and
- Material Safety Data Sheets completed in accordance with the recommendations of the National Occupational Health and Safety Commission.<sup>43</sup>

#### **5 Operating instructions**

**5.1** Each gas detector instrument is to be provided with the appropriate operating manuals and maintenance instructions supplied by the manufacturer.

**5.2** Use and maintenance of equipment is to be in accordance with the manufacturer's instructions and company procedures and, where applicable, the requirements of Australian Standard AS 61779 – *Electrical apparatus for the detection and measurement of flammable gases*.<sup>44</sup>

#### **6 Calibration**

**6.1** Where the correct operation of an instrument depends on zeroing and calibration by use of standard gas samples ('span gases'), such gas samples are to be provided sufficient for the normal operations of the vessel, with a suitable reserve to allow for delays in resupply of the sample gases.

**6.2** A test of the atmosphere in a confined space must not be conducted with an instrument that has not been properly spanned and zeroed. If such a test is to be made, the fact that the instrument has been properly spanned and zeroed must be recorded before the test is made.

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<sup>43</sup> The recommendations are contained in NOHSC:2011(1994), *National Code of Practice for the preparation of Material Safety Data Sheets*. The Data Sheet must specify exposure standards for the chemical in question, which are contained in NOHSC:1003(1995), *Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment*.

<sup>44</sup> Reference should also be made to Appendix H of AS/NZS 2865:2001—*Safe Working in a Confined Space*.

**6.3** Each instrument must be calibrated at least annually, or when the sensor is replaced.<sup>45</sup>

## **7 Responsibilities**

**7.1** It is the responsibility of the owner to:

- (a) provide relevant measuring instruments and adequate supplies of the test gases;
- (b) provide sampling lines, filters, and spare parts in sufficient quantities to ensure that measurements can be made when required;
- (c) supply trained personnel to relevant ships;
- (d) provide appropriate instructions and procedures;<sup>46</sup> and
- (e) ensure that proper training and retraining of personnel is carried out.<sup>47</sup>

**7.2** It is the responsibility of the Master of a ship to ensure that where there is a possibility of harm to persons by their entering a space which might contain toxic, corrosive or other harmful gases, or suffer an oxygen deficiency, or where there is a possibility of danger to the vessel as the result of an operation intended to be carried out (such as gas freeing), the atmosphere in that space is tested by a trained crew member to confirm or deny the existence of such hazard. All such operations must be accompanied by comprehensive briefings for staff involved and the operation, plan of work, and test results must be formally and fully documented.

**7.3** It is the responsibility of trained crew members to test the atmospheres in accordance with the relevant instructions, procedures and their training and to report on the existence, or lack of, hazard.

**7.4** It is the responsibility of crew members or other persons entering such spaces, or about to commence such operations, to take such appropriate precautions as will ensure a safe operation or safe entry, and continued safety whilst personnel are within the space.<sup>48</sup>

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<sup>45</sup> For an Australian ship, the calibration must be carried out in a testing laboratory approved by the National Association of Testing Authorities.

<sup>46</sup> The instructions and procedures must specify the percentage of oxygen, percentages of the LEL or LFL, percentages of hydrocarbons, and proportions of toxic, corrosive or other chemical gases, which delimit conditions that are considered to be permissible and non-permissible for the proposed work.

<sup>47</sup> Where crew members are required to use measuring instruments, they must be trained in their correct use (and retrained if new instruments are introduced). Training must be verified at regular intervals.

<sup>48</sup> Mariners are also directed to Chapter 18 (*Gas Indicators*) of the *International Safety Guide for Oil Tankers and Terminals*, 4th Edition, for further guidance.