

Uniform Shipping Laws Code 2008

Section 13: Miscellaneous Equipment (CTH, NSW, NT, SA, TAS, VIC & WA)

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SECTION 13

Miscellaneous Equipment

1. This Section is divided into Parts as follows:
 - Part 1 Preliminary
 - Part 2 General Provisions
 - Part 3 Scales of Miscellaneous Equipment
 - Part 4 Types of Miscellaneous Equipment (Appendices A-O)

PART 1—PRELIMINARY

2. This Section should be read in conjunction with the Introduction, Definitions and General Requirements Section.

3. Definitions

3.1 *Miscellaneous Equipment* includes any item of equipment which may be required for safety of navigation or safety of crew, passengers or any other person on board for legitimate purposes, in port or at sea, and which item of equipment is not required to be provided by any other Section of the recommended uniform requirements.

3.2 *Navigation Lights* means steaming lights, anchor lights, and not-under-command lights.

3.3 *Steaming Lights* means those lights to be shown by vessels when under way, including the optional manoeuvring light, and special purpose lights.

3.4 *Special Purpose Lights* means those lights required to be shown according to the types of operations of vessels (i.e. towing, fishing, pilotage and operations restricting vessels in their ability to manoeuvre) and those lights required to be shown by vessels constrained by their draft.

4. Standards

All items of miscellaneous equipment listed in Part 3 must conform to the standards detailed in the Appendices to the Section.

PART 2—GENERAL PROVISIONS

5. Navigation Lights, Shapes and Sound Signals

5.1 *All vessels* shall be provided with at least a full set of such navigation lights, shapes and sound signal appliances as are required according to type, size and special purpose to ensure compliance with the International Collision Regulations.

5.2 *Specifications*

The construction and testing of navigation lights shall be in accordance with Appendix O. The requirements for performance capabilities and for the positioning of navigation lights, shapes and sound signals shall be in accordance with the provisions in the Annexes to the International Collision Regulations.

5.3 *Spare*s

All vessels shall be provided with such number of spare lanterns and/or replacement parts for navigation lights as are deemed necessary by the Authority.

5.4 Main and Emergency Installations for Navigation Lights

5.4.1 *Unlimited Sea-going Vessels;*

All Limited Sea-going Vessels of Classes 1 and 2; and

All Restricted Sea-going Vessels of Classes 1 and 2

shall be provided with:

(a) (i) A set of steaming lights capable of operating from main and emergency electrical installations;
or

(ii) A set of steaming lights capable of operating from a main electrical installation and a 'stand-by' set of Steaming Lights operating from a separate and independent power source;

and

(b) Anchor and N.U.C. lights capable of operating from a main electrical installation, and 'stand by' battery powered or oil anchor and N.U.C. lanterns.

5.4.2 *All Limited Sea-going and Restricted Sea-going Vessels of Class 3;*

All vessels operating only within Partially Smooth Water Limits and Smooth Water Limits

shall:

(a) be provided with a set of Steaming Lights capable of operating from an electrical installation;

(b) be able to display Anchor and N.U.C. Lights; and

(c) be provided with such emergency arrangements for the display of Steaming Lights as determined by the Authority.

5.5 Attention is drawn to the following extracts from Rule 1 of the International Regulations Preventing Collisions at Sea:

(b) Nothing in these Rules shall interfere with the operation of special rules made by an appropriate authority for roadsteads, harbours, rivers, lakes or inland waterways connected with the high seas and navigable by sea-going vessels. Such special rules shall conform as closely as possible to these Rules.

(e) Whenever the Government concerned shall have determined that a vessel of special construction or purpose cannot comply fully with the provisions of any of these Rules with respect to the number, position, range or arc of visibility of lights or shapes, as well as to the disposition and characteristics of sound-signalling appliances, without interfering with the special function of the vessel, such vessel shall comply with such other provisions in regard to the number, position, range or arc of visibility of lights or shapes, as well as to the disposition and characteristics of sound-signalling appliances, as her Government shall have determined to be the closest possible compliance with these Rules in respect to that vessel.

6. Navigational Equipment

6.1 All vessels shall be provided with navigational equipment in accordance with Regulation 12 of Chapter V of the International Convention for the Safety of Life at Sea, 1974, as amended.

6.2 The requirements are summarized in tables 13.1 and 13.2, and in the notes attached to the tables. For details, qualifications and exemptions the Authority must be consulted.

7. Pilot Ladders and Mechanical Pilot Hoists

7.1 Where pilots are likely to be employed, and the distance from the lightest seagoing waterline to the place of access to the ship is 1.5 metres or more, a vessel shall be provided with a pilot ladder and boarding arrangements in accordance with Appendix J.

7.2 Any mechanical pilot hoist shall be in accordance with Appendix K.

Table 13.1—Equipment Requirements for Vessels Not Engaged on International Voyages

Vessel size (tons)	Steering Compass Azimuth Circle (1)	Standard Compass (2)	Gyro Compass	Gyro Repeaters, Azimuth Circles (3)	Radar & Plotting Facility (4)	2nd Radar (5)	ARPA (4)	Indicators	
								Propeller & Rudder (6)	Rate of Turn
100,000+	A	A	C	C	A	A	A	A	C
20,000+	A	A	C	C	A	A	A	A	N
15,000+	A	A	C	C	A	A	A	A	N
10,000+	A	A	C	C	A	A	C, T	A	N
1,600+	A	A	C	C	A	N	N	A	N
500+	A	A	C	N	C	N	N	C	N
150+	A	A	N	N	N	N	N	N	N
less than 150	A	N	N	N	N	N	N	N	N

Table 13.2—Additional Equipment (7) Required for Vessels Engaged on International Voyages

Vessel size (tons)	Speed & Distance Indicator (8)	Homing Device (9) (2182 kHz)	MF/DF (10)	Echo Sounder	Gyro Compass	Gyro Repeaters (3), Azimuth Circles
1,600+	C	B	A	A	A	A
500+	C	N	N	B	C	N

Key to tables 13.1 and 13.2:

A = Required on all vessels

B = Required on all vessels constructed on or after 25 May 1980 (see note 11)

C = Required on all vessels constructed on or after 1 September 1984 (see note 11)

T = Required on all tankers

N = Not required

Notes:

- (1) A separate steering compass is not required if heading information from the standard compass is legible at the main steering position
- (2) A spare magnetic compass is to be carried unless either a steering or a gyro compass is fitted. Means of communication between the standard compass position and the conning position is to be fitted. A book for recording errors and deviations of the standard and steering compasses is to be carried.
- (3) The repeater or repeaters are to be placed, as far as is practical, to enable bearings to be taken all round the horizon.

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- (4) For vessels of 1,600 tons and up constructed on or after 1 September 1984 the plotting facility is to be at least as effective as a reflection plotter. A separate plotting facility is not required where an ARPA is fitted.
- (5) Each radar installation is to be operable independently of the other. This does not prohibit components of one system being operable in conjunction with components of the other system.
- (6) The indicators are to show the rudder angle and the propeller revolution rate, and the pitch and operational mode for variable pitch propellers or lateral thrusters, where these latter are fitted.
- (7) This equipment is additional to that required by Table 13.1 for vessels not engaged on International Voyages. For gyro compasses and repeaters this requirement replaces that of Table 13.1.
- (8) On vessels required to be fitted with an ARPA, the speed and distance device must, at least, indicate speed and distance through the water.
- (9) To comply with Regulation IV/ 12(b) of SOLAS 74.
- (10) To comply with Regulation IV/12(a) of SOLAS 74.
- (11) For definition of 'constructed' see Regulation 12 (a) of Chapter V.

8. Medicines and Medical Stores

Vessels must comply with the requirements in respect to Medical Supplies contained in the [National Standard for Commercial Vessels \(NSCV\) Part C Design and Construction, Section 7 Equipment, Subsection 7A Safety Equipment](#), Chapter 4 Types and Quantity of Safety Equipment – Tables 2, 3 and 4 where the tables reference “Medical Supplies” and Annex H “Requirements for Medical Supplies”.

9. Signalling Lights

Vessels must comply with the requirements in respect to Emergency Lighting (hand held) contained in the [NSCV Part C Design and Construction, Section 7 Equipment, Subsection 7A Safety Equipment, Chapter 4 Types and Quantity of Safety Equipment](#) – Tables 2, 3 and 4 where the tables reference “Emergency Lighting (hand held)”.

(Amendment dated 1 October 2008)

PART 3

SCALES OF MISCELLANEOUS EQUIPMENT

Class 1A—Passenger Vessels—Unlimited Sea-Going

Reference should be made to Part 4 for specification of equipment.

<i>Measured length</i>	<i>Requirements</i>
All lengths	Chronometer, Deck Watch or timepiece of equivalent accuracy
All lengths	Sextant
All lengths	Pair of Binoculars fitted with a neck strap and carrying case
All lengths	Barometer or Barograph
All lengths	Mechanical depth sounding device
All lengths	Hand lead line
All lengths	Daylight signalling lamp
All lengths	One copy of "International Code of Signals"
500 tons or more	One set of International Code flags
Less than 500 tons	Flags N and C of the International Code of Signals
All lengths	Charts and Nautical Publications for the vessel's area of operation
All lengths	An Accommodation Ladder or Gangway
All lengths	Safety net
All lengths	Such electronic navigational aids as are considered necessary by the Authority
All lengths	Windlass, anchors and cables-sufficient in number, mass, length and strength, approved by the Authority or a Classification Society on its behalf
All lengths	Hawsers and Warps of sufficient number, length and strength having regard to the size and service of the vessel
All lengths	Official Log Book

Class 1B—Passenger Vessels—Limited Sea-Going

Consistent with the type of vessel and the area of operations a suitable scaling down of equipment may be permitted by the Authority

Reference should be made to Part 4 for specification of equipment.

<i>Measured length</i>	<i>Requirements</i>
All lengths	Chronometer, Deck Watch or timepiece of equivalent accuracy
All lengths	Sextant
All lengths	Pair of Binoculars fitted with a neck strap and carrying case
All lengths	Barometer or Barograph
All lengths	Mechanical depth sounding device
All lengths	Hand lead line
All lengths	Daylight signalling lamp
All lengths	One copy of 'International Code of Signals'
500 tons or more	One set of International Code flags
Less than 500 tons	Flags N and C of the International Code of Sign
All lengths	Charts and Nautical Publications for the vessel's area of operation
All lengths	An Accommodation Ladder or Gangway
All lengths	Safety net
All lengths	Such electronic navigational aids as are considered necessary by the Authority
All lengths	Windlass, anchors and cables—sufficient in number, mass, length and strength, approved by the Authority or a Classification Society on its behalf
All lengths	Hawsers and Warps of sufficient number, length and strength having regard to the size and service of the vessel
35 metres and over	Official Log Book
Less than 35 metres	Vessel Record Book

Class IC—Passenger Vessels—Restricted Sea-Going

Reference should be made to Part 4 for specification of equipment

<i>Measured length</i>	<i>Requirements</i>
All lengths	Clock
All lengths	Barometer or Barograph
All lengths	Mechanical depth sounding device or a Hand lead line
All lengths	Signalling light
All lengths	Flags N and C of the International Code of Signals
All lengths	Charts and nautical publications suitable for the vessel's area of operation
All lengths	Gangway capable of being used on either side of the vessel or a safe means of access approved by the Authority
All lengths	Windlass, anchors and cables—sufficient in number, mass, length and strength, approved by the Authority or a Classification Society on its behalf
All lengths	Hawsers and warps of sufficient number, length and strength having regard to the size and service of the vessel
50 metres and over	Official Log Book
Less than 50 metres	Vessel Record Book

Class 1D—Passenger Vessels—Partially Smooth Water

Reference should be made to Part 4 for specification of equipment

<i>Measured length</i>	<i>Requirements</i>
All lengths	Clock
All lengths	Barometer
All lengths	Hand lead line
All lengths	Signalling light
All lengths	Gangway or a safe means of access approved by the Authority
All lengths	Windlass, anchors and cables—sufficient in number, mass, length and strength approved by the Authority or a Classification Society on its behalf
All lengths	Hawsers and warps of sufficient number, length and strength having regard to the size and service of the vessel
Less than 10 metres	Boat hook

Class 1E—Passenger Vessels—Smooth Water

Reference should be made to Part 4 for specification of equipment.

<i>Measured length</i>	<i>Requirements</i>
All lengths	Clock or Watch
All lengths	Signalling light
All lengths	Gangway or a safe means of access approved by the Authority
All lengths	Windlass, anchors and cables—sufficient in number, mass, length and strength, approved by the Authority or a Classification Society on its behalf
All lengths	Hawsers and warps of sufficient number, length and strength having regard to the size and service of the vessel
Less than 10 metres	Boat hook

Class 2A—Non-Passenger Vessels—Unlimited Sea-Going

Reference should be made to Part 4 for specification of equipment

<i>Measured length</i>	<i>Requirements</i>
All lengths	Chronometer, Deck Watch or timepiece of equivalent accuracy
All lengths	Sextant
All lengths	Pair of Binoculars fitted with a neck strap and carrying case
All lengths	Barometer or Barograph
All lengths	Mechanical depth sounding device
All lengths	Hand lead line
All lengths	Daylight signalling lamp
All lengths	One copy of 'International Code of Signals'
500 tons or more	One set of International Code flags
Less than 500 tons	Flags N and C of the International Code of Signals
All lengths	Charts and Nautical Publications for the vessel's trade
All lengths	An Accommodation Ladder or Gangway
All lengths	Safety net
All lengths	Such electronic navigational aids as are considered necessary by the Authority
All lengths	Windlass, anchors and cables—sufficient in number, mass, length and strength, approved by the Authority or a Classification Society on its behalf
All lengths	Hawsers and Warps of sufficient number, length and strength having regard to the size and service of the vessel
All lengths	Official Log Book

Class 2B—Non-Passenger Vessels—Limited Sea-Going

Consistent with the type of vessel and the area of operations allocated a suitable scaling down of equipment may be permitted by the Authority.

Reference should be made to Part 4 for specification of equipment.

<i>Measured length</i>	<i>Requirements</i>
All lengths	Chronometer, Deck Watch or timepiece of equivalent accuracy
All lengths	Sextant
All lengths	Pair of Binoculars fitted with a neck strap and carrying case
All lengths	Barometer or Barograph
All lengths	Mechanical depth sounding device
All lengths	Hand lead line
All lengths	Daylight signalling lamp
All lengths	One copy of "International Code of Signals"
500 tons or more	One set of International Code flags
Less than 500 tons	Flags N and C of the International Code of Signals
All lengths	Charts and Nautical Publications for the vessel's trade
All lengths	An Accommodation Ladder or Gangway
All lengths	Safety net
All lengths	Such electronic navigational aids as are considered necessary by the Authority
All lengths	Windlass, anchors and cables—sufficient in number, mass, length and strength, approved by the Authority or a Classification Society on its behalf
All lengths	Hawsers and Warps of sufficient number, length and strength having regard to the size and service of the vessel
35 metres and over	Official Log Book
Less than 35 metres	Vessel Record Book
Less than 10 metres	Sea anchor

Class 2C—Non-Passenger Vessels—Restricted Sea-Going

Reference should be made to Part 4 for specification of equipment.

<i>Measured length</i>	<i>Requirements</i>
All lengths	Clock
All lengths	Barometer
All lengths	Mechanical depth sounding device or a Hand lead line
All lengths	Signalling light
All lengths	Flags N and C of the International Code of Signals
All lengths	Charts and nautical publications suitable for vessel's area of operation
All lengths	Gangway capable of being used on either side of the vessel or a safe means of access approved by the Authority
All lengths	Windlass anchors and cables—sufficient in number, mass, length and strength, approved by the Authority or a Classification Society on its behalf
All lengths	Hawsers and warps of sufficient number, length and strength having regard to the size and service of the vessel
Less than 10 metres	Sea anchor
Less than 10 metres	Boat hook
50 metres and over	Official Log Book
10 metres and over but less than 50 metres	Vessel Record Book

Class 2D—Non-Passenger Vessels—Partially Smooth Water

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Reference should be made to Part 4 for specification of equipment.

<i>Measured length</i>	<i>Requirements</i>
All lengths	Clock
All lengths	Barometer
All lengths	Hand lead line
All lengths	Signalling light
All lengths	Gangway or a safe means of access approved by the Authority
All lengths	Windlass, anchors and cables—sufficient in number, mass, length and strength, approved by the Authority or a Classification Society on its behalf
All lengths	Hawsers and warps of sufficient number, length and strength having regard to the size and service of the vessel
Less than 10 metres	Boat hook

Class 2E—Non-Passenger Vessels—Smooth Water

Reference should be made to Part 4 for specification of equipment.

<i>Measured length</i>	<i>Requirements</i>
All lengths	Clock or Watch
All lengths	Gangway or a safe means of access approved by the Authority
All lengths	Windlass, anchors and cables—sufficient in number, mass, length and strength approved by the Authority or a Classification Society on its behalf
All lengths	Hawsers and warps of sufficient number, length and strength having regard to the size and service of the vessel
Less than 10 metres	Boat hook
All lengths	Signalling light

Class 3A—Fishing Vessels—Unlimited Sea-Going

Reference should be made to Part 4 for specification of equipment.

<i>Measured length</i>	<i>Requirements</i>
All lengths	Chronometer or Deck Watch
All lengths	Barometer or Barograph
All lengths	Mechanical depth sounding device
All lengths	Hand lead line
All lengths	Daylight signalling lamp—except that an Authority may permit vessels of less than 25 metres to carry a torch in lieu
35 metres and over	1 set of international code flags
35 metres and over	1 copy of 'International Code of Signals'
Less than 35 metres	Flags N and C
All lengths	Charts and nautical publications suitable for the area of operations of the vessel
All lengths	Gangway or a safe means of access approved by the Authority
All lengths	Electronic navigational aids to the satisfaction of the Authority
All lengths	Windlass, anchors and cables—sufficient in number, mass, length and strength, approved by the Authority or a Classification Society on its behalf
All lengths	Hawsers and warps of sufficient number, length and strength having regard to the use and service of the vessel
50 metres and over	Official Log Book
Less than 50 metres	Vessel Record Book

Class 3B—Fishing Vessels—Limited Sea-Going

Consistent with the type of vessel and the area of operations allocated a suitable scaling down of equipment may be permitted by the Authority.

Reference should be made to Part 4 for specification of equipment.

<i>Measured length</i>	<i>Requirements</i>
All lengths	Deck Watch or Clock
All lengths	Barometer or Barograph
25 metres and over	Mechanical depth sounding device and Hand lead line
Less than 25 metres	Mechanical depth sounding device or Hand lead line
All lengths	Signalling light
35 metres and over	1 set of 'international code flags'
Less than 35 metres	Flags N and C
35 metres and over	1 copy of 'International Code of Signals'
All lengths	Charts and nautical publications suitable for the area of operations of the vessel
All lengths	Gangway or a safe means of access approved by the Authority
All lengths	Electronic navigational aids to the satisfaction of the Authority
All lengths	Windlass, anchors and cables—sufficient in number, mass, length and strength, approved by the Authority or a Classification Society on its behalf
All lengths	Hawsers and warps of sufficient number, length and strength having regard to the size and service of the vessel
All lengths	Vessel Record Book

Class 3C—Fishing Vessels—Restricted Sea-Going

Reference should be made to Part 4 for specification of equipment.

<i>Measured length</i>	<i>Requirements</i>
All lengths	Clock
All lengths	Barometer or Barograph
All lengths	Mechanical depth sounding device or Hand lead line
All lengths	Signalling light
All lengths	Charts and nautical publications suitable for the area of operations of the vessel
All lengths	Gangway or a safe means of access approved by the Authority
All lengths	Windlass, anchors and cables—sufficient in number, mass, length and strength approved by the Authority or a Classification Society on its behalf
All lengths	Hawsers and warps of sufficient number, length and strength having regard to the size and service of the vessel
All lengths	Flags N and C
10 metres and over	Vessel Record Book

Class 3D—Fishing Vessels—Partially Smooth Water

Reference should be made to Part 4 for specification of equipment.

<i>Measured length</i>	<i>Requirements</i>
10 metres and over	Clock
10 metres and over	Barometer
All lengths	Signalling light
All lengths	A gangway or a safe means of access approved by the Authority
All lengths	Windlass, anchors and cables—sufficient in number, mass, length and strength, approved by the Authority or a Classification Society on its behalf
All lengths	Hawsers and warps of sufficient number, length and strength having regard to the size and service of the vessel

Class 3E—Fishing Vessels—Smooth Water

Reference should be made to Part 4 for specification of equipment.

<i>Measured length</i>	<i>Requirements</i>
All lengths	Signalling light
All lengths	A gangway or a safe means of access approved by the Authority
All lengths	Windlass, anchors and cables—sufficient in number, mass, length and strength, approved by the Authority or a Classification Society on its behalf
All lengths	Hawsers and warps of sufficient number, length and strength having regard to the size and service of the vessel

PART 4**TYPES OF MISCELLANEOUS EQUIPMENT**

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Appendix A
CHRONOMETERS AND DECK WATCHES

Chronometer or deck watch—shall mean a certified chronometer or deck watch capable of being rated and used in conjunction with radio time signals to provide an accurate timepiece for navigation.

Appendix B
COMPASS

The term 'Compass' shall include a gyro compass or other mechanical compass, and shall be of a type approved by the Authority.

PART I REQUIREMENTS FOR MAGNETIC COMPASSES

1. Class A Vessels

1.1 In approving, certifying and positioning a magnetic compass for use on a Class A Vessel the requirements of the following international standards, or their equivalent national standards, shall be used for guidance:

- 1.1.1 ISO 449—Shipbuilding – Magnetic Compasses and Binnacles—Class A
- ISO 694—Positioning of Magnetic Compasses in Ships
- ISO 1069—Magnetic Compasses and Binnacles for Sea Navigation-Vocabulary
- ISO 2269—Magnetic Compasses and Accessories – Rules for Testing and Certificates

2. Class B Vessels

2.1 In approving, certifying and positioning a magnetic compass for use on a Class B Vessel the requirements of the following international standards, or their equivalent national standards, shall be used for guidance:

- 2.1.1 ISO 613—Shipbuilding – Magnetic Compasses and Azimuth Reading Devices—Class B
- ISO 694 – Positioning of Magnetic Compasses in Ships
- ISO 1069—Magnetic Compasses and Binnacles for Sea Navigation—Vocabulary
- ISO 2269—Magnetic Compasses and Accessories—Rules for Testing and Certificates

3. Class C and D Vessels

3.1 A magnetic steering compass shall be:

- 3.1.1 located so that the view of the horizon from the steering position shall be as uninterrupted as possible for a minimum arc of 115° from right ahead on either side of the vessel;
- 3.1.2 located forward of the steering wheel/controls in such a manner that it can be easily read from the normal steering position;
- 3.1.3 fitted with an efficient means of illumination together with a device for dimming the illumination;
- 3.1.4 suspended by gimbals so that the bowl shall remain horizontal when the binnacle is tilted 40° in any direction;
- 3.1.5 located in such a position as to permit proper adjustment; and
- 3.1.6 provided with a compass card according to the following table:

<i>Length of vessel (m)</i>	<i>Compass Card diameter (mm)</i>
Less than 10	75
10 but less than 20	100
20 and over	125

4. General Requirements

4.1 Where a projector, reflector or transmitting type of standard compass is the only magnetic compass fitted on board, it shall be:

- 4.1.1 capable of being used as a normal magnetic compass in the event of a power failure; or

- 4.1.2 provided with an emergency electrical supply capable of operating the installation for a period of not less than 24 hours.
- 4.2 General arrangement plans submitted to the Authority in respect of new vessels are to include details of:
 - 4.2.1 all items of equipment or magnetic materials likely to exert a disturbing influence on the compass; and
 - 4.2.2 all items which will impair the visibility of the horizon from a compass position.

5. Other Equipment in Vicinity of Compasses

- 5.1 When electrical instruments are located close to a magnetic compass, care should be taken to ensure that the compass is not affected whether the equipment is energized or not. Electrical equipment should not be placed nearer to any magnetic compass than the 'safe distance' which has been determined by test or recommended by the manufacturer of such equipment.
- 5.2 Portable electrical equipment such as hand microphones and telephone hand sets can seriously affect magnetic compasses and should not be operated when held close to a compass.
- 5.3 When electrical equipment is fitted nearer to a magnetic compass than the recommended safe distance, or if no safe distance is known in respect of a unit, compass deviations should be checked with the equipment in operating and non-operating modes to ensure that the compass is properly compensated and not affected by the equipment. Where such equipment is removed, modified or replaced, or major adjustment/maintenance is made, the compass deviations shall be checked to ensure that no change has taken place.
- 5.4 The minimum distance at which a magnetic compass should be placed from magnetic materials is indicated in B.S. M.A. 2 Part 3.

Any magnetic material in the vicinity of the compass should be disposed symmetrically about the compass and outside the minimum distance. Where magnetic material disposed outside the minimum distance still causes the compass not to operate satisfactorily, the distance of the material away from the compass should be increased.
- 5.5 Where the structure of the vessel does not allow magnetic materials to be placed at the required minimum distance, the compass should be sited in the best possible position compatible with these requirements and the owner or master of the vessel should produce subsequent evidence of satisfactory performance in service.

6. Adjustment of Magnetic Compasses on Vessels of Classes A, B and C

- 6.1 Before an initial certificate of survey is issued in respect of a vessel to which this item applies, the compass or compasses of that vessel shall be adjusted by an adjuster of compasses. Thereafter vessels to which this item applies shall have their compasses adjusted by an adjuster of compasses at intervals not exceeding 3 years.
- 6.2 Provided that where the Authority is satisfied that a compass adjustment is not required or that an adjustment may be deferred without detriment to the safety of the vessel, the Authority may exempt the vessel from compass adjustment for such period as the Authority may determine.
- 6.3 The compass or compasses of a vessel shall be adjusted if:
 - 6.3.1 the vessel has undergone repairs or alterations of such a nature as is in the opinion of the Authority likely to affect the accuracy of the compass or compasses;
 - 6.3.2 the vessel has not previously operated from any port or place in Australia; or
 - 6.3.3 the compass or compasses of the vessel are, in the opinion of the Authority, unsatisfactory or unreliable.
- 6.4 An 'adjuster of compasses' shall be an adjuster of compasses licensed under the Navigation (Compass) Regulations or a person appointed by the Authority for the purpose of adjusting compasses.

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- 1.1. Gyro compasses where fitted are to comply with the general and specific requirements contained in Chapters 1.1 and 1.2 of the IMO Publication: "Performance Standards for Navigation Equipment", London, 1982, ISBN 92-801-1137-X.
- 1.2. Information should be provided to enable competent members of a vessel's staff to operate and maintain the equipment efficiently.
- 1.3. The equipment should be provided with an indication of manufacture, type and/or number.
- 1.4. The equipment should be so constructed and installed that it is readily accessible for maintenance purposes.

Appendix C
DEPTH SOUNDING EQUIPMENT

1. Mechanical depth sounding device

- 1.1. Mechanical depth sounding devices shall include echo-sounders, deep sea sounding machines, or any other apparatus designed for determining the depth of water using mechanical, hydrostatic pressure or electronic means.
- 1.2. A mechanical depth sounding device shall be complete with such accessories and spare parts as are sufficient, in the opinion of the Authority, having regard to the type of device.

2. Hand lead line shall consist of

- 2.1. A lead of at least 3 kg
- 2.2. A line of at least 46 metres, correctly marked.

Appendix D
SIGNALLING EQUIPMENT

1. Daylight Signalling Lamp

- 1.1. Shall be of a type approved by the Authority.
- 1.2. Shall not be solely dependent upon the vessel's main source of power.

2. Signalling Lamp or Light

- 2.1. shall be a signal light approved by the Authority.
- 2.2. may be portable or fixed.
- 2.3. includes a torch or similar apparatus.
- 2.4. shall have a source of power independent of vessel's main power supply.

3. **'International Code of Signals'** means any published manual approved by the Authority containing the International Code of Signals adopted by the International Maritime Organization in 1965 and as amended from time to time.

Appendix E
CHARTS AND NAUTICAL PUBLICATIONS

These may consist of:

- Nautical Almanac
- Nautical Tables
- Sailing Directions
- Notices to Mariners
- Charts

Charts issued specifically for use with electronic position finding aids

List of Lights

Tide Tables

List of Radio Signals and Radio Stations

Merchant Ship Search and Rescue Manual

Chart Instruments

Appendix F

REQUIREMENTS FOR AND USE OF ACCOMMODATION LADDERS, GANGWAYS AND SAFETY NETS

The requirements for accommodation ladders, gangways and associated safety nets are those of Marine Orders Part 23.

Appendix G

ELECTRONIC NAVIGATIONAL AIDS

The term 'Electronic Navigational Aids' includes:

Radar

Decca

Omega

Direction Finder

Satellite Navigator

LORAN.

Appendix H

ANCHORS AND CABLES

1. Requirements

1.1 For vessels of measured length of not more than 25 metres.

1.1.1 For vessels having a displacement hull the number and mass of anchors shall be as specified in Table 1.

1.1.2 For vessels having a planing hull, the mass of anchors shall be 75 per cent of the masses in Table 1. The number of anchors shall be determined by the placing in Table 1 of masses equivalent to the reduced masses for these vessels.

1.1.3 The type, size and length of anchor cable shall be as specified in Tables 2, and 3, according to the mass of anchor and length of vessel respectively.

1.1.4 The notes to Tables 1 and 2 shall be consulted for allowable variations from the numbers, masses, sizes etc., specified.

1.2 For vessels of measured length of 25 metres and over but not more than 61 metres, the appropriate anchors and cables may be in accordance with Table 4, and regulated by the Equipment Number obtained from the equation:

$$EN = \Delta^{2/3} + 2(Ba + \sum bh) + 0.1A$$

Where:

EN = Equipment Number

Δ = moulded displacement in tonnes to the designed load waterline

- B = moulded breadth in metres
- a = freeboard in metres from the designed load waterline to the weather deck.
- b = breadth in metres of a tier of deckhouse etc., where breadth greater than B/4
- h = height in metres of a tier of deckhouse etc., where breadth greater than B/4
- H = $a + h_1 + h_2 + \dots$
- A = the profile area in square metres of the hull and those superstructures and houses where breadth greater than B/4. Screens and bulwarks more than 1.5 metres in height are to be regarded as part of this area.

(Amendment dated 15 March 1996)

1.3 For vessels of measured length of 61 metres and over appropriate anchors and cables shall be in accordance with Classification Society Tables, and regulated by the Equipment Number obtained from the formula:

$$EN = \Delta^{2/3} + 2BH + 0.1A$$

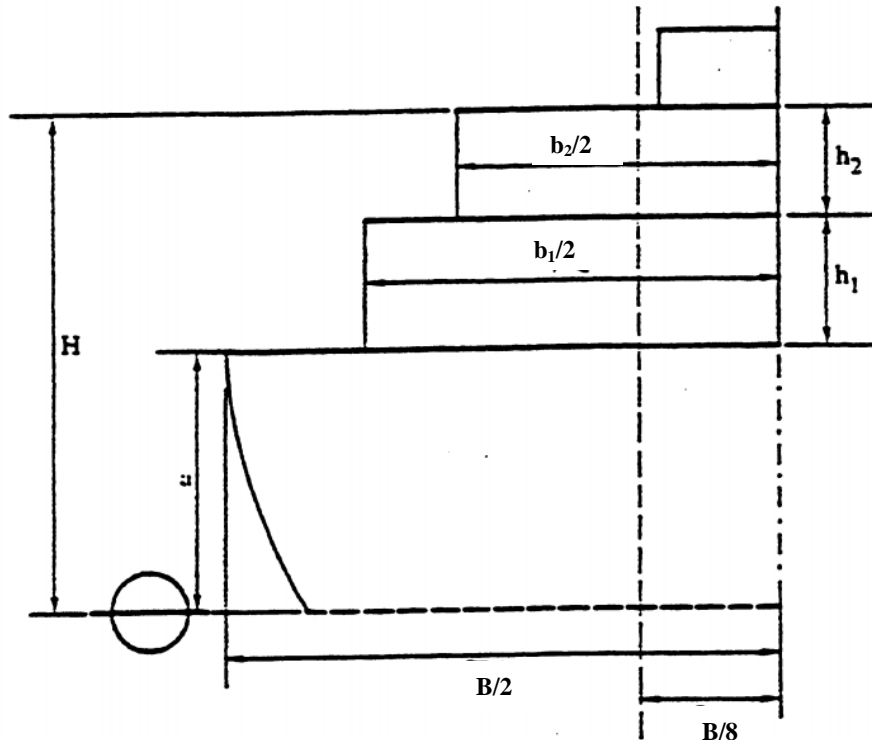
1.4 Departures from required anchors and cables

1.4.1 Where an Authority decides, on the basis of special features, size, activities or area of operations, that the tabulated masses etc. for a vessel of less than 25 metres measured length are not the most appropriate for that vessel, the Authority may calculate the anchor mass etc. by use of the formula:

$$EN = \Delta^{2/3} + 2(Ba + \sum bh) + 0.1A$$

and by use of Table 4, and may then require anchors or cables which differ from those tabulated.

1.4.2 Similarly an Authority in special circumstances as above, may modify or exempt a vessel's compliance with the above requirements.



2. Testing of Anchors

- 2.1 Anchors of more than 75kg are tested by Classification Societies and are certified by them for 'classed vessels'.

Such testing includes – proof load

- report of heat treatment
- metallurgy analysis

- 2.2 Anchors of less than 75kg are normally only proof tested, or only a random selection or sample is proof tested. Many small boat anchors are produced by small scale manufacturers, with no particular regard for heat treatment or correct metallurgy.
- 2.3 It is required that Authorities should be satisfied concerning the design, mass, quality and efficiency of anchors which are permitted to be carried by vessels under their jurisdiction.

3. Testing of Anchor Cables

- 3.1 Manufacturers of chain and of natural or synthetic fibre ropes may be required to issue certificates of test with each chain or rope produced. Manufacture shall be to Australian Standards or equivalent.
- 3.2 It shall be a general principle that the chain or rope is of sufficient strength to match the maximum holding power of a specified mass and type of anchor.

4. Windlass

- 4.1 Where the anchor is less than 30 kg and where fibre rope is used in lieu of anchor chain, as per Table 2, a mechanical lifting device need not be fitted. The inboard end of the rope should be permanently made fast to the vessel.
- 4.2 In all other cases a windlass or capstan shall be provided. For an anchor of 30 kg and over but less than 50 kg the windlass or capstan may be hand operated, and for anchors 50 kg and over the windlass or capstan must be power operated. The windlass or capstan shall be of suitable size and lifting capacity for the anchor(s) and rope(s) or chain(s) carried by the vessel. In smooth water vessels the need for a windlass may be left to the discretion of the Authority.
- 4.3 Such windlasses or cable winches or other suitable lifting devices shall be securely fitted to the deck of the vessel.
- 4.4 The Authority shall satisfy itself that the arrangements for lowering and hoisting anchors, and for securing the chain or rope when a vessel is at anchor, are satisfactory for the size and type of vessel.

NOTES RE TABLE 1

1. High-Holding-Power Anchors

- 1.1 The masses given are for Admiralty Pattern Stockless anchors with an assumed holding power of 3 times their own mass.
- 1.2 The Authority may allow approved high-holding-power anchors to be carried at the owner's request, and shall allow a reduction of 30 per cent of the specified anchor mass, where such anchors are used. Approved high-holding-power anchors shall be those anchors having a holding power at least double that of Admiralty Pattern Stockless anchors, ie. high-holding-power anchors must have holding Power at least 6 times their own mass.
- 1.3 See Notes re Table 2 for details of chains or ropes for high-holding-power anchors.

2. **Variation in mass of anchors.** Where a vessel is required to carry two anchors of a specified mass, any one anchor may differ by not more than 10 per cent from such specified mass but such that the total mass of both anchors carried shall not be less than twice the specified mass.

3. Distribution of mass in anchor.

The mass of the head of a Stockless anchor shall be at least 60 per cent of the total mass of the anchor.

4. **Performance of Anchors.** Varies widely in different types of holding ground. Where a vessel will be operating for most of the time in an area of known poor holding ground, the Authority may require the vessel to carry heavier/better equipment.

Table 1(A)

ANCHOR MASSES (kg) FOR SEA-GOING VESSELS—(See NOTE)

L	H	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0
3															
4				8	11										
5			8	12	13.5	16									
6		8	11	14	16	18.5	21	==							
7		10	13	16	18.5	21	24	==	26						
8		12	15	18.5	21	24.5	27	31	35						
9		14	17	21	24	28	32	36	41	46					
10		16	19	23.5	27	32	37	42	47	52	59				
11		18	22	26	31	37	42	48	54	61	67.5	75			
12		20	24.5	29	35	41	48	54	62	69.5	77	87	96		
13		22	27	33	40	46.5	53.5	62	70	80.5	90	99.5	110	121	
14		24	30.5	37.5	45	52	61	70	81	91	102	113	124.5	138	148
15		27	35	42	50	59	69	79	91	102	115	128	141	154	167.5
16		31	39	47	56	66	77	90	102	115	129	142	156	171	186
17		35	43	52	63	74	87	100	114	129	143	158	174	190	206
18		39	48	58	70	83	97	111	127	142	158	175	191	210	226
19		43	53	65	78	93	108	124	140	156	175	192	211	227.5	246
20		48	59	72	87.5	103	120	137	154	172.5	191	211	229	248	268
21		53	66	80	97	114	132	149	169	189	208	228	248	269.5	291
22		59	73	90	107	126	144.5	164	185	206	226	247	269.5	292	318
23		65	82	100	118	138	158	180	201	223	244	268	291	318	347
24		72	90	109	130	150	172	195	218	240	264	289	318	343.5	388
25		80	99	121	142	163	188	212	235	259	284	312	344	384	432

NOTE: Sea-going vessel means: 1. Unlimited seagoing vessel; 2. Limited sea-going vessel.

Above = 1 Anchor required

Below = 2 Anchors required

H is height (see diagram in 1)

L is measured length.

Table 1(B)**ANCHOR MASSES (kg) FOR RESTRICTED SEA-GOING VESSELS**

L	H	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0
3															
4				7	10										
5			7	10	12	14									
6		7	10	12	13	15	18								
7		9	11	14	16	18	20	<u>22.5</u>							
8		10	12.5	15	17.5	20	<u>22.5</u>	25	30						
9		12	15	17.5	20	<u>22.5</u>	27.5	30	35	40					
10		14	17	20	<u>22.5</u>	27.5	30	35	40	45	50				
11		15	20	<u>22.5</u>	25	30	35	40	45	50	55	60			
12		17	<u>20</u>	25	30	35	40	45	50	57.5	65	72.5	80		
13		20	25	30	35	40	45	50	60	67.5	75	82.5	90	100	
14		20	25	32.5	37.5	45	50	57.5	67.5	75	85	95	105	115	125
15		<u>22.5</u>	30	35	42.5	50	57.5	65	75	85	95	110	120	130	140
16		25	32.5	40	47.5	55	65	75	85	97.5	110	120	130	140	155
17		30	37.5	45	52.5	62.5	72.5	85	95	110	120	130	145	160	175
18		32.5	40	50	60	70	80	92.5	105	120	130	145	160	175	190
19		35	45	55	65	77.5	90	105	120	130	145	160	175	190	205
20		40	50	60	72.5	85	100	115	130	145	160	175	190	205	225
21		45	55	67.5	80	95	110	125	140	160	175	190	210	225	245
22		50	60	75	90	105	120	135	155	175	190	205	225	245	265
23		55	70	85	100	115	130	150	170	190	205	225	245	265	290
24		60	75	90	110	125	145	165	180	200	220	240	260	285	320
25		65	85	100	120	140	160	180	200	220	240	260	285	315	350

Above = 1 Anchor required

Below = 2 Anchors required

H is height (see diagram in 1)

L is measured length

Table 1(C)

ANCHOR MASSES (kg) FOR PARTIALLY SMOOTH WATER VESSELS

L	H	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0
3															
4				6	8										
5			6	8	9.5	11									
6		6	8	9.5	11	12.5	14								
7		7	9	11	12.5	14.5	16	18							
8		8	10.5	12.5	14.5	16.5	18.5	21	23.5						
9		9.5	12	14	16.5	18.5	21.5	24.5	28	31					
10		11	13	16	18.5	21.5	25	28.5	32	35	40				
11		12.5	15	18	21	24.5	28.5	32.5	36	41	45.5	50			
12		13	16.5	20	23.5	28	32.5	36.5	42	46	52	58	64		
13		15	18.5	22.5	27	31.5	36	42	47	53	60	66	73	81.5	
14		17	20.5	25	30.5	35	41.5	47	53	60.5	68	74.5	84.5	92	99
15		19	23	29	33.5	40	46	53	60.5	68	77	86	94	103	112
16		21	26	32	37.5	44.5	51.5	59.5	68	77	87	95.5	104.5	114.5	125
17		23	30.5	35	42.5	49	58	66.5	76	87	95.5	105.5	116.5	117	138
18		26.5	32.5	39	47	55.5	64.5	74.5	85.5	96	105.5	117	128.5	140	151.5
19		29	36	44	52	62	72	83.5	96	106	117	129	141	153	164.5
20		32.5	40	48	58.5	68.5	81	92	104.5	115.5	128	141	153.5	166	180
21		35.5	44.5	53.5	64.5	76	88.5	100	113.5	126.5	138	153	166.5	181	195
22		40	49	60	71.5	85	96.5	111	124	138	152	165.5	181	195.5	211.5
23		44	54	66.5	79	93	106.5	120	135	149.5	163.5	180	195.5	211	230
24		48	60.5	73	88	100.5	116	131	146	162	175	196	210	229	250
25		53.5	66.5	81	95	111	126	142	156	174	190	207.5	227	249	272

Above = 1 Anchor required

Below = 2 Anchors required

H is height (see diagram in 1)

L is measured length

Table 1(D)

ANCHOR MASSES (kg) FOR SMOOTH WATER VESSELS															
L	H	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0
3															
4				4	5										
5			4	5	6	7									
6		4	5	6	7	8	9								
7		4.5	6	7	8	9.5	11	12							
8		5.5	6.5	8	9.5	11	12.5	14	15.5						
9		6	7.5	9	11	12.5	14.5	16	18.5	21					
10		7	8.5	11	12.5	14.5	16.5	19	21.5	24	26.5				
11		8	10	12	14.5	16	19	22	24.5	27.5	31	34.5			
12		9	11	14	15.5	18.5	22	25	28	31.5	35.5	39.5	43		
13		10	12.5	15	18	21.5	24.5	28	32	36	40.5	45	50	54.5	
14		11.5	14	17	20.5	24	27.5	32	36.5	41	46.5	51	56.3	62	67
15		12.5	15.5	19	23	27	31	36	41	46	52	57.5	63.5	69.5	75
16		14	17.5	21.5	25.5	30	35	40.5	46	52	58	64	70	76.5	83
17		15.5	19.5	24	28.5	34	39.5	45	51.5	58	64	71	77.5	85	92
18		17.5	22	26.5	32	38	43.5	50.5	57.5	64	71	78	86	93.5	101.5
19		19.5	24.5	29.5	35.5	41.5	49	56	63	70.5	78	86	94.5	103	111
20		22	27	33	39.5	46.5	54	62	70	77	85.5	94.5	103.5	112.5	121
21		24.5	30	36.5	43.5	51.5	59	67.5	75.5	84	94	103	112.5	122	132.5
22		27	33.5	40.5	47	57	65	73.5	82.5	92	102	112	122	133	144
23		29.5	37	45	53	62	71	80	90	100	110.5	121	132	144.5	157.5
24		33	40.5	49.5	58.5	68	77	87	98	108.5	119	131	143.5	157	171
25		36.5	45	54	64	73.5	84	95	106	117	129	142	156	170.5	186

Above = 1 Anchor required

Below = 2 Anchors required

H is height (see diagram in 1)

L is measured length

Table 2 (A)

ANCHOR CABLES—SEA-GOING VESSELS						
	Anchor mass kg	Short link chain diameter mm	Manila diameter mm	Polypropylene diameter mm	Nylon diameter mm	+Chain Length
Rope may be used in lieu of chain	Under 8	8	14	12	10	3 m chain of table size shackled between rope and anchor
	8-13	8	16	12	10	
	13-18	8	18	14	11	
	18-25	8	20	16	12	
One chain must be carried. Rope may be substituted for chain on second anchor	25-32	10	24	16	14	6 m chain of table size shackled between rope and anchor
	32-38	10	24	18	14	
	38-44	10	24	22	16	
	44-51	13	30	24	18	
	51-76	14	34	28	20	
	76-89	14	38	32	22	
	89-100	15	40	34	24	
Rope not permitted	100-130	15				
	130-178	16				
	178-226	17				
	226-274	19				
	274-322	20				
	322-370	21				
	370-432	21				

Note: Sea-going vessels means: Unlimited sea-going vessels

Limited sea-going vessels

Restricted sea-going vessels

Table 2 (B)**ANCHOR CABLES—PARTIALLY SMOOTH WATER VESSELS**

	Anchor mass kg	Short link chain diameter mm	Manila diameter mm	Polypropylene diameter mm	Nylon diameter mm	+Chain Length
Rope may be used in lieu of chain	Under 8	8	14	12	10	3 m chain of table size shackled between rope and anchor
	8-13	8	16	12	10	
	13-18	8	18	14	11	
	18-25	8	20	16	12	
	25-38	10	24	18	14	6 m chain of table size shackled between rope and anchor
	38-44	12	24	22	16	
	44-51	13	28	24	18	
	51-89	14	36	30	22	
	89-100	15	40	34	24	
One chain must be carried. Rope may be substitutes for chain on second anchor	100-130	15	48	40	30	9 m chain of table size shackled between rope and anchor
	130-178	16	52	46	34	
	178-226	17	56	48	36	
	226-274	19	60	52	38	

Table 2(C)**ANCHOR CABLES—SMOOTH WATER VESSELS**

	Anchor mass kg	Short link chain diameter mm	Manila diameter mm	Polypropylene diameter mm	Nylon diameter mm	+Chain Length
Rope may be used in lieu of chain	Under 8	8	14	12	10	3 m chain of table size shackled between rope and anchor
	8-13	8	16	12	10	
	13-18	8	18	14	11	
	18-25	8	20	16	12	
	25-38	10	24	18	14	6 m chain of table size shackled between rope and anchor
	38-44	12	24	22	16	
	44-51	13	28	24	18	
	51-89	14	36	30	22	
	89-100	15	40	34	24	
	100-130	15	48	40	30	9 m chain of table size shackled between rope and anchor
One chain must be carried. Rope may be substituted for chain on other anchor	130-178	15	52	46	34	9 m chain of table size shackled between rope and anchor
	Over 178	16	56	48	36	

Notes re Table 2

1. Where a lighter high-holding-power anchor is permitted (see Note, Table 1), the chain or the rope used shall be that nominated for the mass of the stockless anchor for which the high-holding-power is specified.
2. For small high-holding-power anchors, the use of nylon is recommended because of its greater elasticity and breaking strain compared to manila.
3. Where anchor ropes are permitted in lieu of chain, the use of a length of chain of tabulated size shackled between rope and anchor is mandatory. This chain facilitates the anchor shank assuming a horizontal position, hence maximizing the holding power of the anchor.
4. It should be noted that polypropylene ropes are subject to actinic degradation, and therefore, when not required for use, should be stowed out of the sunlight.

Table 3

<u>LENGTHS OF ANCHOR CABLE TO BE CARRIED</u>	
<i>Length of vessel metres</i>	<i>Length of cable per anchor metres</i>
3	45
4	45
5	45
6	55
7	55
8	55
9	55
10	55
11	55
12	70
13	70
14	70
15	82
16	82
17	82
18	96
19	96
20	96
21	110
22	110
23	110
24	110
25	110

Table 4

Equipment Number	Stockless anchors		Anchor chain	
	Number	Mass per anchor kg	Length m	Diameter mm
5	1	20	110	8
10	2	32	110	10
15	2	42	140	10
20	2	52	140	12.5
25	2	64	164	12.5
30	2	75	164	12.5
40	2	100	192	12.5
50	2	120	192	12.5
60	2	140	220	12.5
70	2	160	220	14
80	2	180	220	14
90	2	210	220	16
100	2	240	220	16
110	2	270	247.5	17.5
120	2	300	247.5	17.5
130	2	340	275	19
140	2	390	275	20.5
150	2	480	275	22
175	2	570	302.5	24
205	2	660	302.5	26
240	2	780	330	28
280	2	900	357.5	30
320	2	1020	357.5	32
360	2	1140	385	34
400	2	1290	385	36
450	2	1440	412.5	38
500	2	1590	412.5	40
550	2	1740	440	42
600	2	1920	440	44
660	2	2100	440	46

Notes:

For intermediate values of equipment number use equipment complement in sizes and masses given for the lower equipment number in the table.

Length of anchor cable given in table is the total length of cable for the two anchors required.

Appendix I

SEA ANCHORS FOR VESSELS LESS THAN 10 METRES

1. A sea anchor is a conical canvas bag open at both ends with a mouth opening eight times the size of the tail opening.
2. A sea anchor shall be constructed of best quality materials strongly sewn together and roped at the seams, the ropes at the mouth then being formed into a bridle with a thimble seized into the connecting end, and the ropes at the tail extending and seized into a parcelled loop to form the attachment for the tripping line.
3. A hawser at least three times vessel's length and a tripping line four metres longer than the hawser shall be available for use with the sea anchor.
4. Dimensions of sea anchors and attachments:
 - Diameter of mouth of circular sea anchor—0.7m
 - Length of each side of the mouth of non-circular sea anchor—0.6m
 - Length of canvas bag—1.2m
 - Diameter of hawser—24mm
 - Diameter of tripping line—16mm

Appendix J

PILOT LADDERS AND THEIR USE

The requirements for Pilot Ladders are those contained in Marine Orders Part 23.

Appendix K

MECHANICAL PILOT HOISTS

The requirements for Mechanical Pilot Hoists are those contained in Marine Orders Part 23.

Appendix L

MEDICINES AND MEDICAL STORES

Vessels must comply with the requirements in respect to Medical Supplies contained in the NSCV Part C Design and Construction, Section 7 Equipment, Subsection 7A Safety Equipment – Annex H “Requirements for Medical Supplies”.

(Amendment dated 1 October 2008)

Appendix M

OFFICIAL LOG-BOOK

1. The master of a vessel shall keep an official log-book in an approved form which shall be renewed periodically with no period exceeding two years and which shall in any case be renewed on cessation of the Articles of Agreement to which it refers. The master shall cause to be made in that log such entries as are required by the Authority. Such entries to include:
 - (i) Positions of any deck line and load lines;
 - (ii) Time and dates of arrival at and departure from each port of call, with the freeboard and draft upon every occasion of the vessel proceeding to sea;
 - (iii) Births, deaths and disappearances, on or from the vessel;
 - (iv) Illness or injury of persons on board;

- (v) Emergency procedure drills.
- 2. An entry required by this Section in an official log-book shall be—
 - (a) made as soon as possible after the occurrence to which it relates;
 - (b) made and dated so as to show the time and date of the occurrence and of the entry respecting it; and.
 - (c) signed and countersigned.
- 3. The master shall upon the request of the Authority produce the official log-book for inspection.
- 4. A person shall not—
 - (a) wilfully destroy or mutilate an official log-book or an entry in an official log-book;
 - (b) wilfully render illegible an entry in an official log-book-
 - (c) wilfully make a false or fraudulent entry in, or an omission from, an official log-book; or
 - (d) sign an entry in an official log-book knowing the entry to be false or fraudulent.
- 5. Where for any reason the official log book ceases to be required or is no longer current the master or owner of the vessel shall within one month transmit to a Superintendent /Authority the official log-book made up to the time of cessation.
- 6. If a vessel is lost or abandoned, the master or owner shall, if practicable, and as soon as possible, transmit to a Superintendent/Authority, the official log-book duly made up to the time of the loss or abandonment.

Appendix N

VESSEL RECORD BOOK

- 1. The master of a vessel shall keep a Vessel Record Book and shall cause to be made in that book such entries as are required by the Authority. Such entries to include:
 - (i) Time and dates of departure from and arrival at each port of call;
 - (ii) Deaths and disappearances, on or from the vessel;
 - (iii) Illness or injury of persons on board;
 - (iv) Emergency procedures and drills;
 - (v) Details of any casualty to the vessel; and
 - (vi) Details of any assistance given to another vessel.
- 2. The Vessel Record Book may contain details of engine running and maintenance of machinery and equipment.
- 3. An entry required in a Vessel Record Book shall be:
 - (a) made as soon as possible after the occurrence to which it relates; and
 - (b) made and dated so as to show the time and date of the occurrence of the entry respecting it.
- 4. The master shall upon the request of the Authority produce the Vessel Record Book for inspection.
- 5. A person shall not—
 - (a) wilfully destroy or mutilate a Vessel Record Book or an entry in a Vessel Record Book;
 - (b) wilfully render illegible an entry in a Vessel Record Book;
 - (c) wilfully make a false or fraudulent entry in, or an omission from a Vessel Record Book; or
 - (d) sign an entry in a Vessel Record Book knowing the entry to be false or fraudulent.
- 6. If a vessel is lost or abandoned, the master or owner shall, if practicable, and as soon as possible, transmit to a Superintendent/Authority the Vessel Record Book duly made up to the time of the loss or abandonment.

Appendix O
ELECTRIC NAVIGATION LIGHTS

1. General

All lights required to be shown by vessels at sea in accordance with the International Regulations for Preventing Collisions at Sea, 1972, shall comply with the following requirements.

2. Design and construction

2.1 *Assembly*

The whole assembly of the light shall be designed and constructed to meet the tests in 3.

2.2 *Frame*

The frame of the light shall be rigidly constructed of materials able to withstand the mechanical and environmental tests in 3.

2.3 *Lenses*

2.3.1 Lenses and/or shades shall be:

- (i) of glass, plastic or equivalent materials meeting the requirements for colour stability in 2.12;
- (ii) of a colour meeting the requirements of the chromaticity test in 3;
- (iii) capable of withstanding the vibration and environmental tests in 3 without cracking or permanent deformation; and
- (iv) properly fitted and secured to the frame.

2.4 *Globes*

Globes, when mounted in sockets, shall be capable of withstanding the mechanical and environmental tests in 3 without damage or deformation.

2.5 *Electrical Connections*

Globe sockets shall be designed to permit a mechanically strong electrical connection of the two conductor supply. All connections shall be weather protected as installed.

2.6 *Mounting*

2.6.1 Means shall be provided for the proper attachment of the light to the mounting surface in its correct orientation.

2.6.2 A fore and aft line should be engraved on the case of the light, or the manufacturer should state in his fitting instructions how the frame should be fitted in relation to the fore and aft centreline of the vessel.

2.7 *Gaskets*

Where gaskets are used in the assembly or mounting of the light they shall be of a reasonable compression type, capable of withstanding the vibration and environmental tests in 3.

2.8 *Replacement of Globe*

Provision shall be made in the construction and mounting of the light for replacement of the globe(s).

2.9 *Finish*

External and internal parts of the light assembly shall be designed and finished so that roughness and sharp edges liable to cause injury to persons coming into contact with or servicing the light shall be eliminated or adequately protected.

2.10 *Marking*

2.10.1 Each light shall, by means of a name plate or other permanent means, bear the manufacturer's name or identifying mark, identification of design compliance and shall show the type of light and the type and size of vessel for which it is intended.

2.10.2 The manufacturer shall designate, by permanent means fixed to the light, the type and wattage of the proper replacement globe.

2.11 *Operating Temperatures*

The light shall be designed and constructed so that, when operating continuously at the highest expected ambient temperature condition, the surface temperature of any part of the light shall not exceed 60°C.

2.12 *Colour Stability*

Evidence of the colour stability tests of the materials used for lenses, shades or colour filters shall be provided by the manufacturer. Where such evidence is not available the materials shall be accepted subject to satisfactory performance in service.

3. Testing of Lights

3.1. *Application for Testing*

3.1.1 An application for the testing of a light must include details of the type(s) and size(s) of vessel(s) for which the light is required to be tested.

3.1.2 An application must be accompanied by a full set of detailed dimensional drawings and specifications which are to include the physical and chemical properties of the materials used.

3.2 *Photometric Tests*

3.2.1 A light shall be tested for compliance with the requirements of paragraphs 8, 9 and 10 of Annex 1 to the 1972 Collision Regulations for the intensity of lights, the horizontal sectors and the vertical sectors of visibility respectively. For testing in accordance with paragraphs 9 and 10, the light shall be mounted in accordance with the manufacturer's instructions.

3.2.2 The text referred to above is reproduced in Annex I of the Schedule to Section 16 of the USL Code.

3.2.3 These tests are to be related to the requirements of Rule 22 of the 1972 Collision Regulations.

3.3 *Chromaticity Tests*

3.3.1 A light shall be tested for compliance with the requirements of paragraph 7 of Annex 1 to the 1972 Collision Regulations for the colour specification of lights.

3.3.2 The text referred to above is reproduced in Annex I of the Schedule to Section 16 of the USL Code.

3.4 *Vibration Test*

3.4.1 The light shall be tested in both the horizontal and vertical planes, shall operate satisfactorily during the test and shall show no visible damage or deformation after the test.

3.4.2 The tests shall be made over the range 2-80 Hz. At 16 Hz the vibration machine shall yield an amplitude of ± 2 mm, a sweep rate of one octave shall be used.

The duration of each test shall be 2 hours.

3.5 *Environmental Tests*

3.5.1 A light when mounted in accordance with the manufacturer's instructions shall operate satisfactorily during and after the following environmental tests, and shall show no visible damage, corrosion or deformation when examined after the test.

3.5.2 *Temperature Tests*

(i) *Dry Heat Test*

With the lamp operating the light is to be maintained at not less than 30°C for a period of 2 hours. No distortion of the frame, lens or colour slide is allowed.

With the lamp operating the light is to be maintained at not less than 50°C and the temperature of the lens is to be raised to 70°C by simulated solar radiation, the duration of the test is 2 hours, after which no distortion or damage which would render the light unfit for service should result.

(ii) *Low Temperature Test*

With the lamp operating the light is to be maintained at not greater than -25°C for a period of 2 hours. No distortion or damage of the frame lens or colour slide is allowed.

3.5.3 Watertight Test

The light shall be subjected to the application of a stream of water from a nozzle of 12.5 mm inside diameter in all directions at a pressure of not less than 100 kPa. The nozzle shall be held at a distance of 3 metres away from the light under test. The duration of the test is 15 minutes. The test should not render the lantern inoperative due to damage or the ingress of water.

3.5.4 Salt Spray Test

In a salt spray chamber at 35°C for 2 hours followed by a period in a high humidity chamber for 6 hours and then stored at room temperature for 4 days. After each part of the test the electrical resistance shall not be less than 1 megohm for a light operating on voltages in excess of 32 volts and 0.1 megohm for a light operating on voltages less than 32 volts.