

GUIDELINES

ON THE APPLICATION OF PROVISIONS OF CHAPTER V OF THE INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE AT SEA (SOLAS-74)

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GUIDELINES ON THE APPLICATION OF PROVISIONS OF CHAPTER V OF SOLAS-74

The present version of the Guidelines on the Application of Provisions of Chapter V of the International Convention for the Safety of Life at Sea (SOLAS-74) of Russian Maritime Register of Shipping (RS, the Register) has been approved in accordance with the established approval procedure and comes into force on 1 July 2025.

The present version is based on the version dated 1 January 2025 and Rule Change Notice No. 25-124606 taking into account the amendments and additions developed immediately before publication (refer to the Revision History).

REVISION HISTORY¹

For this version, there are no amendments to be included in the Revision History.

¹ With the exception of amendments and additions introduced by Rule Change Notices (RCN), as well as of misprints and omissions.

REGULATION 1. APPLICATION

Comment:

These Guidelines apply in all cases where SOLAS-74 Chapter V applies.

The provisions of the Guidelines apply to all ships engaged on any voyage as specified in SOLAS-74 regulation V/1.1.

When applying the provisions of Chapter V "Safety of navigation" of SOLAS-74, one shall also be guided by the additional requirements of the ship's flag Administration.

The provisions of these Guidelines apply to ships of less than 150 gross tonnage engaged on any voyages, to ships of less than 500 gross tonnage not engaged on international voyages, and to fishing vessels unless the Administration whose flag the ship is flying has decided otherwise to fit these categories of ships with navigational equipment (V/1.4).

REGULATION 2. DEFINITIONS

Comment:

For the purposes of Chapter V, the definitions and explanations given in regulations I/2, V/2 apply. Refer also to [Appendix 2](#).

REGULATION 3. EXEMPTIONS AND EQUIVALENTS

Comment:

The procedure for granting exemptions and equivalents to a ship is set out in regulation V/3, refer also to additional requirements of the ship's flag Administration.

REGULATION 15. PRINCIPLES RELATING TO BRIDGE DESIGN, DESIGN AND ARRANGEMENT OF NAVIGATIONAL SYSTEMS AND EQUIPMENT AND BRIDGE PROCEDURES

Comment:

Before the beginning of the construction or conversion of a ship, the following technical documentation shall be submitted to the Register for review:

1. **bridge layout drawings** showing:
 - 1.1 bridge layout, including the configuration and location of all bridge workstations, including workstations for additional bridge functions, indicating width of passageways, ceiling height, height of the lower edge of the deckhead mounted equipment;
 - 1.2 configuration and dimensions of workstation consoles;
 - 1.3 chair arrangement at workstations.

2. **drawings of equipment location** on the navigation bridge (at least two-view drawings) showing:
 - 2.1 location of all units of radio and navigation and other equipment in workstation consoles;
 - 2.2 location of all units of radio and navigation and other equipment elsewhere on the navigation bridge;
 - 2.3 location of all units of radio and navigation equipment outside the navigation bridge functionally associated with it (if any);

3. **fields of vision drawings** showing:
 - 3.1 horizontal fields of vision from various workstations including the arc of individual blind sectors and the sum of blind sectors created by the cargo, handling equipment and other obstacles outside the wheelhouse that impede the view of the sea surface right ahead (over an arc of 180° from side to side forward of the beam);
 - 3.2 vertical field of vision over the bow to 10° on either side under the most unfavorable conditions of draught, trim and deck cargo location from the conning position and the navigation and maneuvering workstation including the lines of sight under the upper edge of the window from standing position for a 1800 mm height of eye with pitching $\pm 5^\circ$, and above the lower edge of the window from seated position;
 - 3.3 view of the ship's side from the navigation bridge wings;
 - 3.4 window arrangement including inclination, dimensions, framing and height of lower and upper edge above bridge deck surface as well as the height of the deckhead.

4. **wiring diagram** of all units of radio and navigation equipment indicating the type and cross section of cables.
5. **antenna arrangement drawings** showing the location of (if any):
 - 5.1 all receiving and transmitting antennas including radar antennas (indicating the radii of rotation and direction patterns of the antennas, as well as any ship structures or cargo (masts, booms, containers, etc.) that may interfere with the propagation of radio waves or degrade radar performance);as well as:
 - 5.2 magnetic compass(es);
 - 5.3 fixed and float-free mediums (capsules) of the voyage data recorder (VDR);
 - 5.4 microphones of sound signal reception system.

6. **list of radio and navigational equipment** installed on the ship indicating the name, type and manufacturer of the product.
7. **list of information (data) to be recorded by voyage data recorder** (if any) with indication of data sources (equipment, sensors).

Comment:

When reviewing the ship's design documentation, the applicable provisions of the below documents shall be followed:

IMO circular MSC/Circ.982 "Guidelines on ergonomic criteria for bridge equipment and layout";

IMO circular SN.1/Circ.288 "Guidelines for bridge equipment and systems, their arrangement and integration (BES)";

IMO resolution MSC.252(83) "Performance standards for integrated navigation systems (INS)" (if INS is used).

Refer also to provisions of:

IACS No. 95 (Rev.1 Apr 2022) "Recommendation for the Application of SOLAS Regulation V/15. Bridge Design, Equipment Arrangement and Procedures (BDEAP)", the document is available on the IACS website (iacs.org.uk);

ISO 8468. Ships and marine technology — Ship's bridge layout and associated equipment — Requirements and guidelines.

REGULATION 16. MAINTENANCE OF EQUIPMENT

Comment:

The firms providing maintenance and repairs of the navigational equipment shall be recognized by the Register for performing such tasks (refer to Section 9 of Part I of the Rules for Technical Supervision during Construction of Ships and Manufacture of Materials and Products for Ships).

Refer also to IMO Circular SN.1/Circ.266/Rev.1 "Maintenance of Electronic Chart Display and Information System (ECDIS) Software".

2 Except as provided in regulations I/7(b)(ii), I/8 and I/9, while all reasonable steps shall be taken to maintain the equipment required by this chapter in efficient working order, malfunctions of that equipment shall not be considered as making the ship unseaworthy or as a reason for delaying the ship in ports where repair facilities are not readily available, provided suitable arrangements are made by the Master to take the inoperative equipment or unavailable information into account in planning and executing a safe voyage to a port where repairs can take place.

Comment:

"Except as provided in regulations I/7(b)(ii), I/8 and I/9, ...", i.e. when surveying ships in accordance with the provisions of the above mentioned regulations, all equipment required by Chapter V shall be in good operable condition.

REGULATION 17. ELECTROMAGNETIC COMPATIBILITY

1 Administrations shall ensure that all electrical and electronic equipment on the bridge or in the vicinity of the bridge, on ships constructed on or after 1 July 2002, is tested for electromagnetic compatibility, taking into account the recommendations developed by the Organization.*

*Refer to IMO resolution A.813(19) "General requirements for electromagnetic compatibility for all electrical and electronic ship's equipment".

Comment:

In accordance with the requirements of regulations IV/14 and V/18, the equipment required on board a ship in accordance with the provisions of SOLAS-74 chapters IV and V shall be of approved type. The type approval of this equipment includes EMC testing in accordance with standard 60945:2002; refer also to IEC 60533:2015.

2 Electrical and electronic equipment shall be so installed that electromagnetic interference does not affect the proper function of navigational systems and equipment.

Comment:

(Refer to para 4.5.3 of IEC 60945:2002 (magnetic compass safe distance); Installation manuals of the equipment, especially the safe antenna distances)

3 Portable electrical and electronic equipment shall not be operated on the bridge if it may affect the proper function of navigational systems and equipment.

Comment:

(Refer to IACS Unified Interpretation SC194 (Rev. 1 Feb 2021), the document is available on the IACS website (iacs.org.uk))

REGULATION 18. APPROVAL, SURVEYS AND PERFORMANCE STANDARDS OF NAVIGATIONAL SYSTEMS AND EQUIPMENT AND VOYAGE DATA RECORDER

1 Systems and equipment required to meet the requirements of [regulations 19](#) and [20](#) shall be of a type approved by the Administration.

Comment:

On ships flying the flags of Member States of the European Union (EU), the systems and equipment necessary to comply with the requirements of [regulations 19](#) and [20](#) shall be MED certified (type approved in accordance with the Marine Equipment Directive (MED) 2014/90/EU).

On ships flying the flag of the Russian Federation, the systems and equipment necessary to comply with the requirements of [regulations 19](#) and [20](#) shall have the Rosmorrechflot Certificate (be type approved in accordance with Order of the Ministry of Transport of the Russian Federation dated 10 February 2010 No. 32 "On the approval of regulations for type approval of the equipment and survey of items and centers").

On ships flying other flags, additional requirements of the Maritime Administrations (MA) shall be followed; in their absence, the equipment shall have the RS Type Approval Certificate.

Refer to the Appendix to Section 16 of Part IV "Technical supervision during manufacture of products" of the Rules for Technical Supervision during Construction of Ships and Manufacture of Materials and Products for Ships.

2 Systems and equipment including associated back-up arrangements, where applicable, installed on or after 1 July 2002 to perform the functional requirements of [regulations 19](#) and [20](#) shall conform to appropriate performance standards not inferior to those adopted by the Organization.

Comment:

Refer to the Appendix to Section 16 of Part IV "Technical supervision during manufacture of products" of the Rules for Technical Supervision during Construction of Ships and Manufacture of Materials and Products for Ships.

7 When equipment, for which performance standards have been developed by the Organization, is carried on ships in addition to those items of equipment required by [regulations 19](#) and [20](#), such equipment shall be subject to approval and shall, as far as is practicable, comply with performance standards not inferior to those adopted by the Organization.

Comment:

That is, the equipment installed in addition to that quantity, which is required under [regulations 19](#) and [20](#) and used for navigational purposes.

8 The voyage data recorder system, including all sensors, shall be subjected to an annual performance test. The test shall be conducted by an approved testing or servicing facility to verify the accuracy, duration and recoverability of the recorded data. In addition, tests and inspections shall be conducted to determine the serviceability of all protective enclosures and devices fitted to aid location. A copy of the certificate of compliance issued by the testing facility, stating the date of compliance and the applicable performance standards, shall be retained on board the ship.

Comment:

(Refer to IMO circular MSC.1/Circ.1222/Rev.1; IACS Recommendation No. 85 (Rev.1 Dec.2018), the document is available on the IACS website (iacs.org.uk))

9 The automatic identification system (AIS) shall be subjected to an annual test. The test shall be conducted by an approved surveyor or an approved testing or servicing facility. The test shall verify the correct programming of the ship static information, correct data exchange with connected sensors as well as verifying the radio performance by radio frequency measurement and on-air test using, e.g. a Vessel Traffic Service (VTS). A copy of the test report shall be retained on board the ship.

Comment:

(Refer to IMO circular MSC.1/Circ.1252)

REGULATION 19. CARRIAGE REQUIREMENTS FOR SHIPBORNE NAVIGATIONAL SYSTEMS AND EQUIPMENT

Comment:

Refer to [Appendix 1](#) "List of Navigational Equipment".

1 Application and requirements

Subject to the provisions of regulation 1.4:

1.1 Ships constructed on or after 1 July 2002 shall be fitted with navigational systems and equipment which will fulfil the requirements prescribed in [paragraphs 2.1 to 2.9](#).

1.2 Ships constructed before 1 July 2002 shall:

.1 subject to the provisions of [paragraphs 1.2.2](#) (EPFS), [1.2.3](#) (AIS) and [1.2.4](#) (BNWAS) unless they comply fully with this regulation, continue to be fitted with equipment which fulfils the requirements prescribed in regulations V/11, V/12 and V/20 of the International Convention for the Safety of Life at Sea, 1974 in force prior to 1 July 2002;

.2 be fitted with the equipment or systems required in [paragraph 2.1.6](#) (EPFS) not later than the first survey after 1 July 2002, at which time the radio direction-finding apparatus referred to in V/12(p) of the International Convention for the Safety of Life at Sea, 1974 in force prior to 1 July 2002 shall no longer be required;

.3 be fitted with the system required in [paragraph 2.4](#) (AIS) not later than the dates specified in paragraphs 2.4.2 and 2.4.3; and

.4 be fitted with the system required by [paragraph 2.2.3](#) (BNWAS), as follows:

passenger ships, irrespective of size, and cargo ships of 150 gross tonnage and upwards (refer to SOLAS-74 for time limits of equipping).

The bridge navigational watch alarm system shall be in operation whenever the ship is underway at sea.

The provisions of [paragraph 2.2.4](#) shall apply to ships constructed before 1 July 2002.

Administrations may exempt ships from the application of requirement of [paragraph 1.2.4](#) when such ships will be taken permanently out of service for two years after the implementation date specified in subparagraphs 1.2.4.1 to 1.2.4.4.

2 Shipborne navigational equipment and systems

2.1 All ships, irrespective of size, shall have:

.1 a properly adjusted standard magnetic compass, or other means, independent of any power supply, to determine the ship's heading and display the reading at the main steering position;

Comment:

The standard magnetic compass shall be located close to the position from which the vessel is normally steered, in such a way that, if possible, an unobstructed view is provided from the location of its installation for taking horizontal and celestial bearings. In any case, the possibility for taking bearings within a sector of 230° shall be provided, i.e. 115° to each ship's side from the direction right ahead. The view of the horizon may be impaired only by masts, towers, cranes and similar obstructions.

The readings can be transmitted to the main steering position optically (periscope) or electronically. To be able to use one or the other method, the relevant equipment shall be specified in the Type Approval Certificate.

(ISO 25862:2019)

.2 a pelorus or compass bearing device, or other means, independent of any power supply, to take bearings over an arc of the horizon of 360°;

Comment:

Pelorus is a compass repeater with a direction-finding device without a sensitive element (very rare). As a rule, the direction-finding device is included in the magnetic compass.

In any case, the possibility for taking bearings within a sector of 230° shall be provided, i.e. 115° to each ship's side from the direction right ahead. The view of the horizon may be impaired only by masts, towers, cranes and similar obstructions.

.3 means of correcting heading and bearings to true at all times;

Comment:

As a rule, this is the magnetic compass residual deviation table.

.4 nautical charts and nautical publications to plan and display the ship's route for the intended voyage and to plot and monitor positions throughout the voyage. An electronic chart display and information system (ECDIS) is also accepted as meeting the chart carriage requirements of this subparagraph. Ships to which [paragraph 2.10](#) applies shall comply with the carriage requirements for ECDIS detailed therein;

Comment:

To comply with the requirements of SOLAS-74 regulation V/19.2.1.4 (nautical charts), ECDIS may be installed on the ship. Regulation V/19.2.10 establishes the time limits for mandatory outfitting with the ECDIS equipment depending on the type of ship and its gross tonnage.

To meet the above requirements, ECDIS equipment shall be type approved and have official electronic navigation charts (ENC) installed.

ECDIS covers four key components:

- 1) hardware;*
- 2) software installed on it;*
- 3) official electronic navigation charts (ENC);*
- 4) simulator training of ECDIS users (navigators).*

The first two components are to be confirmed by a valid Type Approval Certificate, the third component is to be confirmed by a valid agreement between the shipowner/ship and an authorized organization for distribution of official electronic navigation charts (ENC) or their distributor, the fourth component is to be confirmed by documents on the completion of electronic cartography courses at a training center under the program approved in accordance with STCW.

As of 01.06.2022, the authorized organizations for distribution of official navigation charts (ENC) — RENC (Regional ENC Coordination Center) are:

primar.org

ic-enc.org

The list of distributors can be found on their websites.

ENCs shall be corrected for the forthcoming voyage (SOLAS-74 regulation V/27).

Attention shall be paid to IMO circular SN.1/Circ.266 dated 22.10.2007, which refers to the need to update the ECDIS software to comply with the standards of the International Hydrographic Organization (IHO). Failure to comply with this requirement may result in non-compliance of the installed ECDIS equipment with the SOLAS-74 requirements regarding the carriage of navigation charts on board the ship (regulation V/19.2.1.4).

(Refer also to MSC.1/Circ.1503/rev.1/corr.1 dated 21.09.2016; MSC.1/Circ.1496 dated 21.11.2014)

.5 back-up arrangements to meet the functional requirements of subparagraph [4](#), if this function is partly or fully fulfilled by electronic means* ;

* Refer to appendix 6 "Back-up requirements" of performance standards for electronic chart display and information systems (ECDIS) (resolution A.817(19), as amended). An appropriate folio of paper nautical charts may be used as a back-up arrangement for ECDIS. Other back-up arrangements for ECDIS are acceptable.

Comment:

(Refer to Appendix 6 to resolution A.817(19) as amended by resolutions MSC.64(67), MSC.86(70), MSC.232(82)).

.6 a receiver for a global navigation satellite system or a terrestrial radionavigation system, or other means, suitable for use at all times throughout the intended voyage to establish and update the ship's coordinates by automatic means;

Comment:

Currently, these can be receivers of satellite navigation systems such as GPS, GLONASS, BeiDou, Galileo, which usually include several systems.

.7 if less than 150 gross tonnage and if practicable, a radar reflector, or other means, to enable detection by ships navigating by radar at both 9 and 3 GHz;

Comment:

As a rule, this is an angle reflector that complies with the requirements of IMO resolution MSC.164(78).

.8 when the ship's bridge is totally enclosed and unless the Administration determines otherwise, a sound reception system, or other means, to enable the officer in charge of the navigational watch to hear sound signals and determine their direction;

Comment:

The system display shall be visible from the ship's main conning position.

The system loudspeakers shall be installed so that incoming sound signals are audible at all positions of a wheelhouse.

.9 a telephone, or other means, to communicate heading information to the emergency steering position, if provided.

Comment:

Batteryless telephone systems, telephone, gyrocompass repeater can be used.

2.2 All ships of 150 gross tonnage and upwards and passenger ships irrespective of size shall, in addition to the requirements of [paragraph 2.1](#), be fitted with:

.1 a spare magnetic compass, interchangeable with the standard magnetic compass as referred to in paragraph 2.1.1, or other means to perform the function referred to in paragraph 2.1.1 by means of replacement or duplicate equipment;

Comment:

Usually, this is a spare bowl of the standard magnetic compass installed on the ship. It shall be interchangeable with the standard magnetic compass. Not required where complete duplication of standard magnetic compass is provided.

On ships contracted for construction on or after 1 January 2007, gyrocompass which shall be supplied from the main and emergency source of electrical power as well as from the transitional source of power which may be an accumulator battery may be used as a spare magnetic compass. However, such a gyroscopic compass cannot be considered as required by para 19.2.5.1 of this chapter in respect of ships of 500 gross tonnage and upwards.

(Refer to MSC.1/Circ.1224; IACS SC 203 (Corr. 1 May 2007), the document is available on the IACS website (iacs.org.uk))

.2 a daylight signalling lamp, or other means, to communicate by light during day and night using an energy source of electrical power not solely dependent upon the ship's power supply;

.3 a bridge navigational watch alarm system (BNWAS), as follows:
cargo ships of 150 gross tonnage and upwards and passenger ships irrespective of size (refer to SOLAS-74 for time limits of equipping).

Comment:

The deadline for equipping is the first survey of the ship after 01.01.2018 (refer to MSC.1/Circ.1290).

Devices for acknowledgement of visual and audible alarms, as well as reset of bridge navigational watch alarm system shall only be available in positions on the ship's navigation bridge giving proper look out and preferably adjacent to visual indications. Devices for acknowledgement of visual and audible alarms, as well as reset of bridge navigational watch alarm system shall be easily accessible from the conning position, the workstation for navigating and maneuvering, the workstation for monitoring and the bridge wings.

The device structure shall ensure that it can be used only by the watch-keeping officer on the ship's navigation bridge and shall be protected from accidental use by unauthorized persons.

A special "Emergency Call" key may be installed at the workstation for navigating and maneuvering. The key is intended for immediate sounding, in case of necessity, an audible alarm signal of the second, and then, third level to call another watch-keeping officer and/or the Master.

The alarm devices of BNWAS shall be located so to ensure:

a visual indication activated at the end of the dormant period is visible from any workstation on the bridge;

a first stage audible alarm is possible to hear at every workstation on the bridge;

a second stage audible alarm is sounded in the back-up officer's and/or Master's location;

a third stage audible alarm is sounded at the locations of other crew members capable of taking corrective actions.

In ships other than passenger ships, the second or third stage audible alarms may sound at the same time in all the above locations. In this case, the third stage alarm may be omitted.

(Refer to MSC.282(86), MSC.128(75))

The bridge navigational watch alarm system shall be in operation whenever the ship is underway at sea.

Comment:

The use of the automatic mode to ensure the automatic activation of the BNWAS when the ship's heading or track control system is activated and the automatic deactivation of the BNWAS when the heading or track control system terminates, is not allowed, and connection of the BNWAS system to the ship's heading or track control system is not required.

(Refer to MSC.1/Circ.1474)

.4 a bridge navigational watch alarm system (BNWAS) installed prior to 1 July 2011 may subsequently be exempted from full compliance with the standards adopted by the Organization, at the discretion of the Administration.

2.3 All ships of 300 gross tonnage and upwards and passenger ships irrespective of size shall, in addition to meeting the requirements of [paragraph 2.2](#), be fitted with:

.1 an echo-sounding device, or other electronic means, to measure and display the available depth of water;

.2 a 9 GHz radar, or other means, to determine and display the range and bearing of radar transponders and of other surface craft, obstructions, buoys, shorelines and navigational marks to assist in navigation and in collision avoidance;

Comment:

*The diagrams indicating blind sectors shall be located near displays.
(Refer to IMO circular SN.1/Circ.271)*

.3 an electronic plotting aid, or other means, to plot electronically the range and bearing of targets to determine collision risk;

Comment:

paras .2, .3 — radar for ships of less than 500 gross tonnage (CAT 3).

.4 speed and distance measuring device, or other means, to indicate speed and distance through the water;

Comment:

(Refer to MSC.1/Circ.1429, MSC.334(90))

.5 properly adjusted transmitting heading device, or other means, to transmit heading information for input to the equipment referred to in paragraphs 2.3.2 (Radar), 2.3.3 (EPA) and 2.4 (AIS).

Comment:

Such a device may be a gyrocompass, a GNSS-based compass, or a magnetic compass with transmitting heading device.

(Refer to ISO 22090-1/2/3)

2.4 All ships of 300 gross tonnage and upwards engaged on international voyages and cargo ships of 500 gross tonnage and upwards not engaged on international voyages and passenger ships irrespective of size shall be fitted with an automatic identification system (AIS), as follows:

(refer to SOLAS-74 for time limits of equipping)

Comment:

The deadline for equipping is the first survey of the ship after 01.07.2008.

(Refer to IACS UI SC 171 (Rev.2 Aug 2008), the document is available on the IACS website (iacs.org.uk); MSC/Circ.1141, MSC.1/Circ.1290)

.5 AIS shall:

.5.1 provide automatically to appropriately equipped shore stations, other ships and aircraft information, including the ship's identity, type, position, course, speed, navigational status and other safety-related information;

.5.2 receive automatically such information from similarly fitted ships;

.5.3 monitor and track ships; and

.5.4 exchange data with shore-based facilities;

.6 the requirements of paragraph 2.4.5 shall not be applied to cases where international agreements, rules or standards provide for the protection of navigational information; and

.7 AIS shall be operated taking into account the guidelines adopted by the Organization.* Ships fitted with AIS shall maintain AIS in operation at all times except where international agreements, rules or standards provide for the protection of navigational information.

* Refer to "Guidelines for the on-board operational use of shipborne Automatic Identification Systems (AIS)" adopted by the Organization by resolution A.917(22), as amended by resolution A.956(23).

(Refer to IMO resolution A.1106(29); IMO Circular SN/Circ. 227, as amended)

2.5 All ships of 500 gross tonnage and upwards shall, in addition to meeting the requirements of [paragraph 2.3](#), with the exception of [paragraphs 2.3.3](#) and [2.3.5](#), and the requirements of [paragraph 2.4](#), have:

.1 a gyro-compass, or other means, to determine and display their heading by shipborne non-magnetic means, being clearly readable by the helmsman at the main steering position. These means shall also transmit heading information for input to the equipment referred in [paragraphs 2.3.2 \(Radar\)](#), [2.4 \(AIS\)](#) and [2.5.5 \(ATA\)](#);

.2 a gyro-compass heading repeater, or other means, to supply heading information visually at the emergency steering position if provided;

.3 a gyro-compass bearing repeater, or other means, to take bearings, over an arc of the horizon of 360°, using the gyrocompass or other means referred to in [subparagraph .1](#). However, ships of less than 1600 gross tonnage shall be fitted with such means as far as possible;

Comment:

The installed gyrocompass repeater(s) shall be capable of taking bearings over an arc of the horizon of 360°. As a rule, the repeaters are installed on the wings of the navigation bridge (2 pcs.).

.4 rudder, propeller, thrust, pitch and operational mode indicators, or other means, to determine and display rudder angle, propeller revolutions, the force and direction of thrust and, if applicable, the force and direction of lateral thrust and the pitch and operational mode, all to be readable from the conning position; and

.5 an automatic tracking aid, or other means, to plot automatically the range and bearing of other targets to determine collision risk.

Comment:

(Radar for ships of less than 10 000 gross tonnage (CAT 2))

2.6 On all ships of 500 gross tonnage and upwards, failure of one piece of equipment shall not reduce the ship's ability to meet the requirements of paragraphs 2.1.1 (*magnetic compass*), 2.1.2 (*device to take bearings*) and 2.1.4 (*nautical charts and nautical publications*).

2.7 All ships of 3000 gross tonnage and upwards shall, in addition to meeting the requirements of [paragraph 2.5](#), have:

.1 a 3 GHz radar or, where considered appropriate by the Administration, a second 9 GHz radar, or other means, to determine and display the range and bearing of other surface craft, obstructions, buoys, shorelines and navigational marks to assist in navigation and in collision avoidance, which are functionally independent of those referred to in [paragraph 2.3.2](#); and

.2 a second automatic tracking aid, or other means, to plot automatically the range and bearing of other targets to determine collision risk which are functionally independent of those referred to in [paragraph 2.5.5](#).

Comment:

(Radar for ships of less than 10 000 gross tonnage (CAT 2))

2.8 All ships of 10 000 gross tonnage and upwards shall, in addition to meeting the requirements of [paragraph 2.7](#) with the exception of [paragraph 2.7.2](#), have:

.1 an automatic radar plotting aid, or other means, to plot automatically the range and bearing of at least 20 other targets, connected to a device to indicate speed and distance through the water, to determine collision risks and simulate a trial manoeuvre; and

Comment:

(Radar for ships of 10 000 gross tonnage and upwards (CAT 1))

.2 a heading or track control system, or other means, to automatically control and keep to a heading and/or straight track.

2.9 All ships of 50 000 gross tonnage and upwards shall, in addition to meeting the requirements of [paragraph 2.8](#), have:

.1 a rate-of-turn indicator, or other means, to determine and display the rate of turn; and

.2 a speed and distance measuring device, or other means, to indicate speed and distance over the ground in the forward and athwartships direction.

Comment:

On board the ships of 50 000 gross tonnage and above, as well as on other ships where the installation of the absolute log measuring speed over the ground and the log measuring speed through the water is required, these speed logs shall be provided by two separate devices (MSC.334(90); MSC.1/Circ.1429 dated 28.05.2012).

2.10 Ships engaged on international voyages shall be fitted with an electronic chart display and information system (ECDIS) as follows (refer to SOLAS-74 for time limits of equipping):

Comment:

The deadline for equipping is the first survey of the ship after 01.07.2018. (MSC.1/Circ.1290).

The following ships shall be equipped with ECDIS:

.1 passenger ships of 500 gross tonnage and upwards;

.2 tankers of 3000 gross tonnage and upwards;

.3 cargo ships of 10 000 gross tonnage and upwards;

.4 cargo ships of 3000 gross tonnage and upwards constructed on or after 1 July 2014.

2.11 Administrations may exempt ships from the application of the requirements of [paragraph 2.10](#) when such ships will be taken permanently out of service within two years after the implementation date specified in subparagraphs .5 to .9 of [paragraph 2.10](#).

3 When "other means" are permitted under this regulation, such means must be approved by the Administration in accordance with [regulation 18](#).

4 The navigational equipment and systems referred to in this regulation shall be so installed, tested and maintained as to minimize malfunction.

5 Navigational equipment and systems offering alternative modes of operation shall indicate the actual mode of use.

6 Integrated bridge systems* shall be so arranged that failure of one sub-system is brought to the immediate attention of the officer in charge of the navigational watch by audible and visual alarms and does not cause failure to any other sub-system. In case of failure in one part of an integrated navigational system**, it shall be possible to operate each other individual item of equipment or part of the system separately.

* Refer to circular SN.1/Circ.288 "Guidelines for bridge equipment and systems, their arrangement and integration (BES)".

** Refer to annex 3 to resolution MSC.86(70) and MSC.252(73) "Revised performance standards for integrated navigational systems".

REGULATION 19-1/ LONG-RANGE IDENTIFICATION AND TRACKING OF SHIPS (LRIT)*

(* MSC.1/Circ.1298)

1 Nothing in this regulation or the provisions of performance standards and functional requirements adopted by the Organization** in relation to the long-range identification and tracking of ships shall prejudice the rights, jurisdiction or obligations of States under international law, in particular, the legal regimes of the high seas, the exclusive economic zone, the contiguous zone, the territorial seas or the straits used for international navigation and archipelagic sea lanes.

** Refer to "Revised performance standards and functional requirements for the long-range identification and tracking of ships" adopted by resolution of Organization MSC.263(84), as amended.

2.1 Subject to the provisions of [paragraphs 4.1](#) and [4.2](#), this regulation shall apply to the following types of ships*** engaged on international voyages:

(*** MSC.1/Circ.1295)

- .1 passenger ships, including high-speed passenger craft;
- .2 cargo ships, including high-speed craft, of 300 gross tonnage and upwards; and
- .3 mobile offshore drilling units.

2.2 The term "ship", when used in paragraphs 3 to 11.2, includes the passenger and cargo ships, the high-speed craft and the mobile offshore drilling units, which are subject to the provisions of this regulation.

3 This regulation establishes provisions to enable Contracting Governments to undertake the long-range identification and tracking of ships.

4.1 Ships shall be fitted with a system to automatically transmit the information specified in paragraph 5 as follows: (*refer to SOLAS-74 for time limits of equipping*).

Comment:

All ships referred to in reg. V/19.2.1, namely:

- .1 passenger ships, including high-speed passenger craft;*
- .2 cargo ships, including high-speed craft, of 300 gross tonnage and upwards; and*
- .3 mobile offshore drilling units shall be fitted with LRIT equipment.*

The deadline for equipping is the first survey of radio equipment after 01.07.2009.

(MSC.1/Circ.1307; MSC.1/Circ.1290)

4.2 Ships, irrespective of the date of construction, fitted with an automatic identification system (AIS), as defined in regulation 19.2.4, and operated exclusively within sea area A1, as defined in regulation IV/2.1.12, shall not be required to comply with the provisions of this regulation.

Comment:

On ships equipped with AIS and navigating the GMDSS sea area A1 only, the installation of LRIT equipment is not required.

REGULATION 20. VOYAGE DATA RECORDERS (VDR)*

* Refer to resolutions A.861(20), MSC.214(81), MSC.333(90), MSC.494(104). Refer also to MSC/Circ.1024 "Guidelines on voyage data recorders (VDRs) ownership and recovery of recorded data".

1 To assist in casualty investigations, ships, when engaged on international voyages, subject to the provisions of regulation 1.4, shall be fitted with a voyage data recorder (VDR) as follows (*refer to SOLAS-74 for time limits*):

Comment:

- .1 *passenger ships,*
 - .2 *ships, other than passenger ships, of 3000 gross tonnage and upwards constructed on or after 1 July 2002.*
- The deadline for equipping is 01.07.2020.*

2 To assist in casualty investigations, cargo ships, when engaged on international voyages, shall be fitted with a VDR which may be a simplified voyage data recorder (S-VDR)*** as follows (*refer to SOLAS-74 for time limits*):

*** Refer to resolutions MSC.163(78), MSC.214(81), MSC.493(104).

Comment:

Cargo ships of 3000 gross tonnage and upwards constructed before 1 July 2002.
The deadline for equipping is 01.07.2010.

Administrations may exempt ships, other than ro-ro passenger ships, constructed before 1 July 2002 from being fitted with a VDR where it can be demonstrated that interfacing a VDR with the existing equipment on the ship is unreasonable and impracticable.

REGULATION 21. INTERNATIONAL CODE OF SIGNALS AND IAMSAR MANUAL

1 All ships which, in accordance with the present Convention, are required to carry a radio installation shall carry the International Code of Signals as may be amended by the Organization. The Code shall also be carried by any other ship which, in the opinion of the Administration, has a need to use it.

2 All ships shall carry an up-to-date copy of Volume III of the International Aeronautical and Maritime Search and Rescue (IAMSAR) Manual.

Comment:

*The manual shall be in hard copy for emergency use.
(MSC-MEPC.2/Circ.2 of 01.06.2006)*

REGULATION 22. NAVIGATION BRIDGE VISIBILITY

(refer to page 11 of IACS UI SC226 (Rev.1 Dec 2012), the document is available on the IACS website (iacs.org.uk))

1 Ships of not less than 55 m in length, as defined in regulation 2.4, constructed on or after 1 July 1998, shall meet the following requirements:

.1 the view of the sea surface from the conning position shall not be obscured by more than two ship lengths, or 500 m, whichever is less, forward of the bow to 10° on either side under all conditions of draught, trim and deck cargo;

Comment:

The maximum and minimum values of the forward and aft draught at which the present visibility requirement fails to be fulfilled shall be entered in the Stability Information in accordance with 3.4.1.6.4 of Appendix 1 to Part IV "Stability" of the Rules for the Classification and Construction of Sea-Going Ships.

.2 no blind sector, caused by cargo, cargo gear or other obstructions outside of the wheelhouse forward of the beam which obstructs the view of the sea surface as seen from the conning position, shall exceed 10°. The total arc of blind sectors shall not exceed 20°. The clear sectors between blind sectors shall be at least 5°. However, in the view described in [.1](#), each individual blind sector shall not exceed 5°;

.3 the horizontal field of vision from the conning position shall extend over an arc of not less than 225°, that is from right ahead to not less than 22.5° abaft the beam on either side of the ship;

.4 from each bridge wing, the horizontal field of vision shall extend over an arc of at least 225°, that is from at least 45° on the opposite bow through right ahead and then from right ahead to right astern through 180° on the same side of the ship;

.5 from the main steering position, the horizontal field of vision shall extend over an arc from right ahead to at least 60° on each side of the ship;

.6 the ship's side shall be visible from the bridge wing;

Comment:

In this case, the ship's side is considered visible if:

a view from the bridge wing plus a distance corresponding to a reasonable and safe distance of a watch keeper leaning over the side of the bridge wing, which needs not to be more than 400 mm, to the location vertically right under the maximum beam of the ship at the lowest seagoing draught is not obstructed ([refer to Fig. 1](#)), or

the sea surface at the lowest seagoing draught and with a transverse distance of 500 mm and more from the maximum beam throughout the ship's length is visible from the side of the bridge wing ([refer to Fig. 2](#)).

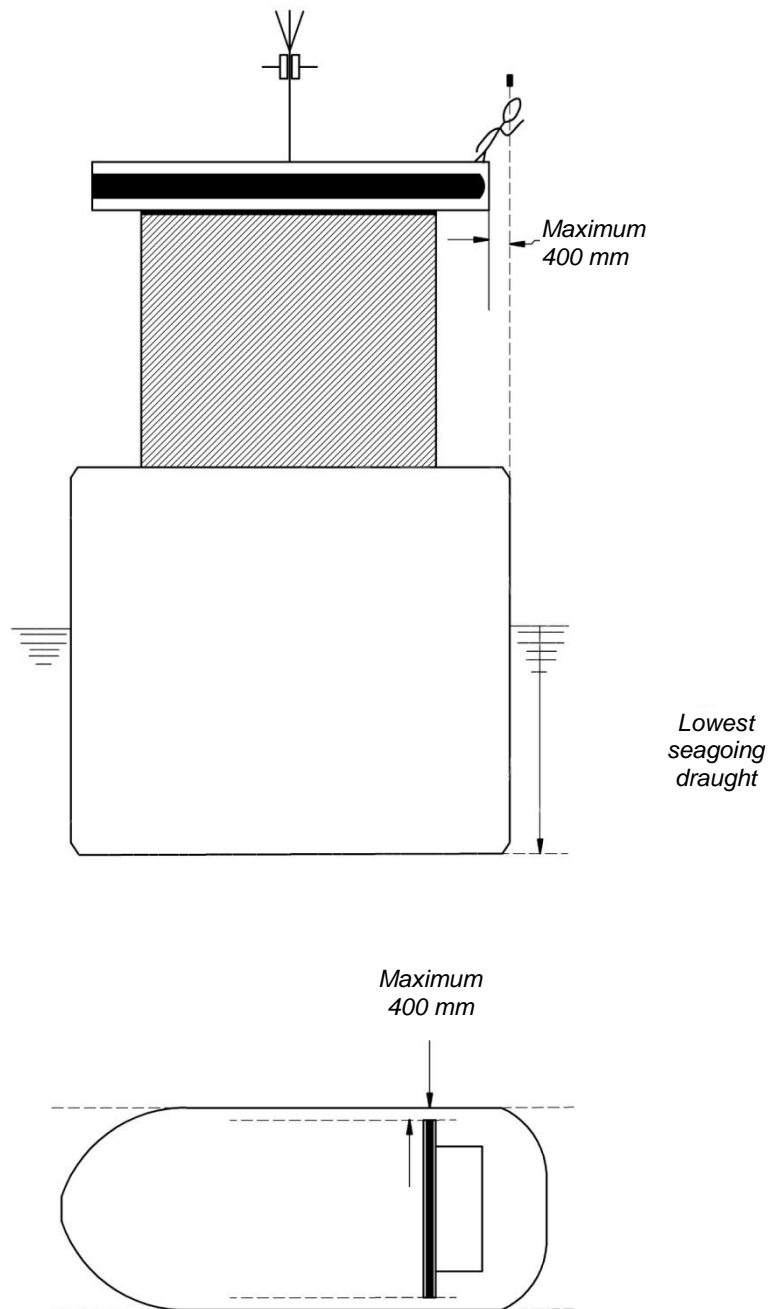


Fig. 1

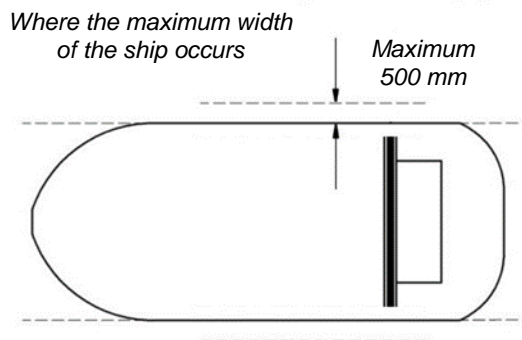
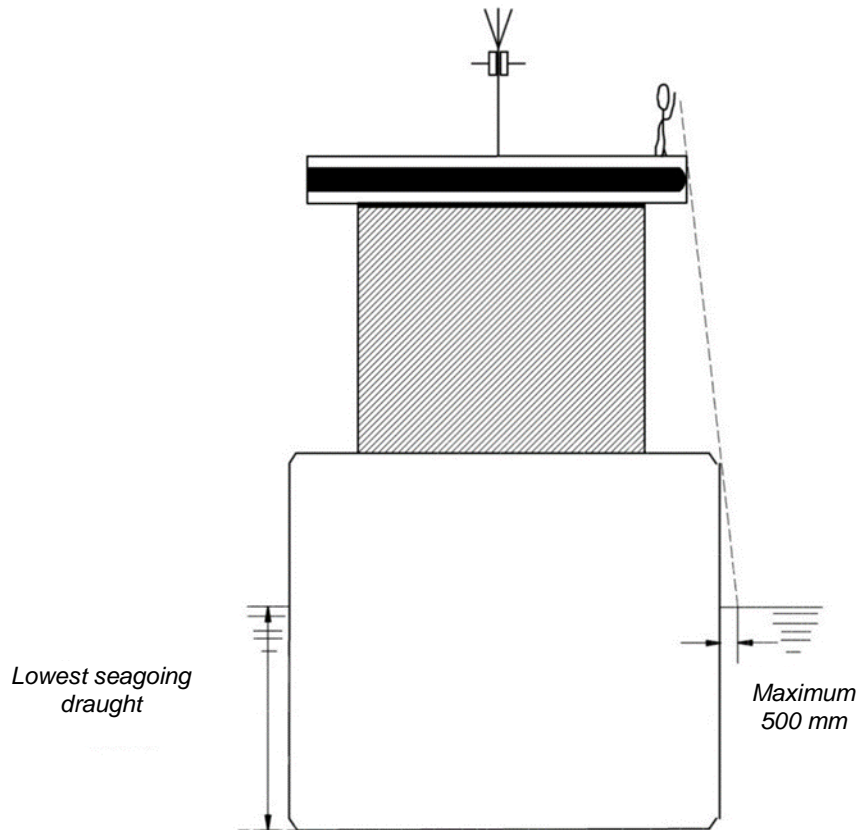


Fig. 2

For particular types of ships as tug/tow boat, offshore supply vessels, salvage ship, floating crane and other similar craft, in ensuring visibility of the ship side, the bridge wings shall at least extend to a location from which the sea surface, at the lowest service draught and at a transverse distance of 1500 mm from the maximum beam throughout the ship's length is visible. If this ship type is changed to a type other than those addressed in this paragraph then the above requirements shall be complied with.

The use of a remote camera system may be accepted for ships of unconventional design as means for achieving the view of the ship's side from the bridge wing, provided the above system meets the following requirements.

The installed remote camera system shall be redundant from the circuit breaker to the camera and screen, including communication cables, i.e. the system shall provide on each side of the ship redundancy of:

- .1 power cables and automatic circuit breakers from the main switchboard to the camera and the screen;
- .2 video cameras;
- .3 screens;
- .4 transmission lines from the camera to the display screen;
- .5 components associated with these lines and cables.

The remote camera system is powered from the ship's main source of electrical power and is not required to be powered by the emergency source of electrical power.

The remote camera system shall be capable of continuous operation under environmental conditions as per IEC 60945:2002.

The view provided by the remote camera system shall be sufficient for the purpose of viewing the ship's side and shall be displayed at locations where the manoeuvring of the ship may take place.

(Refer to IACS UI SC235 (Corr.2 June 2033), the document is available on the IACS website (iacs.org.uk); MSC.1/Circ.1350/Rev.1)

.7 the height of the lower edge of the navigation bridge front windows above the bridge deck shall be kept as low as possible. In no case shall the lower edge present an obstruction to the forward view as described in this regulation;

.8 the upper edge of the navigation bridge front windows shall allow a forward view of the horizon, for a person with a height of eye of 1800 mm above the bridge deck at the conning position, when the ship is pitching in heavy seas. The Administration, if satisfied that a 1800 mm height of eye is unreasonable and impractical, may allow reduction of the height of eye but not to less than 1600 mm;

Comment:

Reducing the height of eye requirement to 1600 mm is only possible with the permission of the ship's flag Administration.

.9 windows shall meet the following requirements:

.9.1 to help avoid reflections, the bridge front windows shall be inclined from the vertical plane top out, at an angle of not less than 10° and not more than 25°;

.9.2 framing between navigation bridge windows shall be kept to a minimum and not be installed immediately forward of any work station;

.9.3 polarized and tinted windows shall not be fitted;

.9.4 a clear view through at least two of the navigation bridge front windows and, depending on the bridge configuration, an additional number of clear-view windows shall be provided at all times, regardless of weather conditions.

2 Ships constructed before 1 July 1998 shall, where practicable, meet the requirements of [paragraphs 1.1](#) and [1.2](#). However, structural alterations or additional equipment need not be required.

3 On ships of unconventional design which, in the opinion of the Administration, cannot comply with this regulation, arrangements shall be provided to achieve a level of visibility that is as near as practical to that prescribed in this regulation.

4 Notwithstanding the requirements of [paragraphs 1.1](#), [1.3](#), [1.4](#) and [1.5](#), ballast water exchange may be undertaken provided that:

.1 the Master has determined that it is safe to do so and takes into consideration any increased blind sectors or reduced horizontal fields of vision resulting from the operation to ensure that a proper lookout is maintained at all times;

.2 the operation is conducted in accordance with the ship's ballast water management plan, taking into account the recommendations on ballast water exchange adopted by the Organization; and

.3 the commencement and termination of the operation are recorded in the ship's record of navigational activities pursuant to [regulation 28](#).

REGULATION 27. NAUTICAL CHARTS AND NAUTICAL PUBLICATIONS

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, shall be adequate and up to date.

(Refer to MSC.1/Circ.1496)

REGULATION 28. RECORDS OF NAVIGATIONAL ACTIVITIES AND DAILY REPORTING

1 All ships engaged on international voyages shall keep on board 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, taking into account the recommendations* adopted by the Organization. When such information is not maintained in the ship's logbook, it shall be maintained in another form approved by the Administration.

* Refer to the "Guidelines for recording events related to navigation" adopted by the Organization by resolution A.916(22).

LIST OF NAVIGATIONAL EQUIPMENT

Nos.	Navigational equipment	Number of items for ships of gross tonnage							SOLAS-74 regulation, RS nomenclature code, explanations
		<150	≥150	≥300	≥500	≥3000	≥10000	≥50000	
1	Standard magnetic compass ¹	1	1	1	1	1	1	1	V/19.2.1.1
									05010000MK
2	Pelorus or magnetic compass bearing device	1	1	1	1	1	1	1	V/19.2.1.2
									As a rule, included in magnetic compass
3	EPFS Receiver ²	1	1	1	1	1	1	1	V/19.2.1.6
									05140300MK
4	Radar reflector	1 ³	—	—	—	—	—	—	V/19.2.1.7
									05140400MK
5	Sound reception system	1	1	1	1	1	1	1	V/19.2.1.8
									05170000 MK
									Required in ships with totally enclosed navigation bridge
6	Telephone for communication with emergency steering position	1	1	1	1	1	1	1	V/19.2.1.9
7	Spare magnetic compass	1 ⁴	1	1	1	1	1	1	V/19.2.2.1
									05010000MK
8	Daylight signalling lamp	1 ⁴	1	1	1	1	1	1	V/19.2.2.2
9	Bridge navigational watch alarm system (BNWAS)	1 ⁴	1	1	1	1	1	1	V/19.2.2.3
									05190000MK

Nos.	Navigational equipment	Number of items for ships of gross tonnage							SOLAS-74 regulation, RS nomenclature code, explanations							
		<150	≥150	≥300	≥500	≥3000	≥10000	≥50000								
10	Echo sounder	1 ⁴	1 ⁴	1	1	1	1	1	V/19.2.3.1							
									05050000MK							
11	Log	1 ⁴	1 ⁴	1	1	1	1	1	V/19.2.3.4							
									05030000MK							
12	Transmitting heading device ^{5, 6}	1 ⁴	1 ⁴	1	—	—	—	—	V/19.2.3.5							
									05010100MK 05010200MK 05010300MK							
13	Radar including:	1 ⁴	1 ⁴	1	1	2	2	2	V/19.2.3.2, V/19.2.7.1							
									One radar shall be a 9 GHz radar							
	.1 EPA (electronic plotting aid)								1 ⁴	1 ⁴	1	—	—	—	—	V/19.2.3.3
																05140210MK 05140220MK 05140230MK
.2 ATA (automatic tracking aid)	—	—	—	1	2	1	1	V/19.2.5.5, V/19.2.7.2								
	05140220MK 05140230MK															
.3 ARPA (automatic radar plotting aid)		—	—	—	—	—	1	1	V/19.2.8.1							
									05140230MK							
14	AIS (automatic identification system)	1 ⁴	1 ⁴	1 ^{4, 7}	1	1	1	1	V/19.2.4							
									05150000MK							
15	Gyrocompass (GC) ⁸	—	—	—	1	1	1	1	V/19.2.5.1							
									05020000MK							

Nos.	Navigational equipment	Number of items for ships of gross tonnage							SOLAS-74 regulation, RS nomenclature code, explanations
		<150	≥150	≥300	≥500	≥3000	≥10000	≥50000	
16	GC repeater at emergency steering position	—	—	—	1	1	1	1	V/19.2.5.2
									Included in gyrocompass
17	GC bearing repeater	—	—	—	2 ⁹	2	2	2	V/19.2.5.3
									Included in gyrocompass
18	Heading or track control system	—	—	—	—	—	1	1	V/19.2.8.1
									05060000MK 05060100MK
19	Rate of turn indicator	—	—	—	—	—	—	1	V/19.2.9.1
									05120000MK
20	Absolute log	—	—	—	—	—	—	1	V/19.2.9.2
									05030100MK
21	Electronic chart display and information system (ECDIS) ¹⁰	—	—	—	1 ⁴	1	1	1	V/19.2.10
									05130000MK
									Back-up arrangements shall be provided
22	Equipment of long-range identification and tracking system (LRIT system) ^{10, 11}	1 ⁴	1 ⁴	1	1	1	1	1	V/19-1.2.1
									05200000MK
23	Voyage data recorder (VDR) ¹⁰	1 ⁴	1 ⁴	1 ⁴	1 ⁴	1 ^{4, 11}	1 ^{4, 12}	1 ^{4, 12}	V/20.1
									05160100MK
24	Simplified voyage data recorder (S-VDR) ¹⁰	—	—	—	—	1 ¹³	1 ¹³	1 ¹³	V/20.2
									05160200MK

Nos.	Navigational equipment	Number of items for ships of gross tonnage							SOLAS-74 regulation, RS nomenclature code, explanations
		<150	≥150	≥300	≥500	≥3000	≥10000	≥50000	
25	Indicators of:								V/19.2.5.4 The indicators shall be readable from the position from which the ship is normally navigated
	.1 rudder angle	—	—	—	1	1	1	1	11070200
	.2 propeller revolutions, force and direction of thrust	—	—	—	1	1	1	1	11070400
	.3 pitch and operational mode of controllable pitch propeller(s) ¹⁴	—	—	—	1	1	1	1	11070300
	.4 force and direction of lateral thrust of thruster(s) ¹⁵	—	—	—	1	1	1	1	11070400

- ¹ Remote transmission of the standard magnetic compass dial readings to the main steering position is required.
- ² The electronic position fixing system (EPFS) used (global navigation satellite system or terrestrial radio navigation system) shall be available for use at all times throughout the intended voyage.
- ³ Not required where the radar cross-section is sufficient for the ship to be detected by radar at 9 GHz and 3 GHz (corresponding to a wave length of 3 and 10 cm, respectively).
- ⁴ Required for passenger ships.
- ⁵ Provision shall be made for transmitting the ship's heading information to the equipment referred to in items [13](#), [13.1](#), [14](#) of the Table.
- ⁶ Not required provided the ship is fitted with a gyrocompass to transmit the ship's heading information to the equipment referred to in items [13](#), [13.1](#), [14](#) of the Table.
- ⁷ Required for ships engaged in international voyages.
- ⁸ Provision shall be made for transmitting the ship's heading information to the equipment referred to in items [13](#), [13.2](#), [14](#) of the Table.
- ⁹ Required for ships of less than 1600 gross tonnage, as far as practicable.
- ¹⁰ Not required for ships not engaged in international voyages.
- ¹¹ Ships, irrespective of their date of construction, fitted with an automatic identification system and operated exclusively within sea area A1 shall be exempted from the requirement for installation of LRIT system.
- ¹² Required for cargo ships constructed on or after 1 July 2002.
- ¹³ Required on cargo ships constructed before 1 July 2002.
- ¹⁴ To be fitted where controllable pitch propeller(s) is/are provided.
- ¹⁵ To be fitted where thruster(s) is/are provided.

Notes:

1. For ships fitted with a radar with a plotting aid (EPA, ATA or ARPA) and/or the track control system, the speed-and-distance measuring device through the water (the log) shall be provided.

2. For ships of 500 gross tonnage and upwards but less than 10 000 constructed before 1 September 1984, no log is required.

3. For ships contracted for construction on or after 1 January 2007, gyrocompass may be used as a spare magnetic compass if powered by the main and emergency source of electrical power as well as by the transitional source of power which may be a rechargeable battery. In this case, such gyrocompass cannot be considered as the one required by item [15](#) of the present Table for ships of 500 gross tonnage and upwards.

DEFINITIONS AND ABBREVIATIONS

The Guidelines use the definitions and explanations given in SOLAS-74 regulations I/2, V/2, as well as the following.

Bridge wings are those parts of the bridge on both sides of the ship's wheelhouse which, in general, extend to the ship's side.

Commanding view means view without obstructions, which could interfere with the navigator's ability to perform his main tasks, covering at least the field of vision required for safe performance of collision avoidance functions (225°).

Consistent Common Reference Point is a location on own ship, to which all horizontal measurements such as target range, bearing, relative course, relative speed, closest point of approach (CPA) or time to closest point of approach (TCPA) are referenced. Typically such point on the ship is the conning position of the bridge.

EMC stands for the Electro-Magnetic Compatibility.

EPFS stands for the Electronic Position Fixing System.

Field of vision is the horizontal angle within which no obstructions interfere in an observation of environment from a workstation on the navigation bridge.

GNSS Global Navigation Satellite System.

IRNSS stands for the Indian Regional Navigation Satellite System.

Main conning position means a workstation or the navigation bridge providing the watch officer with a commanding view and equipped with everything necessary for ship's manoeuvring and control.

Navigation is the process of deciding, executing and maintaining course and speed of the ship in relation to waters and traffic while moving from one place to another.

Navigation bridge means an area from which the navigation and control of the ship are exercised, including the wheelhouse and bridge wings.

Standard magnetic compass is a magnetic compass independent of any ship source of electrical power to determine the ship's heading and display the reading at the main steering position.

Totally enclosed bridge is a bridge without bridge wings, with the breadth of the wheelhouse equal to or exceeding the ship's breadth.

Tracking is the process of observing the sequential changes in the position of a target to establish the parameters of its motion.

Waters:

Ocean areas mean the waters that encompass navigation beyond the outer limits of coastal waters. Ocean areas do not restrict the freedom of course setting in any direction for a distance equivalent to 30 minutes of sailing with the relevant ship speed.

Coastal waters mean the waters that encompass navigation along a coast at a distance less than the equivalence of 30 minutes of sailing with the relevant ship speed. The other side of the course line allows freedom of course setting in any direction for a distance equivalent to at least 30 minutes of sailing with the relevant speed.

Narrow waters mean the waters that do not allow the freedom of course setting to any side of the course line for a distance equivalent to 30 minutes of sailing with the relevant ship speed.

Wheelhouse is the enclosed area of the navigation bridge where the main conning position of the ship is located.

Workstation means a position on the navigation bridge having the relevant equipment where the watch officer as well as the Master or pilot carry out one or several tasks.

Workstation for navigating and maneuvering means a workstation with commanding view used by navigators when carrying out navigation, route monitoring, traffic surveillance and maneuvering functions, and which enables monitoring of the safety state of the ship.

Russian Maritime Register of Shipping

**Guidelines on the Application of Provisions of Chapter V
of the International Convention for the Safety of Life at Sea
(SOLAS-74)**

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