

**RUSSIAN MARITIME REGISTER OF SHIPPING**

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**RULES**  
**FOR THE EQUIPMENT**  
**OF SEA-GOING SHIPS**

**Part I**

**SURVEY REGULATIONS**



Saint-Petersburg  
Edition 2016

Rules for the Equipment of Sea-Going Ships of Russian Maritime Register of Shipping have been approved in accordance with the established approval procedure and come into force on 1 January 2016.

The present nineteenth edition of the Rules is based on the eighteenth edition of 2015 taking into account the additions and amendments developed immediately before publication.

The unified requirements, interpretations and recommendations of the International Association of Classification Societies (IACS) and the relevant resolutions of the International Maritime Organization (IMO) have been taken into consideration.

The Rules are published in the following parts:

Part I "Survey Regulations";

Part II "Life-Saving Appliances";

Part III "Signal Means";

Part IV "Radio Equipment";

Part V "Navigational Equipment".

All parts of the Rules are published in electronic format and hard copy in Russian and English. In case of discrepancies between the Russian and English versions, the Russian version shall prevail.

*As compared to the previous edition (2015), the nineteenth edition contains the following amendments.*

The term "ice category" has been replaced by the term "ice class" throughout the text of the Rules.

## **RULES FOR THE EQUIPMENT OF SEA-GOING SHIPS**

### **PART I. SURVEY REGULATIONS**

1. Chapter 2.3: in item 4.3 of Table 2.3 the scope of the equipment supervision has been specified.
2. Chapter 3.2: in para 3.2.5.2.12 the requirements to documentation on navigation bridge have been specified.
3. Editorial amendments have been made.

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# PART I. SURVEY REGULATIONS

## 1 GENERAL

### 1.1 APPLICATION

1.1.1 The Rules for the Equipment of Sea-Going Ships<sup>1</sup> apply to:

.1 passenger ships, tankers, ships, intended for carriage of dangerous cargoes, as well as tugs, irrespective of the power of main engines and gross tonnage;

.2 all self-propelled ships not specified in 1.1.1.1, with the main engines power 55 kW and upwards;

.3 all ships not specified in 1.1.1.1 and 1.1.1.2, of 80 gross tonnage and upwards, or ships fitted out with machinery and equipment of total prime movers power output 100 kW and upwards.

1.1.2 The requirements of these Rules apply also to the following ship types to the extent specified in the relevant rules for the classification and construction of these ships:

.1 nuclear ships and floating facilities (refer to the Rules for the Classification and Construction of Nuclear Ships and Floating Facilities);

.2 nuclear support ships (refer to the Rules for the Classification and Construction of Nuclear Support Vessels);

.3 gas carriers (refer to the Rules for the Classification and Construction of Ships Carrying Liquefied Gases in Bulk and Rules for the Classification and Construction of Ships Carrying Compressed Natural Gas);

.4 chemical tankers (refer to the Rules for the Classification and Construction of Chemical Tankers);

.5 mobile offshore drilling units and fixed offshore platforms (refer to the Rules for the Classification, Construction and Equipment of Mobile Offshore Drilling Units and Fixed Offshore Platforms);

.6 high-speed craft (refer to the Rules for the Classification and Construction of High-Speed Craft);

.7 type A WIG craft (refer to the Rules for the Classification and Construction of Type A WIG Craft);

.8 manned submersibles, ship's diving systems and passenger submersibles (refer to the Rules for the Classification and Construction of Manned Submersibles, Ship's Diving Systems and Passenger Submersibles);

.9 pleasure craft (refer to the Rules for the Classification and Construction of Pleasure Craft);

.10 small sea fishing vessels (refer to the Rules for the Classification and Construction of Small Sea Fishing Vessels);

.11 floating offshore oil-and-gas production units (refer to the Rules for the Classification, Construction and Equipment of Floating Offshore Oil-and-Gas Production Units).

1.1.3 These Rules may also be applied to ships not listed in 1.1.1 and 1.1.2, if agreed upon with the Register.

1.1.4 The present Part of the Rules applies both to ships under construction and to ships in service, when stipulated accordingly in the Rules.

### 1.2 DEFINITIONS AND EXPLANATIONS

1.2.1 The definitions and explanations concerning the general terminology are given in 1.1, Part I, "Classification" of Rules for the Classification and Construction of Sea-Going Ships and in Section 1, Part I "General Regulations for Technical Supervision" of the Rules for Technical Supervision during Construction of Ships and Manufacture of Materials and Products for Ships.

The following definitions of the areas of navigation have been adopted for the purpose of the present Part of the Rules:

unrestricted area of navigation;

restricted area of navigation R1 — navigation in sea areas at seas with a wave height of 8,5 m with 3 per cent probability and with the ships proceeding not more than 200 miles<sup>2</sup> away from the place of refuge and with an allowable distance between the places of refuge not more than 400 miles;

restricted area of navigation R2 — navigation in sea areas at seas with a wave height of 7,0 m with 3 per cent probability with ships proceeding from the place of refuge not more than 100 miles and with an allowable distance between the places of refuge not more than 200 miles;

restricted area of navigation R2-RSN — river-sea navigation at seas with a wave height of 6,0 m with 3 per cent probability with ships proceeding from the place of refuge:

in open seas up to 50 miles and with an allowable distance between the places of refuge not more than 100 miles;

in enclosed seas up to 100 miles and with an allowable distance between the places of refuge not more than 200 miles;

restricted area of navigation R2-RSN(4,5) — river-sea navigation at seas with a wave height of 4,5 m with 3 per cent probability with ships proceeding from the place of refuge:

in open seas up to 50 miles and with an allowable distance between the places of refuge not more than 100 miles;

in enclosed seas up to 100 miles and with an allowable distance between the places of refuge not more than 200 miles;

<sup>1</sup> Hereinafter referred to as "the Rules".

<sup>2</sup> Hereinafter a nautical mile is equal to 1852 m.

**restricted area of navigation R3-RSN** — river-sea navigation at seas with a wave height of 3,5 m with 3 per cent probability with due regard for particular restrictions on the area and conditions of navigation resulting from the wind and wave conditions of the basins with determination of a maximum allowable distance from the place of refuge which in no case should be more than 50 miles;

**restricted area of navigation R3** — harbour, roadstead and coastal navigation within limits established by the Register in each case;

**Berth-connected ship** — for berth-connected ships (with indication of siding place position and geographical service area according to Fig. 4.3.3.6, Part IV "Stability" of the Rules for the Classification and Construction of Sea-Going Ships).

Restrictions for particular floating crane operations (cargo-handling operations and navigation with eventual carriage of cargoes on deck and/or in the hold) shall be imposed by the Register in each particular case.

The following explanations have been adopted for the purpose of the present Part of the Rules:

**Rules** mean the Rules for the Equipment of Sea-Going Ships consisting of the following Parts:

- I — Survey Regulations;
- II — Life-Saving Appliances;
- III — Signal Means;
- IV — Radio Equipment;
- V — Navigational Equipment.

### 1.3 COMPLIANCE WITH STATUTORY REQUIREMENTS

**1.3.1** As far as practicable, the Rules consider the requirements of international conventions and codes coming within the Register terms of reference (refer to 2.5, General Regulations for the Classification and Other Activity). Some of them are directly incorporated in the text of the Rules, while others are referred to in the text of the Rules.

## 2 SURVEYS OF EQUIPMENT OF SHIPS IN SERVICE

### 2.1 GENERAL

**2.1.1** Surveys of all the equipment of a ship, whenever practicable, shall be held simultaneously.

In general, surveys of the equipment shall be held concurrently with periodical classification surveys, as stated in Section 3, Part I "General Provisions" of the Rules for the Classification Surveys of Ships in Service.

### 2.2 INITIAL SURVEY

**2.2.1** The initial survey is held in order to ascertain that the equipment initially submitted to the Register can be allowed for service on board the ship.

The scope of the initial survey of equipment is determined by the Register on the basis of Table 2.3 with due regard to the provisions stated under 2.5 of General Regulations for the Classification and Other Activity.

### 2.3 PERIODICAL SURVEYS

**2.3.1** The periodical surveys (annual and special) are held in order to ascertain that the equipment complies with the requirements of the Rules and additional requirements of the Register. The scope of periodical surveys and intervals between them are given in Table 2.3. The scope of individual inspections, measurements, tests, etc. is determined by a Surveyor to the Register depending upon the instructions in force and particular circumstances.

### 2.4 OCCASIONAL SURVEYS

**2.4.1** The occasional surveys of ship's equipment are held in all other cases except initial and periodical

surveys. The scope of the surveys and procedure for them are determined by the Register depending on the purpose of the survey and on technical condition of the equipment.

**2.4.2** A survey after emergency is carried out in case the damage has been sustained by ship's equipment, arrangements or outfit enlisted in the RS Nomenclature.

The survey shall be held in a port where the ship is at the moment or in the first port she calls after the emergency.

This survey is held in order to reveal the damage, agree upon the scope of work required to eliminate the consequences of an emergency and to determine possibility and conditions of retaining validity of the relevant documents of the Register.

**2.4.3** The occasional surveys may be held at the request of the shipowner or the underwriter to the extent necessary to comply with their application or they may be initiated by the Register.

### 2.5 SURVEY OF EQUIPMENT OF THE SHIPS IN SERVICE WHICH ARE NOT REGISTERED BY THE REGISTER

**2.5.1** The Register may establish the survey of ship in service which is not registered by the Register provided that this ship was submitted to the initial survey (refer to 2.2).

**2.5.2** When submitting the ship for survey of the equipment the technical documentation in the scope defined in 3.2 as well as the documents on the previous survey of the equipment shall be submitted.

If the shipowner is not able to submit some materials from the ones specified in 3.2 he shall ensure the receiving by the Register of all the necessary information for carrying out the initial survey.

Table 2.3

Nos.		Item to be surveyed	Survey of a ship				
			1st annual	2nd annual	3rd annual	4th annual	special
<b>1</b>	<b>Life-saving arrangements and appliances</b>						
1.1	Launching appliances		P <sup>1</sup>	P <sup>1</sup>	P <sup>1</sup>	P <sup>1</sup>	P <sup>1</sup>
1.2	Lifeboats and rescue boats		OP <sup>1, 2</sup>	OP <sup>1, 2</sup>	OP <sup>1, 2</sup>	OP <sup>1, 2</sup>	OP <sup>1, 2</sup>
1.3	Rigid liferafts and buoyant apparatus		O <sup>1</sup>	O <sup>1</sup>	O <sup>1</sup>	O <sup>1</sup>	O <sup>1</sup>
1.4	Inflatable liferafts, marine evacuation systems, inflated rescue boats, hydrostatic release units. Inflatable lifejackets, immersion suits, anti-exposure suits and thermal protective aids		CE <sup>3</sup>	CE <sup>3</sup>	CE <sup>3</sup>	CE <sup>3</sup>	CE <sup>3</sup>
1.5	Lifebuoys and rigid lifejackets		C	C	C	C	CE <sup>3</sup>
1.6	Line-throwing appliances		C	C	C	C	C
1.7	Posters or signs using symbols		C	C	C	C	C
<b>2</b>	<b>Signal means</b>						
2.1	Navigation and flashing lights		P	P	P	P	OP
2.1.1	Spare parts for navigation and flashing lights		—	—	—	—	C
2.2	Sound signal means		P	P	P	P	P
2.3	Signal shapes and pyrotechnic means		C	C	C	C	C
<b>3</b>	<b>Navigational equipment</b>						
3.1	Standard magnetic compass		P	P	P	P	EP
3.2	Spare magnetic compass		P	C	P	C	P
3.3	Gyrocompass		P	P	P	P	P
3.4	Ship's heading or track control system		P	P	P	P	P
3.5	Transmitting heading device (THD)		P	P	P	P	P
3.6	Electronic chart display and information system (ECDIS)		P	P	P	P	P
3.7	Back up arrangements for ECDIS		P	P	P	P	P
3.8	Receiver for a global navigation satellite system(s)/terrestrial radionavigation system		P	P	P	P	P
3.9	Radar		P	P	P	P	P
3.10	Electronic plotting aid (EPA)		P	P	P	P	P
3.11	Automatic tracking aid (ATA)		P	P	P	P	P
3.12	Automatic radar plotting aid (ARPA)		P	P	P	P	P
3.13	Automatic identification system (AIS)		EP	EP	EP	EP	EP
3.14	Voyage data recorder (VDR)		EC	EC	EC	EC	EC
3.15	Speed and distance measuring device (through the water, over the ground in the forward and athwartship direction)		P	C	P	C	OP
3.16	Mechanical log		C	C	C	C	C
3.17	Echo sounder		P	P	P	P	OP
3.18	Sound reception system		P	P	P	P	P
3.19	Radar reflector		P	C	P	C	P
3.20	Radiobeacon station		P	P	P	P	P
3.21	Navigational devices and instruments		C	C	C	C	C
3.22	Spaces intended for installation of navigational equipment		C	C	C	C	C
3.23	Sources of electrical power		P	P	P	P	OMP
3.24	Aerials		P	P	P	P	OP
3.25	Earthing		C	C	C	C	C
3.26	Spare parts, measuring instruments, tools and materials		C	C	C	C	CE
<b>4</b>	<b>Radio equipment</b>						
4.1	Spaces where shipboard radio communication facilities are installed		C	C	C	C	C
4.2	Spaces where survival craft radio communication facilities are located		C	C	C	C	C
4.3	VHF radio installation:						
	DSC encoder;		P	P	P	P	OMP
	DSC watch receiver;		P	P	P	P	OMP
	Radiotelephone station		MP	MP	MP	MP	OMP
4.4	MF radio installation:						
	DSC encoder;		P	P	P	P	OMP
	DSC watch receiver;		P	P	P	P	OMP
	Radiotelephone station		MP	MP	MP	MP	OMP
4.5	MF/HF radio installation:						
	.1 DSC encoder;		P	P	P	P	OMP
	.2 DSC watch receiver;		P	P	P	P	OMP
	.3 radio receiver for telephony and NBDP;		P	P	P	P	OMP
	.4 radio transmitter for telephony, DSC and NBDP;		MP	MP	MP	MP	OMP



Table 2.3 — continued

Nos.	Item to be surveyed	Survey of a ship				
		1st annual	2nd annual	3rd annual	4th annual	special
	.5 improved fidelity printer;	P	P	P	P	OP
	.6 terminal printer	P	P	P	P	OP
4.6	INMARSAT ship earth station	P	P	P	P	OMP
4.7	NAVTEX service receiver	P	P	P	P	OMP
4.8	EGC receiver	P	P	P	P	OMP
4.9	HF direct-printing radiotelegraphy receiver for reception of marine safety information	P	P	P	P	OMP
4.10	COSPAS-SARSAT satellite EPIRB	EP	EP	EP	EP	EP
4.11	VHF EPIRB	EP	EP	EP	EP	EP
4.12	Ship's search and rescue locating device: ship's radar search and rescue transponder (SART) or ship's AIS search and rescue transmitter (AIS-SART)	P	P	P	P	P
4.13	Two-way VHF radiotelephone apparatus <sup>4</sup>	P	P	P	P	P
4.14	Fixed two-way VHF radiotelephone apparatus <sup>4</sup>	P	P	P	P	OMP
4.15	Main, operational and portable VHF radiotelephone station operating within frequency band of 300,025 to 300,500 MHz and 336,025 to 336,500 MHz	P	P	P	P	P
4.16	Two-way VHF radiotelephone apparatus for communication with aircraft	P	P	P	P	P
4.17	Ship security alert system	P	P	P	P	P
4.18	Equipment of public address system (including spaces, sources of energy, earthings and spare parts)	P	P	P	P	OMP
4.19	Facsimile receiving device	P	P	P	P	P
4.20	Sources of electrical power:					
	.1 transformers;	P	P	P	P	OMP
	.2 accumulator batteries;	EP	EP	EP	EP	EP
	.3 charging devices (including automatic ones);	P	P	P	P	OMP
	.4 cabling;	C	C	C	C	OM
	.5 switchboards and fittings;	P	P	P	P	OP
	.6 protective equipment against radio interference	C	C	C	C	O
4.21	Aerials	MP	MP	MP	MP	OMP
4.22	Lead-in and interior wiring of aerials	C	C	C	C	O
4.23	Earthing	C	C	C	C	OM
4.24	Spare parts, portable measuring instrument	C	C	C	C	CP

**Symbols:**  
 O — examination with provision of measures to enable the items involved to be made accessible for examination, to be opened up or dismantled, if necessary;  
 C — external examination;  
 M — measurement of wears, clearances, insulation resistance, etc;  
 P — testing of machinery, equipment and arrangements under working conditions, external examination included;  
 E — checking of documents and/or brands confirming carrying-out of obligatory periodical checking by an appropriate competent body.

<sup>1</sup> When determining the technical condition of life-saving appliances as related to strength and/or tightness, the proof load testing of the launching devices, hook releasing devices of the lifeboat, lifeboats and rescue boats or checking of tightness of the boats and their air boxes or compartments of the rigid liferafts and buoyant apparatus may be required at the discretion of a Surveyor. Such testing and checking are obligatory during special surveys of ship for lifeboats, rescue boats of rigid and combination of rigid and inflated construction, rigid liferafts and buoyant apparatus of 10 years old and over, for inflated rescue boats of 5 years old and for the launching devices and hook releasing devices of the lifeboat — not less than once every 5 years. Measurement of residual thicknesses of metal structures being part of the life-saving arrangements shall be made at the discretion of a Surveyor.

<sup>2</sup> Checking in operation of motor lifeboats and rescue boats, their propelling gears, launching and recovery appliances, drainage arrangements, as well as drenching and compressed air systems of the lifeboats in oil tankers.

<sup>3</sup> Checking of documentation to confirm carrying-out of the periodical surveys and testing at the survival craft stations as well as at other specialized locations for surveying, testing and repairing the personal life-saving appliances.

<sup>4</sup> Operability of the two-way VHF radiotelephone apparatus shall be checked by a primary battery not intended for use in distress.

### 3 TECHNICAL DOCUMENTATION

#### 3.1 GENERAL

**3.1.1** General provisions relating to review and approval (agreement) of the technical documentation on ships, materials and equipment are given in Part II "Technical Documentation" of the Rules for Technical Supervision during Construction of Ships and Manufacture of Materials and Products for Ships.

#### 3.2 PLAN APPROVAL DOCUMENTATION

##### 3.2.1 General.

Prior to the commencement of the construction of a ship whose equipment shall meet the requirements of the Rules, plan approval documentation listed under 3.2.2 to 3.2.6 shall be submitted to the Register for review. Documentation submitted for review, as a rule, shall be delivered to the Register in electronic form in PDF format by mutually agreed way, or as hard copy in triplicate, completed in accordance with the lists given in 3.2.2 to 3.2.6 taking into account the peculiarities and type of a ship.

Documentation marked with a (\*) sign is technical documentation, the satisfactory results of review of which are acknowledged by putting on it the appropriate stamps in compliance with 8.3.1, Part II "Technical Documentation" of the Rules for Technical Supervision during Construction of Ships and Manufacture of Materials and Products for Ships.

Documentation marked with a (\*\*) sign is technical documentation, the satisfactory results of review of which are acknowledged by putting on it the appropriate stamps in compliance with 8.3.2, Part II "Technical Documentation" of the Rules for Technical Supervision during Construction of Ships and Manufacture of Materials and Products for Ships.

##### 3.2.2 General documentation:

**.1** specification for all the equipment covered by the Rules(\*\*).

"Radio Equipment" Section of the Specification shall contain the information on the marine areas of ship's navigation and on methods of maintenance of radio equipment under the requirements of Global Maritime Distress and Safety System (GMDSS);

**.2** list of equivalents of structures, materials and products with a justification of their application (refer to 1.3.4.1, General Regulations for the Classification and Other Activity)<sup>1</sup>(\*\*).

<sup>1</sup> Refer to 3.2.2.6, Part I "Classification" of the Rules for the Classification and Construction of Sea-Going Ships.

##### 3.2.3 Documentation on life-saving appliances:

**.1** arrangement plan of lifeboats and rescue boats, liferafts, marine evacuation systems and their launching appliances, as well as means of embarkation that provide access to survival craft in the water(\*);

**.2** drawings of securing of launching appliances for survival craft and rescue boats, as well as their means of embarkation(\*);

**.3** drawings of securing of survival craft and rescue boats in stowed-for-sea-position(\*);

**.4** arrangement plan of survival craft muster and embarkation stations, means of illumination and means of protection from seas, as well as means to prevent any entry of water into the survival craft(\*);

**.5** list of life-saving appliances including their type and technical specifications, as well as data on their approval by the Register(\*\*);

**.6** arrangement plan and drawings of securing of personal life-saving appliances(\*);

**.7** necessary calculations and data proving the compliance with the Register rules(\*\*);

**.8** when alternative design and arrangements being applied on board deviate from the requirements of Part II "Life-Saving Appliances", an engineering analysis shall be submitted to the Register for approval together with a technical background demonstrating that the alternative design and arrangements provide an equivalent level of safety to that stipulated by the relevant requirements of this Part(\*\*).

The engineering analysis shall be carried out in compliance with 1.3.11, Part II "Life-Saving Appliances".

##### 3.2.4 Documentation on signal means:

**.1** arrangement plan and drawings of securing of navigation lights, flashing lights, as well as pyrotechnic and sound signal means with indication of their principal location(\*);

**.2** list of signal means with indication of their principal characteristics(\*\*);

**.3** connection circuits of navigation lights, flashing lights, as well as of electric sound signal means(\*).

##### 3.2.5 Documentation on navigation bridge:

**.1** bridge layout drawings(\*) showing:

**.1.1** bridge layout, including configuration and location of all workstations on the bridge, including workplaces for execution of additional function of the bridge, indicating width of passageways, deck-head heights, height of entrances and doors, the lower edge of deck head-mounted equipment;

**.1.2** configuration and dimensions of workstation consoles, including console foundation;

.1.3 chairs in workstation with indication of minimal and maximal heights of adjustment;

.2 arrangement plans of equipment (two sections, at least)(\*).

Location of all radio and navigational equipment and other equipment in workstations console, as well as equipment located elsewhere on the navigation bridge and out of it that is functionally connected with the bridge shall be indicated on the arrangement plans, moreover, it shall be indicated (if any):

.2.1 control units (integral or separate) for distress alert transmission;

.2.2 VHF radio installations, including any control units;

.2.3 MF or MF/HF radio installations, including any control units, terminal printing device;

.2.4 satellite radio communication facilities, including printers;

.2.5 receivers providing constant DSC watching on VHF channel 70, on the frequency 2187,5 kHz, as well as HF DSC frequencies;

.2.6 NAVTEX service receiver and enhanced group calling (EGC) receiver;

.2.7 ship's and survival craft search and rescue locating devices: ship's or survival craft radar search and rescue transponders (SART), ship's or survival craft AIS search and rescue transmitter (AIS-SART), emergency position-indicating radio beacons (EPIRB);

.2.8 two-way VHF radiotelephone apparatus and chargers;

.2.9 two-way VHF radiotelephone apparatus for communication with aircraft and chargers;

.2.10 emergency lighting supplied from the reserve source of electrical power (GMDSS accumulators);

.2.11 charger for reserve source of electrical power (GMDSS accumulators);

.2.12 ship security alert system and arrangement (button) for its actuation;

.2.13 distribution boards supplying radio and navigational equipment (with protection devices);

.2.14 optical remote transmission device of magnetic compass;

.2.15 GNSS receiver;

.2.16 sound reception system;

.2.17 log and its repeaters;

.2.18 echo sounder and its repeaters;

.2.19 gyrocompass and its repeaters (for heading indication, for bearing taking);

.2.20 rate-of-turn indicator;

.2.21 AIS equipment with a display;

.2.22 ship's heading/track control system;

.2.23 radars;

.2.24 electronic chart display and information system (ECDIS);

.2.25 system of long range identification and tracking of ships (LRIT system);

.2.26 bridge navigational watch alarm system (BNWAS);

.2.27 voyage data recorder (VDR);

.2.28 indicators of propeller revolutions, the force and direction of thrust, pitch and operational mode of controllable pitch propellers, rudder angle, force and direction of lateral thrust of the thruster;

.3 fields of vision drawings (for ships with overall length 55 m and more)(\*):

.3.1 the horizontal field of vision from all workstations, including the arc of individual blind sectors and sum of blind sectors forward of the beam (over an arc of 180° from side to side right ahead);

.3.2 the vertical field of vision over the bow to 10° on either side under all conditions of draught, trim and deck cargo location from conning position and the workstation for navigation and manoeuvring, including the line of sight under the upper edge of the window from standing working position at the workstation and above the lower edge of the window from sitting working position;

.3.3 visibility of the ship's side from 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 list of all relevant bridge equipment(\*\*) with specification of:

.4.1 type;

.4.2 model;

.4.3 manufacturer;

.4.4 supplier;

.4.5 information on valid type approval (number of type approval certificates issued by the Register), if type approval is required according to the Nomenclature of Items of the Register Technical Supervision.

**3.2.6 Documentation on radio and navigational equipment:**

.1 wiring diagram (according to type approval certificates) of radio and navigational equipment(\*), to be indicated (if applicable):

.1.1 diagram of commutation of aerials;

.1.2 diagrams of power supply from main, emergency and reserve sources of electrical power (GMDSS accumulators);

.1.3 automatic circuit breakers;

.1.4 connection of chargers;

.1.5 connection of GNSS receiver (GPS/GLO-NASS/Galileo) to VHF/MF/HF radio installations, satellite communication equipment and other navigational equipment;

.1.6 interfacing of gyrocompass/remote transmitting heading device to other equipment;

.1.7 connection to voyage data recorder (VDR);

- .1.8 type and cross sectional areas of cables;
- .2 circuit connection diagram (block diagram) of public address system with indication of location of main and remote command broadcast microphone posts(\*);
- .3 arrangement plans of aerials (in three sections)(\*) with indication (if any):
  - .3.1 all transmitting aerials, including tuning devices;
  - .3.2 all receiving aerials;
  - .3.3 radar aerials (with indication of rotation radius of the aerial, and any other ship structures or cargo (masts, derricks, containers, etc.), which can affect radiowaves propagation or impair the radar system performance);
  - .3.4 satellite communication equipment aerials;
  - .3.5 GNSS receiver aerials;
  - .3.6 location of float-free COSPAS-SARSAT satellite EPIRB;
  - .3.7 location of the standard/spare magnetic compass;
  - .3.8 location of VDR protective capsule;
  - .3.9 location of microphones of sound reception system;
- .4 calculation of the capacity of reserve source of electrical power (accumulators) for supplying of GMDSS radio equipment(\*\*);
- .5 list of information (data) to be recorded by voyage data recorder with indication of format and data sources (equipment, sensors) (if any)(\*\*).

### **3.2.7 Programmes of mooring and sea trials(\*)**

**3.2.7.1** Programmes of mooring and sea trials shall be approved by the Register before the commencement of relevant trials.

**3.2.7.2** The scope of mooring and sea trials shall comply with the relevant requirements of Part V "Technical Supervision during Construction of Ships" of the Rules for Technical Supervision during Construction of Ships and Manufacture of Materials and Products for Ships.

### **3.3 TECHNICAL DOCUMENTATION FOR EQUIPMENT OF SHIP SUBJECT TO CONVERSION OR RECONSTRUCTION**

**3.3.1** Prior to the commencement of work on conversion or reconstruction of a ship, technical documentation concerning those items of equipment which are liable to conversion or reconstruction shall be submitted to the Register for review.

**3.3.2** In case of new components of equipment on board the ship, which differ substantially from those fitted initially and covered by the Rules, additional technical documentation on these components shall be submitted to the Register for review within the scope required for a ship under construction (refer to 3.2).



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