

RULES

FOR THE CLASSIFICATION AND CONSTRUCTION OF HIGH-SPEED CRAFT

PART XI ELECTRICAL EQUIPMENT

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RULES FOR THE CLASSIFICATION AND CONSTRUCTION OF HIGH-SPEED CRAFT

Rules for the Classification and Construction of High-Speed Craft of Russian Maritime Register of Shipping (RS, the Register) have been approved in accordance with the established approval procedure and come into force on 1 March 2023.

The present edition of the Rules is based on the 2018 edition taking into account the amendments developed immediately before publication.

The procedural requirements, unified requirements, unified 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 "Classification";

Part II "Hull Structure and Strength";

Part III "Equipment, Arrangements and Outfit";

Part IV "Stability";

Part V "Reserve of Buoyancy and Subdivision";

Part VI "Fire Protection";

Part VII "Machinery Installations";

Part VIII "Systems and Piping";

Part IX "Machinery";

Part X "Boilers, Heat Exchangers and Pressure Vessels";

Part XI "Electrical Equipment";

Part XII "Refrigerating Plants";

Part XIII "Materials";

Part XIV "Welding";

Part XV "Automation";

Part XVI "Live-Saving Appliances";

Part XVII "Radio Equipment";

Part XVIII "Navigational Equipment";

Part XIX "Signal Means";

Part XX "Equipment for Pollution Prevention";

Part XXI "Craft for Personnel Transportation".

REVISION HISTORY

(Purely editorial amendments are not included in the Revision History)

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

1 GENERAL

1.1 SCOPE OF APPLICATION

1.1.1 This Part of the Rules of the Rules for the Classification and Construction of High-Speed Craft¹ applies to electrical installations of high-speed craft² and individual items of electrical equipment in compliance with [1.3](#).

1.1.2 All applicable requirements of Part XI "Electrical Equipment" of the Rules for the Classification and Construction of Sea-Going Ships³ unless provided otherwise in this Part, apply to electrical installations and individual items of HSC electrical equipment.

¹ Hereinafter referred to as "these Rules".

² Hereinafter referred to as "HSC".

³ Hereinafter referred to as "the Rules for the Classification".

1.2 DEFINITIONS AND EXPLANATIONS

Definitions and explanations relating to the general terminology are given in 1.1, Part I "Classification" of these Rules and in Part XI "Electrical Equipment" of the Rules for the Classification.

1.3 SCOPE OF TECHNICAL SUPERVISION

1.3.1 The following equipment, systems and arrangements are subject to technical supervision:

- .1** electric propulsion plant;
- .2** main and emergency sources of electrical power;
- .3** power and lighting transformers and converters used in the equipment, systems and arrangements referred to in [1.3.1](#);
- .4** distribution devices, control and monitoring panels;
- .5** electric drives of machinery serving main machinery; steering gear (hydraulic and aerodynamic rudders, tilt struts of foils, pylons, etc); machinery and arrangements of stabilization systems; anchor and mooring arrangements; machinery of lift fans and air propellers; foil lifting and lowering machinery; machinery of lifeboat and liferaft lowering devices; starting air compressors and air compressors for sound signal means; bilge and fire pumps, ventilation fans of machinery spaces and passenger accommodation spaces;
- .6** main lighting for spaces and locations of essential machinery and equipment, escape routes and emergency lighting;
- .7** navigation and flashing lights;
- .8** service telephone communications, electric engine-room telegraph;
- .9** general alarm system;
- .10** fire detection and warning systems indicating the release of fire smothering medium;
- .11** signalling systems of watertight and fire doors;
- .12** charging facilities for accumulator batteries.

1.3.2 All items of electrical equipment listed in 1.3.3, Part XI "Electrical Equipment" of the Rules for the Classification, as well as other electrical equipment used in propulsion and steering of HSC are subject to technical supervision during manufacture.

1.4 TECHNICAL DOCUMENTATION

1.4.1 The requirements for technical documentation of the craft to be submitted to the Register for consideration and approval are given in 1.4, Part I "Classification".

1.4.2 Before fabrication of individual items of electrical equipment to be installed on HSC, the documents listed in 1.4.2, Part XI "Electrical Equipment" of the Rules for the Classification, shall be submitted for consideration and approval.

2 GENERAL REQUIREMENTS

2.1 OPERATIONAL CONDITIONS

2.1.1 The design, installation and arrangement of electrical equipment shall ensure its proper operation at the worst angles of list and trim likely to arise under the worst intended conditions, including emergency situations.

2.1.2 Electrical equipment shall reliably operate under conditions listed in 2.1, Part XI "Electrical Equipment" of the Rules for the Classification.

2.2 CONSTRUCTIONAL REQUIREMENTS AND PROTECTION OF ELECTRICAL EQUIPMENT

2.2.1 The electrical installation shall be designed and installed so that the probability of the whole craft being at risk in case of failure of any item of machinery or control system is extremely remote.

2.2.2 Depending on the place of installation electrical equipment with an appropriate safety enclosure shall be used or other precautions shall be taken to protect the equipment from adverse effects of the environment and to ensure protection of passengers, crew and craft from electrical hazards.

2.2.3 Minimum protection of electrical equipment to be installed in spaces and areas of the craft shall be chosen in accordance with Table 2.4.4.2, Part XI "Electrical Equipment" of the Rules for the Classification.

2.3 PROTECTIVE EARTHING

Protective earthing of electrical equipment shall comply with 2.5, Part XI "Electrical Equipment" of the Rules for the Classification.

2.4 ARRANGEMENT OF ELECTRICAL EQUIPMENT

2.4.1 In arrangement of electrical equipment the requirements of 2.7, except 2.7.2, and 2.9, Part XI "Electrical Equipment" of the Rules for the Classification shall be met.

2.4.2 Electrical equipment shall be reliably secured in regular places. Means shall be provided to prevent electrical equipment securing devices from loosening and electrical equipment from shifting. Materials used for securing devices of electrical equipment and cables shall not cause electrolytic corrosion of hull structures and the material of securing devices itself.

2.4.3 Lighting fittings shall be arranged and installed so as to prevent heating of surrounding cables, pipes, finishing and other materials above the temperature allowable for their safe operation and to prevent a risk of ignition.

3 MAIN SOURCE OF ELECTRICAL POWER

3.1 ITEMIZATION AND CAPACITY OF THE MAIN SOURCE OF ELECTRICAL POWER

3.1.1 Each craft shall be provided with the main source of electrical power of sufficient capacity to supply all the necessary electrical equipment to maintain normal operational conditions of the craft and comfortable conditions of habitability. The main source of electrical power shall consist of at least two independent generating sets.

3.1.2 The number and capacity of generating sets and electrical converters in the main source of electrical power shall be such that, in the event of failing any one of them, the remaining set will be capable of supplying:

.1 all electrical equipment necessary to provide the normal operational conditions of propulsion and safety of the craft along with the minimum comfortable conditions of habitability for people on board;

.2 those services which are necessary to start the main propulsion plant from the dead craft condition. The emergency source of electrical power may be used for the purpose of starting from the dead craft condition if its capability either alone or combined with that of any other source of electrical power is sufficient to provide at the same time those services required to be provided in [5.3.2.1 to 5.3.2.4.1](#) or [5.4.2.1 to 5.4.2.3](#) or [5.4.3.1 to 5.4.3.4](#), as appropriate.

3.1.3 As the main source of electrical power on the craft with a low-power electrical installation listed in 1.1.1.3, Part I "Classification", it is permitted to use at least one of the following options:

.1 an independent generating set and accumulator batteries operating in a buffer mode together with a generating set;

.2 a generator for propulsion machinery and accumulator batteries operating in a buffer mode together with a generating set;

.3 a generator for propulsion machinery and an independent generating set.

There with, the capacity of accumulator batteries shall comply with the requirements in 3.1.6, Part XI "Electrical Equipment" of the Rules for the Classification.

3.2 CONNECTION OF ELECTRICAL POWER SOURCE UNITS

3.2.1 Disconnecting devices shall be installed on the main switchboard for the main busbars to be subdivided into at least two parts which shall be connected by a circuit-breaker or some other approved means. So far as it is practicable, the connection of generating sets or any other duplicated equipment shall be equally divided between the parts.

For category B crafts each part of the main busbars with their associated generators shall be arranged in separate compartments.

3.2.2 In passenger crafts each system shall be able to supply all equipment necessary to maintain control of propulsion, stabilization, navigation, lighting and ventilation, and allow starting of the largest essential electrical engine.

4 DISTRIBUTION OF ELECTRICAL POWER

4.1 DISTRIBUTION SYSTEMS AND ALLOWABLE STRESSES

4.1.1 For electrical power distribution, two-wire or three-wire or four-wire insulated systems shall be used. Four-wire systems with neutral solidly earthed but without hull return may also be used.

4.1.2 The electrical distribution voltages throughout the craft may be either direct current or alternating current and shall not exceed:

- .1** 500 V for power, cooking, heating and other permanently connected equipment;
- .2** 250 V for lighting, internal communications and receptacle outlets.

4.1.3 For electric propulsion plants the use of voltages not exceeding the values given in 4.2 and Section 18, Part XI "Electrical Equipment" of the Rules for the Classification.

4.2 SUPPLY OF ESSENTIAL SERVICES

4.2.1 All essential services other than those for which additional requirements shall be met or other means of power supply are allowed as described below, shall be supplied from the main switchboard by separate independent feeders.

4.2.2 Electric drives and control systems of steering gear and stabilization devices shall be supplied by two independent feeders, one of which shall be fed either from the emergency source of electrical power or from other independent power source.

4.2.3 Where drives and control systems of steering gear and stabilization devices are not essentially dependent on the continuous availability of electric power but at least one alternative system, not dependent on the electric supply, is installed, then the steering gear and stabilization devices electrically powered or controlled may be fed by a single circuit protected in accordance with the requirements of 8.4.2, Part XI "Electrical Equipment" of the Rules for the Classification.

4.2.4 Navigation light switchboard shall be supplied by two independent feeders.

4.2.5 Anchor and mooring arrangements may be supplied from the nearest section switchboard provided it is supplied directly from the main switchboard.

4.2.6 Electric drives of the machinery serving the main propulsion plant, electric drives of passenger and service spaces ventilation, electric drives of survival craft lowering devices and electrical drives of foil lifting and lowering machinery may be supplied by separate feeders from section switchboards.

4.2.7 Electrical devices of internal communications including loud-speaking announcing system and main and emergency lighting fittings may be fed by separate feeders from section switchboards intended to supply such services. Such switchboards shall be fed from the main and emergency switchboards.

5 EMERGENCY ELECTRICAL INSTALLATIONS

5.1 GENERAL

5.1.1 Each craft shall be provided with an independent emergency source of electrical power.

5.1.2 Main and emergency distribution systems shall be arranged so that feeders from main and emergency sources of power are separated both vertically and horizontally as widely as practicable.

5.1.3 The emergency source of electrical power may be either a generator or an accumulator battery, which shall comply with the following requirements.

5.1.3.1 Where the emergency source of electrical power is a generator, it shall be:

.1 driven by a suitable prime mover with an independent supply of oil fuel having a flash point not lower than 43 °C;

.2 started automatically upon failure of the electrical supply from the main source of electrical power and shall be automatically connected to the emergency switchboard. The automatic starting system and the characteristic of the prime mover shall be such as to permit the emergency generator to carry its full rated load, subject to a maximum of 45 s. Starting devices shall meet the requirements of 9.5, Part XI "Electrical Equipment" of the Rules for the Classification;

.3 provided with a transitional emergency source of electrical power according to [5.3.4](#) or [5.4.4](#);

5.1.3.2 Where an emergency source of electrical power is an accumulator battery, it shall be capable of:

.1 carrying of the emergency electrical load without recharging while maintaining the voltage of the battery throughout the discharge period within 12 % above or below its nominal voltage;

.2 connecting automatically to the emergency switchboard in the event of failure of the main source of electrical power;

.3 immediately supplying at least the services specified in [5.3.4](#) or [5.4.4](#).

5.1.4 The emergency generator and its prime mover and any emergency accumulator battery shall be designed and arranged so as to ensure that they will function at full rated power when the craft is upright and when the craft has a list or trim which may arise under the worst intended conditions, including emergency situations.

5.1.5 Capacity of emergency source of power shall be sufficient to supply simultaneously all those services that are essential for the safety of navigation in an emergency. In ships where electrical power is necessary for propulsion, the capacity of the emergency source of electrical power shall be sufficient to restore propulsion to the ship (in conjunction with other machinery, as appropriate) from a dead ship condition within 30 min after blackout.

5.1.6 Where the emergency diesel-generator is provided for use in exceptional cases and for short periods to supply non-emergency circuits, suitable measures shall be taken for safeguarding independent emergency operation under all circumstances and arrangements shall be made, where necessary, to disconnect automatically non-emergency circuits from the emergency switchboard to ensure that power is available to the emergency circuits.

5.1.7 If the main source of electrical power complies with [3.1.3.1](#) and [3.1.3.2](#), an accumulator battery may be considered as the emergency source. Herewith, it shall be arranged so as to comply with [5.2](#). In case the main and emergency power supply units are overlapping in the same switchboard, they shall be separated from each other by bulkheads of non-combustible material.

5.2 SPACES FOR EMERGENCY SOURCES OF ELECTRICAL POWER

5.2.1 The emergency source of electrical power and associated transforming equipment, if any, the transitional emergency source of electrical power, the emergency switchboard and the emergency electrical lighting switchboard shall be located above the waterline in the final condition of damage, operable in that condition and readily accessible.

5.2.2 As far as practicable, the space containing the emergency source of electrical power, associated transforming equipment, if any, the transitional source of electrical power and the emergency switchboard shall not be contiguous to the boundaries of main machinery spaces or spaces containing the main source of electrical power, associated transforming equipment, if any, or the main switchboard.

5.3 EMERGENCY SOURCES ON CARGO CRAFT

5.3.1 Where the main source of electrical power is located in two or more compartments which are not contiguous, each of which has its own independent systems, including power distribution and control systems, completely independent of each other and such that a fire or other casualty in any one of the spaces will not affect the power distribution from the others, or to the services required by [5.3.2](#), the requirements of [5.1.1](#) and [5.2.1](#) may be considered satisfied without an additional emergency source of electrical power, provided that:

.1 there is at least one generating set, meeting the requirements of [5.1.4](#) and of the sufficient capacity to meet the requirements of [5.3.2](#), in each of at least two non-contiguous spaces;

.2 arrangements required by [5.3.1.1](#) in each such space are at least equivalent to those required by [5.3.1.1](#) so that a source of electrical power is available at all times to the services required by [5.3.2](#);

.3 generator sets referred to in [5.3.1.1](#) and their independent distribution systems are installed in accordance with [5.2.1](#), and starting devices shall meet the requirements of 9.5, Part XI "Electrical Equipment" of the Rules for the Classification.

5.3.2 The emergency source of electrical power shall be capable of supplying simultaneously at least the following services for the periods specified hereunder:

.1 for a period of 12 h emergency lighting:

.1.1 at the stowage spaces of life-saving appliances;

.1.2 at all escape routes such as alleyways, stairways, exits from accommodation and service spaces, embarkation points, etc;

.1.3 in public spaces, if any;

.1.4 in machinery spaces and generating sets spaces;

.1.5 in all control stations and main and emergency switchboard spaces;

.1.6 at the stowage spaces for emergency outfit, fire-fighting equipment, fireman outfits and manually operated call point positions;

.1.7 at the steering gear;

.2 for a period of 12 h:

.2.1 navigation lights, "Not under command" and other lights required by International Regulations for Preventing Collisions at Sea in force;

.2.2 internal communication equipment for announcements;

.2.3 fire-detection and general alarm systems and manual fire alarm;

.2.4 remote control devices of fire-extinguishing systems, if electrical;

.3 for a period of 4 h of intermittent operation:

.3.1 the daylight signalling lamp, if it has no independent supply from its own accumulator battery;

.3.2 the craft whistle, if electrically driven;

.4 for a period of 12 h:

.4.1 navigational equipment required by Part XVIII "Navigational Equipment";

.4.2 essential electrically powered instruments and controls for propulsion machinery, if alternative sources are not available for such devices;

.4.3 one of fire pumps required by Part VI "Fire Protection";

.4.4 the sprinkler pump and drencher pump, if fitted;

.4.5 the emergency bilge pump and all the equipment essential for the operation of electrically powered remote-controlled bilge valves as required by Part VIII "Systems and Piping";

.4.6 radio equipment required by Part XVII "Radio Equipment";

.5 for a period of 10 min, power drives for directional control devices, including those required to direct thrust forward and astern, unless there is a manual alternative.

5.3.3 Where the automatic starting of the emergency generator according to [5.1.3.1.2](#) is not provided during 45 s, provision shall be made for a transitional emergency source of electrical power.

5.3.4 The transitional emergency source of electrical power required by [5.3.3](#) shall be an accumulator battery which shall operate without recharging while maintaining the voltage of the battery throughout the discharge period within 12 % above or below its nominal voltage and be of sufficient capacity and arranged so as to supply automatically, in case of failure of either the main or emergency source of electrical power, at least the following services, if their operation depends upon a source of electrical power:

- .1** for a period of 30 min, consumers specified in [5.3.2.1 to 5.3.2.3](#);
- .2** devices of closing of watertight doors, but not necessarily simultaneously, unless an independent temporary source of stored energy is provided. The power source shall have sufficient capacity to operate each door at least three times, i.e. closed — open — closed, against an adverse list of 15°;
- .3** for a period of 30 min, control, indication and alarm circuits for watertight doors.

5.4 EMERGENCY SOURCES OF ELECTRICAL POWER ON PASSENGER CRAFT

5.4.1 Where the main source of electrical power is located in two or more compartments which are not contiguous, each having its own independent systems of electrical power distribution and control, completely independent of each other and such that a fire or other casualty in any one of the spaces will not affect the electrical power distribution from other systems or devices and systems required by [5.4.2](#) or [5.4.3](#), the requirements of [5.1.1](#) and [5.2.1](#) may be considered satisfied without an additional emergency source of electrical power, provided that:

.1 there is at least one generating set of sufficient capacity to meet the requirements of [5.1.4](#), [5.4.2](#) or [5.4.3](#) in each of at least two non-contiguous spaces;

.2 arrangements required by [5.4.1.1](#) in each such space are equivalent to those required by [5.1.3.1](#) so that the main source of electrical power is available at all times to the services required by [5.4.2](#) or [5.4.3](#);

.3 generator sets referred to in [5.4.1.1](#) and their independent distribution systems are installed so that one of them remains operable after damage or flooding of any one compartment.

.4 Starting devices shall meet the requirements of 9.5, Part XI "Electrical Equipment" of the Rules for the Classification.

5.4.2 For category A craft, the emergency source of electrical power shall be capable of supplying simultaneously the following services, if they depend upon a source of electrical power for their operation:

.1 for a period of 5 h, emergency lighting:

.1.1 at the stowage places of life-saving appliances;

.1.2 at all escape routes such as alleyways, stairways, exits from accommodation and service spaces, embarkation points, etc;

.1.3 in public spaces;

.1.4 in machinery spaces and generating set spaces, including their control stations;

.1.5 in control stations;

.1.6 at stowage places of emergency outfit, firefighting equipment, fireman outfits and manually operated call point positions;

.1.7 at the steering gear;

.2 for a period of 5 h:

.2.1 navigation lights, except for "Not under command" lights;

.2.2 internal communication equipment for announcements;

.2.3 fire-detection and general alarm systems and manual fire alarms;

.2.4 remote control devices of fire-extinguishing systems, if electrical;

.3 for a period of 4 h of intermittent operation:

.3.1 the daylight signalling lamp, if it has no independent supply from its own accumulator battery;

.3.2 the craft whistle, if electrically driven;

.4 for a period of 5 h:

.4.1 radio equipment as required by Part XVII "Radio Equipment";

.4.2 gyrocompass;

.4.3 essential electrically powered instruments and controls for propulsion machinery, if alternative sources are not available for such devices;

.4.4 navigational equipment required by Part XVIII "Navigational Equipment", provided the emergency source of power is a diesel-generating set;

.5 for a period of 12 h, the "Not under command" lights;

.6 for a period of 10 min, power drives for directional control devices, including those required to direct thrust forward and astern, unless there is a manual alternative.

5.4.3 For category B crafts, the emergency source of electrical power shall be capable of supplying simultaneously the following services, if they depend upon a source of electrical power for their operation:

- .1 for a period of 12 h, emergency lighting:
 - .1.1 at stowage places of life-saving appliances;
 - .1.2 at all escape routes such as alleyways, stairways, exits from accommodation and service spaces, embarkation points, etc;
 - .1.3 in passenger compartments;
 - .1.4 in machinery spaces and generating set spaces, including their control stations;
 - .1.5 in all control stations and main and emergency switchboards;
 - .1.6 at stowage places for emergency outfit, firefighting equipment, fireman outfits and manually operated call point positions;
 - .1.7 at the steering gear;
- .2 for a period of 12 h:
 - .2.1 navigation lights, "Not under command" and other lights required by the International Regulations for Preventing Collisions at Sea in force;
 - .2.2 internal communication equipment for announcements;
 - .2.3 fire-detection and general alarm systems and manual fire alarms;
 - .2.4 remote control devices of fire-extinguishing systems, if electrical;
- .3 for a period of 4 h of intermittent operation:
 - .3.1 the daylight signalling lamp, if it has no independent supply from its own accumulator battery;
 - .3.2 the craft whistle, if electrically driven;
- .4 for a period of 12 h:
 - .4.1 navigational equipment as required by Part XVIII "Navigational Equipment";
 - .4.2 essential electrically powered instruments and controls for propulsion machinery, if alternative sources are not available for such devices;
 - .4.3 one of the fire pumps required by Part VI "Fire Protection";
 - .4.4 the sprinkler pump and drencher pump, if fitted;
 - .4.5 the emergency bilge pump and all the equipment essential for the operation of electrically powered remote controlled bilge valves required by Part VIII "Systems and Piping";
 - .4.6 radio equipment required by Part XVII "Radio Equipment";
- .5 for a period of 30 min, any power-operated watertight doors together with their indicators and warning signals;
- .6 for a period of 10 min, power drives for directional control devices, including those required to direct thrust forward and astern, unless there is a manual alternative.

5.4.4 The transitional emergency source of electrical power required by [5.1.3.1.3](#) shall be an accumulator battery which shall operate without recharging while maintaining the voltage of the battery throughout the discharge period within 12 % above or below its nominal voltage and be of sufficient capacity and arranged so as to supply automatically, in case of failure of either the main or emergency source of electrical power, at least the following services, if they depend upon a source of electrical power for their operation:

- .1 for a period of 30 min, the consumers specified in [5.4.2.1 — 5.4.2.3](#), [5.4.3.1 — 5.4.3.3](#);
- .2 with respect to watertight doors: power to operate watertight doors, but not necessarily simultaneously, unless an independent temporary source of stored energy is provided. The power source shall have sufficient capacity to operate each door at least three times, i.e. closed — open — close, against an adverse list of 15°;
- .3 for a period of 30 min: power to the control, indication and alarm circuits for watertight doors.

5.4.5 In addition to the emergency lighting required by [5.4.2.1](#), [5.4.3.1](#) and [5.4.4.1](#), on passenger craft with special category spaces all passenger spaces and alleyways shall be

provided with supplementary emergency lighting which can operate for at least 3 h under any condition of heel when all other sources of electrical power have failed.

5.4.6 Lighting provided in [5.4.5](#) shall be such that the approach to the means of escape can be readily seen (or to provide illumination of 0,5 lx). Any failure of a lamp shall be immediately apparent.

5.4.7 The source of electrical power for the supplementary lighting shall consist of accumulator batteries located within the lighting units that are continuously charged, where practicable, from the emergency switchboard and replaced in an interval specified by the manufacturer, having regard to the conditions for which they are intended.

5.4.8 A portable rechargeable battery-operated lamp shall be provided in every crew space alleyway, recreational space and every working space which is normally occupied unless supplementary emergency lighting required by [5.4.5](#), is provided.

6 ACCUMULATOR BATTERIES

6.1 Any accumulator batteries meeting the requirements of Section 13, Part XI "Electrical Equipment" of the Rules for the Classification are allowed for installation on board.

6.2 Accumulator batteries shall not be located in the crew accommodation spaces.

6.3 Charging facilities shall be provided on board every craft where accumulator batteries are used as the main or emergency source of electrical power or as independent sources of electrical power for supplying separate essential consumers.

6.4 Charging facilities shall be designed to permit the supply of essential consumers, regardless of whether a battery is on charge or not. Means shall be provided to minimize the risk of overcharging or overheating of batteries. Means for efficient air ventilation shall be provided.

7 CABLES AND WIRES

7.1 The use shall be made of non-combustible and flame-retarding cables and wires meeting the requirements of Section 16, Part XI "Electrical Equipment" of the Rules for the Classification.

7.2 Cables for service communication, fire detection system, warning system on starting a smothering fire-extinguishing system, general alarm system and watertight door signalling system, lighting system as well as feeders supplying lighting fittings and emergency consumers shall not be routed through machinery spaces and their casings, boiler rooms, galleys and other spaces with a major fire hazard, except for the cases where devices and machinery of the above-mentioned systems are arranged in such spaces. On the outside bulkheads of the spaces cables shall be placed at a distance of at least 100 mm.

7.3 Cables and wires shall be installed and secured so as to avoid their chafing or other damage.

7.4 All conductors shall be linked and connected so that the initial electrical and mechanical properties of the cable and also its flame-retarding properties and, where necessary, fire-resisting properties are maintained.

7.5 Cable armour or braid of all cables shall be electrically continuous and earthed.

8 SPARE PARTS

8.1 Every craft shall have a store of spare parts in an amount sufficient for carrying out repairs in case of a failure of essential devices in any situations, including emergency at sea, to ensure propulsion, steering, safety of the craft and occupants on board.

8.2 In determining the required number of spare parts, one shall be guided by the recommendations of manufacturers of the particular equipment.

8.3 Spare parts shall be included in the list of spare parts referred to in 3.2.11.1.25, Part I "Classification" of the Rules for the Classification, approved by the Register, and their number shall at least comply with that list.

Russian Maritime Register of Shipping

Rules for the Classification and Construction of High-Speed Craft
PART XI
ELECTRICAL EQUIPMENT

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