ECE/TRANS/SC.3/172/Rev.1/Amend.1

ECONOMIC COMMISSION FOR EUROPE

INLAND TRANSPORT COMMITTEE

Working Party on Inland Water Transport

Recommendations on harmonized Europe-wide technical requirements for inland navigation vessels

Revision 1

Amendment 1

UNITED NATIONS
New York and Geneva, 2013

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Additions and amendments to Resolution No. 61 on Recommendations on Harmonized Europe-Wide Technical Requirements for Inland Navigation Vessels

Resolution No. 72
(adopted on 14 October 2011 by the Working Party on Inland Water Transport)

The Working Party on Inland Water Transport,

Considering Resolution No. 61 of the Working Party on Inland Water Transport on recommendations on Harmonized Europe-Wide Technical Requirements for Inland Navigation Vessels, as amended (ECE/TRANS/SC.3/172/Rev.1),

Bearing in mind the report of the Working Party on the Standardization of Technical and Safety Requirements in Inland Navigation on its thirty-ninth sessions (ECE/TRANS/SC.3/WP.3/78, paras. 26 and 28),

Acknowledging that river-sea navigation vessels can play a an increasingly important role in providing transport for foreign trade and r*esponding* to the policy recommendations No. 2 of the UNECE White Paper on Efficient and Sustainable Inland Water Transport in Europe (ECE/TRANS/SC.3/189, para. 208, (c)) to elaborate pan-European technical prescriptions for such vessels,

Observing that these requirements should take into account the constraints that they might face in terms of the navigational season, distance from the coast and from harbours, as well as the height of the waves envisaged,

Also reaffirming the desirability of further developing Resolution No. 61 with due regard to the latest amendments to the Directive 2006/87/EC of the European Union laying down technical requirements for inland waterway vessels,

Noting, in particular, that alignment of the definitions used in the resolution and in the directive would not only contribute to further harmonization of these instruments but would also facilitate the participation of countries outside of the European Union in the international data exchange, especially with the European hull database,

Decides to amend and supplement as follows the text of the annex to Resolution No. 61:

1. *Amend* the definitions used in the resolution in accordance with the provisions of Annex I,

2. *Add* a new Chapter 20B on special provisions applicable to river-sea navigation vessels, as contained in Annex II.

Annex I

Amendments to the definitions used in Resolution No. 61

A. Amendments to Chapter 1

5. *Amend* paragraph 1–1.2 to read:

1–1.2 In general, these Recommendations shall, with due regard to definitions in 1–2, apply to the following craft:

(i) vessels having a length L of 20 meters or more;

(ii) vessels for which the product of L x B x T is a volume of 100 m^3 or more.

6. *Amend* the first sentence in paragraph 1–1.3 to read:

1–1.3 These Recommendations shall also apply, with due regard to definitions in 1–2, to all of the following craft: […]

7. For the text in Chapter 1–2 *substitute* the text in appendix 1.

B. Amendments to Chapter 6

8. For the text of Chapter 6 *substitute* the text in appendix 2.

C. Amendments to other chapters

9. *Replace* the term "pushed barges" with "lighters" in the following provisions of the resolution:

(a) 9–2.4.6.5;

(b) 10–1.2.1, in the explanation of the factor k;

(c) 10–1.3.1, (ii);

(d) 10–5.4.3, last sentence;

(e) 16–1.1 (i) and (ii);

(f) 16–1.2 (iii);

(g) 16–2, title;

(h) 16–2.1;

(i) 23–11.1, table and footnotes to the table.

10. Replace the term "ship-borne barges" with "ship-borne lighters" in the following provisions of the resolution:

(a) 10–1.2.1, first sentence;

(b) 16–2.2, introduction sentence;

(c) 16–2.2 (ii).

D. Amendments to Appendix 2

11. *Replace* term “vessel” *with* “craft” in the following entries of Appendix 2 on the model ship’s certificate:

(a) on the cover page under remarks, and

(b) in boxes 1, 2, 10, 12, 13 14, 15 and 50, second sentence.

Appendix 1

1–2 Definitions

Types of craft

1. “Craft”: a vessel or item of floating equipment;

2. “Vessel”: an inland waterway vessel or sea-going ship;

3. “Inland waterway vessel”: a vessel intended solely or mainly for navigation on inland waterways;

4. “Sea-going ship”: a vessel-intended mainly for navigation at sea;

5. “Motor vessel”: a motor cargo vessel or a motor tanker;

6. “Motor tanker”: a vessel intended for the carriage of goods in fixed tanks and built to navigate independently under its own motive power;

7. “Motor cargo vessel”: a vessel, other than a motor tanker, intended for the carriage of goods and built to navigate independently under its own motive power;

8. “Canal barge”: an inland waterway vessel not exceeding 38.5 m in length and 5.05 m in breadth and usually operating on the Rhine-Rhone Canal;

9. “Tug”: a vessel specially built to perform towing operations;

10. “Pusher”: a vessel specially built to propel a pushed convoy;

11. “Barge”: a dumb barge or tank barge;

12. “Tank barge”: a vessel intended for the carriage of goods in fixed tanks and built to be towed, either having no motive power of its own or having only sufficient motive power to perform restricted manoeuvres;

13. “Dumb barge”: a vessel, other than a tank barge, intended for the carriage of goods and built to be towed, either having no motive power of its own or having only sufficient motive power to perform restricted manoeuvres;

14. “Lighter”: a tank lighter, cargo lighter or ship-borne lighter;

15. “Tank lighter”: a vessel intended for the carriage of goods in fixed tanks, built or specially modified to be pushed, either having no motive power of its own or having only sufficient motive power to perform restricted manoeuvres when not part of a pushed convoy;

16. “Cargo lighter”: a vessel, other than a tank lighter, intended for the carriage of goods and built or specially modified to be pushed, either having no motive power of its own or having only sufficient motive power to perform restricted manoeuvres when not part of a pushed convoy;

17. “Ship-borne lighter”: a lighter built to be carried aboard sea-going ships and to navigate on inland waterways;

18. “Passenger vessel”: a vessel constructed and equipped to carry more than 12 passengers;

19. “Passenger sailing vessel”: a passenger vessel built and fitted out also with a view to propulsion under sail;

20. “Day-trip vessel”: a passenger vessel without overnight passenger cabins;

21. “Cabin vessel”: a passenger vessel with overnight passenger cabins;

22. “High-speed vessel”: a motorized vessel, with the exception of small craft, capable of sailing at a speed greater than 40 km/h in relation to the surface of still water, when this is stated in its ship’s certificate;

23. “Floating equipment”: a floating installation carrying working gear such as cranes, dredging equipment, pile drivers or elevators;

24. “Worksite craft”: a vessel, appropriately built and equipped for use at worksites, such as a reclamation barge, hopper or pontoon barge, pontoon or stone-dumping vessel;

25. “Recreational craft”: a vessel other than a passenger vessel, intended for sport or pleasure;

26. “Ship’s boat”: a boat for use in transport, rescue, salvage and work duties;

27. “Floating establishment”: any floating installation not normally intended to be moved, such as a swimming bath, dock, jetty or boathouse;

28. “Floating object”: a raft or other structure, object or assembly capable of navigation, not being a vessel or floating equipment or establishment;

29. “Flush-deck vessel”: a vessel which has no superstructure on its freeboard deck;

Assemblies of craft

30. “Convoy”: a rigid or towed convoy of craft;

31. “Formation”: the manner in which a convoy is assembled;

32. “Rigid convoy”: a pushed convoy or side-by-side formation;

33. “Pushed convoy”: a rigid assembly of craft of which at least one is positioned in front of the one or two vessels providing the power for propelling the convoy, known as the “pusher(s)”; a convoy composed of a pusher and a pushed craft coupled so as to permit guided articulation is also considered as rigid;

34. “Side-by-side formation”: an assembly of craft coupled rigidly side by side, none of which are positioned in front of the vessel propelling the assembly;

35. “Towed convoy”: an assembly of one or more craft, floating establishments or floating objects towed by one or more vessels forming part of the convoy;

Particular areas on board

36. “Machinery space”: is the part of the vessel housing the main and auxiliary machinery.

37. “Main engine room”: space where the propulsion engines are installed;

38. “Engine room”: space where combustion engines are installed;

39. “Boiler room”: a space housing a fuel-operated installation designed to produce steam or heat a thermal fluid;

40. “Enclosed superstructure”: a watertight, rigid, continuous structure with rigid walls jointed to the deck in a permanent and watertight manner;

41. “Wheelhouse”: the area which houses all the control and monitoring instruments necessary for manoeuvring the vessel;

42. “Accommodation”: a space intended for the use of persons normally living on board, including galleys, storage space for provisions, toilets and washing facilities, laundry facilities, anterooms and passageways, but not the wheelhouse;

43. “Passenger area”: areas on board intended for passengers and enclosed areas such as lounges, offices, shops, hairdressing salons, drying rooms, laundries, saunas, toilets, washrooms, passageways, connecting passages and stairs not encapsulated by walls;

44. “Control centre”: a wheelhouse, an area which contains an emergency electrical power plant or parts thereof or an area with a centre permanently occupied by on-board personnel or crew members, such as for fire alarm equipment, remote controls of doors or fire dampers;

45. “Stairwell”: the well of an internal staircase or of a lift;

46. “Lounge”: a room of an accommodation or a passenger area. On board passenger vessels, galleys are not regarded as lounges;

47. “Galley”: a room with a stove or a similar cooking appliance;

48. “Store room”: a room for the storage of flammable liquids or a room with an area of over 4 m^2 for storing supplies;

49. “Hold”: part of the vessel, bounded fore and aft by bulkheads, opened or closed by means of hatch covers, intended for the carriage of goods, whether packaged or in bulk, or for housing tanks not forming part of the hull;

50. “Fixed tank”: a tank joined to the vessel, the walls of the tank consisting either of the hull itself or of a casing separate from the hull;

51. “Working station”: an area where members of the crew carry out their duties, including gangway, derrick and ship’s boat;

52. “Passageway”: an area intended for the normal movement of persons and goods;

53. “Safe area”: the area which is externally bounded by a vertical surface running at a distance of 1/5 B_{WL} parallel to the course of the hull in the line of maximum draught;

54. “Muster areas”: areas of the vessel which are specially protected and in which passengers muster in the event of danger;

55. “Evacuation areas”: part of muster areas of the vessel from which evacuation of persons can be carried out;

Marine engineering terms

56. “Main machinery”: is that designed to drive the propelling mechanisms and/or serving the main purpose of the craft;

57. “Auxiliary machinery”: is that which contributes to the operation of the main machinery and that which supplies the vessel with all forms of power necessary for the operation of the vessel’s various systems and installations;

58. “Plane of maximum draught”: the water plane corresponding to the maximum draught at which the craft is authorized to navigate;

59. “Safety clearance”: the distance between the plane of maximum draught and the parallel plane passing through the lowest point above which the craft is no longer deemed to be watertight;

60. “Residual safety clearance”: the vertical clearance available, in the event of the craft heeling over, between the water level and the lowest point of the immersed side, beyond which the craft is no longer regarded as watertight;

61. “Freeboard (f)”: the distance between the plane of maximum draught and a parallel plane passing through the lowest point of the gunwale or, in the absence of a gunwale, the lowest point of the upper edge of the craft’s side;

62. “Residual freeboard”: the vertical clearance available, in the event of the craft heeling over, between the water level and the upper surface of the deck at the lowest point of the immersed side or, if there is no deck, the lowest point of the upper surface of the fixed craft’s side;

63. “Freeboard deck”: the deck from which the freeboard is measured shall normally be the uppermost complete deck exposed to the weather, up to which the watertight bulkheads of the hull extend and below which all openings in the craft’s sides are fitted with permanent watertight closures;

In vessels having a discontinuous freeboard deck, the lowest part of the exposed deck and the continuation of that deck parallel to the upper part of the deck shall be taken as the freeboard deck;

64. “Margin line”: an imaginary line drawn on the side plating not less than 10 cm below the bulkhead deck and not less than 10 cm below the lowest non-watertight point of the side plating. If there is no bulkhead deck, a line drawn not less than 10 cm below the lowest line up to which the outer plating is watertight shall be used;

65. “Water displacement (∇)”: the immersed volume of the vessel, in m^3;

66. “Displacement (Δ)”: the total weight of the vessel, inclusive of cargo, in t;

67. “Block coefficient (C_B)”: the ratio between the water displacement and the product of length L_{WL}, breadth B_{WL} and draught T;

68. “Lateral plane above water (A_W)”: lateral plane of the vessel above the waterline in m^2;

69. “Bulkhead deck”: the deck to which the required watertight bulkheads are taken and from which the freeboard is measured;

70. “Bulkhead”: a wall of a given height, usually vertical, partitioning the vessel and bounded by the bottom of the vessel, the plating or other bulkheads;

71. “Transverse bulkhead”: a bulkhead extending from one side of the vessel to the other;

72. “Wall”: a dividing surface, usually vertical;

73. “Partition wall”: a non-watertight wall;

74. “Length (L)”: the maximum length of the hull in m, excluding rudder and bowsprit;

75. “Length overall (L_{OA})”: the maximum length of the craft in m, including all fixed installations such as parts of the steering system or power plant, mechanical or similar devices;

76. “Length of waterline (L_{WL})”: the length of the hull in m, measured at the maximum draught;

77. “Breadth (B)”: the maximum breadth of the hull in m, measured to the outer edge of the shell plating (excluding paddle wheels, rub rails and similar);

78. “Breadth overall (B_{OA})”: the maximum breadth of the craft in m, including all fixed equipment such as paddle wheels, rub rails, mechanical devices and the like;

79. “Breadth of waterline (B_{WL})”: breadth of the hull in m, measured from the outside of the side plating at the maximum draught line;

80. “Height (H)”: the shortest vertical distance in m between the lowest point of the hull or the keel and the lowest point of the deck on the side of the craft;

81. “Draught (T)”: the vertical distance in m between the lowest point of the hull or the keel and the maximum draught line;

82. “Forward perpendicular”: the vertical line at the forward point of the intersection of the hull with the maximum draught line;

83. “Clear width of side deck”: the distance between the vertical line passing through the most prominent part of the hatch coaming on the side deck side and the vertical line passing through the inside edge of the slip guard (guardrail, foot rail) on the outer side of the side deck;

84. “Liquid cargo”: all liquids carried on the vessel, including: cargo, stores, ballast, etc.;

85. “Stores”: cargo consumed in the operation of the vessel (fuel, lubricating oil, fresh water, provisions, etc.);

86. “Empty vessel”: a vessel that is fully prepared and equipped with machinery and systems, but with no cargo, passengers, liquid ballast or stores;

87. “Critical angle (φ_{fl})”: angle of heel at which water begins to fill the vessel through unsecured openings, but not exceeding the angle at which the edge of the freeboard deck is submerged, or at which the middle of the bilge leaves the water;

88. “Capsizing angle (φ_c)”: angle of heel at which the vessel begins to capsize under the effect of the heeling moment;

89. “Permissible angle (ϕ_{perm})”: angle of heel which should not be exceeded and which should be prescribed by the competent authority for the type of vessel under consideration. In general it corresponds to the critical angle ϕ_{fl}, but should not be greater than the capsizing angle ϕ_c;

90. “Amidships”: is at the middle of the length (L);

Steering system

91. “Steering system”: all the equipment necessary for steering the vessel, such as to ensure the manoeuvrability laid down in Chapter 5;

92. “Rudder”: the rudder or rudders, with shaft, including the rudder quadrant and the components connecting with the steering apparatus;

93. Steering apparatus”: the part of the steering system which produces the movement of the rudder;

94. Drive unit”: the steering-apparatus drive, between the power source and the steering apparatus;

95. “Power source”: the power supply to the steering drive unit and the steering apparatus produced by an on-board network, batteries or an internal combustion engine;

96. “Steering control”: the component parts ~~of~~ and circuitry for the operation of a power-drive unit of the steering apparatus;

97. “Steering apparatus control unit”: the control for the steering apparatus, its drive unit and its power source; [1]

98. “Manual drive”: a system whereby manual operation of the hand wheel moves the rudder by means of a mechanical transmission, without any additional power source;

99. “Manually-operated hydraulic drive”: a manual control actuating a hydraulic transmission;

100. “Rate-of-turn regulator”: equipment which automatically produces and maintains a given rate of turn of the vessel in accordance with pre-selected values;

101. “Wheelhouse designed for radar navigation by one person”: a wheelhouse arranged in such a way that, during radar navigation, the vessel can be manoeuvred by one person;

Electrical equipment and automation

102. “Earthing”: means electrical connection to the mass of the hull;

103. “Hull return”: the distribution of direct or alternating current is said to be of the “hull return” type when the insulated conductors are connected to one of the feed poles and the hull or superstructure is connected to the other pole;

104. “Safe voltage”: means a voltage presenting no danger to persons. This condition shall be deemed to be satisfied if the windings of transformers, converters and other voltage-reducing devices are electrically separate and the reduced voltage of such devices or the voltage of sources of electric power does not exceed 50 V between the poles in the case of direct current, or between phases in the case of alternating current;

105. “Automated power installation”: is an installation equipped with automatic control, monitoring and protection of the main and auxiliary machinery and related systems interconnected by remote signalling devices;

106. “Automation system”: is the complex of automation elements, appliances and connections intended for performing prescribed functions in the field of control and monitoring;

107. “Automated remote control system”: is an automation system that provides control and monitoring of the operation of the vessel’s machinery from a remote control station by means of single manipulating of the control element (e.g. handle) by the operator and performs automatically all intermediate operations on preparation for putting into operation, switching on, changing operation modes, reversal, blocking and switching off the main and auxiliary machinery and its systems;

108. “Remote control system”: is an automation system that provides control and monitoring of the operation of an individual vessel’s machinery from a remote control station by means of manipulating the control element by the operator for performing all operations including intermediate ones;

[1] [Only applicable in the Russian text]

109. “Alarm system”: is an automation system that provides actuating visual and acoustic signals when the controlled parameters reach the limit values or deviations from normal working ranges of the power installation occur;

110. “Safety system”: is an automation system that provides a certain automatic influence on the controlled installation in order to prevent its failure;

111. “Element of an automation system”: is electric, electronic or other device being the part of the automation system (sensor, relay, amplifier, chip, logic element, etc.);

112. “Indicator system”: is one that provides the operator with current information on the monitored physical parameters of the installation (mechanism, system) and changes in these parameters, and is capable of being incorporated into the overall system of automation;

Properties of structural components and materials

113. “Watertight”: a structural component or device so fitted as to prevent any ingress of water;

114. “Spray-proof and weather-tight”: a structural component or device so fitted that in normal conditions it allows only a negligible quantity of water to penetrate;

115. “Gastight”: a structural component or device so fitted as to prevent the ingress of gas and vapours;

116. “Non-combustible”: a substance which neither burns nor produces flammable vapours in such quantities that they ignite spontaneously when heated to approximately 750° C;

117. “Flame-retardant”: material which does not readily catch fire, or whose surface at least restricts the spread of flames pursuant to the test procedure referred to in section 15.11.1;

118. “Fire-resistance”: the property of structural components or devices as certified by the test procedure referred to in section 15.11.1;

119. “Code for Fire Test Procedures”: the International Code for the Application of Fire Test Procedures adopted under Resolution MSC.61(67) by the Maritime Safety Committee of the IMO;

Other definitions

120. “Recognized classification society”: a classification society which has been recognized in accordance with the criteria and the procedures of Appendix 6;

121. “Navigation lights”: appearances of navigation lights for the identification of craft;

122. “Light signals”: signal lights are the light signals emitted by signal lanterns;

123. “Radar installation”: an electronic navigational aid for detecting and displaying the surroundings and traffic;

124. “Inland ECDIS”: a standardized system for displaying electronic navigational charts for inland waters and associated information, that displays selected information from proprietary electronic navigational charts for inland waters and optionally information from other sensors of the craft;

125. “Inland ECDIS installation ": an installation for displaying electronic navigational charts for inland waters that can be operated in two different modes: information mode and navigation mode;

126. “Information mode”: use of Inland ECDIS for information purposes only without radar overlay;

127. “Navigation mode”: use of Inland ECDIS with radar overlay for navigating a craft;

128. “Oil-containing water”: mixture of water and any quantity of oil formed in the course of operation of a vessel, except for cargo waste;

129. “Domestic waste water”: waste water from galleys, messes, bathrooms (showers and wash basins) or laundries, and human waste water;

130. “Vessel operation refuse”: waste formed in the course of operation of the vessel except for cargo waste.

131. “Household refuse”: organic and inorganic household waste (e.g. remains of food, paper, glass and similar kitchen waste) which does not contain vessel operation refuse;

132. “Collective life-saving appliances”: lifeboats, liferafts, ship’s boats and life-saving buoyancy aids intended for rescue of passengers and the ship’s crew;

133. “Lifeboat”: a boat intended for rescue of people in distress complying with the requirements of the Basin administration, a recognized Classification Society or the International Life-Saving Appliance Code (LSA) of IMO;

134. “Liferaft”: a raft intended for rescue of people in distress, keeping them out of the water complying with the requirements of the Basin administration, a recognized Classification Society or the International Life-Saving Appliance Code (LSA) of IMO;

135. “Life-saving buoyancy aids”: means intended for supporting several persons overboard on the water surface;

136. “Individual life-saving appliances”: means intended for supporting a person overboard on the water surface, including lifejackets and lifebuoys;

137. “Ship´s certificate”: a certificate issued to a vessel by the competent authority, signifying compliance with the technical requirements of this Resolution;

138. “Administration”: the Administration of the country in which the vessel is registered, or which issues the ship’s certificate;

139. “Basin administration”: the national or international organization that is competent to decide regulations on waterways within a geographical area;

140. “New vessel”: a vessel the keel of which is laid, or which is at a comparable stage of construction, on or after the date of entry into force of these Recommendations decided by the Administration;

141. “Existing vessel”: a vessel in the possession of a valid ship’s certificate or another permission to navigate on the day before the entry into force of these Recommendations decided by the Administration;

142. “Shipboard personnel”: all employees on board a passenger vessel who are not members of the crew;

143. “Persons with reduced mobility”: persons facing particular problems when using public transport, such as the elderly and the handicapped and persons with sensory disabilities, persons in wheelchairs, pregnant women and persons accompanying young children.

Appendix 2

Chapter 6

Steering system

6–1 General requirements

6–1.1 Vessels shall be fitted with a reliable steering system which ensures provides at least the manoeuvrability required by in chapter 5.

6–1.2 Steering systems shall be so constituted that the rudder position cannot change unintentionally.

6–1.3 The entire steering gear system shall be designed for a permanent list up to 15°, an angle of trim up to 5° and ambient temperatures from – 20° C to + 50° C.

6–1.4 The component parts of the steering system shall be rugged enough to always to be able to withstand the stresses to which they may be subjected during normal operation. No external forces applied to the rudder shall impair the operating capacity of the steering system.

6–1.5 The steering system shall comprise a powered-drive unit if the forces required to actuate the rudder require so.

6–1.6 The power-driven unit of the steering apparatus shall be protected against overload by means of an arrangement that restricts the torque applied by the drive unit.

6–1.7 The penetrations for the rudder stocks shall be so designed as to prevent the spread of water-polluting lubricants.

6–2 Steering apparatus drive unit

6–2.1 If the steering apparatus has a powered drive unit, a second independent drive unit or an additional manual drive shall be present. In case of failure or malfunctioning of the drive unit, it shall be possible to bring the second independent drive unit or a the manual drive into operation within five seconds.

6–2.2 If the second steering apparatus control drive unit or manual drive is not automatically brought into service, it shall be possible for the helmsman to bring it into service simply and rapidly by means of a single manipulation.

6–2.3 The second drive unit or manual drive shall ensure the manoeuvrability prescribed in chapter 5 as well.

6–3 Hydraulic drive unit

6–3.1 No other power consumer**s** may be connected to the hydraulic steering apparatus drive unit.

6–3.2 Hydraulic tanks shall be equipped with a warning system that monitors a dropping of the oil level below the lowest content level needed for safe operation.

6–3.3 The dimensions, design and arrangement of the pipework shall, as far as possible, exclude mechanical damage or damage resulting from fire.

6–3.4 Hydraulic hoses are:

(i) only permissible, if vibration absorption or freedom of movement of components makes their use inevitable;

(ii) to be designed for at least the maximum service pressure;

(iii) to be renewed at the latest every eight years.

6–4 Power source

6–4.1 Steering systems equipped with two powered drive units shall have at least two power sources.

6–4.2 If the second power source for the power-driven unit is not permanently available while the vessel is under way, a buffer device is required. Its capacity shall be sufficient to provide power during the period needed for bringing the second power source into operation.

6–4.3 In the case of electrical power sources, no other consumers may be powered by the network supplying the steering system.

6–5 Manual drive

6–5.1 The hand wheel shall not be driven by a powered drive unit.

6–5.2 Regardless of rudder position**,** a kickback of the wheel must be prevented when the manual drive is engaged automatically.

6–6 Rudder-propeller, water-jet, cycloidal-propeller and bow thruster systems

6–6.1 Where the thrust vectoring of rudder-propeller, water-jet, cycloidal-propeller or bow-thruster installations is remotely actuated from the wheelhouse, there shall be two steering apparatus control units each independent of the other, which, mutatis mutandis, meet the requirements of paragraphs 6-1 to 6-5. Such systems are not subject to this section, if they are not necessary in order to achieve the manoeuvrability requirements of chapter 5 or if they are only needed for the stopping test.

6–6.2 Where there are several rudder-propeller, water-jet, cycloidal-propeller or bow-thruster systems that are independent of each other, the second steering apparatus control unit is not necessary if the vessel retains the manoeuvrability required by chapter 5 if one of the units fails.

6–7 Indicators and monitoring devices

6–7.1 The rudder position shall be clearly displayed at the steering position. If the rudder position indicator is electrical, it shall have its own power supply.

6–7.2 There shall be at least the following optical and acoustic alarm devices at the steering position:

(i) oil level in the hydraulic tanks in accordance with paragraph 6–3.2, and working pressure of the hydraulic system;

(ii) failure of the electrical supply for the steering control;

(iii) failure of the electrical supply for the drive units;

(iv) failure of the rate-of-turn regulator;

(v) failure of the required buffer devices.

6–8 Rate-of-turn regulators

6–8.1 The rate-of-turn regulators and their components shall meet the requirements of in paragraph 9–2.18.

6–8.2 The proper functioning of the rate-of-turn regulator shall be displayed at the steering position by means of a green warning light. Any lack of or unacceptable variations in the supply voltage and an unacceptable fall in the speed of rotation of the gyroscope shall be monitored.

6–8.3 Where, in addition to the rate-of-turn regulator, there are other steering control systems, it shall be possible to distinguish clearly at the steering position which of these systems has been activated. It shall be possible to shift from one system to another immediately. The rate-of-turn regulator shall not have any influence on these other steering control systems.

6–8.4 The electrical supply to the rate-of-turn regulator shall be independent of that for the other power consumers.

6–8.5 The gyroscopes, detectors and rate-of-turn indicators used in the rate-of-turn regulators shall meet the minimum requirements and test conditions concerning rate-of-turn indicators for inland waterways as set by the competent authority.

6–9 Acceptance and periodical inspections

6–9.1 The correct installation of the steering system shall be checked by a competent authority. It may, for this purpose, request the following documents:

(i) description of the steering system;

(ii) drawings and information on the steering apparatus drive units;

(iii) information concerning the steering apparatus;

(iv) electrical wiring diagram;

(v) description of the rate-of-turn regulator;

(vi) operating and maintenance instructions for the steering system.

6–9.2 Operation of the entire steering system shall be checked by means of a navigation test. If a rate-of-turn regulator is installed, it shall be checked that a predetermined course can be reliably maintained and that bends can be negotiated safely.

6–9.3 Power-driven steering systems shall be inspected by an expert:

(i) before going into service;

(ii) after a failure;

(iii) after any modification or repair;

(iv) regularly at least every three years.

6–9.4 The inspection has to cover at least:

(i) a check of conformity with the approved drawings and at periodical inspections whether alterations in the steering system were made;

(ii) a functional test of the steering system for all operational possibilities;

(iii) a visual check and a tightness check of the hydraulic components, in particular valves, pipelines, hydraulic hoses, hydraulic cylinders, hydraulic pumps and hydraulic strainers;

(iv) a visual check of the electrical components, in particular relays, electric motors and safety devices;

(v) a check of the optical and acoustic control devices.

6–9.5 An inspection certificate, signed by the inspector, shall be issued, showing the date of inspection.

Annex II

Chapter 20B

Special provisions applicable to river-sea navigation vessels

20B–1 General provisions

20B–1.1 Purpose and scope

20B–1.1.1 For the purpose of this Chapter, the following zones and conditions of sea navigation shall be established:

(i) Restricted zone between ports of the same country (domestic voyages) where inland navigation vessels are allowed to navigate with season and wave height restrictions provided that specific requirements of the Administration or a recognized classification society concerning seaworthiness, stability, hull structure, machinery, electrical equipment, navigation equipment and communication facilities are met.

(ii) zone RS 2,0 (wave height up to 2.0 m)[2]: sea areas within specified geographical borders where river-sea navigation vessels are allowed to navigate with season restrictions;

(iii) zone RS 3,0 (wave height up to 3.0 m): sea areas within specified geographical borders where river-sea navigation vessels are allowed to navigate with season restrictions;

(iv) zone RS 3,5 (wave height up to 3.5 m): sea areas within specified geographical borders where river-sea navigation vessels are allowed to navigate with season restrictions;

(v) zone RS 4,5 (wave height up to 4.5 m): sea areas where river-sea navigation vessels are allowed to navigate in closed seas away from shelter at a distance up to 100 miles (distance between shelters up to 200 miles); in open seas away from shelter at a distance up to 50 miles (distance between shelters up to 100 miles);

(vi) zone RS 6,0 (wave height up to 6.0 m): sea areas where river-sea navigation vessels are allowed to navigate in closed seas away from shelter at a distance up to 100 miles (distance between shelters up to 200 miles); in open seas away from shelter at a distance up to 50 miles (distance between shelters up to 100 miles).

20B–1.1.2 Unless specified otherwise, the provisions of the present Chapter apply to new vessels.

20B–1.2 Definitions

1. "River-sea navigation vessel": a vessel intended for navigation on inland waterways and suitable for restricted navigation at sea.

[2] In the present, Chapter wave height means a wave height of 3 per cent probability.

2. "International voyage": a voyage from a port of a country to which international conventions apply to a port outside such country or inverse.

3. "Coastal voyage": any voyage other than an international voyage.

4. "Closed seas": inland and mediterranean isolated seas communicating with ocean high-seas through straits and different from high seas in salinity and temperature of water, nature of currents, tides, wind and wave conditions.

5. "Main seas (open seas)": off-lying seas with ample communication to ocean high-seas and water closely resembling that of high-seas in its salinity and temperature of water, nature of currents, tides, wind and wave conditions.

20B–1.3 Classification

River-sea vessels navigation vessels shall be built under the supervision of a recognized Classification Society in accordance with its classification requirements. The class assigned by the Classification Society shall be maintained for the whole operation period of the vessel.

20B–2 Documents

20B–2.1 River-sea navigation vessels involved in international voyages shall be covered by SOLAS 1974 or the International Convention on Load Lines of 1966 and shall carry a valid corresponding international certificate.

20B–2.2 River-sea navigation vessels involved in coastal voyages must carry the certificates required by the laws of their state of registry.

20B–2.3 River-sea navigation vessels involved in international voyages shall be covered by MARPOL 73 and shall carry a valid international sea pollution prevention certificate (IOPP certificate).

20B–2.4 River-sea navigation vessels involved in coastal voyages shall carry a valid sea pollution prevention certificate as required by the laws of their flag state.

20B–2.5 In addition to Chapter 8A, river-sea navigation vessels involved in international voyages shall be covered by Annex VI of MARPOL 73 and shall carry a valid international air prevention pollution certificate (IAPP Certificate).

20B–2.6 River-sea navigation vessels involved in coastal voyages shall comply with the requirements of the international Conventions and IMO instruments below:

(i) all types of vessels for navigation in all zones, except restricted zones:

- In addition to Chapter 3A, the structural fire protection shall comply with Chapter II–2 of SOLAS 1974 and International Code for Fire Safety Systems;
- In addition to Chapter 4, the load line shall comply with International Convention on Load Lines, 1966;
- In addition to Chapter 6, the electrical equipment shall comply with Part D Chapter II–1 of SOLAS 1974;

(ii) self-propelled vessels for navigation in all zones, except restricted zone:

- the composition of communication equipment shall comply with Chapter IV of SOLAS 1974 to ensure participation in Global Maritime Distress and Safety System (GMDSS);

- the composition of navigation equipment shall comply with Chapter V of SOLAS 1974;

(iii) passenger vessels in zone RS 3,0 and all vessels when navigating in zones RS 4,5, RS 6,0:

- in addition to Chapters 3 and 15, the subdivision of the vessel shall comply with SOLAS 1974;
- the minimal summer freeboard for navigation at sea shall comply with International Convention on Load Lines, 1966;
- in addition to the Chapters 10 and 15, life-saving appliances shall comply with SOLAS 1974 and the International Life-Saving Appliance Code, 1996;
- in addition to the ADN liquid cargo systems of oil tankers, air- and gas outlet ducts, ventilation, fire extinguishing, fuel and oil systems shall comply with SOLAS 1974 and the International Code for Fire Safety Systems.

20B–3 Hull

20B–3.1 Strength

20B–3.1.1 In addition to Chapter 3 the hull shall be designed in accordance with the rules of a recognized classification society and constructed under its supervision. The classification certificate shall specify for which zone(s) the vessel is fit.

20B–3.1.2 The bow draft of cargo vessels for any loading conditions shall not be less than specified in the table:

Zone	*Length of the vessel (m)*	*Bow draft not less than (m)*
RS 2,0	≤ 25	0.5
	≥ 60	0.9
RS 3,0	≤ 25	0.75
	≥ 60	1.4
RS 3,5	≤ 25	0.9
	≥ 60	1.7
RS 4,5	≤ 25	1.2
	≥ 60	2.2
RS 6,0	≤ 25	1.6
	≥ 60	2.9

Note: Minimal permissible bow draft for vessels of transitional lengths shall be determined from linear interpolation.

20B–3.2 Design requirements

20B–3.2.1 Without prejudice to MARPOL 73 and the ADN, motor vessels, lighters and barges shall have double sides and a double bottom. The double sides shall extend over the length of the cargo holds. The double bottom shall extend from the collision bulkhead to the aft peak bulkhead.

20B–3.2.2 Tankers for transportation of oil products, liquid dangerous goods and liquefied gases shall be fitted with facilities which enable safe access to the bow area.

20B–3.3 Stability

20B–3.3.1 In addition to 3–3.2.3, a vessel engaged in international voyages shall carry the Stability Booklet in English.

20B–3.3.2 In addition to 3–5.1.6, stability shall be checked under the most adverse loading conditions with due regard to 3–5.1.5, at least for the following cases:

(i) with full cargo and full stores;

(ii) with full cargo and 10 per cent stores;

(iii) with no cargo yet with ballast and full stores.

20B–3.3.3 In addition to 3–3.2.1, each vessel after restoring repair, major repair or modernization shall undergo a heeling test.

20B–3.4 Subdivision

20B–3.4.1 Vessels shall comply with 20B–2.6.

20B–3.4.2 For vessels involved in coastal voyages it shall be ensured that the deck will not be submerged in any of the following situations:

(i) for passenger vessels in zone RS 2,0, when any two compartments are flooded;

(ii) for self-propelled flush-deck vessels, flush-deck barges and lighters in zones RS 3,5, RS 3,0 and RS 2,0, when any single compartment is flooded;

(iii) for motor cargo vessels in zone RS 3,5, when the forepeak, the afterpeak or any single double-bottom or double-side compartment is flooded.

20B–3.4.3 In addition to 3–4.1.3, the collision bulkhead shall be fitted at a distance of at least half of the hull width, aft of the forward perpendicular. For vessels more than 14 m wide this distance may be reduced on approval of the Administration or a recognized Classification Society.

20B–3.4.4 River-sea vessels shall be provided with a Stability Booklet and a damage control plan approved by the Administration or a recognized Classification Society.

20B–3.5 Stability criteria; weather criterion

20B–3.5.1 The vessel's stability is regarded as sufficient as regards weather criterion if, at combined effects of wind and rolling, the requirements of the "Code on Intact Stability for all types of ships" are met with due regard to 20B–3.5.2.

20B–3.5.2 The initial metacentric height corrected for the free-surface effect of liquid cargo shall be at least 0.15 m for all types of vessels at any options of loading (except "unladen vessel").

The minimal corrected metacentric height may have another value as in cases specified in 20B–3.6.

20B–3.6 Additional stability requirements for specific vessel types

20B–3.6.1 Motor cargo vessels

(i) The stability of vessels carrying cargo on deck shall be checked with additional loading options:

- with holds filled by homogeneous cargo having a draft according to the summer load line, with cargo on deck, full stores and liquid ballast, if necessary;
- loaded as in the previous case but with 10 per cent of stores.

(ii) The metacentric height of vessels carrying cargo in bulk or on deck shall be at least 0.2 m.

(iii) As long as there no data on the stowage rate (μ), the stability of vessels carrying timber in the holds or on deck shall be determined at minimal value μ=2.32 m^3/t.

20B–3.6.2 Vessels carrying containers

The stability of vessel carrying containers shall be checked for the following additional loading conditions:

- with the maximum number of containers each having a weight equal to 0.6 of the maximal gross weight for each type of container, and with full stores and liquid ballast, if necessary;
- loaded as in the previous case but with 10 per cent of stores;
- with the maximum number of empty containers, with ballast and full stores;
- loaded as in the previous case but with 10 per cent of stores.

20B–3.6.3 Tugs

(i) In addition to 3–5.3.3.1, the stability of tugs shall be checked at the following loading conditions:

- with full stores,
- with 10 per cent of stores.

(ii) Tug shall be checked for stability under the dynamic effect of a towline jerk with due account for rolling, i.e. the following condition shall be met:

$$\Delta g(d_{perm} - d_k) \geq M_p,$$

where M_p — heeling moment, kNm, from dynamic effect of towline jerk; M_p is determined as per requirements set by the Administration or a recognized Classification Society;

Δ — displacement, t;

g — gravity acceleration, g = 9.81 m/s^2;

d_{perm} — lever of permissible moment taken from the dynamic stability curve, at the admissible heeling angle, m;

d_k — lever of permissible moment taken from the dynamic stability curve under estimated roll amplitude.

(iii) Tugs shall be checked for stability of towline jerks with no account taken of the free-surface effects from liquid cargo.

20B–3.6.4 Towed barges

(left void)

20B–3.6.5 Icing

For vessels operating in subzero weather conditions, icing shall be taken into account in the stability calculations.

20B–4 Fire protection

20B–4.1 Vessels shall comply with 20B–2.6.

20B–4.2 Fire-protection diagrams shall be provided on self-propelled vessels in the central control station, wheelhouse and on prominent places in the corridors. A second copy of fire-protection diagram or a booklet with such diagrams shall be kept outside the deckhouse in an assigned place protected against sea impact.

20B–5 Freeboard and load line

20B–5.1 Freeboard

20B–5.1.1 When assigning the minimum summer freeboard, the requirements of 20B–2.6 shall be met.

20B–5.1.2 For vessels engaged in coastal voyages in zones RS 3,5 (other than passenger vessels), RS 3,0, and RS 2,0 the minimum freeboard shall be assigned according to the requirements of the Administration or a recognized classification society.

20B–5.1.3 For vessels also designated for zones 1, 2 and 3, in addition the minimum freeboard shall be assigned in accordance with 4–4.2 and 4–4.4.

20B–5.1.4 Vessels navigating at sea shall carry a load line mark according to the International Convention on Load Lines, 1966.

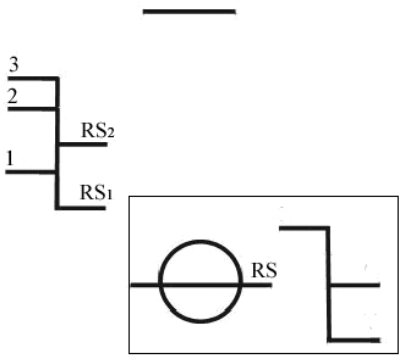
The following marks shall be placed sternwards, off the draught mark:

(i) marks for navigation on inland waterways of zones 1, 2 and 3 in accordance with 4–4.1.2;

(ii) a measurement mark in accordance with the requirements of the Convention on the Measurement of Inland Navigation Vessels, if the vessel is measured in accordance with it;

(iii) marks for navigation in sea areas with seawater, where the vessel is allowed for navigation with a wave height lower than in the given zones, e.g. for a vessel in zone RS 3,5 — zones RS 3,0 and 2,0.

The diagram of the load line is shown on the figure:



(Load line according to International Convention on Load Lines, 1966)

RS_1, RS_2 — lines corresponding to the maximum draught for navigation in sea areas with a wave height lower than in the main navigation zone;

1, 2, 3 — lines corresponding to maximum draught for navigation on inland waterways of zones 1, 2 and 3 respectively.

20B–5.2 Hatchways and covers of vessel openings

20B–5.2.1 Hatchway covers shall be designed to withstand wave loads depending on the navigation zone, length of the vessel and the load from cargo to be stowed on these enclosures.

Minimal design loads for hatchway covers shall comply with requirements of the Administration or a recognized Classification Society.

20B–6 Ship machinery and arrangements

20B–6.1 Steering gear and thruster unit

20B–6.1.1 Steering gear and thruster unit shall comply with Chapter 6.

20B–6.1.2 Self-propelled passenger and cargo vessels with area of lateral projection over the centre plane in excess of 800 m^2, shall be provided with a bow and/or stern thruster in addition to the steering gear.

Note: Lateral projection area includes the vessel's wet and dry parts as well as area of on-deck cargo.

20B–6.2 Anchor equipment

20B–6.2.1 Vessels shall be supplied with anchors and chains according to the equipment number *N*. For vessels in zones RS 2,0, RS 3,0, RS 3,5, RS 4,5, *N* (in m^2) shall be determined according to 10–1.2.2.

For vessels in zone RS 6,0 the equipment number *N* (dimensionless value) is calculated by the following formulae:

(i) for passenger vessels, motor cargo vessels and tankers:

$$N = 0.85 \nabla^{2/3} + 1.7 B_{WL} h + 0.085 A_w;$$

(ii) for non-self-propelled vessels:

$$N = 1.0625 \nabla^{2/3} + 2.125 B_{WL} h + 0.10625 A_w;$$

(iii) for tugs:

$$N = 0.85 \nabla^{2/3} + 1.7 (B_{WL} a + \Sigma h_i b_i) + 0.085 A_w;$$

where ∇ is water displacement corresponding to the summer load line in m^3;

B_{WL} — breadth of waterline of the vessel in m;

A_w — lateral plane within the vessel's length L_{WL} as per summer load waterline in m^2. When calculating A_w only the lateral plane of the hull, as well as superstructures and deckhouses with width over 0.25 B_{WL} should be considered;

h — distance from the summer load waterline to the upper edge of the deck plating of the highest deckhouse calculated by the formula in m:

$h = a + \Sigma h_i$,

a — distance from the summer load waterline to the upper edge of the deck plating of the upper deck near the side amidships in m;

h_i — height of each layer of superstructure or deckhouse having a width over 0.25 B_{WL} at the centre line of the vessel. In case of two or more superstructures or deckhouses in the given layer only the superstructure or deckhouse of the biggest width should be considered. In the lowest layer h_i is measured in the centre line from the upper deck or, if the upper deck is stepped, from horizontal line being the prolongation of the upper deck;

b_i — width of each (i^{th}) layer of the superstructure or deckhouse having a width over 0.25 B_{WL} in m.

Sheer and trim may not be considered in calculations of h. Masts, cargo derricks, rigging, guard rails and similar structures as well as bulwark and hatch coamings less than 1.5 m high may be omitted in calculations of h and A. If the height of bulwark or hatch coamings is over 1.5 m, they shall be considered as a deckhouse or superstructure.

20B–6.2.2 Vessels with N exceeding 75 m^2 shall be fitted with two bow anchors. For vessels with N of 75 m^2 or less one bow anchor is permitted.

20B–6.2.3 Total mass P, in kg, of bow anchors is calculated in accordance with the table, but in any case they shall not be less than N:

Zone	*Vessel type*	*N (m^2)*	*P (k)g*
RS 2,0	Motor cargo and passenger vessels	from 50 to 5200	$1.90971 \cdot N^{0.912368} - 11.1760$
	non-self-propelled	from 150 to 5200	$1.8253 \cdot N^{0.9174657} - 0.5589$
	tugs	from 50 to 1600	$\exp(0.78894 + 0.9164 \cdot \ln N)$
RS 3,0	Motor cargo and passenger vessels	less than 1000	$1/(0.000248 + 0.5997 / N)$
		1000 and over	$234.5 + 1.097 N$
	non-self-propelled	from 200 to 1000	$18.72 + 2.9996 \cdot N^{0.868}$
		1000 and over	$63.803 + 1.828 \cdot N^{0.943}$
	tugs	from 50 to 2000	$1/(0.1061 \cdot \ln N / N - 7.42 \cdot 10^{-5})$
RS 3,5 RS 4,5	The same as for zone RS 3,0	The same as for zone RS 3,0	20 % greater than the value calculated as for zone RS 3,0
RS 6,0	All vessels	from 10 to 2500	$1/(1.997 \cdot 10^{-6} + 0.1625 / N)$

20B–6.2.4 Total length l_A, in m, of anchor chains of bow anchors is calculated in accordance with the table:

Zone	*Vessel type*	*N*	*l_A (m)*
RS 2,0	Motor cargo and passenger vessels	from 50 to 5200	$1/(0.0036455 + 0.22895 \cdot \ln N / N)$
	non-self-propelled	from 150 to 5200	$(928.5287 \cdot (\ln N)^2 - 16660.441)^{0.5}$
	tugs	from 50 to 1600	$1/(0.0035 + 1.13/N)$

Zone	*Vessel type*	*N*	l_A *(m)*
RS 3,0	Motor cargo and passenger vessels	less than 1000	$1/(0.002565 + 0.1826 \cdot \ln N / N)$
		1000 and over	$1/(0.00277 + 1.3056 / N)$
	non-self-propelled	from 200 to 1000	$(15.972 – 959.209 / N)^2$
		1000 and over	$1/(0.00297 + 1.563 / N)$
	tugs	from 50 to 2000	1/(0.0024 + 0.18 ln N/N)
RS 3,5 RS 4,5	The same as for zone RS 3,0	The same as for zone RS 3,0	25 % greater than l_A calculated as for zone RS 3,0
RS 6,0	All vessels	from 10 to 2500	$57.19 + 9.12 (\ln N)^2$

The calculated value of l_A shall be rounded to the nearest multiple of a shackle length. Values of l_A shall not be less than those specified in 10–1.4.1. If the total anchor chain length is a multiple of an uneven number of shackles, the length of one of the anchor chains shall be increased by 1 shackle.

20B–6.2.5 Stern anchors for vessels in zones RS 2,0, RS 3,0, RS 3,5, RS 4,5 shall be provided in accordance with 10–1.3 where P is calculated according to 20B–6.2.3.

20B–6.2.6 For vessels in zone RS 6,0 with N from 35 to 205, the mass P of the stern anchor is taken as N. When $N > 205$, the mass of the stern anchor shall be at least 75 per cent of the mass of one bow anchor.

The stern anchor chain length for vessels in zone RS 6,0 is determined according to 20B–6.2.6; here for vessels with N from 35 to 205:

$$l_A = 92 - 11504 \cdot \ln N / N^2,$$

and for vessels with $N > 205$, the chain length of stern the anchor is equal to half the total length of the chain of the bow anchors.

20B–6.3 Mooring equipment

20B–6.3.1 The number and length of mooring lines for vessels in zone RS 2,0 shall comply with the provisions of 10–1.4.5. Vessels in zones RS 3,0, RS 3,5 and RS 4,5 with a length up to 85 m shall be equipped with at least 3 mooring lines, each at least 100 m long. Vessels in zones RS 3,0, RS 3,5 and RS 4,5 with a length over 85 m shall be provided with at least 4 mooring lines, each of at least 120 m long.

20B–6.3.2 The number and length of mooring lines for vessels in zone RS 6,0 shall be determined on the basis of N (calculated in accordance with 20B–6.2.1) as follows:

N	*Number and length of mooring lines*
$10 < N \le 25$	at least two mooring lines at least 30 m long
$25 < N \le 50$	at least two mooring lines at least 50 m long
$50 < N \le 205$	at least three mooring lines having a length not less than: 80 m at $N \le 70$; 100 m at $70 \le N \le 90$; 110 m at $90 \le N \le 130$; 120 m at $130 \le N \le 205$

N	*Number and length of mooring lines*
$205 < N \leq 1480$	at least four mooring lines having a length not less than: 120 m at $205 \leq N \leq 280$; 140 m at $280 \leq N \leq 500$; 160 m at $500 \leq N \leq 720$; 170 m at $720 \leq N \leq 980$; 180 m at $980 \leq N \leq 1480$
$1480 < N \leq 2500$	at least five mooring lines having a length not less than: 190 m at $1480 \leq N \leq 2080$; 200 m at $2080 \leq N \leq 2500$

20B–6.3.3 For vessels in zone RS 6,0 with A_w/N over 0.9, the number of mooring lines as given in 20B–6.3.2 shall be increased by:

(i) 1 — for vessels with $0.9 < A_w/N \leq 1.1$;

(ii) 2 — for vessels with $1.1 < A_w/N \leq 1.2$;

(iii) 3 — for vessels with $A_w/N > 1.2$.

20B–6.4 Life-saving appliances

20B–6.4.1 Vessels shall comply with the requirements of the present section with due regard of 20B–2.6.

20B–6.4.2 Life-saving appliances shall be certified by a competent body authorized by the Administration or a recognized classification society.

20B–6.4.3 A vessel shall be provided with a rescue boat. One of the lifeboats or a ship's boat can be used as a rescue boat if this boat and its launching and recovery appliances meet the requirements.

20B–6.4.4 Tankers for transportation of oil products, liquid dangerous goods and liquefied gases less than 85 m in length and engaged in coastal voyages may be equipped with one lifeboat with a seating capacity sufficient to accommodate 100 per cent of the people onboard if the lifeboat can be launched from either side of the vessel.

20B–6.4.5 Marine evacuation systems are recommended for passenger vessels over 30 m in length engaged in coastal voyages in zone RS 2,0, and fitted with free-fall launching life rafts.

20B–6.4.6 If a passenger vessel engaged in coastal voyage in zone RS 2,0 is fitted with free-fall launching life rafts and there are no marine evacuation systems, it shall be equipped with immersion suits for all passengers and crew to be accommodated in these liferafts.

20B–6.4.7 Passenger vessels engaged in coastal voyage in zone RS 2,0 shall be fitted with motorized lifeboats.

20B–6.4.8 Tankers in zones RS 3,0 and RS 2,0 intended for transportation of dangerous goods with a flashpoint not over 60° C, which are not covered by SOLAS 74, shall be fitted with fireproof lifeboats.

20B–6.5 Wheelhouse

20B–6.5.1 In addition to Chapter 7, unobstructed searchlight-aided view shall be provided from the windows of the wheelhouse at night time.

20B–6.5.2 Arrangement and the colour of signal lights when navigating on inland waterways shall comply with CEVNI.

20B–6.6 Fire fighting equipment

20B–6.6.1 Vessels shall comply with 20B–2.6.

20B–7 Power plant and systems

20B–7.1 General

20B–7.1.1 Power plant components, vessel systems and equipment shall be designed for operation at ambient air temperature in closed spaces from 0 to + 50° C, and on the open deck, from - 25 to + 50° C.

The assumption shall be made that outboard water temperature is 20° C (32° C for vessels operating in tropic areas).

20B–7.1.2 Power plants shall operate under all normal operating conditions, with a permanent list up to 15° with concurrent permanent trim up to 5°, and rolling up to 22.5° with simultaneous pitching up to 7.5°.

20B–7.2 Internal combustion engines

20B–7.2.1 The duration of main engines reversing shall not exceed the following values depending on the vessel speed:

(i) 25 s at full speed;

(ii) 15 s at low speed.

20B–7.3 Corrosion protection of propeller shafts

20B–7.3.1 Propeller shafts made of corrosion-sensitive materials shall be protected against corrosion either with metal coatings or other coatings approved by Administration or recognized Classification Society.

20B–7.4 Alarm system

20B–7.4.1 Vessels shall be fitted with an alarm to contact an engineer in the machinery space which can be activated:

(i) manually from the central control station or from a local control station of the main engines;

(ii) automatically, if the power plant faulty alarm is not confirmed within a given time.

The alarm signal shall be indicated inside the spaces that may be attended by the power plant servicing personnel.