

# Inspection Checklist

(Diving Liveboards)

## Document control

Date	Version	Authors	List of changes
19 Apr 2024	1.0	Mick Uberti, Justus Schiszler, Jan-Philipp Lauer	Initial version
7 Dec 2024	1.1	Mick Uberti	Updated checklist with reference to standards. Standards
9 Dec 2024	1.2	Mick Uberti Jan-Philipp Lauer	Appendices A and B added, further references to standards added, formatting
28 Dec 2024	1.3	Mick Uberti	Updated Tender section and stability

## Table of contents

<b>Table of contents</b> .....	<b>1</b>
<b>Inspection ratings</b> .....	<b>3</b>
<b>Survey interval</b> .....	<b>3</b>
<b>Handling of non-conformities</b> .....	<b>3</b>
<b>Time required for vessel inspection</b> .....	<b>3</b>
<b>Checklist</b> .....	<b>4</b>
<b>Documentation</b> .....	<b>4</b>
<b>Safety equipment</b> .....	<b>4</b>
Floatation devices.....	<b>4</b>
<b>Watertight integrity and construction</b> .....	<b>7</b>
<b>Engineering: Standard SCV Code, Chapter IV Machinery</b> .....	<b>8</b>
<b>Electrical (Standard: SCV Code Part D Electrical Arrangements)</b> .....	<b>11</b>
<b>Anchoring</b> .....	<b>12</b>
<b>Ship’s boats (Tender / Rescue boat)</b> .....	<b>15</b>
<b>Diving deck</b> .....	<b>16</b>
<b>Diving emergency equipment</b> .....	<b>16</b>
<b>Appendix A: First Aid Kit Contents</b> .....	<b>17</b>
<b>Appendix B: Holding tank calculator</b> .....	<b>18</b>

**Note:** This inspection checklist has been compiled as a minimum requirement for the vessels inspected by [Maritime Survey International](https://www.maritimesurveyinternational.com). It is intended as a stopgap measure to reduce the safety gap to vessels built to an IACS (International Association of Classification Societies) or even a non-IACS class society standard. Newly constructed diving liveboard vessels should be built in accordance with IACS or even non-IACS class society standards.



**Application:** The Code of Safety for Small Commercial Vessels (SCV Code 2021) operating in the Caribbean trading area is referenced throughout the checklist as being the most appropriate standard to apply to existing vessels such as liveaboards. The SCV Code was developed with the support of the International Maritime Organization. SOLAS Chapter II and other relevant parts is applied for Safety and Communications Equipment. Collision Regulations is applied for the Navigation Systems as Egypt is a signatory. The Collision regulations is not a voluntary standard for Domestic Vessels. Standards are available on the MSI website.

## Inspection ratings

Vessel ratings are provided following this scale:

Rating	Conditions
Excellent 95% to 100%	The condition is as good as new with maintenance being well planned and executed. The likelihood of failure causing risk to operations, people and/or the environment is improbable.
Good 67% to 94%	The condition is good although the item is not as new with there being signs of degradation. Maintenance carried out is above the minimum requirements and the likelihood of causing risk to operations, people and/or the environment is remote.
Satisfactory 33% to 66%	The condition is sufficient for operation but not more than that, maintenance is not conducted fully and there is significant room for improvement. The likelihood of causing risk to operations, people and/or the environment is probable.
Un-Satisfactory 15% to 32%	The condition is substandard with maintenance either completely or largely neglected. The likelihood of causing risk to operations, people and/or the environment is deemed to be frequent.
Poor 0% to 14%	The condition is substandard with the vessel not fit for purpose. The likelihood of causing risk to operations, people and/or the environment is deemed to be likely.
Not inspected	The item was not available for inspection, or not inspected and needs further assessment to verify condition and compliance with the relevant standard if required.

Each survey report is provided with a separate summary of findings and a rating.

### Survey interval

Annual inspections are required to maintain the vessel's inspection status.

### Handling of non-conformities

Follow-up inspections to verify rectification are possible. At the auditor's discretion, proof of rectification can be accepted via videos and images.

### Time required for vessel inspection

The time required to complete an on-site vessel inspection is approximately 4 to 8 hours depending on the vessel's size and condition.

## Checklist

### Documentation

1. Safety Management System to be on board - should follow the requirements of the ISM code (or at least mini-ISM Code) as a principle.
2. Stability book to be on board and up to date.
3. Planned maintenance system to be in place.
4. Fire system certification: Fixed fire extinguishing and detection system and fire extinguishers.
5. Vessel log book to be on board and up to date.
6. Vessel Registration Certificate
7. The vessel must carry passenger and third-party liability insurance.
8. Crew must be appropriately licensed to operate the vessel and hold a valid employment agreement.
9. Safe manning for intended operation: Watch plans must ensure at least one person to be on night watch at all times.

### Safety equipment

10. First aid kit on board to be appropriate for the operation and duration of the voyage. See Appendix A: First aid kit contents for first aid kit contents. Reference: IMO Medical First Aid Guide (MFAG) International Medical Guide for Ships (IMGS) This is available on the [MSI website](#).
11. Grab-bag for carrying documents when abandoning ship to be packed and ready on the bridge.
12. Attachment points for safety harnesses should be installed in relevant areas.
13. Signage
  - a. Limiting the number of people on the upper decks if deemed necessary for stability.
  - b. Escape and rescue plans in accordance with ISO 24409-4 mounted throughout the vessel and in every cabin.
  - c. Emergency plans for the crew must be prepared in accordance with ISO 17631.
  - d. Emergency exits, assembly points, life jackets, life rafts, life boats, and fire fighting equipment to be clearly marked.
  - e. Photoluminescent signage to be used.

### Floatation devices

14. Life jackets for total complement (One for each person on board). Minimum 150N Coastal Life Jacket **Standard:** ISO 12402-3:2020
15. Life jackets to be clearly labeled with the vessel ID and the location is to be labeled and known to passengers and crew.
16. Life jackets lights to be installed on each life jacket: Lights must meet ISO 24408:
17. Inflatable life jackets must be serviced annually.

18. A vessel of more than 20 m in length overall shall carry a minimum of three ring lifebuoys. (SCV Code Chapter VI Regulation 5.3). Life Buoys as per SOLAS LSA Code Chapter II, regulation 2.1. One of the life buoy is required to be fitted with a self-igniting light. One ring life buoy is carried one shall not have a lifeline attached.
19. All life buoys must be equipped with reflective tapes.
20. All life buoys to be clearly labeled with the vessel ID and homeport.

#### **Life rafts (As per LSA Code Chapter VI)**

21. Total life raft capacity must at least be equal to the vessel's maximum complement.
22. Life rafts to be approved in accordance with SOLAS B PACK as per LSA Code Chapter IV 4.1.5.3 .
23. Life rafts to be installed in an accessible area to allow for easy deployment, which would also allow the life rafts to float free in case of sinking. Life rafts must be mounted in manufacturer approved cradles.
24. Life rafts must be able to launch either side of the vessel without the need for being lifted over obstacles.
25. Life rafts to be installed with hydrostatic releases.
26. The life rafts' painter lines must be secured to the hydrostatic release units' weak points.
27. Life rafts and Hydrostatic release to be serviced in accordance with the manufacturer's recommendations.

#### **Distress signals**

28. 12 x Rocket Parachute flares: **SOLAS Chapter III, Regulation 6** and the **LSA Code Section 3.1**.
29. 1 x Torch for each crew member to be on board.

#### **Navigation (As per International Regulations for Preventing Collisions at Sea 1972, also known as *Collision Regulations (COLREGs)*)**

30. Navigation lights and system to be in accordance with Collision Regulations. **Standard:** COLREGs Annex I and ISO 19009:2015. This includes vertical red-white-red lights to indicate night diving operations, an Alpha flag, and Alpha flag lighting.
31. Switches to be separately fused (this ensures that when one navigation light fails all of the other lights remain operative).
32. Navigation lights and range. Light spacings as per Collision regulations.
  - a. Side lights (Port and Starboard) to be visible at 2 NM and to be installed with the black backing painted in front of the light to ensure that there is no reflection.
  - b. Masthead light to be visible at 5 NM.
  - c. All round white light, 2 NM
  - d. Stern light 2 NM
  - e. Not under command lights: Two all-round red lights (to display two in a vertical line), 2 NM
33. Up-to-date nautical charts for the area of operation to be on board.
34. Publications, and Notices to Mariners to be on board.

35. Nautical instruments to be on board (dividers, course plotter, navigational triangles, parallel rule, calculator, writing materials - as appropriate) and bridge crew proficient in their use. IAMSAR manual Volume III to be on board.
36. Compass **Standard:** ISO 25862:2009. Compass to be on board and adjusted. Updated deviation card on board.
37. Fluxgate compass for the autopilot to be on board, linearized, calibrated, and operational.
38. GNSS (GPS) on board and operational, e.g. chart plotter or ECDIS.
39. Speed and distance indicator on board and operational if not integrated with GNSS (GPS). **Standard:** IEC 61023:2007
40. Radar to be on board and operational. **Standard:** IEC 62388:2013 (Performance standards for marine radar). **Specification:** Radar with a range of at least 24 NM.
41. Automatic Identification System (AIS) transponder to be operational. **Standard:** IEC 61993-2:2018.
42. Depth/echo sounder. **Standard:** IEC 60945 (General marine equipment)
43. Horn. **Standard:** As per Collision Regulations Bell and Horn - Rule 33 A vessel of 12 meters or more in length shall be provided with a horn (whistle). A vessel of 20 meters or more in length shall be provided with a bell (300mm mouth) in addition to a horn (whistle).
44. Bells and gongs shall be made of corrosion-resistant material and designed to give a clear tone. The diameter of the mouth of the bell shall be not less than 300 mm for vessels of 20 meters or more in length.
45. Windshield wipers to be installed on the wheelhouse windows and operational.
46. Binoculars
47. Searchlight

#### **Communications as per SOLAS Chapter IV - Radiocommunications**

48. Antennas to be in good condition and operational.
49. GMDSS VHF Radio.
50. GMDSS MF / HF Radio.
51. MMSI labeling
52. GMDSS emergency procedures placard
53. NAVTEX receiver.
54. Satellite phone
55. Emergency battery to be installed for radios / satellite phone.
56. Float Free EPIRB to be mounted in a float free position. The EPIRB's hydrostatic release must be current.
57. EPIRB must be registered.
58. Signaling light to be on board and operational.
59. Anchor ball day shape on board.
60. Code flags appropriate to operations, as a minimum
  - a. N Flag
  - b. C Flag
  - c. A Flag

## Watertight integrity and construction

61. Coamings and sill heights are as-built and compliant. Hatches are to have water tight seals in place.
62. A cover to a hatchway shall be hinged, sliding, or permanently secured by other equivalent means to the structure of the vessel and be provided with devices to enable it to be positively secured in both the open and closed positions.
63. Hull plate and frames to be without leaks or penetrations.
64. Condition of bulwark and guardrails. Guardrails around the outside of the vessel are to be secure and at least 1000 mm high. **Standard:** SCV Code Part B 5 Rails and guards.
65. Watertight bulkheads, doors and hatches should all be made watertight. This may require seals and latches to be installed.
66. Bulkhead penetrations to be sealed and made watertight.
67. Watertight doors must open and close within the specified timeframes (20 to 40 s automatically, 60 s manually).
68. Collision Bulkhead A vessel of 20 m or more in length overall built after 1 July 2002 is required to have a collision bulkhead fitted in accordance with SCV Code Part D Subdivision Chapter III/17.1 and III/17.2.
69. Bulkheads
  - a. Must be watertight.
  - b. Visual inspections must not indicate any defects.
  - c. Any bulkhead penetrations should be sealed.
70. Adequate freeing ports and scuppers installed on the vessel.
71. Windows and portlights: All windows fitted with deadlights.
72. Condition of decks (exterior)
73. Condition of decks (interior)
74. Condition of bollards and fairleads
75. Condition of crane bases
76. Cathodic protection
77. Condition of paint coatings of hull
78. Condition of paint coatings of deck
79. Antifouling

**Note:** On some vessels it may not be possible to install a watertight door where required, however an effort should be made to ensure that the hatches and doors where required are made watertight.

## **Accommodation: Standard SCV Code Chapter IX Accommodation, Welfare, Working and Living Conditions.**

80. The wheelhouse must be of good size and provide crew with visibility in accordance with collision regulations.
81. Condition of crew mess if available
82. Condition of crew cabins
83. Condition if guest accommodation cabins

84. Quantity and condition of seating
85. Condition of galley
86. Condition of toilets and showers
87. Condition of laundry facilities
88. Condition of spa bath
89. Condition of stairways and ladders
90. Condition of internal doors

### **Stability**

91. Is the Stability book scope appropriate for the type of operations
92. Stability book approved by a competent authority or flag state or classification society.
93. Has the lightship been assessed within the last 5 years
94. Are there clear instructions in the Stability Book for operational loading conditions, including passenger weight distribution, dive equipment, and fuel levels?
95. Are cargo stowage recommendations from the stability book put into practice
96. Are tank and ballast management recommendations from the stability book put into practice
97. Freeboard markings applied to hull
98. Draft Marks applied to the hull
99. Are scuppers and drainage systems clear to prevent water accumulation on deck?

### **Engineering: Standard SCV Code, Chapter IV Machinery**

100. Condition of
  - a. Main engine(s)
  - b. Auxiliary engine(s)
  - c. Exhaust system
  - d. Machinery space
  - e. Ventilation system
  - f. Gearboxes
  - g. Propeller shaft(s)
  - h. Propeller and shaft coupling(s)
  - i. Stern bearing(s)
  - j. Propeller shaft bracket(s)
  - k. Fuel tank(s)
  - l. Fuel service system
  - m. Ballast water system
  - n. Rudder stocks
  - o. Rudders
  - p. Maneuvering systems (bow / steering thruster)
  - q. Air conditioning
  - r. Freshwater tanks
  - s. Freshwater piping
  - t. Cranes
101. Bilge alarms. A visual and audible alarm shall be provided at the operating station to indicate a high-water level alarm in each space. **Standard:** SCV Code Part C 15, 16.1.

102. Bilge pumps to be operational and to have a secondary means of pumping. Quantity of Bilge pumps as per **Standard: SCV Code Part C 15 Table IV/15.1**
  - a. > 20 m 2 x fixed power pumps 190 liters per minute (Lpm)
  - b. < 20 m 1 x fixed power pump 95 Lpm and 1 portable power pump 38 Lpm
103. Bilge piping condition and diameter. **Standard: SCV Code Part C 14.2** *A bilge pipe in a vessel of less than 20 m in length shall be not less than 25 mm nominal pipe size. A bilge pipe in a vessel of 20 m or more in length shall be not less than 40 mm nominal pipe size. A bilge suction shall be fitted with a suitable strainer having an open area not less than three times the area of the bilge pipe. Strainers shall be easily accessible so that they may be cleared of dirt/debris.*
104. Bilge valves to be clearly labeled.
105. Bilge system operating instructions to be available and clear.
106. All seawater pipework shall be of steel, bronze, copper or other equivalent material. Flexible or plastic pipe material must be type or class approved and comply with the IMO Fire Test Procedures Code. **Standard: LY2 5.9** materials for valves and associated piping.
107. Pumps to be secured.
108. Bilges to be clear of oil, water, and other residues.
109. Fuel tanks to have sight glasses fitted with spring loaded return valves.
110. Secondary water separator fuel filters to be operational.
111. Flexible fuel lines to be in good condition and meet minimum **Standard: ISO7840** Type A1 standard.
112. Exhaust to be free of leaks and exhaust lagging to be secure.
113. All machinery to be securely mounted.
114. Engines to be free of oil and water leaks
115. The engine room must be equipped with remote vent closures, remote engine shutdowns, and remote fuel shutoffs. The remote controls have to be situated in a safe area outside of the engine room.
116. The engine room to be equipped with an operational forced ventilation system.
117. The breathing gas compressor's air intake must be located where no exhaust gases can enter it.
118. Seawater valves to be operational. A valve or similar fitting attached to the side of the vessel below the waterline, shall be of steel, bronze or other non-brittle fire-resistant material or equivalent. Valves of plastic (unless class or type approved) or ordinary cast iron or similar material are not acceptable. When the opening is for the purpose of an inlet or discharge below a line drawn 150 mm above the loading mark it shall be fitted with a seacock, valve or other positive means of closure, which is readily accessible in an emergency.
119. Sea chests to be installed and clean.
120. Air Conditioning system to be operational
121. Air Conditioning air handler filters to be installed and cleaned.
122. Black water treatment system to be used or compliance with MARPOL discharge rules to be ensured at all times.
123. Holding tank: A vessel certified to carry more than 15 persons with toilet facilities capable of discharging waste to the sea shall be fitted with a holding tank of suitable size to accommodate waste from the total number of persons on board for the duration of the voyage. Guidance on the size of the holding tank required is given in SCV Annex 9 (See Appendix B: Holding tank calculator)

124. Sewage treatment plant: A sewage treatment plant which meets the operational requirements given in the Recommendation on International Effluent Standards and Guidelines for Performance Tests for Sewage Treatment Plants adopted by the Marine Environment Protection Committee of the International Maritime Organization by Resolution MEPC.2(VI) may be fitted in lieu of the holding tank required by SCV Code VIII/5.9.
125. LPG systems on board are to comply with local gas safety requirements.
126. A minimum of two escape routes from the lower decks towards the fore and aft of the vessel must be provided.
127. Escape routes must be usable in conditions of poor visibility (smoke, darkness) and unusual ship motions (handrails fitted, non-slip floor coverings, sufficiently large openings, unobstructed).
128. Escape hatches must be operational.
129. Machinery, equipment, furniture, and other loose objects to be secured against shifting.
130. Facilities to secure doors, cupboard doors, and drawers at sea to be installed.
131. Facilities to prevent falling out of bunks in rough seas to be installed.
132. Handrails and handholds for moving around in rough seas/when vessel heels to be installed.
133. Non-slip flooring to be installed

### Fire safety

134. Structural fire protection / insulation must be installed in the engine room and in good condition. **Standard:** SCV Code Chapter V, 3 Insulation.
135. Portlights or windows shall not be fitted in the boundary of the machinery space, except that an observation port having a maximum diameter of 150 mm may be fitted, provided the frame is constructed of steel or brass and the port is fitted with a permanently attached steel or brass cover with securing arrangements. **Standard:** SCV Code Chapter V 2.6.
136. Fire safety equipment must be clearly signposted and (painted) in red color.
137. Fire Axe: A vessel of 20 m or more in length shall have at least one fire axe located in or adjacent to the primary operating station.
138. Fire extinguishers quantity as per **Standard:** SCV Code Table V/11 and are to be serviced regularly, mounted, and the location is to be labeled.

TABLE V/11

Space protected	Minimum No. required	Type extinguisher permitted		
		Class	Medium	Minimum Capacity
Operating Station	1	B, C	CO <sub>2</sub>	2 kg; 5 lbs
			Dry Chemical	2 kg; 5 lbs
Machinery Space	1	B, C located just outside exit	CO <sub>2</sub>	4.5 kg; 10 lbs
Accommodation Spaces	1 for each 20 m <sup>2</sup> or part thereof	A	Foam	9 l; 2.5 gl
			Dry Chemical	4.5 kg; 10 lbs
Galley, Pantry, Concession Stand	1	A, B	Foam	6 l; 1.5 gl
			Dry Chemical	4.5 kg; 10 lbs

11.2 The installation and location of the portable extinguishers shall be to the satisfaction of the Administration and in accordance with resolution A.951(23) and the International Code for Fire Safety Systems (FSS Code) where deemed appropriate.

- 139. Fire pump to be on board and operational. On vessels of 15 m or more in length at least one self-priming, power driven fire pump is required which shall have a minimum capacity 15 m<sup>3</sup>/hr. Fire pumps shall have two independent sources of power or equivalent arrangements. **Standard:** SCV Code Part B – Fire Extinguishing and Detecting Equipment.
- 140. Fire hydrant(s), hose(s) and nozzle(s) to be on board and adequate for reaching all areas onboard the vessel. Each nozzle shall be of corrosion-resistant material and be capable of switching between a solid stream and a spray pattern.
- 141. Fire hose: For a vessel of 20 m in length or more, each hose shall be to recognized standards and be not less than 7.5 m or more than 15 m in length and 40 mm in diameter. It shall have fittings of brass or other approved material that can connect with each hydrant or with other lengths of fire hose.
- 142. Fixed firefighting system to be installed in the main engine room. **Standard:** SCV Code V/10.2, the Machinery spaces (>37 kW) shall be equipped with a fixed gas or other fixed fire extinguishing system in accordance with the provisions of the **Standard:** FSS Code.
- 143. Fixed fire detection and alarm system to be installed in the engine room and each overnight accommodation space on a vessel with overnight accommodation for passengers.
- 144. All grills, broilers, and deep fat fryers shall be fitted with a grease extraction hood.
- 145. An ABF fire extinguisher to be in the galley.

**Electrical (Standard: SCV Code Part D Electrical Arrangements)**

Electrical equipment on a vessel shall be installed and maintained to:

- .1 provide services necessary for safety under normal and emergency conditions;
- .2 protect passengers, seafarers, other persons, and the vessel from electrical hazards including fire caused by or originating in electrical equipment and electrical shock;
- .3 minimize accidental personnel contact with energized parts and;
- .4 prevent electrical ignition of flammable vapors.

146. Electrical cables shall be constructed and fitted to a recognized standard for marine use.
147. All electrical equipment and circuits shall be clearly marked and identified.
148. A system in which there is no intentional connection of the circuit to earth (an insulated system) shall be provided with double pole switches, except that single pole switches may be used in the final sub-circuit.
149. Single pole switches are accepted in a system with one pole earthed. Fuses shall not be installed in an earthed conductor.
150. Each vessel that relies on electricity to power the following loads shall be arranged so that the loads can be energized from two sources of electricity:
  - .1 fuel system;
  - .2 fire main;
  - .3 fixed firefighting systems;
  - .4 bilge system;
  - .5 steering system;
  - .6 propulsion system and its necessary auxiliaries and controls;
  - .7 vessel's service and emergency electrical generation system and its necessary auxiliaries;
  - .8 a system identified by the Administration as being crucial to the survival of the vessel or to the protection of the personnel on board;
  - .9 interior lighting except for decorative lights;
  - .10 communication systems including a public address system required under regulation **Standard:** SCV Code Mics systems and Equipment VII/6; navigation equipment and lights; and
  - .11 illumination of the survival craft launching and embarkation areas as well as man overboard rescue equipment and rescue areas.
151. A vessel with batteries of adequate capacity to supply the loads specified above for three hours, or a generator or alternator driven by a propulsion engine that complies with **Standard:** SCV Code 17.1.
152. A voltmeter and an ammeter shall be provided for a generator rated at 50 volts or more. For each alternating current generator, a means for measuring frequency shall also be provided.
153. Each generator shall be protected by an overcurrent device with set value not exceeding 115% of the generator full load rating.
154. Batteries are to be secured against shifting. Batteries are to be in a spill-proof container with a lid. Battery terminals are to be covered with rubber boots. Batteries are to be ventilated.
155. Rubber mats to be placed in front of the electrical control panels (>240V)
156. Lighting is to be secured and covered.
157. Electrical wiring is to be made tidy, insulated, and secured.
158. Shore power connection must be in good condition and operational.

## Anchoring



159. One anchor of a type suitable for the vessel and area of operation to be on board and ready for use. Anchor table for vessels less than 24 m. For vessels > 24m the Surveyor will complete a calculation. See Anchor table below.
160. A spare anchor appropriate for the vessel and its area of operation is to be carried.
161. Windlass / anchor winch to be operational.
  - a. Anchor chain, rope, and shackles to be on board appropriate for the vessel and in good condition.
162. Condition of chain locker
163. Condition of bollards and cleats

### ANCHORS AND CABLES

<u>Length Overall + Lwl</u> 2	Anchor Mass		Anchor Cable Diameter			
	Main	Kedge	Main		Kedge	
			Chain	Rope	Chain	Rope
(metres)	(kg)	(kg)	(mm)	(mm)	(mm)	(mm)
6	8	4	6	12	6	10
7	9	4	8	12	6	10
8	10	5	8	12	6	10
9	11	5	8	12	6	10
10	13	6	8	12	6	10
11	15	7	8	12	6	10
12	18	9	8	14	8	12
13	21	10	10	14	8	12
14	24	12	10	14	8	12
15	27	13	10	14	8	12
16	30	15	10	16	8	12
17	34	17	10	-	8	14
18	38	19	10	-	8	14
19	42	21	12	-	10	14
20	47	23	12	-	10	14
21	52	26	12	-	10	14
22	57	28	12	-	10	16
23	62	31	12	-	10	-
24	68	34	12	-	10	-

**Notes:**

1. The anchor sizes given are for high holding power (HHP) types.
  
2. When a vessel has unusually high windage due to any combination of high free-board, large superstructure or deck equipment outfit, the mass of anchor given above shall be increased to take account of the increase in wind loading.  
 For vessels of unusual or non-conventional ship form (including pontoon barges) the anchor size shall be to the satisfaction of the Administration.  
 The diameter of the anchor cable shall be appropriate to the increased mass of anchor.
  
3. Chain cable diameter given is for short link chain. Chain cable should be sized in accordance with ISO 4565:1986 - Anchor chains for small craft, or equivalent.
  
4. The rope diameter given is for nylon construction. When rope of another construction is proposed, the breaking load should be not less than that of the nylon rope specified in the table.
  
5. When anchors and cables are manufactured to imperial sizes, the metric equivalent of the anchor mass and the cable diameter shall not be less than the table value.
  
6. Lwl is the waterline length of the vessel when the vessel is floating at the assigned free-board draught.

### Ship's boats (Tender / Rescue boat)

164. Hull construction and condition
165. Engine and fuel tank must be serviceable.
166. If an inflatable ship's boat is used
  - a. The tube(s) must be fully inflated.
  - b. The number of air chambers must be  $\geq 5$  with one tube; if a boat with two tubes is used, no tube must provide  $>60\%$  buoyancy
  - c. Inflation pump
  - d. Patch kit
167. The name of the vessel to which the ship's boat belongs must be labeled.
168. Handheld GMDSS VHF radio to be carried.
169. Collision Regulations-compliant navigation lights to be installed.
170. Alpha flag to be carried and used appropriately.
171. Ship's boats must be equipped with an all-round grab line
172. Equipment to be carried
  - a. Towing points
  - b. Sturdy boarding ladder for divers
  - c. Sufficient number of buoyant paddles
  - d. Floating bailer, bucket
  - e. Waterproof flashlight
  - f. First aid kit
  - g. Bilge pump
  - h. Emergency repair kit (for inflatable boats) / Tool kit

## **Diving deck**

173. Continuous monitoring of breathing gas quality
174. Air compressor maintenance procedures and schedule
  - a. Compressor logbook showing compressor's annual maintenance
  - b. Spare filters in stock
  - c. Spare oil in stock
  - d. Certificate of latest air quality test (within the last 90 days).
175. SCUBA cylinders (if provided):
  - a. Clear markings/stickers of their last hydro and visual examinations/tests.
  - b. Cylinder valves - correct pressure (e.g. if cylinder is 207 bar then the valve should be rated higher).
  - c. Cylinder valves - valves must have "safety assembly" (pressure relief).
176. Diver tracking devices, ENOS or AIS
177. Sufficient lashing possibilities for the diving equipment
178. Sufficiently long, sturdy diving ladder(s); if the diving ladder is not fixed or lockable (preferred), it must provide appropriate handholds to prevent pinching injuries.
179. Handrail on the stern for divers to hold on to while in the water (if diving ladders mounted at the stern)
180. Floating line with buoy
181. Visible identification of the ship for divers (flag underwater, name visible on the hull, flashing light for night diving)
182. Non-slip, splinter-free flooring
183. No sharp edges
184. Handrails
185. Rinsing facilities for diving equipment
186. Separate rinsing facilities for cameras and dive computers

## **Diving emergency equipment**

187. Sufficient emergency oxygen ( $\geq 3$  h for 2 people, 15 liter / minute flow, unless a risk assessment shows the need for a greater amount)
188. Wemoll oxygen rebreather if deemed necessary

## Appendix A: First aid kit contents

### Basic First Aid Supplies

1. **Dressings and Bandages**
    - Sterile gauze pads (10 small, 10 medium, 10 large)
    - Adhesive bandages (assorted sizes)
    - Elastic bandages (for sprains and strains)
    - Triangular bandages (for slings or splints)
    - Adhesive tape (waterproof preferred)
  2. **Wound Care and Cleansing**
    - Antiseptic wipes or solutions (e.g., chlorhexidine)
    - Burn dressings (hydrogel type for burns)
    - Antibiotic ointment or cream
  3. **Instruments**
    - Trauma scissors (blunt-ended)
    - Tweezers (fine-tipped for splinters)
    - Digital thermometer
    - Sterile gloves (latex-free recommended)
    - CPR face mask or shield
  4. **Eye Care**
    - Eye wash ampoules or saline solution
    - Eye pads and adhesive strips
- 

### Medications

1. **Oral Medications**
    - Pain relievers x 20 tablets (e.g., paracetamol, ibuprofen)
    - Antihistamines (e.g., loratadine or diphenhydramine)
    - Antidiarrheal tablets (e.g., loperamide)
    - Antiemetics (e.g., promethazine or metoclopramide)
  2. **Emergency Medications**
    - Epinephrine auto-injectors (for anaphylaxis)
    - Aspirin (for suspected heart attacks)
  3. **Diving-Specific Medications**
    - Oxygen therapy supplies for decompression sickness
    - Seasickness tablets or patches
- 

### Emergency and Trauma Supplies

1. **Oxygen Delivery Equipment**
  - Portable oxygen cylinders (sized for onboard emergencies)
  - Non-rebreather masks and demand valves
2. **Immobilization Devices**
  - Rigid or inflatable splints (for fractures)
  - Spinal board and cervical collar
3. **Burn Treatment**

- Burn gels or hydrogel-based dressings
- 4. Resuscitation**
- Automated External Defibrillator (AED)

## Diving-Specific Additions

- 1. Decompression Sickness Treatment**
  - Dive tables or decompression charts
  - Communication devices to reach emergency hyperbaric treatment centers

## Appendix B: Holding tank calculator

### ESTIMATING GUIDELINES FOR HOLDING TANK CAPACITY

1 These calculations shall be used as guidelines, as capacities are not mandated. The capacity of each Marine Sanitation Device (MSD) should be evaluated in terms of the vessel's size, route, service, and particular circumstances. These capacities consider only "black-water" toilet drains. On the average, each person will produce 0.4 litres of waste per day.

2 Flush Rate. Table A9-1 estimates the water used per flush by different toilet systems.

**TABLE A9-1  
APPROXIMATE FLUSH CAPACITIES FOR VESSEL TOILETS  
DRAINING TO MARINE SANITATION DEVICES**

System Type	Litres per flush
Conventional (flushometer)	19.0
Recirculating	0.4
Vacuum	1.1
Hand Pump	1.9
Electric Pump	3.8

3 Wastewater produced. Table A9-2 estimates the litres of wastewater produced per person per day, based on the plumbing type, and the way the boat operates.

**TABLE A9-2  
LITRES OF WASTEWATER PER PERSON  
PER DAY BASED ON PLUMBING TYPE**

Trip Length	User	Conv.	Recirc.	Vacuum	Hand Pump	Electric
LONG (Note 1)	Seafarers	96	1.9	7.2	11	20
	Passengers	96	1.9	7.2	11	20
MEDIUM (Note 2)	Seafarers	96	1.9	7.2	11	20
	Passengers	31	0.64	7.2	3.8	6.8
SHORT (Note 3)	Seafarers	48	0.95	3.6	7.4	10
	Passengers	24	0.95	1.9	2.6	5.1

**Note**

- 1 Seafarers and passengers aboard 24 hour/day.
- 2 Seafarers aboard 24-hour/day; 2 groups of passengers aboard for 4 hours each (2 trips/day), each passenger using facilities once.
- 3 All Seafarers aboard 12 hour/day; 6 groups of passengers aboard for 2 hours (6 trips per day), one fourth of passengers using facilities once.