

## **NASBLA MODEL ADMINISTRATIVE RULES – CHARTER BOAT SAFETY**

*The **Model Administrative Rules – Charter Boat Safety** were developed to accompany the **Model Act for Charter Boat Safety**, originally approved by the membership of the National Association of State Boating Law Administrators in September 1992. Applicable to vessels carrying passengers for hire, the model act is intended to provide for the regulation, inspection, and licensing of charter boats; protect the safety and welfare of persons using them; provide for the seizure and condemnation of certain vessels; impose duties on certain insurance carriers; and authorize the administering department to prescribe standards and promulgate rules.*

*In October 2005, the loss of 20 lives in the sinking of the Ethan Allen in Lake George, NY, propelled the National Transportation Safety Board (NTSB) to investigate the accident and identify a deficiency among the states in effectively regulating small passenger vessel safety. In response to this event – and as part of an organizational effort to make the model act provisions consistent under the NASBLA Model Act Standards adopted in 2005 -- NASBLA undertook a review and update of the charter boat safety model act. The NASBLA Law Enforcement Committee reviewed the updated version and adopted it with minor editing changes. The model act, in revised form, was approved by the NASBLA membership on Sept. 27, 2006.*

*As with the model act, the model rules also were reviewed in 2006, and subsequently were updated and made consistent (as feasible) under the guidance of the NASBLA Model Act Standards. The NASBLA Law Enforcement Committee made additional changes, including adding definitions for the terms “immediately available” and “readily accessible,” both of which are used in other NASBLA model acts. The revised model rules, like the model act, were approved by the NASBLA membership in September 2006.*

*In October 2006, an NTSB-sponsored seminar with the United States Coast Guard (USCG) and state partners was held to showcase the states' own small passenger vessel safety programs and familiarize state officials with the USCG regulatory program for small vessel passenger safety. One of the action items agreed upon was for the USCG and NTSB to conduct a comparative review of the U.S. small passenger safety regulations (Title 46 of Federal Regulations Parts 117-187 [Subchapter T]) and the **Model Act for Charter Boat Safety** as it had been adopted in September 2006. In March 2007, NTSB Chairman Mark V. Rosenker, in a letter to then-NASBLA President Jeffrey S. Johnson, identified areas in the model act where additional requirements needed to be developed.*

*The Uniform Boating Laws Subcommittee of NASBLA's Enforcement and Training Committee reviewed the model act in follow-up to the NTSB letter, and in March 2008, recommended the addition of two new provisions to the act. See the **NASBLA Model Act for Charter Boat Safety**.*

*The major follow-up, however, came in the Subcommittee's revisions to these model administrative rules. The revisions are so extensive as to constitute a "new" set of administrative rules. A summary of the major revisions is presented on page 2.*

*Major revisions:*

- *Though an attempt was made to preserve the style and formatting found in the existing model administrative rules, the scope of proposed additions necessitated reorganization by topic area. See the new Contents pages (pages 3-4).*
- *These model rules are specifically directed at charter boat (passengers for hire) operations and therefore are inappropriate for rental craft such as PWCs, kayaks, rowboats, and other types of boats where a capacity plate is used to determine maximum loading. These proposed revised model rules have been expanded to cover most ferry vessels, intermediate sized passenger vessels, and vessels that carry passengers and have overnight accommodations.. Vessels carrying large numbers of passengers require special consideration that is beyond the scope of this effort. The USCG has special rules for large passenger vessels (46CFR 70-80).*
- *The existing model administrative rules imply various categories of operational routes. These proposed revised rules specifically provide for two routes; protected and partially protected. These routes should cover non-navigable waters.*
- *A specific call out has been added for appropriately-sized PFDs for children. The USCG requires the carriage of 10 percent additional PFDs for children. The model administrative rules specify that there should be appropriately-sized PFDs for everyone aboard. See the new Section 60.64.*
- *A provision for survival craft was added including rescue craft. Rather than repeat USCG requirements in these model rules,, the need for survival craft has been left up to the state. However, included in the new Section 68 are the factors that should be considered in deciding the need for survival craft.*
- *Due to the complexity of stability requirements and anticipated changes to the USCG stability regulations, these proposed revised model rules reference the USCG stability regulations rather than copying them directly into the rules. Also added is a requirement for subdivision (internal flooding standard) for vessels over 65 feet in length carrying more than 49 passengers. See new Section 70.*
- *Nothing in the existing model administrative rules covers the initial acceptance of a vessel as far as design, structure, and equipment. These proposed revisions add a section on vessel plan submittal (see new Section 90) that should meet the intent of Section 6 in the proposed revisions to the **Model Act for Charter Boat Safety**. This requirement will be a major challenge for the states that may not have personnel with the knowledge and experience to review and accept these plans. This section has been written to apply to "new" vessels, but does not imply that states should ignore their fleet of existing passenger vessels in complying with Section 6 of the model act.*
- *A general provision has been added referencing the USCG standard for boilers and pressure vessels. See new Section 42.7.*
- *In the section on licensing, crew manning requirements have been added. The crew manning standard comes from New York State policy. See new Section 134.*

## Contents

Section 10 – Statutory Authority and Applicability.....	5
10 General.....	5
Section 20 – Definitions.....	5
Section 30 - Certification.....	14
30 General.....	14
31 Suspensions and Revocation of Certificates.....	14
Section 40 - Inspection.....	15
40 Inspection Standards.....	15
41 Dockside Inspection (Initial Inspection for Certification).....	15
42 Dockside Inspection (Annual Inspection for Certification).....	16
43 Drydock Inspection.....	21
44 Vessel Damage, Repairs, Modifications, and Alterations.....	22
45 Passenger Loading.....	23
Section 50 - Navigation.....	24
50 Safe Navigation.....	24
51 Navigation Lights.....	25
52 Sound Making Devices.....	25
53 Compasses.....	25
54 Charts and nautical Publications.....	25
Section 60 - Life Saving Systems.....	26
60 Class A Vessels - Personal Flotation Devices and Water Light.....	26
61 Class B Vessels - Personal Flotation Devices and Water Light.....	26
62 Class C Vessels - Personal Flotation Devices and Water Light.....	27
63 Class D Vessels - Personal Flotation Devices and Water Light.....	28
64 Class E Vessel Equivalent Requirements.....	28
65 Visual Distress Signals.....	28
66 Personal Flotation Devices - General.....	29
67 First Aid Kit.....	30
68 Rescue boats and survival craft.....	30
69 General.....	30
Section 70 - Stability & Subdivision.....	31
70 Stability Testing.....	31
71 Weather deck drainage.....	32
72 Sub-division, damage stability, and watertight integrity.....	32
Section 80 - Fire Fighting Systems.....	32
80 Portable Fire Fighting Equipment.....	32
81 Fixed Fire Extinguishing and Detecting Systems.....	33
82 Fire Main System.....	34
83 Miscellaneous Firefighting Equipment.....	35
Section 90 - Vessel Construction and Arrangement.....	35
90 Plans and Information Required.....	35
91 Structural Hull Design.....	37
92 Fire Protection.....	38
93 Means of Escape.....	42

**Charter Boat Model Rules – approved September 8, 2008**

94 General Passenger Accommodation Requirements .....	45
95 Ventilation of Enclosed and Partially Enclosed Spaces .....	45
96 Class A Vessel Specific Construction Requirements .....	46
97 Class B Vessel Specific Construction Requirements.....	47
98 Class C Vessel Specific Construction Requirements.....	48
99 Class D Vessel Specific Construction Requirements .....	49
100 Class E Vessel Specific Construction Requirements.....	50
Section 100 - Machinery Systems.....	50
100 Main Engines .....	50
101 Auxiliary Machinery .....	52
102 Alternative Standards.....	52
103 Specific Machinery Requirements .....	52
104 Bilge and Ballast Systems.....	56
105 Steering Systems .....	59
106 Piping Systems.....	60
Section 110 - Electrical Systems.....	61
111 Power sources .....	62
112 Generators and motors .....	62
113 Distribution panels and switchboards .....	63
114 Cable and wiring requirements .....	63
115 Batteries .....	66
116 Grounding .....	66
117 Overcurrent protection.....	68
118 Shore power .....	69
119 Lighting.....	69
Section 120 - Preparations for and Response to Emergencies.....	70
120 Passenger Count.....	70
121 Passenger Safety Orientation .....	71
122 Wearing of life jackets .....	71
123 Emergency instructions.....	72
124 Station bill.....	73
125 Life jacket placards .....	74
126 Inflatable survival craft placards.....	74
127 Public address systems.....	74
128 Drills .....	75
129 Response to a marine casualty .....	76
Section 130 – License and Manning Requirements.....	77
130 State Pilot's License; Requirements.....	77
131 Pilot's License; Display.....	78
132 Pilot's License; Duration; Renewal.....	78
133 Pilot's License; Suspension or Revocation.....	79
134 Crew Manning Requirements .....	79
Section 140 – Special Provisions.....	80
140 Equivalents.....	80
141 Incorporation by Reference.....	80

## Section 10 - Statutory Authority and Applicability

### 10 General

- 1           10.1 [Insert citation for statute authorizing promulgation of rules establishing  
2           minimum safety standards for charter boats and licensing pilots of charter boats.]  
3  
4           10.2 These rules do not apply to vessels required to be inspected by the United  
5           States Coast Guard under: 46 CFR Subchapter T, Parts 175-185; 46 CFR  
6           Subchapter K, Parts 114-122; or 46 CFR Subchapter H, Parts 70-80, for the  
7           purposes of carrying passengers for hire.  
8  
9           10.3. These rules shall apply to all other vessels, as defined in the act, carrying  
10          passengers for hire on waters of the state.

## Section 20 – Definitions

- 1           20.1 “Act” means [Charter Boat Safety Act] or any act successor thereto.  
2  
3           20.2 “Auxiliary engine” means any other engine or motor carried or used onboard  
4          a vessel, other than the main propulsion engines.  
5  
6           20.3 “Accommodation space” means a space (including a space that contains a  
7          microwave oven or other low-heat appliance with a maximum heating element  
8          temperature of 250 [deg] F or less, used as a:  
9          (a) Public space;  
10         (b) Hall;  
11         (c) Dining room and mess room;  
12         (d) Lounge or cafe;  
13         (e) Public sales room;  
14         (f) Overnight accommodation space;  
15         (g) Barber shop or beauty parlor;  
16         (h) Office of conference room;  
17         (i) Washroom or toilet space;  
18         (j) Medical treatment room or dispensary; or  
19         (k) Game or hobby room.  
20  
21          20.4 “Beam” means the maximum width of a vessel from:  
22         (a) Outside of planking to outside of planking on wooden vessels; and  
23         (b) Outside of frame to outside of frame on all other vessels.  
24

**Charter Boat Model Rules – approved September 8, 2008**

25 20.5 “Buoyant Apparatus” means those devices approved as buoyant apparatus  
26 with United States Coast Guard-approval numbers beginning in 46 CFR  
27 160.010/....N. The term does not include inflatable life rafts or ring life buoys.  
28

29 20.6 “Bare boat charter or livery boat” means the unconditional lease or rental of  
30 a vessel by the vessel owner or the owner’s agent to a person who, by written  
31 agreement or contract, assumes all responsibility and liability for operating and  
32 provisioning of the vessel during the term of agreement or contract.  
33

34 20.7 "Cable" means single or plural insulated conductor(s) with an outer  
35 protective jacket.  
36

37 20.8 “Carrying passengers for hire” or “to carry passengers for hire” means the  
38 transporting of persons on a vessel for consideration, regardless of whether the  
39 consideration is directly or indirectly paid to the vessel owner, the owner's agent, the  
40 vessel operator, charterer, or any other person who holds any interest in the vessel.  
41

42 20.9 “Charter boat” means a vessel that is rented, leased or offered for rent or  
43 lease to carry passengers for hire if the vessel owner or the owner's agent retains  
44 possession, command, and control of the vessel.  
45

46 20.10 “Cargo space” means a:

- 47 (a) Cargo hold;
- 48 (b) Refrigerated cargo space;
- 49 (c) A trunk leading to or from a space listed above: or
- 50 (d) A vehicle space.  
51

52 20.11 “Class A vessel” means a vessel, except a sailboat, that carries for hire on  
53 navigable waters not more than six (6) passengers.  
54

55 20.12 “Class B vessel” means a vessel, except a sailboat, that carries for hire on  
56 inland waters not more than six (6) passengers.  
57

58 20.13 “Class C vessel” means a vessel, except a sailboat, that carries for hire on  
59 inland waters more than six (6) passengers.  
60

61 20.14 “Class D vessel” means a vessel which is propelled primarily by a sail or  
62 sails and which carries for hire on navigable waters not more than six (6) passengers  
63 or carries passengers for hire on inland waters.  
64

65 20.15 “Class E vessel” means a bare boat charter of any type vessel twenty (20)  
66 feet in length or more or designed for overnight accommodations on any waters of  
67 this state carrying any number of passengers.  
68

69 20.16 “Cockpit vessel” means a vessel with an exposed recess in the weather deck  
70 extending not more than one-half of the length of the vessel measured over the  
71 weather deck.  
72

73 20.17 “Corrosion-resistant material” or “corrosion-resistant” means made of one  
74 of the following materials in a grade suitable for its intended use in a marine  
75 environment:

- 76 (a) Silver;
- 77 (b) Copper;
- 78 (c) Brass;
- 79 (d) Bronze;
- 80 (e) Aluminum alloys with a copper content of no more than 0.4%;
- 81 (f) Cooper-nickel;
- 82 (g) Plastics;
- 83 (h) Stainless steel;
- 84 (i) Nickel-copper; or
- 85 (j) A material, which when tested in accordance with ASTM B 117

86  
87 20.18 “Crew accommodation space” means an accommodation space designated  
88 for the use of crew members only; passengers are typically not allowed entry.  
89

90 20.19 “Daytime” means one hour before sunrise to one hour after sunset, where  
91 the actual times of sunrise and sunset are determined by the National Weather  
92 Service. Times shall be local prevailing time.  
93

94 20.20 “Deck rails” means a guard structure at the outer edge of a vessel deck  
95 consisting of vertical solid or tubular posts and horizontal courses made of metal  
96 tubing, wood, cable, rope, or other suitable material.  
97

98 20.21 “Department” means the [insert name of agency authorized by the  
99 legislative body to administer the act and promulgate these rules].  
100

101 20.22 “Distribution panel” means an electrical panel that receives energy from the  
102 switchboard and distributes the energy-to-energy consuming devices or other panels.  
103

104 20.23 “Draft” means the vertical distance from the molded baseline of a vessel  
105 amidships to the waterline.  
106

107 20.24 “Drydock inspection” means an examination of a vessel when the vessel is  
108 out of the water and supported so that all of the exterior and interior of the vessel,  
109 including all through-hull fittings and appurtenances, may be examined.  
110

111 20.25 “Dockside inspection” means an examination of a vessel when the vessel is  
112 moored alongside a dock and afloat in the water so that the entire exterior above the  
113 waterline and the interior of the vessel may be examined.  
114

115 20.26 “Embarkation station” means the place on the vessel from which a survival  
116 craft is boarded.

117  
118 20.27 “Enclosed space” means a compartment that is not exposed to the  
119 atmosphere when all access and ventilation closures are secured.

120  
121 20.28 “Equipment” means a system, part, or component of a vessel as originally  
122 manufactured; or a system, part, or component manufactured or sold for replacement,  
123 repair, or improvement of a system, part, or component of a vessel; an accessory or  
124 equipment for, or appurtenance to, a vessel; or a marine safety article, accessory, or  
125 equipment intended for use by a person onboard a vessel. The term does not include  
126 radio equipment.

127  
128 20.29 “Ferry” means a vessel that:

- 129 (a) Has provisions only for deck passengers or vehicles, or both;  
130 (b) Operates on a short run on a frequent schedule between two points over the  
131 most direct water route; and  
132 (c) Offers a public service of a type normally attributed to a bridge or tunnel.

133  
134 20.30 “Fiber reinforced plastic” means plastics reinforced with fibers or strands of  
135 some other material.

136  
137 20.31 “Flexible vibration hose” means non-rigid tubing which is noncombustible  
138 or self-extinguishing and which is not affected by the motion of the vessel or the  
139 machinery to which it is connected or attached.

140  
141 20.32 “Flash point” means the temperature at which a liquid gives off a  
142 flammable vapor when heated using the Pensky-Martens Closed Cup Tester method  
143 in accordance with ASTM D-93.

144  
145 20.33 “Float-free launching or arrangement” means a method of launching a  
146 survival craft whereby the survival craft is automatically released from a sinking  
147 vessel and is ready for use.

148  
149 20.34 “Flush deck vessel” means a vessel with a continuous weather deck located  
150 at the uppermost sheer line of the hull.

151  
152 20.35 “Freeing port” means any direct opening through the vessel's bulwark or  
153 hull to quickly drain overboard water that has been shipped on exposed decks.

154  
155 20.36 “Galley” means a space containing appliances with cooking surfaces that  
156 may exceed 250[deg] F, such as ovens, griddles, and deep fat fryers.

157  
158 20.37 “General maintenance” means dry docking or hauling out of a vessel for  
159 painting or cleaning the hull and rudder, or the changing of a propeller, propeller  
160 shaft, and associated bearings.



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20.38 “Good marine practice and standards” means those methods and ways of maintaining, operating, equipping, repairing, and restructuring vessels as determined by the marine inspector. The marine inspector shall use commonly accepted standards, including United States Coast Guard, the standards of the American Boat and Yacht Council, and the standards of the boating industry associations as sources of reference in making such determinations. Refer to the ‘incorporation by reference’ section.

20.39 “Hazardous condition” means any condition that could adversely affect the safety of any vessel, bridge, structure or shore area, or the environmental quality of any port, harbor, or waterway. This condition could include but is not limited to, fire, explosion, grounding, leaking, damage, illness of a person on board, or a manning shortage.

20.40 “Immediately available” means stored in plain and open view in the area where it will be used; not obstructed, blocked, or covered in any way, and capable of being quickly deployed.

20.41 “Initial inspection” means the first inspection in certificating a new vessel.

20.42 “Inland waters” means all waters of this state, except navigable waters.

20.43 “Inflatable survival craft” or “inflatable life jacket” means one that depends upon nonrigid, gas-filled chambers for buoyancy, and which is normally kept uninflated until ready to use.

20.44 “Intrinsically safe” means use of approved components meeting UL 913 or IEC 79-11(Ia).

20.45 “Launching appliance” means a device for transferring a survival craft or rescue boat from its stowed position safely to the water. For a launching appliance using a davit, the term includes the davit, winch, and falls.

- 20.46 “Major conversion” means a conversion of a vessel that:
- (a) Substantially changes the dimensions or carrying capacity of the vessel;
  - (b) Changes the type of vessel;
  - (c) Substantially prolongs the life of the vessel; or
  - (d) Otherwise so changes the vessel that it is essentially a new vessel.

20.47 “Marine inspector” means a [insert department title] or other person employed by the department and trained in vessel inspection and operator testing procedures.

20.48 “Machinery space” means a space including a trunk, alleyway, stairway, or duct to such a space that contains:

- 207 (a) Propulsion machinery of any type;  
208 (b) Steam or internal combustion machinery;  
209 (c) Oil transfer equipment;  
210 (d) Electrical motors of more than ten 10 hp;  
211 (e) Refrigeration equipment;  
212 (f) One or more oil-fired boilers or heaters; or  
213 (g) Electrical generating machinery.  
214

215 20.49 “Master” means the individual having command of the vessel and who is  
216 the holder of a valid license that authorized the individual to serve as master of a  
217 small passenger vessel.  
218

219 20.50 “Means of escape” means a continuous and unobstructed way of exit travel  
220 from any point in a vessel to an embarkation station. A means of escape can be both  
221 vertical and horizontal, and include doorways, passageways, stairtowers, stairways,  
222 and public spaces. Cargo spaces, machinery spaces, rest rooms, hazardous areas  
223 determined by the cognizant Officer in Charge Marine Inspection, escalators, and  
224 elevators must not be any part of the means of escape.  
225

226 20.51 “Navigable waters” means those waters of the state over which the state and  
227 the United States Coast Guard exercise concurrent jurisdiction.  
228

229 20.52 “New vessel” means:  
230 (a) Initial construction;  
231 (b) A vessel having undergone major conversion  
232

233 20.52 “Nighttime” means one hour after sunset to one hour before sunrise where  
234 actual times of sunrise and sunset are determined by the National Weather Service.  
235 Time shall be local prevailing time.  
236

237 20.53 “Noncombustible material” means any material approved in accordance  
238 with 46 CFR 164.009 (Subchapter Q).  
239

240 20.54 “Non-self-propelled vessel” means a vessel that does not have installed  
241 means of propulsion, including propulsive machinery, masts, spars, or sails.  
242

243 20.55 “Open boat” means a vessel, either with or without engines or motors,  
244 which has its engine, fuel tank compartments, and other spaces, except weather  
245 enclosures, open to the atmosphere not protected from entry of water, and arranged to  
246 prevent or preclude the entrapment of explosive or flammable gases and vapors  
247 within the vessel.  
248

249 20.56 “Open deck” means a deck that is permanently open to the weather on one  
250 or more sides and, if covered, any spot on the overhead is less than [fifteen 15 feet]  
251 from the nearest opening to the weather.  
252

253 20.57 “Open to the atmosphere” means a compartment that has at least [fifteen 15  
254 square inches] of open area directly exposed to the atmosphere for each [thirty-five  
255 35 ft<sup>3</sup>] of net compartment volume.  
256

257 20.58 “Operate” means to navigate or otherwise control the movement of a vessel,  
258 including control of the vessel’s propulsion system.  
259

260 20.59 “Operating station” means the principal steering station on the vessel from  
261 which the individual on duty normally navigates the vessel.  
262

263 20.60 “Operator” means the person who navigates or is otherwise in control or in  
264 charge of the movement of the vessel, including control of the vessel’s propulsion  
265 system.  
266

267 20.61 “Owner” means a person, other than a lienholder, having property in, or  
268 title to a vessel.  
269

270 20.62 “Owner’s agent” means a person acting on the behalf of the owner in all  
271 matters concerning the vessel.  
272

273 20.63 “Overnight accommodations” or “overnight accommodation space” means  
274 an accommodation space for use by passengers or by crew members, which has one  
275 or more berths, including beds or bunks, for passengers or crew members to rest for  
276 extended periods. Staterooms, cabins, and berthing areas are normally overnight  
277 accommodation spaces. Overnight accommodations do not include spaces that  
278 contain only seats, including reclining seats.  
279

280 20.64 “Partially protected waters” is a term used in connection with stability  
281 criteria and means:

- 282 (a) Waters not more than twenty 20 nautical miles from the mouth of a harbor of  
283 safe refuge; and  
284 (b) Rivers, estuaries, harbors, lakes, and similar waters not otherwise classified as  
285 protected.  
286

287 20.65 “Partially enclosed space” means a compartment that is neither open to the  
288 atmosphere nor an enclosed space.  
289

290 20.66 “Passenger” means a person carried onboard a charter boat, except:

- 291 (a) The owner or an individual representative of the owner, or in the case of a  
292 vessel under charter, an individual charterer or individual representative of the  
293 charterer;  
294 (b) The master; or  
295 (c) A member of the crew engaged in the business of the vessel that has not  
296 contributed consideration for carriage and who is paid for on board services.  
297

**Charter Boat Model Rules – approved September 8, 2008**

298 20.67 “Passenger accommodation space” means an accommodation space  
299 designated for the use of passengers.

300  
301 20.68 “Person” means any natural person or individual.

302  
303 20.69 “Personal flotation device” means a device that is approved by the United  
304 States Coast Guard under 46 CFR Part 160.

305  
306 20.70 “Personal watercraft” means a vessel, less than 16 feet, propelled by a  
307 water-jet pump or other machinery as its primary source of motor propulsion, which  
308 is designed to be operated by a person sitting, standing or kneeling on, rather than  
309 being operated by a person sitting or standing inside the vessel.

310  
311 20.71 “Pilot's license” means a vessel operator's license issued by the United  
312 States Coast Guard or other federal agency, or a license issued by the department to  
313 an operator of a charter boat that is operated on inland waters.

314  
315 20.72 “Protected waters” is a term used in connection with stability criteria and  
316 means sheltered waters presenting no special hazards such as most rivers, harbors,  
317 and lakes.

318  
319 20.73 “Readily accessible” means easily located and retrieved without searching,  
320 delay, or hindrance.

321  
322 20.74 “Ring life buoy” means a United States Coast Guard-approved round or  
323 horse collar Type IV throwable personal flotation device with United States Coast  
324 Guard-approval numbers beginning in 46 CFR 160.048/....N.

325  
326 20.75 “Rule” means a rule promulgated pursuant to the administrative procedures  
327 act.

328  
329 20.76 “Sailing vessel” means a vessel principally equipped for propulsion by sail  
330 even if the vessel has an auxiliary means of propulsion.

331  
332 20.77 “Scantlings” means the dimensions of all structural parts such as frames,  
333 girders, and plating, used in building a vessel.

334  
335 20.78 “Scupper” means a pipe or tube of at least [one and one-quarter (1.25)  
336 inches] in diameter leading down from a deck or sole and through the hull to drain  
337 water overboard.

338  
339 20.79 “Self-bailing cockpit” means a cockpit, with watertight sides and floor  
340 (sole), which is designed to free itself of water by gravity drainage through scuppers.

341  
342 20.80 “Stairway” means an inclined means of escape between two decks.

343

344 20.81 “Steel or equivalent material” means steel or any noncombustible material  
345 that, by itself or due to insulation provided, has structural and integrity properties  
346 equivalent to steel at the end of the standard fire test.  
347

348 20.82 “Survival craft” means a lifeboat, rigid liferaft, inflatable liferaft, life float,  
349 inflatable buoyant apparatus, buoyant apparatus, or a small boat carried aboard a  
350 vessel.  
351

352 20.83 “Switchboard” means an electrical panel that receives power from a  
353 generator, battery, or other electrical power source and distributes power directly or  
354 indirectly to all equipment supplied by the generating plant.  
355

356 20.84 “Trunk” means a vertical shaft or duct for the passage of pipes, wires, or  
357 other devices or a large enclosed passageway through any deck or bulkhead of a  
358 vessel.  
359

360 20.85 “Vehicle space” means a space not on an open deck, for the carriage of  
361 motor vehicles with fuel in their tanks, into and from which such vehicles can be  
362 driven and to which passengers have access.  
363

364 20.86 “Vessel” means every description of watercraft or other artificial  
365 contrivance, other than a seaplane on water, used or capable of being used as a means  
366 of transportation on water.  
367

368 20.87 “Watertight” means designed and constructed to withstand a static head of  
369 water without any leakage, except that “watertight” for the purposes of electrical  
370 equipment means enclosed so that water does not enter the equipment when a stream  
371 of water from a hose with a nozzle one inch in diameter that delivers at least 65  
372 gallons per minute is sprayed on the enclosure from any direction from a distance of  
373 ten feet for five minutes.  
374

375 20.88 “Weather deck” means those portions of the vessel foredeck and afterdeck,  
376 which are open and exposed to the weather.  
377

378 20.89 “Weathertight” means that water will not penetrate in any sea condition,  
379 except that ‘weathertight equipment’ means equipment constructed or protected so  
380 the exposure to a beating rain will not result in the entrance of water.  
381

382 20.90 “Well deck vessel” means a vessel with a weather deck fitted with solid  
383 bulwarks that impede the drainage of water over the sides or a vessel with an exposed  
384 recess in the weather deck extending more than one-half of the length of the vessel  
385 measured over the weather deck.  
386

387 20.91 “Wire” means an individual insulated conductor without an outer protective  
388 jacket.  
389

390           20.92 “Wood vessel” means, for the purposes of subdivision and lifesaving  
391 equipment requirements in this subchapter, a traditionally built, plank-on-frame  
392 vessel, where mechanical fasteners (screws, nails, trunnels) are used to maintain hull  
393 integrity.

394  
395           20.93 “Work space” means a space, not normally occupied by a passenger, in  
396 which a crew member performs work and includes, but is not limited to, a galley,  
397 operating station, or machinery space.

398  
399           20.94 “Vital systems” means those systems that are vital to a vessel's survivability  
400 and safety such as the fuel, fire main, steering and bilge systems, navigation lighting,  
401 and communication equipment.

## Section 30 - Certification

### 30 General

1           30.1 Upon satisfactory completion of the required dry dock inspection and annual  
2 dockside inspections, the department shall issue a certificate of inspection which  
3 shall expire on [May 31] of the following year, except that the department may  
4 extend the expiration date for a period not to exceed [thirty (30)] days when  
5 extreme weather conditions exist.

6  
7           30.2 The certificate of inspection shall indicate that the vessel may operate during  
8 both the daytime and nighttime hours, unless otherwise requested by the vessel  
9 owner.

10  
11           30.3 A certificate of inspection shall be framed under transparent material and  
12 posted in a conspicuous place on the vessel. Where posting is impractical, the  
13 certificate shall be kept onboard to be shown on demand.

14  
15           30.4 There shall be a sticker issued with each certificate, and such stickers, when  
16 issued, shall be affixed to the port and starboard sides of the vessel in a  
17 conspicuous manner.

### 31 Suspensions and Revocation of Certificates.

1           31.1 If, at any time, subsequent to an inspection of a vessel and the issuance of a  
2 certificate, changes to the hull or any portion of the vessel, including equipment  
3 required to be carried onboard, are found to have occurred so that the vessel no  
4 longer meets the minimum standards prescribed, the certificate shall be revoked  
5 by the department and immediately surrendered to a marine inspector.

6  
7           31.2 Violation of the act or any other act or falsification of information on an  
8 application for inspection may also be cause for immediate suspension or  
9 revocation of the certificate.

10  
11 31.3 An issued inspection certificate and stickers shall remain the property of the  
12 department and shall be surrendered to a marine inspector upon revocation.

## Section 40 - Inspection

### 40 Inspection Standards

1 40.1 A vessel is inspected for compliance with the standards required by this  
2 section. Machinery, equipment, materials, and arrangements not covered by  
3 standards in this section may be inspected in accordance with standards  
4 acceptable as good marine practice.

5  
6 40.2 In the application of inspection standards due consideration must be given to  
7 the hazards involved in the operation permitted by a vessel's Certificate of  
8 Inspection. Thus, the standards may vary in accordance with the vessel's area of  
9 operation or any other operational restrictions or limitations.

10  
11 40.3 The published standards recognized safety associations may be used as  
12 guides in the inspection of vessels when such standards do not conflict with the  
13 requirements of this section.

### 41 Dockside Inspection (Initial Inspection for Certification)

1 41.1 The initial inspection is conducted to determine that the vessel and its  
2 equipment comply with applicable regulations and that the vessel was built or  
3 converted in accordance with approved plans, manuals, and calculations.  
4 Additionally, during the inspection, the materials, workmanship, and condition of  
5 all parts of the vessel and its machinery and equipment may be checked to  
6 determine if the vessel is satisfactory in all respects for the service intended.

7  
8 41.2 The owner or managing operator of a vessel shall ensure that the vessel  
9 complies with the laws and regulations applicable to the vessel and that the vessel  
10 is otherwise satisfactory for the intended service. The initial inspection may  
11 include an inspection of the following items:

- 12 (a) The arrangement, installation, materials, and scantlings of the structure  
13 including the hull and superstructure, yards, masts, spars, rigging, sails,  
14 piping, main and auxiliary machinery, pressure vessels, steering apparatus,  
15 electrical installation, fire resistant construction materials, life saving  
16 appliances, fire detecting and extinguishing equipment, pollution  
17 prevention equipment, and all other equipment;
- 18 (b) Sanitary conditions and fire hazards; and
- 19 (c) Certificates and operating manuals, including certificates issued by the  
20 FCC.  
21

- 22 41.3 During an initial inspection for certification the owner or managing operator  
23 shall conduct all tests and make the vessel available for all applicable inspections  
24 discussed in this section including the following:
- 25 (a) The installation of each rescue boat, life raft, inflatable buoyant apparatus,  
26 and launching appliance as listed on its Certificate of Inspection.
  - 27 (b) The operation of each required rescue boat and survival craft launching  
28 appliance.
  - 29 (c) Required machinery, fuel tanks, and pressure vessels.
  - 30 (d) A stability test or a simplified stability test when required.
  - 31 (e) Required watertight bulkheads.
  - 32 (f) Required firefighting systems.
  - 33 (g) The operation of all smoke and fire detecting systems, and fire alarms and  
34 sensors.

#### 42 Dockside Inspection (Annual Inspection for Certification)

1 42.1 The vessel owner shall, at the dockside inspection, submit all required safety  
2 apparatus for inspection and shall operate or cause to be operated all machinery,  
3 steerage, and bilge pumps to the extent necessary to determine that their condition  
4 is satisfactory and fit for safe, constant operation.

5  
6 42.2 Hull inspection items

- 7 (a) At each initial and subsequent inspection for certification of a vessel, the  
8 owner or managing operator shall be prepared to conduct tests and have  
9 the vessel ready for inspections of the hull structure and its appurtenances,  
10 including the following:
  - 11 (1) Inspection of all accessible parts of the exterior and interior of the hull,  
12 the watertight bulkheads, and weather decks;
  - 13 (2) Inspection and operation of all watertight closures in the hull, decks,  
14 and bulkheads including through hull fittings and sea valves;
  - 15 (3) Inspection of the condition of the superstructure, masts, and similar  
16 arrangements constructed on the hull, and on a sailing vessel all spars,  
17 standing rigging, running rigging, blocks, fittings, and sails;
  - 18 (4) Inspection of all railings and bulwarks and their attachment to the hull  
19 structure;
  - 20 (5) Inspection to ensure that guards or rails are provided in dangerous  
21 places;
  - 22 (6) Inspection and operation of all weathertight closures above the  
23 weather deck and the provisions for drainage of sea water from the  
24 exposed decks; and
  - 25 (7) Inspection of all interior spaces to ensure that they are adequately  
26 ventilated and drained, and that means of escape are adequate and  
27 properly maintained.
- 28 (b) The vessel must be afloat for at least a portion of the inspection as required  
29 by the marine inspector.



30 (c) When required by the marine inspector, a portion of the inspection must be  
31 conducted while the vessel is underway so that the hull and internal  
32 structure can be observed.

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34

42.3 Machinery inspection items.

35 (a) At each initial and subsequent inspection for certification of a vessel, the  
36 owner or managing operator shall be prepared to conduct tests and have  
37 the vessel ready for inspections of machinery, fuel, and piping systems,  
38 including the following:

- 39 (1) Operation of the main propulsion machinery both ahead and astern;  
40 (2) Operational test and inspection of engine control mechanisms  
41 including primary and alternate means of starting machinery;  
42 (3) Inspection of all machinery essential to the routine operation of the  
43 vessel including generators and cooling systems;  
44 (4) External inspection of fuel tanks and inspection of tank vents, piping,  
45 and pipe fittings;  
46 (5) Inspection of all fuel system;  
47 (6) Operational test of all valves in fuel lines by operating locally and at  
48 remote operating positions;  
49 (7) Operational test of all overboard discharge and intake valves and  
50 watertight bulkhead pipe penetration valves;  
51 (8) Operational test of the means provided for pumping bilges; and  
52 (9) Test of machinery alarms including bilge high level alarms.

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42.4 Electrical inspection items.

55 (a) At each initial and subsequent inspection for certification of a vessel, the  
56 owner or managing operator shall be prepared to conduct tests and have  
57 the vessel ready for inspection of electrical equipment and systems,  
58 including the following:

- 59 (1) Inspection of all cable as far as practicable without undue disturbance  
60 of the cable or electrical apparatus;  
61 (2) Test of circuit breakers by manual operation;  
62 (3) Inspection of fuses including ensuring the ratings of fuses are suitable  
63 for the service intended;  
64 (4) Inspection of rotating electrical machinery essential to the routine  
65 operation of the vessel;  
66 (5) Inspection of all generators, motors, lighting fixtures and circuit  
67 interrupting devices located in spaces or areas that may contain  
68 flammable vapors;  
69 (6) Inspection of batteries for condition and security of stowage;  
70 (7) Operational test of electrical apparatus, which operates as part of or in  
71 conjunction with a fire detection or alarms system installed on board  
72 the vessel, by simulating, as closely as practicable, the actual operation  
73 in case of fire; and  
74 (8) Operational test of all emergency electrical systems.

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42.5 Lifesaving inspection items

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(a) At each initial and subsequent inspection for certification of a vessel, the owner or managing operator shall be prepared to conduct tests and have the vessel ready for inspection of lifesaving equipment and systems, including the following:

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- (1) Tests of each rescue boat and each rescue boat launching appliance and survival craft launching appliance;
- (2) Inspection of each lifejacket, work vest, and marine buoyant device;
- (3) If used, inspection of the passenger safety orientation cards or pamphlets;
- (4) Inspection of each inflatable life raft, inflatable buoyant apparatus, and inflatable lifejacket to determine that it has been serviced as required by marine inspector; and
- (5) Inspection of each hydrostatic release unit to determine that it is in compliance with the applicable servicing and usage requirements.

(b) Each item of lifesaving equipment determined by the marine inspector to not be in serviceable condition must be repaired or replaced.

(c) Each item of lifesaving equipment with an expiration date on it must be replaced if the expiration date has passed.

(d) The owner or managing operator shall destroy, in the presence of the marine inspector, each lifejacket, other personal floatation device, and other lifesaving device found to be defective and incapable of repair.

(e) At each initial and subsequent inspection for certification of a vessel, the vessel must be equipped with an appropriately sized lifejacket for each person, including *children* and crew, authorized on the Certificate of Inspection.

(f) At each initial and subsequent inspection for certification, the marine inspector may require that “abandon ship,” “man overboard” or fire fighting drill(s) be held under simulated emergency conditions specified by the marine inspector.

42.6 Fire protection inspection items.

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(a) At each initial and subsequent inspection for certification, the owner or managing operator shall be prepared to conduct tests and have the vessel ready for inspection of its fire protection equipment, including the following:

(1) Inspection of each hand portable fire extinguisher, semi portable fire extinguisher, and fixed gas fire extinguishing system to check for excessive corrosion and general condition;

(2) Inspection of piping, controls, and valves, and the inspection and testing of alarms and ventilation shutdowns, for each fixed gas fire extinguishing system and detecting system to determine that the system is in operating condition;

- 119 (3) Operation of the fire main system and checking of the pressure at the  
120 most remote and highest outlets;
- 121 (4) Testing of each fire hose to a test pressure equivalent to its maximum  
122 service pressure;
- 123 (5) Checking of each cylinder containing compressed gas to ensure it has  
124 been tested and marked;
- 125 (6) Testing or renewal of flexible connections and discharge hoses on  
126 semi-portable extinguishers and fixed gas extinguishing systems; and
- 127 (7) Inspection and testing of all smoke and fire detection systems,  
128 including sensors and alarms.
- 129 (b) The owner, managing operator, or a qualified servicing facility as  
130 applicable shall conduct the following inspections and tests:
- 131 (1) For portable fire extinguishers, the inspections, maintenance  
132 procedures, and hydrostatic pressure tests required by Chapter 4 of  
133 NFPA 10, "Portable Fire Extinguishers," with the frequency specified  
134 by NFPA 10. In addition, carbon dioxide and Halon portable fire  
135 extinguishers must be refilled when the net content weight loss  
136 exceeds [10%] of the weight of charge. The owner or managing  
137 operator shall provide satisfactory evidence of the required servicing  
138 to the marine inspector. If any of the equipment or record has not been  
139 properly maintained, a qualified servicing facility must be required to  
140 perform the required inspections, maintenance procedures, and  
141 hydrostatic pressure tests. A tag issued by a qualified servicing  
142 organization, and attached to each extinguisher, may be accepted as  
143 evidence that the necessary maintenance procedures have been  
144 conducted.
- 145 (2) For semi-portable and fixed gas fire extinguishing systems. The owner  
146 or managing operator shall provide satisfactory evidence of the  
147 required servicing to the marine inspector. If any of the equipment or  
148 record has not been properly maintained, a qualified servicing facility  
149 may be required to perform the required inspections, maintenance  
150 procedures, and hydrostatic pressure tests.
- 151 (i) Carbon dioxide - Weigh cylinders. Recharge if weight loss exceeds  
152 [10%] of weight of charge. Test time delays, alarms, and  
153 ventilation shutdowns with carbon dioxide, nitrogen, or other  
154 nonflammable gas as stated in the system manufacturer's  
155 instruction manual. Inspect hoses and nozzles to be sure they are  
156 clean.
- 157 (ii) Halon - Weigh cylinders. Recharge if weight loss exceeds 10% of  
158 weight of charge. If the system has a pressure gauge, also recharge  
159 if pressure loss (adjusted for temperature) exceeds [10%]. Test  
160 time delays, alarms, and ventilation shutdowns with carbon  
161 dioxide, nitrogen, or other nonflammable gas as stated in the  
162 system manufacturer's instruction manual. Inspect hoses and  
163 nozzles to be sure they are clean.

- 164 (iii) Dry Chemical (cartridge operated) - Examine pressure cartridge  
165 and replace if end is punctured or if determined to have leaked or  
166 to be in unsuitable condition. Inspect hose and nozzle to see if they  
167 are clear. Insert charged cartridge. Ensure dry chemical is free  
168 flowing (not caked) and extinguisher contains full charge.  
169 (iv) Dry chemical (stored pressure) - See that pressure gauge is in  
170 operating range. If not, or if the seal is broken, weigh or otherwise  
171 determine that extinguisher is fully charged with dry chemical.  
172 Recharge if pressure is low or if dry chemical is needed.  
173 (v) Foam (stored pressure) - See that pressure gauge, if so equipped, is  
174 in the operating range. If not, or if the seal is broken, weigh or  
175 otherwise determine that extinguisher is fully charged with foam.  
176 Recharge if pressure is low or if foam is needed. Replace premixed  
177 agent every [3] years.  
178 (c) The owner, managing operator, or master shall destroy, in the presence of  
179 the marine inspector, each fire hose found to be defective and incapable of  
180 repair.  
181 (d) At each initial and subsequent inspection for certification, the marine  
182 inspector may require that a fire drill be held under simulated emergency  
183 conditions to be specified by the inspector.  
184

185 42.7 Pressure vessels and boilers

- 186 (a) Boilers and pressure vessels must be tested and inspected in accordance  
187 with 46 CFR Subchapter F – Marine Engineering, Part 61.  
188

189 42.8 Steering and miscellaneous systems and equipment

- 190 (a) At each initial and subsequent inspection for certification the owner or  
191 managing operator shall be prepared to test the steering systems of the  
192 vessel and make them available for inspection to the extent necessary to  
193 determine that they are in suitable condition and fit for the service  
194 intended. Servo-type power systems, such as orbital systems, must be  
195 tested and capable of smooth operation by a single person in the manual  
196 mode, with hydraulic pumps secured.  
197 (b) At each initial and subsequent inspection for certification the owner or  
198 managing operator shall be prepared to test and make available for  
199 inspection all items in the ship's outfit, such as ground tackle, navigation  
200 lights and equipment, markings, and placards, which are required to be  
201 carried by the regulations in this subchapter, as necessary to determine that  
202 they are fit for the service intended.  
203

204 42.9 Unsafe practices

- 205 (a) At each inspection for certification and at every other vessel inspection all  
206 observed unsafe practices, fire hazards, and other hazardous situations

207 must be corrected and all required guards and protective devices must be  
208 in satisfactory condition.  
209 (b) At each inspection for certification and at every other vessel inspection the  
210 bilges and other spaces may be examined to see that there is no excessive  
211 accumulation of oil, trash, debris, or other matter that might create a fire  
212 hazard, clog bilge pumping systems, or block emergency escapes.

### 43 Drydock Inspection

43.1 All vessels carrying passengers for hire shall pass an initial drydock inspection conducted by a marine inspector. Thereafter, a vessel shall pass a drydock inspection when the department has reasonable cause to believe it necessary or at intervals not to exceed [sixty (60) months].

43.2 Before an inspection, the vessel owner shall remove or effectively store all associated equipment, including fishing gear, coolers, and personal belongings onboard the vessel, which would impede the inspection process.

43.3 The vessel owner shall open or remove all hatches and inspection ports before or during an inspection and shall have the vessel in reasonably clean and orderly condition.

43.4 To determine that a vessel is seaworthy and in good and serviceable condition, the vessel owner shall permit the marine inspector to inspect the entire interior and exterior of the vessel, including all of the following:

- (a) The hull and appendages
- (b) Propellers
- (c) Shafting
- (d) Stern bearings
- (e) Rudders
- (f) Through-hull fittings
- (g) Sea valves
- (h) Strainers
- (i) Outdrive units
- (j) Outboard lower units

43.5 When the marine inspector has reasonable cause to believe that the seaworthiness or the sound structure of the vessel may be impaired, the vessel owner may be required to remove sections or portions of the lining, decking, ceiling, or other obstructions that may obscure any part of the vessel so that the seaworthiness or sound structure may be determined.

43.6 When through-hull fittings are present below the waterline, they shall be fitted with a readily accessible shutoff valve. The shutoff valve shall be located as close to the through-hull fitting as possible and be in good and serviceable condition. This requirement shall not be construed to conflict with current vessel water pollution control acts.

**44 Vessel Damage, Repairs, Modifications, and Alterations**

1           44.1 When a vessel has an accident causing physical damage, has a grounding  
2 causing physical damage, or is to be hauled out and dry docked to carry out major  
3 repairs or alterations affecting the vessel's seaworthiness, the vessel owner shall  
4 immediately report to the marine inspector or the marine safety section of the  
5 department the nature of the damage, repairs, or alterations. Physical damage does  
6 not include breakage of glass, lights, or decorative items.

7  
8           44.2 All repairs and alterations shall be done in accordance with good marine  
9 practice and standards, and approved by the marine inspector before the work is  
10 started. Drawings, sketches, or written specifications may be required by the  
11 marine inspector depending on the nature and extent of the repairs or alterations.

12  
13           44.3 The vessel owner shall not allow the vessel to be returned to service or  
14 returned to the water until all repairs or alterations have been completed and the  
15 vessel has been reinspected and approved by the marine inspector. The marine  
16 inspector shall reinspect the vessel as soon as possible after notification by the  
17 owner that the repairs and alterations have been completed. Testing may be  
18 required whenever a repair or alteration is undertaken.

19  
20           44.4 When corrections or repairs to the vessel or associated equipment are  
21 required as a result of an inspection by the marine inspector, the vessel owner  
22 shall notify the marine inspector when the corrections or repairs have been made.

23  
24           44.5 When, during the course of an inspection, the marine inspector finds  
25 equipment or conditions which are not addressed in these rules and which are  
26 unsafe or jeopardize the safety of the passengers carried onboard, the marine  
27 inspector shall require that the condition be corrected, or the equipment removed  
28 from the vessel.

29  
30           44.6 When it is determined by the marine inspector that a vessel, because of its  
31 construction or design, or both, is not safe to carry passengers for hire, a  
32 certificate of inspection shall not be issued. The owner, if not satisfied with the  
33 decision of the department, may seek relief in accordance with the Administrative  
34 Procedures Act.

35  
36           44.7 Repairs or alterations to the hull, machinery, or equipment that affect the  
37 safety of the vessel must not be made without the approval, except during an  
38 emergency. When repairs are made during an emergency, the owner, managing  
39 operator, or master shall make notification as soon as practicable after such  
40 repairs or alternations are made. Repairs or alterations that affect the safety of the  
41 vessel include, but are not limited to: replacement, repair, or refastening of deck  
42 or hull planking, plating, and structural members; repair of plate or frame cracks;  
43 damage repair or replacement, other than replacement in kind, of electrical wiring,  
44 fuel lines, tanks, boilers and other pressure vessels, and steering, propulsion and

45 power supply systems; alterations affecting stability; and repair or alteration of  
46 lifesaving, fire detecting, or fire extinguishing equipment.  
47  
48 44.8 Notification and inspection shall not be required for general maintenance dry  
49 docking or hauling out.

1  
**45 Passenger Loading**

1  
1 45.1 Passengers permitted.

2 (a) The maximum number of passengers permitted must be not more than that  
3 allowed by the requirements of this section, except as authorized under  
4 Section 45.1 (e).

5 (b) The maximum number of passengers permitted on any vessel may be the  
6 greatest number permitted by the length of rail criterion, deck area  
7 criterion, or fixed seating criterion described in this paragraph or a  
8 combination of these criteria as allowed by Section 45.1 (d).

9 (1) Length of rail criterion. One passenger may be permitted for each 30  
10 inches of rail space available to the passengers at the periphery of each  
11 deck. The following rail space may not be used in determining the  
12 maximum number of passengers permitted:

- 13 (i) Rail space in congested areas unsafe for passengers, such as near  
14 anchor handling equipment or line handling gear, in the way of sail  
15 booms, running rigging, or paddle wheels, or along pulpits;
- 16 (ii) Rail space on stairways; and
- 17 (iii) Rail space where persons standing in the space would block the  
18 vision of the licensed individual operating the vessel.

19 (2) Deck area criterion. One passenger may be permitted for each [ten (10)  
20 square feet] of deck area available for the passengers' use. In  
21 computing such deck area, the areas occupied by the following must  
22 be excluded;

- 23 (i) Areas for which the number of persons permitted is determined  
24 using the fixed seating criteria;
- 25 (ii) Obstructions, including stairway and elevator enclosures,  
26 elevated stages, bars, and cashier stands, but not including slot  
27 machines, tables, or other room furnishings;
- 28 (iii) Toilets and washrooms;
- 29 (iv) Spaces occupied by and necessary for handling lifesaving  
30 equipment, anchor handling equipment or line handling gear, or  
31 in the way of sail booms or running rigging;
- 32 (v) Spaces below deck that are unsuitable for passengers or that  
33 would not normally be used by passengers;
- 34 (vi) Interior passageways less than [thirty-four (34) inches] wide and  
35 passageways on open deck, less than [twenty-eight (28) inches]  
36 wide;

- 37 (vii) Bow pulpits, swimming platforms and areas that do not have a  
38 solid deck, such as netting on multi-hull vessels;  
39 (viii) Deck areas in way of paddle wheels; and  
40 (ix) Aisle area provided in accordance with Section 45.2.
- 41 (c) Fixed seating criterion. One passenger may be permitted for each  
42 [eighteen (18) inches] of width of fixed seating provided by Section 45.2.  
43 Each sleeping berth in overnight accommodation spaces shall be counted  
44 as only one seat.
- 45 (d) Different passenger capacity criteria may be used on each deck of a vessel  
46 and added together to determine the total passenger capacity of that vessel.  
47 Where seats are provided on part of a deck and not on another, the number  
48 of passengers permitted on a vessel may be the sum of the number  
49 permitted by the seating criterion for the space having seats and the  
50 number permitted by the deck area criterion for the space having no seats.  
51 The length of rail criterion may not be combined with either the deck area  
52 criterion or the fixed seating criterion when determining the maximum  
53 number of passengers permitted on an individual deck.
- 54 (e) For a vessel operating on short runs on protected waters such as a ferry,  
55 special consideration may be given to increases in passenger allowances.  
56

57 45.2 Seating.

- 58 (a) A seat must be provided for each passenger permitted in a space for which  
59 the fixed seating criterion has been used to determine the number of  
60 passengers permitted.
- 61 (b) A seat must be constructed to minimize the possibility of injury and avoid  
62 trapping occupants.
- 63 (c) Installation of seats must provide for ready escape.
- 64 (d) Seats, including fixed, temporary, or portable seats, must be arranged as  
65 follows:
- 66 (1) An aisle of not more than [fifteen (15) feet] in overall length must be  
67 not less than [24 inches] in width.
- 68 (2) An aisle of more than [fifteen (15) feet] in overall length must be not  
69 less than [thirty (30) inches] in width.
- 70 (3) Where seats are in rows, the distance from seat front to seat front must  
71 be not less than [thirty (30) inches] and the seats must be secured to a  
72 deck or bulkhead.
- 73 (4) Seats used to determine the number of passengers permitted must be  
74 secured to the deck, bulkhead, or bulwark.

## Section 50 - Navigation

### 50 Safe Navigation



- 1           50.1 The movement of a vessel shall be under the direction and control of the  
2           master or a licensed operator at all times. The master shall operate the vessel  
3           keeping the safety of the passengers and crew foremost in mind directing the  
4           vessel in order to prevent accidents. Special attention should be paid to:  
5           (a) The current velocity and direction of the transiting area;  
6           (b) Tidal state;  
7           (c) Prevailing visibility and weather conditions;  
8           (d) Density of marine traffic;  
9           (e) Potential damage caused by own wake;  
10          (f) The danger of each closing visual or radar contact;  
11          (g) Vessel’s handling characteristics; and  
12          (h) Magnetic variation and deviation errors of the compass.

### 51 Navigation Lights

- 1           51.1 All vessels must have navigation lights that are in compliance with the  
2           applicable sections of the International and Inland Navigation Rules, except that a  
3           vessel of more than [sixty-five (65) feet] in length must also have navigation  
4           lights that meet UL 1104, “Standards for Marine Navigation Lights.”

### 52 Sound Making Devices

- 1           52.1 All vessels must be equipped with a horn or whistle capable of producing a  
2           four-to-six second blast, audible at a range of at least one-half mile from the  
3           vessel. The whistle and its actuating mechanism must be permanently installed in  
4           the vessel. It must be electro-mechanical, air, or steam-actuated and capable of  
5           being sounded by the operator at the helm.  
6  
7           52.2 Vessels less than thirty-nine feet in length may utilize a portable sound  
8           signaling device such as a mouth whistle, hand-held air horn, or similar device in  
9           lieu of a permanently installed device provided it meets all of the criteria listed  
10          above. A portable device must be kept in a position that is immediately accessible  
11          to the operator of the vessel.  
12  
13          52.3 Vessels greater than thirty-nine feet in length are required to be equipped  
14          with a bell. The bell must be permanently mounted to the vessels exterior  
15          structure in the vicinity of the control station. A lanyard or wire must be attached  
16          to the bell's clapper to enable the operator to sound the bell from the control  
17          station.

### 53 Compasses

- 1           53.1 When required, a vessel must be fitted with a suitable magnetic compass  
2           designed for marine use, to be mounted at the primary operating station.

### 54 Charts and nautical Publications

- 1 54.1 As appropriate for the intended voyage, a vessel must carry adequate and up-  
2 to-date:  
3 (a) Charts of large enough scale to make safe navigation possible;  
4 (b) U.S. Coast Pilot or similar publication;  
5 (c) United States Coast Guard Light List;  
6 (d) Tide tables; and  
7 (e) Current tables or a river current publication issued by the U.S. Army  
8 Corps of Engineers or a river authority.  
9
- 10 54.2 Extracts from the publications listed above for the areas to be transited may  
11 be provided instead of the complete publication.

## Section 60 - Life Saving Systems

### 60 Class A Vessels - Personal Flotation Devices and Water Light.

- 1 60.1 The vessel owner shall provide [one (1)] United States Coast  
2 Guard-approved personal flotation device of proper size for each person,  
3 including *children* and the crew, to be carried onboard. Each device shall be  
4 inspected at the dockside inspection.  
5
- 6 60.2 The vessel owner shall affix, in a suitable manner, to all personal flotation  
7 devices carried aboard the vessel, [thirty one and one half (31.5) sq. in.] of United  
8 States Coast Guard-approved retro reflective material to the outside of each  
9 device and [thirty one and one half (31.5) sq. in.] to the inside of each device.  
10
- 11 60.3 The vessel owner shall have aboard the vessel a ring life buoy not less than  
12 [twenty (20) inches] in diameter. The ring life buoy shall comply with all of the  
13 following requirements:  
14 (a) Be immediately available in a suitable location.  
15 (b) Have attached, in a suitable manner, not less than [fifty (50)] feet of line.  
16 (c) Be marked as required Section 66.  
17
- 18 60.4 The vessel owner shall provide a *floating* water light which is self-activating  
19 upon contact with the water and which is approved by the marine inspector. The  
20 light shall be stored in an immediately available location near the ring life buoy  
21 and shall be in good and serviceable condition. When, at the owner's discretion,  
22 the light is attached to the ring life buoy, it shall be attached by a line at least [one  
23 (1)] foot in length.

### 61 Class B Vessels - Personal Flotation Devices and Water Light.

- 1 61.1 The owner of a vessel, except for an open boat, shall provide [one (1)]  
2 United States Coast Guard-approved personal flotation device, of a proper size,  
3 for each person, including *children* and the crew, to be carried onboard. Each  
4 device shall be inspected at the dockside inspection.

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61.2 The owner of an open boat shall provide [one (1)] United States Coast Guard-approved personal flotation device of proper size for each person to be carried onboard, including the crew. In addition, [one (1)] unicellular plastic foam United States Coast Guard-approved Type IV throwable device shall also be carried. Each device shall be inspected at the dockside inspection.

61.3 The vessel owner shall affix, in a suitable manner, to all personal flotation devices carried aboard the vessel, [thirty one and one half (31.5) sq. in.] of United States Coast Guard-approved retro reflective material to the outside of each device and [thirty one and one half (31.5) sq. in.] to the inside of each device that is reversible.

61.4 The owner of a vessel, except for an open boat, which operates on inland lakes shall have aboard the vessel a ring life buoy not less than [twenty (20) inches] in diameter. The ring life buoy shall comply with all of the following requirements:

- (a) Be immediately available in a suitable location.
- (b) Have attached, in a suitable manner, not less than [fifty (50)] feet of line.
- (c) Be marked as required by Section 66.

61.5 The owner of a vessel, except for an open boat, shall provide a *floating* water light which is self-activating upon contact with the water and which is approved by the marine inspector. The light shall be stored in an immediately available location near the ring life buoy and shall be in good and serviceable condition. When, at the owner's discretion, the light is attached to the ring life buoy, it shall be attached by a line at least [one (1) foot] in length.

**62 Class C Vessels - Personal Flotation Devices and Water Light.**

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62.1 The vessel owner shall provide [one (1)] United States Coast Guard-approved Type personal flotation device of proper size for each person, including *children* and the crew, to be carried onboard. Each device shall be inspected at the dockside inspection.

62.2 All personal flotation devices shall have affixed, in a suitable manner, (31.5 sq. in.) of United States Coast Guard-approved retro reflective material to the outside of each device and (thirty one and one half (31.5) sq. in.) to the inside of each device that is reversible.

62.3 The owner of a vessel shall have aboard the vessel a ring life buoy not less than [twenty (20) inches] in diameter. The ring life buoy shall comply with all of the following requirements:

- (a) Be immediately available in a suitable location.
- (b) Have attached, in a suitable manner, not less than [fifty (50) feet] of line.
- (c) Be marked as required by Section 66.

18 62.4 The owner of a vessel, except those vessels operating exclusively on rivers,  
19 shall provide a *floating* water light which is self-activating upon contact with the  
20 water and which is approved by the marine inspector. The light shall be stored in  
21 an immediately available location near the ring life buoy and shall be in good and  
22 serviceable condition. When, at the owner's discretion, the light is attached to the  
23 ring life buoy, it shall be attached by a line at least [one (1) foot] in length.

### 63 Class D Vessels - Personal Flotation Devices and Water Light.

1 63.1 The vessel owner shall provide one (1) United States Coast Guard-approved  
2 personal flotation device of proper size for each person, including *children* and  
3 the crew, to be carried onboard. Each device shall be inspected at the dockside  
4 inspection.  
5

6 63.2 The owner of a vessel which operates on the [insert body of water] shall  
7 affix, in a suitable manner, to all personal flotation devices carried aboard the  
8 vessel, (31.5 sq. in.) of United States Coast Guard-approved retroreflective  
9 material to the outside of each device and [31.5 sq. in.] to the inside of each  
10 device.  
11

12 63.3 The vessel owner shall have a ring life buoy not less than [twenty (20)  
13 inches] in diameter aboard the vessel. The ring life buoy shall comply with all of  
14 the following requirements:

- 15 (a) Be immediately accessible in a suitable location.
  - 16 (b) Have attached, in a suitable manner, not less than [fifty (50) feet] of line.
  - 17 (c) Be marked as required by Section 66.
- 18

19 63.4 The vessel owner shall provide a water light which is self-activating upon  
20 contact with the water and which is approved by the marine inspector. The light  
21 shall be stored in an immediately available location near the ring life buoy and  
22 shall be in good and serviceable condition. When, at the owner's discretion, the  
23 light is attached to the ring life buoy, it shall be attached by a line at least [one (1)  
24 foot] in length.

### 64 Class E Vessel Equivalent Requirements

1 64.1 Class E vessels shall meet the same requirements as a Class A, Class B,  
2 Class C or Class D vessel as suitable for the number of passengers carried and the  
3 waters on which the Class E vessel will be operated.

### 65 Visual Distress Signals.

1 65.1 The owner of a vessel which operates on the [insert body of water] shall have  
2 aboard the vessel at least one option, from the following list, of United States  
3 Coast Guard-approved visual distress signals:  
4

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Option	Number Required	Type	Accepted
A	[3]	Hand-held red flare with manufacture date of October 1, 1980, or later.	Day and Night
B	[3]	Hand-held rocket-propelled parachute red flare.	Day and Night
C	[1] [1]	Orange flag distress signal and electric distress light	Day Only Night Only
D	[3] [1]	Floating or hand-held orange smoke and electric distress light	Day Only Night Only
E	[3]	Floating or hand-held orange smoke and Option (a) or Option (b)	Day and Night
F	[1]	Orange distress flag and Option (a) or (b)	Day and Night

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65.2 A person shall not display a visual distress signal on the waters of the state, except in an emergency.

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65.3 A person shall not possess any pistol-type visual distress signal launching device commonly known as a flare gun.

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65.4 Any United States Coast Guard-approved electric distress light for boats that activates automatically upon contact with the water and flashes S.O.S. is acceptable for meeting the night-time requirements of this section and Sections 60.4, 61.5, 62.4, 63.4 and 64.1.

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65.5 The vessel owner shall have aboard the vessel at least one portable battery-operated light (flashlight), powered by D-cells or larger size batteries, which is in good and serviceable condition.

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**66 Personal Flotation Devices - General.**

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66.1 When the marine inspector determines that any personal flotation device required to be carried onboard a vessel is not in good and serviceable condition, the vessel owner shall permit the marine inspector to note, in writing, on the personal flotation device, that the device is no longer serviceable. The vessel owner shall replace the non-serviceable devices immediately or the number of passengers allowed to be carried aboard the vessel shall be reduced to equal the number of serviceable personal flotation devices carried. The certificate of inspection may be revised, at any time, for the number of these devices carried, upon request of the owner to the marine inspector.

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66.2 Personal flotation devices shall be carried in suitable places which are readily accessible to the passengers *and crew* onboard. The places shall be designed to allow the devices to float free when practical.

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15 66.3 When personal flotation devices are carried so that they are readily  
16 accessible, but not readily visible to the passengers, the container shall be marked  
17 “LIFE PRESERVERS” and the number of devices contained therein shall be  
18 listed. The letters and numbers shall be at least [one (1) inch] high and shall be a  
19 color contrasting to the color of the container. The container shall also indicate the  
20 size of the devices contained therein. Differing sizes shall not be mixed within a  
21 container.

22  
23 66.4 On documented vessels, all required personal flotation devices shall be  
24 marked with the vessel's name in characters at least [one (1) inch] high and shall  
25 be a color contrasting to the color of the device.

26  
27 66.5 On undocumented vessels, all required personal flotation devices acquired  
28 shall be marked with the vessel's registration number in characters at least [one  
29 (1) inch] high and shall be a color contrasting to the color of the device.

### 67 First Aid Kit

1 67.1 The vessel owner shall provide, and have onboard the vessel, at least [one  
2 (1)] standard [sixteen (16)]-unit first aid kit.

### 68 Rescue boats and survival craft

1 68.1 A vessel of more than [sixty-five (65) feet] in length must carry at least  
2 one rescue boat unless the marine inspector determines that:  
3 (a) The vessel is sufficiently maneuverable, arranged, and equipped to allow  
4 the crew to recover a helpless person from the water;  
5 (b) Recovery of a helpless person can be observed from the operating station;  
6 and  
7 (c) The vessel does not regularly engage in operations that restrict its  
8 maneuverability.

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10 68.2 In general, a rescue boat must be a small, lightweight boat with built-in  
11 buoyancy and capable of being readily launched and easily maneuvered. In  
12 addition, it must be of adequate proportion to permit taking an unconscious  
13 person on board without capsizing.

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15 68.3 When the marine inspector determines that a vessel shall carry survival  
16 craft, the number, type, arrangement and stowage shall be determined based on a  
17 vessel's route, temperature of the water, vessel communication schedule, water  
18 depth.

### 69 General

1 69.1 Life saving safety equipment carried in excess of the requirements  
2 specified above must meet the same type approval requirements.

## Section 70 - Stability & Subdivision

### 70 Stability Testing

1           70.1 A vessel's stability must be assessed against the applicable requirements of  
2           Sec. 170.170, 170.173, 171.050, 171.055, and 171.057 in 46 CFR Subchapter S if  
3           it meets the following:

- 4           (a) The vessel is more than [sixty five (65) feet] in length
- 5           (b) The vessel carries more than [one hundred and fifty (150) passengers].
- 6           (c) The vessel carries passengers on two or more decks.
- 7           (d) The vessel is a pontoon vessel that operates on other than protected  
8           (sheltered) waters or carries more than [forty nine (49) passengers].
- 9           (d) Any other vessel whose stability is questioned by the marine inspector.

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11           70.2 A single deck passenger vessel carrying between [7 and 150 passengers]  
12           must have its stability assessed against the simplified (proof test) stability  
13           standards as follows:

- 14           (a) Sailing vessels - 46 CFR 178.325
- 15           (b) Mono-hull vessels – 46 CFR 178.330
- 16           (c) The deadweight simulation for each passenger shall be [one hundred and  
17           eighty five (185) pounds].
- 18           (d) The number of passengers used to determine passenger weight shall in no  
19           case exceed the maximum number calculated by the appropriate method in  
20           Section 45.
- 21           (e) Any solid fixed ballast used to meet stability standards must be stowed in  
22           a manner that prevents shifting and installed to the satisfaction of the  
23           marine inspector. Removal of solid ballast constitutes a modification if the  
24           vessel requiring notification of the [insert title of official who administers  
25           the state's boating laws].

26  
27           70.3 A single deck pontoon passenger vessel carrying between [7 and 49  
28           passengers] must have its stability assessed against the simplified (proof test)  
29           stability standards as follows:

- 30           (a) Pontoon vessels – 46 CFR 178.340
- 31           (b) The deadweight simulation for each passenger shall be [one hundred and  
32           eighty five (185) pounds].
- 33           (c) The number of passengers used to determine passenger weight shall in no  
34           case exceed the maximum number calculated by the appropriate method in  
35           Section 45.
- 36           (d) Any solid fixed ballast used to meet stability standards must be stowed in  
37           a manner that prevents shifting, and be installed to the satisfaction of the  
38           marine inspector. Removal of solid ballast constitutes a modification if the  
39           vessel requires notification of the [insert title of official who administers  
40           the state's boating laws].

41

42           70.4 A pontoon vessel that has more than two pontoons or has decks higher than  
 43 [6 inches] above the pontoons must meet the stability standard found in ABYC  
 44 Standard H-35, “Powering and Load Capacity of Pontoon Boats.”

45  
 46           70.5 The [insert title of official who administers the state’s boating laws] may  
 47 waive the stability test for any vessel carrying not more than [forty nine (49)  
 48 passengers] if it can be established that due to the form, construction,  
 49 arrangement, route and operating restrictions of the vessel, the stability of that  
 50 vessel can be safely determined without a stability proof test.

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 52           70.6 A vessel must undergo a simplified stability proof test in the presence of a  
 53 marine inspector. A simplified stability proof test in accordance with Sections  
 54 70.2 and 70.3 are conducted to determine if a vessel, as built and operated, has a  
 55 minimum level of initial stability. Failure of the simplified test does not  
 56 necessarily mean that the vessel lacks stability for the intended route, service, and  
 57 operating condition, but that calculations or other methods must be used to  
 58 evaluate the stability of the vessel.

**71 Weather deck drainage**

1           71.1 The weather decks on vessels must allow for the rapid drainage of water.  
 2 Cockpit and well deck vessels must have scuppers or freeing ports located that  
 3 allow rapid clearing of water on deck in all probable conditions of trim and list.

**72 Sub-division, damage stability, and watertight integrity**

1           72.1 Vessels of more than [sixty-five (65) feet] in length or carrying more than  
 2 [forty-nine (49) passengers) must meet the subdivision and damage stability and  
 3 watertight integrity requirements of 46 CFR 179.

**Section 80 - Fire Fighting Systems**

**80 Portable Fire Fighting Equipment.**

1           80.1 A vessel, except for an open boat, shall be equipped with a minimum number  
 2 of United States Coast Guard-approved portable fire extinguishers which shall be  
 3 located as shown in the following table:  
 4

<b>Compartmented Vessels</b>	<b>Class</b>	<b>Minimum Number Extinguishers</b>	<b>Locations</b>
Less than [26] feet	BI	2	Helmsman's position and cabin
[26] feet to less than [40] feet	BI	3	Accessible to the engine compartment, helmsman's position, crew's quarters and



**Charter Boat Model Rules – approved September 8, 2008**

			galley
[40] feet or over	BI	4	Accessible to the engine compartment, helmsman's position, crew's quarters and galley

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80.2 Where [three (3) or more] B1 units are required, the extinguishing capacity may be made up of a smaller number of B2 units, if each location is protected with an immediately available extinguisher.

80.3 The vessel owner shall examine, at regular intervals, all fire extinguishers to make certain that they have not been tampered with and have not suffered corrosion or damage.

80.4 A foam extinguisher shall be discharged, cleaned, inspected for mechanical defects or serious corrosion, and recharged annually.

80.5 A dry chemical extinguisher shall be kept full with the specified weight of chemical at all times. The cartridge shall be reweighed annually. If the cartridge is found to weigh less than the minimum weight stamped thereon, it shall be replaced with a full cartridge or recharged. An extinguisher with a gauge shall be recharged when the pressure is below prescribed operating limits.

80.6 A carbon dioxide extinguisher shall be reweighed annually, and a cylinder found lighter than the weight indicated on the nameplate shall be recharged.

80.7 Servicing and maintenance of portable fire extinguishers shall be performed by a qualified fire fighting equipment repair service annually.

**81 Fixed Fire Extinguishing and Detecting Systems**

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- 81.1 Where required.
- (a) The following spaces must be equipped with a United States Coast Guard-approved fixed gas fire extinguishing system:
    - (1) A space containing propulsion machinery;
    - (2) A space containing an internal combustion engine of more than 50 hp;
    - (3) A space containing an oil fired boiler;
    - (4) A space containing machinery powered by gasoline or other fuels having a flash point of 110[deg] F or lower;
    - (5) A space containing a fuel tank for gasoline or any other fuel having a flash point of 110[deg] F or lower;
    - (6) A space containing combustible cargo or ship's stores inaccessible during the voyage (in these types of spaces only carbon dioxide, not Halon, systems will be allowed);
    - (7) A paint locker; and

- 15 (8) A storeroom containing flammable liquids (including liquors of 80  
16 proof or higher where liquor is packaged in individual containers of  
17 [2.5 gallons] capacity or greater).
- 18 (b) The following spaces must be equipped with a United States Coast Guard-  
19 approved fire detecting system, except when a fixed gas fire extinguishing  
20 system that is capable of automatic discharge upon heat detection is  
21 installed or when the space is manned:
- 22 (1) A space containing propulsion machinery;  
23 (2) A space containing an internal combustion engine of more than 50 hp;  
24 (3) A space containing an oil fired boiler;  
25 (4) A space containing machinery powered by gasoline or any other fuels  
26 having a flash point of 110[deg] F or lower; and  
27 (5) A space containing a fuel tank for gasoline or any other fuel having a  
28 flash point of 110[deg] F or lower.
- 29 (c) All griddles, broilers, and deep fat fryers must be fitted with a grease  
30 extraction hood.
- 31 (d) Each overnight accommodation space on a vessel with overnight  
32 accommodations for passengers must be fitted with an independent  
33 modular smoke detecting and alarm unit.  
34
- 35 81.2 Servicing and maintenance of fixed fire extinguishing and detecting systems  
36 shall be performed by a qualified fire fighting equipment repair service annually.

## 82 Fire Main System.

- 1 82.1 Fire pumps.
- 2 (a) A self priming, power driven fire pump must be installed on each vessel:  
3 (1) Of not more than [sixty-five (65) feet] in length which is a ferry  
4 vessel;  
5 (2) Of not more than [sixty-five (65) feet] in length that carries more than  
6 [forty nine (49) passengers]; or  
7 (3) Of more than [sixty-five (65) feet] in length.
- 8 (b) On a vessel of not more than [sixty-five (65) feet] in length carrying more  
9 than [forty-nine (49) passengers], and on a vessel of more than [sixty five  
10 (65) feet] in length, the minimum capacity of the fire pump must be [fifty  
11 (50) gallons per minute] at a pressure of not less than [60 psi] at the pump  
12 outlet. The pump outlet must be fitted with a pressure gauge.
- 13 (c) On a ferry vessel of not more than [sixty-five (65) feet] in length carrying  
14 not more than [forty-nine (49) passengers], the minimum capacity of the  
15 fire pump must be [10 gallons per minute]. The fire pump must be capable  
16 of projecting a hose stream from the highest hydrant, through the hose and  
17 nozzle, a distance of [twenty-five (25) feet].
- 18 (d) The power-driven fire pump system shall be self-priming and of such size  
19 as to discharge an effective stream from a hose connected to the highest  
20 outlet of the pump. The power fire pump system may be driven by a  
21 propulsion engine or other source of power. The pump may also be

- 22 connected to the bilge system so that it can serve as either a fire pump or a  
23 bilge pump.  
24 (e) A fire pump must be capable of both remote operation from the operating  
25 station and local operations at the pump.  
26 (f) The power-driven fire pump system shall be of a type that allows any part  
27 of the vessel to be reached with an effective stream of water from one  
28 length of fire hose.

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#### 82.2 Fire main and hydrants.

- 31 (a) A vessel that has a power driven fire pump must have a sufficient number  
32 of fire hydrants to reach any part of the vessel using a single length of fire  
33 hose.  
34 (b) Piping, valves, and fittings in a fire main system must of material  
35 acceptable to the marine inspector.  
36 (c) Each fire hydrant must have a valve installed to allow the fire hose to be  
37 removed while the fire main is under pressure.  
38 (d) At least one length of fire hose shall be attached to each power-drive fire  
39 pump or hydrant in the system at all times. Fire hose may be commercial  
40 fire hose or equivalent which is not more than [one and a half (1 1/2)  
41 inches] in diameter or garden hose which is not less than [five eighths  
42 (5/8) inch] nominal inside diameter. The fire hose shall be in one piece  
43 which is not less than [twenty-five (25)], nor more than [fifty (50)], feet in  
44 length. Garden hose, when used, shall be of a good commercial grade  
45 constructed of an inner tube, plies of braided cotton reinforcement, and an  
46 outer rubber cover or equivalent material and shall be fitted with a  
47 commercial garden hose nozzle of good grade bronze or equivalent metal.

### 83 Miscellaneous Firefighting Equipment

#### 1 83.1 Fire axe.

2 A vessel of more than [sixty-five (65) feet] in length must have at least [one] fire  
3 axe located in or adjacent to the primary operating station.  
4

#### 5 83.2 Fire bucket.

6 A vessel not required to have a power driven fire pump must have at least [one 2  
7 ½ gallon] bucket, with an attached lanyard satisfactory to the marine inspector,  
8 placed so as to be easily available during an emergency. The words “FIRE  
9 BUCKET” must be stenciled in a contrasting color on each bucket.

## Section 90 - Vessel Construction and Arrangement

### 90 Plans and Information Required

1 90.1 The owner of a new vessel requesting initial inspection for certification shall,  
2 prior to the start of construction submit for approval to [insert title of official who  
3 administers the state’s boating laws] at least [two] copies of the following plans:

- 4 (a) Outboard profile;
- 5 (b) Inboard profile; and
- 6 (c) Arrangement of decks.

7  
8 90.2 In addition, the owner shall, prior to receiving a Certificate of Inspection,  
9 submit for approval at least [two] copies of the following plans, manuals,  
10 analyses, and calculations that are applicable to the vessel:

- 11 (a) Midship section;
- 12 (b) Survival craft embarkation stations;
- 13 (c) Machinery installation, including but not limited to:
  - 14 (1) Propulsion and propulsion control, including shaft details;
  - 15 (2) Steering and steering control, including rudder details;
  - 16 (3) Ventilation diagrams; and
  - 17 (4) Engine exhaust diagram;
- 18 (d) Electrical installation including, but not limited to:
  - 19 (1) Elementary one-line diagram of the power system.
  - 20 (2) Cable lists;
  - 21 (3) Bills of materials;
  - 22 (4) Type and size of generators and prime movers;
  - 23 (5) Type and size of generator cables, bus-tie cables, feeders, and branch
  - 24 circuit cables;
  - 25 (6) Power, lighting, and interior communication panelboards with number
  - 26 of circuits and rating of energy consuming devices;
  - 27 (7) Type of capacity of storage batteries;
  - 28 (8) Rating of circuit breakers and switches, interrupting capacity of circuit
  - 29 breakers, and rating and setting of overcurrent devices; and
  - 30 (9) Electrical plant load analysis.
- 31 (e) Lifesaving equipment locations and installation;
- 32 (f) Fire protection equipment installation including, but not limited to:
  - 33 (1) Fire main system plans and calculations;
  - 34 (2) Fixed gas fire extinguishing system plans and calculations;
  - 35 (3) Fire detecting system and smoke detecting system plans;
  - 36 (4) Sprinkler system diagram and calculations; and
  - 37 (5) Portable fire extinguisher types, sizes and locations;
- 38 (g) Fuel tanks;
- 39 (h) Piping systems including: bilge, ballast, hydraulic, sanitary, compressed
- 40 air, combustible and flammable liquids, vents, soundings, and overflows;
- 41 (i) Hull penetrations and shell connections;
- 42 (j) Marine sanitation device model number, approval number, connecting
- 43 wiring and piping; and
- 44 (k) Lines and offsets, curves of form, cross curves of stability, and tank
- 45 capacities including size and location on vessel; and
- 46 (l) On sailing vessels:

- 47 (1) Masts, including integration into the ship's structure; and  
48 (2) Rigging plan showing sail areas and centers of effort as well as the  
49 arrangement, dimensions, and connections of the standing rigging.

50

51 90.3 For a vessel of not more than [sixty five (65) feet] in length, the owner  
52 may submit specifications, sketches, photographs, line drawings or written  
53 descriptions instead of any of the required drawings, provided the required  
54 information is adequately detailed.

55

56 90.4 For a vessel, the construction of which was begun prior to approval of the  
57 plans and information required by Sections 90.1 and 90.2, additional plans and  
58 information, manufacturers' certifications of construction, testing including  
59 reasonable destructive testing, and inspections, may be required to verify that the  
60 vessel complies with these requirements.

## 91 Structural Hull Design

1 91.1 Except as otherwise allowed by section, a vessel must comply with the  
2 structural design requirements of one of the standards listed below for the hull  
3 material of the vessel.

- 4 (a) Wooden hull vessels--Rules and Regulations for the Classification of  
5 Yachts and Small Craft, Lloyd's Register of Shipping (Lloyd's);  
6 (b) Steel hull vessels:  
7 (1) Rules and Regulations for the Classification of Yachts and Small  
8 Craft, Lloyd's; or  
9 (2) Rules for Building and Classing Steel Vessels Under 61 Meters (200  
10 Ft) in Length, American Bureau of Shipping (ABS);  
11 (c) Fiber reinforced plastic vessels:  
12 (1) Rules and Regulations for the Classification of Yachts and Small  
13 Craft, Lloyd's; or  
14 (2) Rules for Building and Classing Reinforced Plastic Vessels, ABS; or  
15 (3) ABS Guide for High Speed Craft;  
16 (d) Aluminum hull vessels:  
17 (1) Rules and Regulations for the Classification of Yachts and Small  
18 Craft, Lloyd's; or  
19 (i) For a vessel of more than 30.5 meters (100 feet) in length-- Rules  
20 for Building and Classing Aluminum Vessels, ABS; or  
21 (ii) For a vessel of not more than 30.5 meters (100 feet) in length--  
22 Rules for Building and Classing Steel Vessels Under 61 Meters  
23 (200 Feet) in Length, ABS, with the appropriate conversions from  
24 the ABS Rules for Building and Classing Aluminum Vessels; or  
25 (2) ABS Guide for High Speed Craft;  
26 (e) Steel hull vessels operating in protected waters--Rules for Building and  
27 Classing Steel Vessels for Service on Rivers and Intracoastal Waterways,  
28 ABS.  
29

30 91.2 Alternate Structural Acceptance Criteria

- 31 (a) When the scantlings for the hull, deckhouse, and frames of the vessel  
32 differ from those specified by the standards listed in Section 91.1, and the  
33 owner can demonstrate that the vessel, or another vessel approximating  
34 the same size, power, and displacement, has been built to such scantlings  
35 and has been in satisfactory service insofar as structural adequacy is  
36 concerned for a period of at least 5 years, such scantlings may be approved  
37 by the marine inspector.
- 38 (b) The scantlings for a vessel of not more than [sixty-five (65) feet] in length  
39 carrying not more than [twelve (12) passengers] that do not meet the  
40 standards in Section 91.1 may be approved by the marine inspector if the  
41 builder of the vessel establishes to the satisfaction of the [insert title of  
42 official who administers the state’s boating laws] that the design and  
43 construction of the vessel is adequate for the intended service.
- 44 (c) The design, materials, and construction of masts, posts, yards, booms,  
45 bowsprits, and standing rigging on a sailing vessel must be suitable for the  
46 intended service. The hull structure must be adequately reinforced to  
47 ensure sufficient strength and resistance to plate buckling. The marine  
48 inspector may require the owner to submit detailed calculations on the  
49 strength of the mast, post, yards, booms, bowsprits, and standing rigging  
50 to [insert title of official who administers the state’s boating laws] for  
51 evaluation.
- 52 (d) When the structure of vessel is of novel design, unusual form, or special  
53 materials, which cannot be reviewed or approved in accordance with  
54 Section 91.1, the structure may be approved by the [insert title of official  
55 who administers the state’s boating laws], when it can be shown by  
56 systematic analysis based on engineering principles that the structure  
57 provides adequate safety and strength. The owner shall submit detailed  
58 plans, material component specifications, and design criteria, including the  
59 expected operating environment, resulting loads on the vessel, and design  
60 limitations for such vessel, to the [insert title of official who administers  
61 the state’s boating laws].

**92 Fire Protection**

1 92.1 General arrangement and outfitting.

- 2 (a) Fire hazards to be minimized. The general construction of the vessel must  
3 be such as to minimize fire hazards insofar as it is reasonable and  
4 practicable.
- 5 (b) Combustibles insulated from heated surfaces. Internal combustion engine  
6 exhausts, boiler and galley uptakes, and similar sources of ignition must  
7 be kept clear of and suitably insulated from combustible material. Dry  
8 exhaust systems for internal combustion engines on wooden or fiber  
9 reinforced plastic vessels must be installed in accordance with American

- 10 Boat and Yacht Council (ABYC) Standard P-1 “Installation of Exhaust  
11 Systems for Propulsion and Auxiliary Engines.”
- 12 (c) Separation of machinery and fuel tank spaces from accommodation  
13 spaces. Machinery and fuel tank spaces must be separated from  
14 accommodation spaces by boundaries that prevent the passage of vapors.
- 15 (d) Paint and flammable liquid lockers. Paint and flammable liquid lockers  
16 must be constructed of steel or equivalent material, or wholly lined with  
17 steel or equivalent material.
- 18 (e) Vapor barriers. Vapor barriers must be provided where insulation of any  
19 type is used in spaces where flammable and combustible liquids or vapors  
20 are present, such as machinery spaces and paint lockers.
- 21 (f) Waste receptacles. Unless other means are provided to ensure that a  
22 potential waste receptacle fire would be limited to the receptacle, waste  
23 receptacles must be constructed of noncombustible materials with no  
24 openings in the sides or bottom.
- 25 (g) Mattresses. All mattresses must comply with either:
- 26 (1) The U.S. Department of Commerce “Standard for Mattress  
27 Flammability” (FF 4-72.16), 16 CFR Part 1632, Subpart A and not  
28 contain polyurethane foam; or
- 29 (2) International Maritime Organization Resolution A.688(17) “Fire Test  
30 Procedures For Ignitability of Bedding Components.” Mattresses that  
31 are tested to this standard may contain polyurethane foam.

32  
33

## 92.2 Cooking and Heating

- 34 (a) Cooking and heating equipment must be suitable for marine use.  
35 Equipment designed and installed in accordance with American Boat and  
36 Yacht Council (ABYC) A-3, “Galley Stoves,” and A-7, “Boat Heating  
37 Systems,” or with National Fire Protection Association (NFPA) 302,  
38 “Pleasure and Commercial Motor Craft,” complies with this requirement.  
39 The following provisions also apply:
- 40 (1) The use of gasoline for cooking, heating, or lighting is prohibited on  
41 all vessels.
- 42 (2) Fireplaces or other space heating equipment with open flames are  
43 prohibited from being used on all vessels.
- 44 (3) Galley stoves aboard a vessel shall be operated only by the vessel  
45 owner, the operator, or a crew member while carrying passengers. The  
46 vessel owner, the operator, or the crew member shall be present in the  
47 galley at all times while the galley stove is being operated.
- 48 (4) Heating appliances, when present on a vessel, shall be of a type  
49 commonly manufactured for use aboard vessels.
- 50 (5) Heating appliances, when present on a vessel, shall be installed in  
51 adequately ventilated areas and shall be securely fastened to the vessel.
- 52 (6) Woodwork and other combustible material immediately surrounding  
53 heating appliances installed on a vessel shall be effectively insulated  
54 with noncombustible material.

- 55 (7) All fuel tanks for heating appliances installed on a vessel shall have an  
56 in-line shutoff valve as close to the fuel tank as practical. The fuel line  
57 shall have as few other fittings as practicable between the shutoff  
58 valve and the heating appliance. All remotely installed fuel tanks shall  
59 be securely fastened to the vessel in an accessible location.
- 60 (8) Heating appliances, when present on a vessel, using liquefied  
61 petroleum gas, liquefied natural gas, or compressed natural gas shall  
62 be installed in accordance with good marine practice and standards,  
63 except for Class A and Class D vessels on which these type appliances  
64 are prohibited by federal regulation.
- 65 (9) A person shall not ignite or start a liquefied petroleum gas, compressed  
66 natural gas, or liquefied natural gas heating or cooking appliance  
67 onboard a vessel while passengers are onboard the vessel.
- 68 (b) Cooking systems using liquefied petroleum gas (LPG) and compressed  
69 natural gas (CNG) must meet the following requirements:
- 70 (1) The design, installation and testing of each LPG system must meet  
71 ABYC A-1, “Marine Liquefied Petroleum Gas (LPG) Systems,”  
72 Chapter 6 of NFPA 302.
- 73 (2) The design, installation and testing of each CNG system must meet  
74 ABYC A-22, “Marine Compressed Natural Gas (CNG) Systems,”  
75 Chapter 6 of NFPA 302.
- 76 (3) Cooking systems using Chapter 6 of NFPA 302 as the standard must  
77 meet the following additional requirements:
- 78 (i) The storage or use of CNG containers within the accommodation  
79 area, machinery spaces, bilges, or other enclosed spaces is  
80 prohibited;
- 81 (ii) LPG or CNG must be odorized in accordance with ABYC A-1  
82 appendix 4 or A-22 appendix 4, respectively;
- 83 (iii) The marking and mounting of LPG cylinders must be in  
84 accordance with ABYC A-1 appendix 7; and
- 85 (iv) LPG cylinders must be of the vapor withdrawal type as specified  
86 in ABYC A-1 Section 1.7.
- 87 (4) Continuous pilot lights or automatic glow plugs are prohibited for an  
88 LPG or CNG installation using ABYC A-1 or A-22 as the standard.
- 89 (5) CNG installation using ABYC A-22 as the standard must meet the  
90 following additional requirements:
- 91 (i) The storage or use of CNG containers within the accommodation  
92 area, machinery spaces, bilges, or other enclosed spaces is  
93 prohibited;
- 94 (ii) CNG cylinders, regulating equipment, and safety equipment  
95 must meet the installation, stowage, and testing requirements of  
96 paragraph 6- 5.12 of NFPA 302.
- 97 (iii) The use or stowage of stoves with attached CNG cylinders is  
98 prohibited as specified in paragraph 6-5.1 of NFPA 302.
- 99 (6) If the fuel supply line of an LPG or CNG system enters an enclosed  
100 space on the vessel, a remote shutoff valve must be installed that can



- 101 be operated from a position adjacent to the appliance. The valve must  
102 be located between the fuel tank and the point where the fuel supply  
103 line enters the enclosed portion of the vessel. A power-operated valve  
104 installed to meet this requirement must be of a type that will fail  
105 closed.
- 106 (7) The following variances from ABYC A-1 Section 1.12 are allowed for  
107 CNG:
- 108 (i) The storage locker or housing access opening need not be in the  
109 top.
- 110 (ii) The locker or housing need not be above the waterline.
- 111 (8) The following variances from NFPA 302 are allowed:
- 112 (i) The storage locker or housing for CNG tank installations need not  
113 be above the waterline as required by paragraph 6-5.12.1.1(a);
- 114 (ii) Ignition protection need not be provided as required by paragraph  
115 6-5.4. Note to Sec. 184.240: The ABYC and NFPA standards  
116 referenced in this section require the posting of placards containing  
117 safety precautions for gas cooking systems.

118  
119

### 92.3 Structural fire protection

- 120 (a) Cooking areas. Vertical or horizontal surfaces within 3 feet of cooking  
121 appliances must have an American Society for Testing and Materials  
122 (ASTM) E-84 “Surface Burning Characteristics of Building Materials”  
123 flame spread rating of not more than 75. Curtains, draperies, or free  
124 hanging fabrics must not be fitted within 3 feet of cooking or heating  
125 appliances.
- 126 (b) Composite materials. When the hull, bulkheads, decks, deckhouse, or  
127 superstructure of a vessel is partially or completely constructed of a  
128 composite material, including fiber reinforced plastic, the resin used must  
129 be fire retardant as meeting MIL-R-21607. Resin systems that have not  
130 been accepted as meeting MIL-R-21607 may be accepted as fire retardant  
131 if they have an ASTM E-84 flame spread rating of not more than 100  
132 when tested in laminate form. The laminate submitted for testing the resin  
133 system to ASTM E-84 must meet the following requirements:
- 134 (1) The test specimen laminate total thickness must be between 1/8 and  
135 1/4 inch.
- 136 (2) The test specimen laminate must be reinforced with glass fiber of any  
137 form and must have a minimum resin content of 40% by weight.
- 138 (3) Tests must be performed by an independent laboratory.
- 139 (4) Test results must include, at a minimum, the resin manufacturer's  
140 name and address, the manufacturer's designation (part number) for  
141 the resin system including any additives used, the test laboratory's  
142 name and address, the test specimen laminate schedule, and the flame  
143 spread index resulting from the ASTM E-84 test.
- 144 (5) Specific laminate schedules, regardless of resin type, that have an  
145 ASTM E-84 flame spread rating of not more than 100 may be

- 146 considered as equivalent to the requirement in this section to use a fire  
147 retardant resin.
- 148 (c) Use of general purpose resin. General purpose resins may be used instead  
149 of fire retardant resins if the following additional requirements are met:
- 150 (1) Cooking and heating appliances. Galleys must be surrounded by B-15  
151 Class fire boundaries. This may not apply to concession stands that are  
152 not considered high fire hazards areas (galleys) as long as they do not  
153 contain medium to high heat appliances such as deep fat fryers, flat  
154 plate griddles, and open ranges with heating surfaces exceeding 250  
155 [deg] F. Open flame systems for cooking and heating are not allowed.
- 156 (2) Sources of ignition. Electrical equipment and switchboards must be  
157 protected from fuel or water sources. Fuel lines and hoses must be  
158 located as far as practical from heat sources. Internal combustion  
159 engine exhausts, boiler and galley uptakes, and similar sources of  
160 ignition must be kept clear of and suitably insulated from any  
161 woodwork or other combustible matter. Internal combustion engine  
162 dry exhaust systems must be installed in accordance with ABYC  
163 Standard P-1.
- 164 (3) Fire detection and extinguishing systems. Fire detection and  
165 extinguishing systems must be installed. Additionally, all fiber  
166 reinforced plastic (FRP) vessels constructed with general purpose  
167 resins must be fitted with a smoke activated fire detection system of an  
168 approved type, installed in all accommodation spaces, all service  
169 spaces, and in isolated spaces such as voids and storage lockers that  
170 contain an ignition source such as electric equipment or piping for a  
171 dry exhaust system.
- 172 (4) Machinery space boundaries. Boundaries that separate machinery  
173 spaces from accommodation spaces, service spaces, and control spaces  
174 must be lined with noncombustible panels or insulation.
- 175 (5) Furnishings. Furniture and furnishings must be fire resistant meeting the  
176 standards of UL 1056, “Fire Test of Upholstered Furniture”.
- 177 (d) Limitations on the use of general purpose resin
- 178 (1) Overnight accommodations. Vessels with overnight passenger  
179 accommodations for more than [twelve (12) persons] must not be  
180 constructed with general-purpose resin.
- 181 (2) Gasoline fuel systems. Vessels with engines powered by gasoline or  
182 other fuels having a flash point of 110[deg] F or lower must not be  
183 constructed with general purpose resin, except for vessels powered by  
184 outboard engines with portable fuel tanks stored in an open area aft, if  
185 the arrangement does not produce an unreasonable hazard.
- 186 (3) Cargo. Vessels carrying or intended to carry hazardous combustible or  
187 flammable cargo must not be constructed with general-purpose resin.

## 93 Means of Escape

1 93.1 Except as otherwise provided in this section, each space accessible to  
2 passengers or used by the crew on a regular basis, must have at least two means of  
3 escape, one of which must not be a watertight door.  
4

5 93.2 The two required means of escape must be widely separated and, if  
6 possible, at opposite ends or sides of the space to minimize the possibility of one  
7 incident blocking both escapes.  
8

9 93.3 Subject to the restrictions of this section, means of escape may include  
10 normal exits and emergency exits, passageways, stairways, ladders, deck scuttles,  
11 and windows.  
12

13 93.4 The number and dimensions of the means of escape from each space must  
14 be sufficient for rapid evacuation in an emergency for the number of persons  
15 served. In determining the number of persons served, a space must be considered  
16 to contain at least the number of persons as follows:

- 17 (a) Passenger overnight accommodation spaces: Designed capacity;
- 18 (b) Accommodation spaces having fixed seating for passengers: Maximum  
19 seating capacity
- 20 (c) Public spaces, including spaces such as casinos, restaurants, club rooms,  
21 and cinemas, and public accommodation spaces: One person may be  
22 permitted for each [ten (10) square feet] of deck area. In computing such  
23 deck area, the following areas must be excluded:
  - 24 (1) Areas for which the number of persons permitted is determined using  
25 the fixed seating criterion;
  - 26 (2) Obstructions, including stairway and elevator enclosures, elevated  
27 stages, bars, and cashier stands, but not including slot machines,  
28 tables, or other room furnishings;
  - 29 (3) Toilets and washrooms;
  - 30 (4) Interior passageways less than [thirty-four (34) inches] wide and  
31 passageways on open deck less than [twenty-eight (28) inches] wide;
  - 32 (5) Spaces necessary for handling lifesaving equipment, anchor handling  
33 equipment, or line handling gear, or in way of sail booms or running  
34 rigging; and
  - 35 (6) Bow pulpits, swimming platforms, and areas that do not have a solid  
36 deck, such as netting on multi hull vessels;
  - 37 (7) Crew overnight accommodation spaces: Two-thirds designed capacity;  
38 and
- 39 (d) Work spaces: Occupancy under normal operating conditions.  
40

41 93.5 The dimensions of a means of escape must be such as to allow easy  
42 movement of persons when wearing life jackets. There must be no protrusions in  
43 means of escape that could cause injury, ensnare clothing, or damage life jackets.  
44

45 93.6 The minimum clear opening of a door or passageway used as a means of  
46 escape must not be less than [thirty-two (32) inches] in width, however, doors or

47 passageways used solely by crew members must have a clear opening not less  
48 than [twenty-eight (28) inches]. The sum of the width of all doors and  
49 passageways used as means of escape from a space must not be less than [0.333  
50 inches] multiplied by the number of passengers for which the space is designed.

51  
52 93.7 A dead end passageway, or the equivalent, of more than [twenty (20) feet]  
53 in length is prohibited.

54  
55 93.8 Each door, hatch, or scuttle, used as a means of escape, must be capable of  
56 being opened by one person, from either side, in both light and dark conditions.  
57 The method of opening a means of escape must be obvious, rapid, and of  
58 adequate strength. Handles and securing devices must be permanently installed  
59 and not capable of being easily removed. A door, hatch, or scuttle must open  
60 towards the expected direction of escape from the space served.

61  
62 93.9 A means of escape which is not readily apparent to a person from both  
63 inside and outside the space must be adequately marked to the satisfaction of the  
64 marine inspector.

65  
66 93.10 A ladder leading to a deck scuttle may not be used as a means of escape  
67 except:

- 68 (b) On a vessel of not more than [sixty-five (65) feet] in length, a vertical  
69 ladder and a deck scuttle may be used as not more than one of the means  
70 of escape from passenger accommodation space; or  
71 (c) As not more than [one] of the means of escape from any crew  
72 accommodation space or work space.

73  
74 93.11 Each ladder used as a means of escape must be mounted at least [seven (7)  
75 inches] from the nearest permanent object in back of the ladder. Rungs must be:

- 76 (a) At least [sixteen (16) inches] in width; and  
77 (b) Not more than [twelve (12) inches] apart, and uniformly spaced for the  
78 length of the ladder with at least [forty five (45) inches] clearance above  
79 each rung.

80  
81 93.12 When a deck scuttle serves as a means of escape, it must not be less than  
82 18 inches in diameter and must be fitted with a quick acting release and a  
83 holdback device to hold the scuttle in an open position.

84  
85 93.13 Footholds, handholds, ladders, and similar means provided to aid escape,  
86 must be suitable for use in emergency conditions, of rigid construction, and  
87 permanently fixed in position, unless they can be folded, yet brought into  
88 immediate service in an emergency.

89  
90 93.14 On a vessel of not more than [sixty-five (65) feet] in length, a window or  
91 windshield of sufficient size and proper accessibility may be used as one of the  
92 required means of escape from an enclosed space, provided it:

- 93 (a) Does not lead directly overboard;  
94 (b) Can be opened or is designed to be kicked or pushed out; and  
95 (c) Is suitably marked.  
96  
97 93.15 Only one means of escape is required from a space where:  
98 (a) The space has a deck area less than [three hundred and twenty two (322)  
99 square feet];  
100 (b) There is no stove, heater, or other source of fire in the space;  
101 (c) The means of escape is located as far as possible from a machinery space  
102 or fuel tank; and  
103 (d) If an accommodation space, the single means of escape does not include a  
104 deck scuttle or a ladder.

#### 94 General Passenger Accommodation Requirements

- 1 94.1 All passenger accommodations must be arranged and equipped to provide  
2 for the safety of the passengers in consideration of the route, modes of operation,  
3 and speed of the vessel.  
4  
5 94.2 The height of ceilings in a passenger accommodation space, including  
6 aisles and passageways, must be at least [seventy four (74) inches], but may be  
7 reduced at the sides of a space to allow the camber, wiring, ventilation ducts, and  
8 piping.  
9  
10 94.3 A passenger accommodation space must be maintained to minimize fire  
11 and safety hazards and to preserve sanitary conditions. Aisles must be kept clear  
12 of obstructions.  
13  
14 94.4 A passenger accommodation space must not contain:  
15 (a) Electrical generation equipment or transformers, high temperature parts,  
16 pipelines, rotating assemblies, or any other item that could injure a  
17 passenger, unless such an item is adequately shielded or isolated; and  
18 (b) A control for operating the vessel, unless the control is so protected and  
19 located that operation of the vessel by a crewmember will not be impeded  
20 by a passenger during normal or emergency operations.  
21  
22 94.5 The deck above a passenger accommodation space must be located above  
23 the deepest load waterline.  
24  
25 94.6 A variation from a requirement of this subpart may be authorized for an  
26 unusual arrangement or design provided there is no significant reduction of space,  
27 accessibility, safety, or sanitation.

#### 95 Ventilation of Enclosed and Partially Enclosed Spaces

- 1 95.1 An enclosed or partially enclosed space within a vessel must be  
2 adequately ventilated in a manner suitable for the purpose of the space.

- 3  
4 95.2 A power ventilation system must be capable of being shut down from the  
5 pilot house.  
6  
7 95.3 An enclosed passenger or crew accommodation space and any other space  
8 occupied by a crew member on a regular basis must be ventilated by a power  
9 ventilation system unless natural ventilation in all ordinary weather conditions is  
10 satisfactory to the marine inspector.

## 96 Class A Vessel Specific Construction Requirements

- 1 96.1 Deck Rails.
- 2 (a) A vessel, except for an open boat which operates exclusively on rivers,  
3 shall have deck rails or equivalent protection at the periphery of all  
4 weather decks, including the cockpit, which are accessible to the  
5 passengers and crew. The top rail course of the deck rails shall be not less  
6 than [twenty-six (26) inches] above the deck.  
7 (b) Deck rails shall consist of evenly spaced horizontal courses and the  
8 spacing between courses shall not be greater than [thirteen (13) inches].  
9 However, rail courses are not required where the space between the top  
10 rail course and the deck is fitted with a bulwark, chain link fencing, wire  
11 mesh, or equivalent.  
12 (c) A vessel with a flying bridge shall have suitable deck rails or equivalent  
13 protection at the periphery of the flying bridge deck. If passengers are  
14 allowed on the flying bridge, the rails shall be at least [twenty-six (26)  
15 inches] above the deck and meet all other requirements of this rule.  
16 (d) An open boat which operates exclusively on rivers shall have suitable deck  
17 rails or equivalent protection.  
18 (e) All deck rails or equivalent protection shall be in good and serviceable  
19 condition.  
20 (f) Passengers shall not be allowed in any deck area where the rails do not  
21 meet the requirements of this rule. Deck areas not meeting these  
22 requirements shall be clearly marked indicating passengers are prohibited  
23 with signs or other suitable means.  
24  
25 96.2 Marine Radio and Compass.
- 26 (a) The owner of a vessel which operates on the [insert body of water] shall  
27 have aboard the vessel a marine radio-telephone which is in good working  
28 condition and a current Federal Communication Commission's operator's  
29 license.  
30 (b) The owner of a vessel which operates on the [insert body of water] shall  
31 have aboard the vessel a suitable marine-type compass which is in good  
32 and serviceable condition.  
33

34 96.3 Toilet and Sanitary Facilities.

- 35 (a) A vessel, except for an open boat and a vessel where suitable privacy  
36 enclosures are not practical, shall be equipped with [one (1)] toilet which  
37 complies with existing watercraft pollution control acts, and which shall  
38 be maintained in a serviceable and sanitary condition by the vessel owner.  
39

40 96.4 Anchor and Anchor Line.

- 41 (a) A vessel shall be equipped with [one (1)] anchor of a suitable size and  
42 type.  
43 (b) A vessel operating on [insert body of water] shall be equipped with [one  
44 (1)] sea anchor.  
45 (c) A vessel operating on [insert body of water] shall be equipped with not  
46 less than [one hundred fifty (150) feet] of suitable anchor line which is  
47 immediately available onboard the vessel.  
48 (d) A vessel operating exclusively on rivers shall be equipped with not less  
49 than [thirty (30) feet] of suitable anchor line which is immediately  
50 available onboard the vessel.  
51 (e) Any line, when attached to the required anchor, shall be attached by eye  
52 splice, thimble, and shackle.

**97 Class B Vessel Specific Construction Requirements**

1 97.1 Deck Rails.

- 2 (a) A vessel, except for an open boat which operates exclusively on rivers,  
3 shall have deck rails or equivalent protection at the periphery of all  
4 weather decks, including the cockpit, which are accessible to the  
5 passengers and crew. The top rail course of the deck rails should be not  
6 less than [twenty-six (26) inches] above the deck.  
7 (b) Deck rails shall consist of evenly spaced courses and the spacing between  
8 courses shall not be greater than [thirteen (13) inches]. However, rail  
9 courses are not required where the space between the top rail course and  
10 the deck is fitted with a bulwark, chain link fencing, wire mesh, or  
11 equivalent.  
12 (c) A vessel with a flying bridge shall have suitable deck rails or equivalent  
13 protection at the periphery of the flying bridge deck. If passengers are  
14 allowed on the flying bridge, the rails shall be at least [twenty-six (26)  
15 inches] above the deck and meet all other requirements of this rule.  
16 (d) An open boat which operates exclusively on rivers shall have suitable deck  
17 rails or equivalent protection.  
18 (e) All deck rails or equivalent protection shall be in good and serviceable  
19 condition.  
20 (f) Passengers shall not be allowed in any deck area where the rails do not  
21 meet the requirements of this rule. Deck areas not meeting these

22 requirements shall be clearly marked indicating passengers are prohibited  
 23 with signs or other suitable means.

24  
 25

97.2 Anchor and Anchor Line.

- 26 (a) A vessel shall be equipped with [one (1)] anchor of a suitable size and  
 27 type.  
 28 (b) A vessel operating on inland lakes shall be equipped with not less than  
 29 [seventy-five (75) feet] of suitable anchor line which is immediately  
 30 available onboard the vessel.  
 31 (c) A vessel operating exclusively on rivers shall be equipped with not less  
 32 than [thirty (30) feet] of suitable anchor line which is immediately  
 33 available onboard the vessel.  
 34 (d) Any line attached to the required anchor shall be attached by eye splice,  
 35 thimble, and shackle.

**98 Class C Vessel Specific Construction Requirements**

1 98.1 Deck Rails.

- 2 (a) On a passenger deck of a vessel, the deck rails shall be not less than  
 3 [thirty-six (36) inches] high. The space between the top rail course and the  
 4 deck shall be fitted with bulwarks, chain link fencing, wire mesh, or  
 5 equivalent.  
 6

7 98.2 Vessels Carrying Vehicles.

- 8 (a) A vessel carrying vehicles shall have suitable chains, cable, or other  
 9 barriers installed at the ends of the vehicle runways. Suitable gates, rails,  
 10 or other devices shall also be installed as a continuation of the regularly  
 11 required rails.  
 12

13 98.3 Toilet and Sanitary Facilities.

- 14 (a) The vessel owner shall provide toilets which comply with existing  
 15 watercraft control laws, and washbasins in accordance with the following  
 16 table, except that a vessel operating on short runs of approximately [thirty  
 17 (30) minutes or less] need not be fitted with toilets or washbasins.  
 18  
 19

<b>Number of Passengers</b>	<b>Toilets</b>	<b>Washbasins</b>
[49] or less	1	1
Over [49]	1 for men; 1 for women	1 for men; 1 for women

20



21 (b) Toilet and washbasin facilities shall be maintained in a serviceable and  
22 sanitary condition.

23

24 98.4 Anchors and Anchor Line.

25 (a) A vessel shall be equipped with [one (1)] anchor of a suitable size and  
26 type.

27 (b) A vessel operating on inland lakes shall be equipped with not less than  
28 [seventy five (75) feet] of suitable anchor line which is immediately  
29 available onboard the vessel.

30 (c) A vessel operating exclusively on rivers shall be equipped with not less  
31 than [thirty (30) feet] of suitable anchor line which is immediately  
32 available onboard the vessel.

33 (d) Any line attached to the required anchor shall be attached by eye splice,  
34 thimble, and shackle.

### 99 Class D Vessel Specific Construction Requirements

1 99.1 Sailing Apparatus; Inspection.

2 (a) The vessel owner shall permit the marine inspector to examine all masts,  
3 spars, standing rigging, running rigging, blocks, fittings, sails, lines, and  
4 other sailing apparatus to determine if they are fit for safe constant  
5 operation.

6

7 99.2 Deck Rails.

8 (a) A vessel shall have deck rails or equivalent protection at the periphery of  
9 all weather decks, including the cockpit, which are accessible to the  
10 passengers and crew. The top course of the deck rails shall be located as  
11 follows:

12 (1) Not less than [twenty-four (24) inches] above the deck where  
13 accompanied by handgrabs.

14 (2) Not less than [twenty-six (26) inches] above the deck where not  
15 accompanied by handgrabs.

16 (b) Passengers shall not be allowed forward of the cabin unless the deck rails  
17 are [twenty-six (26) inches] high.

18 (c) Deck rails shall consist of evenly spaced courses and the spaces between  
19 courses shall not be greater than [twelve (12) inches] on [twenty-four  
20 (24)-inch] high deck rails or [thirteen (13) inches] on [twenty-six  
21 (26)-inch] high deck rails. However, rail courses are not required where  
22 the space between the top rail course and the deck is fitted with a bulwark,  
23 chain link fencing, wire mesh, or equivalent.

24 (d) All deck rails shall be in good and serviceable condition.

25 (e) Passengers shall not be allowed in any deck area where the rails do not  
26 meet the requirements of this rule. Deck areas not meeting these

27 requirements shall be clearly marked, indicating passengers are prohibited,  
28 with signs or other suitable means.

29

30

99.3 Marine Radio and Compass.

31

(a) The owner of a vessel which operates on the [insert body of water] shall  
32 have aboard the vessel a marine radio-telephone which is in good working  
33 condition and a current Federal Communication Commission  
34 radio-telephone operator's license.

35

(b) The owner of a vessel which operates on the [insert body of water] shall  
36 have aboard the vessel a suitable marine-type compass which is in good  
37 and serviceable condition.

38

39

99.4 Toilet Facilities.

40

(a) A vessel, except for an open boat and a vessel where suitable privacy  
41 enclosures are not practical, shall be equipped with [one (1)] toilet which  
42 complies with existing watercraft pollution control acts, and shall be  
43 maintained in a serviceable and sanitary condition by the vessel owner.

44

45

99.5 Anchors and Anchor Line.

46

(a) A vessel shall be equipped with [one (1)] anchor of a suitable size and  
47 type.

48

(b) A vessel operating on the [insert body of water] shall be equipped with  
49 [one (1)] sea anchor.

50

(c) A vessel operating on the [insert body of water] shall be equipped with not  
51 less than [one hundred fifty (150) feet] of suitable anchor line which is  
52 immediately available onboard the vessel.

53

(d) A vessel operating on inland lakes shall be equipped with not less than  
54 [seventy-five (75) feet] of suitable anchor line which is readily available  
55 onboard the vessel.

56

(e) Any line, when attached to the required anchor, shall be attached by  
57 eyesplice, thimble, and shackle.

**100 Class E Vessel Specific Construction Requirements**

1

100.1 Equivalent Requirements.

2

(a) Class E vessels shall meet the same requirements as a Class A, Class B,  
3 Class C or Class D vessel as suitable for the number of passengers carried  
4 and the waters on which the Class E vessel will be operated.

**Section 100 - Machinery Systems**

**100 Main Engines**

1 100.1 Each vessel designed for inboard or inboard/outboard (stern drive) main  
2 engines shall be fitted with the appropriate number of engines.

3  
4 100.2 All main engines shall be of the appropriate type and design for the  
5 propulsion requirements of the hull in which they are installed, shall be capable of  
6 operating at a constant marine load without exceeding their design limitations,  
7 and shall be in good and serviceable condition.

8  
9 100.3 All propulsions engines must have at least two means for stopping the  
10 engine(s) under any operating condition. A fuel oil shutoff will satisfy one of  
11 these requirements.

12  
13 100.4 The head, block, and exhaust manifold of any main engine shall be water-  
14 jacketed and cooled by water from a pump which operates when the engine  
15 operates, except for drystack exhaust systems.

16  
17 100.5 When a main engine is fitted with an updraft or sidedraft carburetor, the  
18 carburetors shall have integral or properly connected drip collectors of adequate  
19 capacity which will return all drip and overflow to the engine intake manifold.

20  
21 100.6 The exhaust pipe system of the main engines shall comply with all of the  
22 following provisions:

- 23 (a) Be gastight to the hull interior.  
24 (b) Be designed and installed to prevent cooling water or seawater from  
25 returning to the engines.  
26 (c) Be so accessible that it can be inspected and repaired throughout its  
27 length.  
28 (d) Be supported so as to prevent undue stress which may cause fractures.  
29 Hangers, brackets, and other supporting components shall be made of  
30 fireproof materials and shall be installed so as to prevent the transmission  
31 of heat to adjacent combustible materials.  
32 (e) Where personnel or combustibles might come in contact with hot surfaces,  
33 effective protection shall be provided by water jacketing, lagging,  
34 shielding, or suitable guards.

35  
36 100.7 Outboard engines on vessels designed for utilizing outboard engines as  
37 main engines shall be in good and serviceable condition.

38  
39 100.8 Vessels utilizing unique or unusual machinery as main engines shall be  
40 given separate consideration and shall be subject to requirements as determined  
41 by the marine inspector after consultation with the [insert title of official who  
42 administers state boating laws]. The requirements shall be in keeping with good  
43 marine practice and standards. These unique or unusual types of machinery shall  
44 include those utilizing steam, electricity, gas turbines, air screws, and hydraulic  
45 jets.

### 101 Auxiliary Machinery

1           101.1 When auxiliary engines are installed on a vessel, they shall be installed in  
2           accordance with good marine practice and standards and shall be in good and  
3           serviceable condition.

### 102 Alternative Standards

1           102.1 A vessel, other than a high speed craft, of not more than 65 feet in length  
2           carrying not more than [twelve (12) passengers] propelled by gasoline or diesel  
3           internal combustion engines may comply with the following American Boat and  
4           Yacht Council (ABYC) Projects or 33 CFR subchapter S (Boating Safety), where  
5           indicated in this section, in lieu of complying with those requirements:  
6           (a) H-2--"Ventilation of Boats Using Gasoline", or 33 CFR 183, subpart K,  
7           "Ventilation";  
8           (b) H-22--"DC Electric Bilge Pumps Operating Under 50 Volts";  
9           (c) H-24--"Gasoline Fuel Systems", or 33 CFR 183, subpart J-- "Fuel  
10           System";  
11           (d) H-25--"Portable Gasoline Fuel Systems for Flammable Liquids";  
12           (e) H-32--"Ventilation of Boats Using Diesel Fuel";  
13           (f) H-33--"Diesel Fuel Systems";  
14           (g) P-1--"Installation of Exhaust Systems for Propulsion and Auxiliary  
15           Engines"; and  
16           (h) P-4--"Marine Inboard Engines".

### 103 Specific Machinery Requirements

1           103.1 General requirements.

2           (a) Starting motors, generators, and any spark-producing device must be  
3           mounted as high above the bilges as practicable. Electrical equipment in  
4           spaces, compartments, or enclosures that contain machinery powered by,  
5           or fuel tanks for, gasoline or other fuels having a flashpoint of 110[deg] F  
6           or lower must be explosion-proof, intrinsically safe, or ignition-protected  
7           for use in a gasoline atmosphere.

8           (b) Gauges to indicate engine revolutions per minute (RPM), jacket water  
9           discharge temperature, and lubricating oil pressure must be provided for  
10           all propulsion engines installed in the vessel. The gauges must be readily  
11           visible at the operating station.

12           (c) An enclosed space containing machinery powered by gasoline or other  
13           fuels having a flash point of 110[deg] F or lower must be equipped with a  
14           flammable vapor detection device in compliance with UL Standard 1110,  
15           "Marine Combustible Gas Indicators."

16           (d) In systems and applications where flexible hoses are permitted to be  
17           clamped:  
18           (1) Double hose clamping is required where practicable;  
19           (2) The clamps must be of a corrosion-resistant metallic material;

- 20 (3) The clamps must not depend on spring tension for their holding power;  
21 and  
22 (4) Two clamps must be used on each end of the hose, or one hose clamp  
23 can be used if the pipe ends are expanded or beaded to provide a  
24 positive stop against hose slippage.  
25

26 103.2 Gasoline Engines; Ventilation.

- 27 (a) Any enclosed compartment or space, including the lower portion and  
28 bilge, in which a gasoline engine or fuel tank is located shall be provided  
29 with a ventilation system capable of preventing, and effectively removing,  
30 an accumulation of flammable or explosive vapors. The ventilation system  
31 shall be constructed and installed as follows:  
32 (1) Where a gasoline engine and fuel tank are in the same enclosed or  
33 interconnected compartment, not less than [two (2)] supply ducts  
34 should be located at one end or side of the compartment and should  
35 extend halfway into the compartment so as to be lower than the level  
36 of the carburetor air intake. Not less than [two (2)] exhaust ducts, one  
37 of which should be power-assisted, should be located at the opposite  
38 end or side of the compartment and extend to the lowest portion of the  
39 compartment.  
40 (2) When a gasoline engine and fuel tank are not in the same enclosed or  
41 interconnected compartment, each compartment should be ventilated  
42 in the manner described in subdivision (a) of this sub-rule. However, a  
43 separate fuel tank compartment may be foamed in with United States  
44 Coast Guard-approved type foam instead of ventilating the  
45 compartment.  
46 (3) The exterior termination of a ventilation duct should be fitted with a  
47 cowl, scoop, or louver and should be elevated, in a suitable manner, to  
48 prevent the return of displaced vapors to any enclosed space and to  
49 avoid the pickup of vapors from fuel-filling operations. Cowls, scoops,  
50 or louvers should be trimmed for maximum effectiveness.  
51 (b) A duct should be constructed of noncombustible, not readily collapsible  
52 materials. It should be reasonably gastight from end to end. It should lead  
53 as directly as possible and be properly fastened and supported. A duct  
54 should be installed so that low spots in the ducting will not collect water  
55 and the ordinary collection of water in the bilge will not block the duct.  
56 (c) The internal cross-sectional area of each intake and exhaust ventilation  
57 duct in a compartment should be the same. The minimum total aggregate  
58 internal cross-sectional area of the intake ventilation ducts should be not  
59 less than [one and a half (1 1/2) square inches per foot] of beam.  
60 Notwithstanding, each round-type duct should have an inside diameter of  
61 not less than [three (3) inches], and each rectangular-type duct should have  
62 inside dimensions equivalent to not less than [two (2) inches] by [three  
63 and a half (3 1/2) inches].  
64 (d) All cowls, scoops, or louvers should have an open mouth area of not less  
65 than twice the required duct area. When screened, the mouth area should

- 66 be increased to compensate for the area of the screen wire. A damper  
67 should not be fitted in a duct.
- 68 (e) At least one exhaust duct of each compartment required to be ventilated  
69 should be fitted with a power-operated exhaust blower with a pickup  
70 capacity of not less than [one hundred (100) cubic feet per minute] and  
71 should be of a type approved for marine use. The exhaust blower should  
72 be installed as high above the bilges as possible and should be in good and  
73 serviceable condition.
- 74 (f) At each helm position, where ignition of the main engine can be  
75 accomplished, there should be an exhaust blower switch which is  
76 independent from the ignition system or the blower switch should have an  
77 automatic delay interlock with the ignition system. The blower switch  
78 should be in good and serviceable condition.
- 79 (g) At each helm position, where ignition of the main engines can be  
80 accomplished, a label should be posted which is in plain view of the  
81 operator, which is as close to the ignition switch as practicable, and which  
82 contains, at a minimum, the following statement: "Warning - Before  
83 starting engine(s) operate blower(s)."  
84

85 103.3 Diesel Engines; Ventilation.

- 86 (a) Any enclosed or interconnected compartments or spaces containing only  
87 diesel engines or diesel fuel tanks, or both, should be provided with at  
88 least [one (1)] air supply duct at one end or side of the compartment and at  
89 least [one (1)] exhaust duct at the opposite end or side of the compartment.  
90 The air supply duct shall be of a suitable size to provide sufficient air for  
91 proper operation of the engines and ventilation of dangerous vapors from  
92 the compartment. The ducts should be installed, constructed, and fitted as  
93 described in Section 104.3. However, the exhaust duct should not be  
94 required to be power-assisted and any enclosed compartment containing  
95 only a diesel fuel tank should not be required to be ventilated, but shall be  
96 provided with at least a gooseneck vent of not less than [one and a half (1  
97 1/2) inches] inside diameter.  
98

99 103.4 Fixed Fuel Tank Systems

- 100 (a) A fixed fuel tank on a vessel shall be installed as follows:  
101 (1) To permit examination with minimum disturbance to the hull structure.  
102 (2) With adequate support and bracing to prevent movement. The supports  
103 and braces shall be insulated from contact with the tank surfaces with a  
104 non-abrasive and non-absorbent material.  
105 (3) With openings for fill and vent pipes and for fuel level gauges, where  
106 used, on the topmost surfaces of the tank. The tank shall not have  
107 openings in the bottom, sides, or ends, except that an opening fitted  
108 with a threaded plug or cap may be used for cleaning the tank.  
109 (4) On fuel tanks for diesel fuel, the opening for the fuel supply piping is  
110 not restricted to the top of the tank.

- 111 (b) Fixed fuel tank piping shall be installed as follows:  
112 (1) Fuel supply lines to the engines shall be tubing of copper,  
113 nickel-copper, steel, or United States Coast Guard-approved Type A  
114 flexible fuel line. Fuel supply lines shall run as direct as practicable,  
115 shall be accessible, and shall be supported in a suitable manner. They  
116 shall have a readily accessible, manually operated, in-line shutoff  
117 valve installed as close to the fuel tank as practicable. They shall be  
118 protected in a suitable manner from mechanical injury at all supports  
119 and where they pass through bulkheads and structural members.  
120 (2) Metal fuel supply lines shall be fitted with flexible vibration hoses as  
121 close to the engine as practicable.  
122 (3) A filling pipe shall be fitted to the highest point of the fuel tank and  
123 shall have an inside diameter of not less than [one and one quarter (1  
124 1/4)] inches.  
125 (4) A fuel tank shall be fitted with a marine-type fuel gauge or a sounding  
126 pipe if sounding cannot be accomplished through the filling pipe.  
127 (5) A filling or sounding pipe shall be arranged so that overflow of liquid  
128 or vapor cannot escape to the inside of the vessel.  
129 (6) A fuel tank shall be fitted with a vent pipe connected at the highest  
130 point of the tank, shall have an inside diameter of not less than [seven  
131 sixteenths (7/16)] of an inch, and shall terminate on the hull exterior as  
132 far as practicable from any hull openings and below deck spaces. The  
133 vent pipe shall be installed to prevent accidental contamination of the  
134 fuel by water and shall be fitted with a removable flame screen at its  
135 point of termination.  
136 (7) Devices in fuel lines for drawing fuel below decks for any purpose are  
137 prohibited.  
138 (8) All accessories installed in the fuel line shall be supported in a suitable  
139 manner.  
140 (c) The vessel owner or operator shall maintain the entire fuel system and  
141 accessories in good and serviceable condition.  
142 (d) The owner or operator of a vessel with a fixed fuel system shall not carry  
143 fuel onboard the vessel outside of the fixed fuel system, unless the fuel is  
144 carried in conjunction with an auxiliary outboard engine. When fuel is  
145 carried, it shall be in portable fuel tanks as provided by manufacturers of  
146 outboard engines and shall be safely secured outside of the engine or  
147 living compartment.  
148 (f) During fueling operations, smoking aboard the vessel by any person is  
149 prohibited.  
150 (g) The vessel operator shall not allow passengers onboard the vessel while  
151 taking on fuel.

152  
153

#### 103.5 Fixed Fuel System Grounding

- 154 (a) A fixed fuel system shall be grounded by one or more of the following  
155 methods:  
156 (1) By electrical connection to a common ground.

- 157 (2) By welding or bolting to a metal bulkhead of a metal hull vessel.  
158 (3) By electrical connection to the rudder, struts, or metal grounding plate.  
159 (b) Where flexible vibration hose is installed, metal grounding straps or  
160 wires shall be used to maintain ground continuity.  
161

162 103.6 Portable Fuel Systems

- 163 (a) The operator of a vessel with a portable fuel system shall carry fuel  
164 onboard in approved portable fuel tanks.  
165 (a) Portable fuel tanks shall be secured in a suitable manner to prevent  
166 shifting while underway. Sufficient lengths of approved flexible fuel lines  
167 shall be provided so that the farthest fuel tank from the engine can be  
168 reached without removing the tank from its secured location.  
169 (b) A portable fuel tank meeting the design, construction, and stowage  
170 requirements of ABYC H25, “Portable Gasoline Fuel Systems for  
171 Flammable Liquids”, will meet the intent of this section.  
172

173 103.7 Main Engine Gauges

- 174 (a) On vessels designed for inboard or inboard/outboard (sterndrive) main  
175 engines, both of the following gauges shall be present:  
176 (1) A gauge to indicate main engine cooling water temperature for each  
177 main engine. The gauge shall be readable, by the marine inspector, from  
178 each helm position.  
179 (2) A gauge to indicate main engine lubrication oil pressure for each main  
180 engine. The gauge shall be readable, by the marine inspector, from each  
181 helm position.  
182 (b) All gauges installed on a vessel shall be in good and serviceable condition.

**104 Bilge and Ballast Systems**

1 104.1 General.

- 2 (a) A vessel must be provided with a satisfactory arrangement for draining  
3 any watertight compartment, other than small buoyancy compartments,  
4 under all practicable conditions. Sluice valves are not permitted in  
5 watertight bulkheads.  
6 (b) A vessel of not more than [sixty-five (65) feet] in length carrying not more  
7 than [12 passengers] may meet the requirements of ABYC Project H-22,  
8 “DC Electric Bilge Pumps Operating Under 50 Volts,” in lieu of the  
9 requirements of this subpart, provided that each watertight compartment,  
10 other than small buoyancy compartments and the compartment forward of  
11 the collision bulkhead, is provided with a means for dewatering.  
12 (c) Special consideration may be given to vessels, such as high-speed craft,  
13 which have a high degree of subdivision and utilize numerous small  
14 buoyancy compartments. Where the probability of flooding of the space is  
15 limited to external hull damage, compartment drainage may be omitted



16 provided it can be shown by stability calculations that the safety of the  
 17 vessel will not be impaired.

18  
 19

104.2 Bilge piping system.

- 20 (a) A vessel of at least [twenty-six (26) feet] in length must be provided with  
 21 individual bilge lines and bilge suctions for each watertight compartment,  
 22 except that the space forward of the collision bulkhead need not be fitted  
 23 with a bilge suction line when the arrangement of the vessel is such that  
 24 ordinary leakage may be removed from this compartment by the use of a  
 25 hand portable bilge pump or other equipment, and such equipment is  
 26 provided.
- 27 (b) A bilge pipe in a vessel of not more than [sixty-five (65) feet] in length  
 28 must be not less than [one (1) inch] nominal pipe size. A bilge pipe in a  
 29 vessel of more than [sixty-five (65) feet] in length must be not less than  
 30 [one and one half (1.5) inches] nominal pipe size. A bilge suction must be  
 31 fitted with a suitable strainer having an open area not less than three times  
 32 the area of the bilge pipe.
- 33 (c) Except when individual pumps are provided for separate spaces,  
 34 individual bilge suction lines must be led to a central control point or  
 35 manifold and provided with a stop valve at the control point or manifold  
 36 and a check valve at some accessible point in the bilge line. A stop- check  
 37 valve located at a control point or manifold will meet the requirements for  
 38 both a stop valve and a check valve.
- 39 (d) A bilge pipe piercing the collision bulkhead must be fitted with a screw-  
 40 down valve located on the forward side of the collision bulkhead and  
 41 operable from the weather deck, or, if it is readily accessible under service  
 42 conditions, a screw-down valve without a reach rod may be fitted to the  
 43 bilge line on the after side of the collision bulkhead.

44  
 45

104.3 Bilge pumps.

- 46 (a) A vessel must be provided with bilge pumps in accordance with the table  
 47 below. A second power pump is an acceptable alternative to a hand pump  
 48 if it is supplied by a source of power independent of the first power bilge  
 49 pump. Individual power pumps used for separate spaces are to be  
 50 controlled from a central control point and must have a light or other  
 51 visual means at the control point to indicate operation.

52

<b>Number of passengers</b>	<b>Length of vessel</b>	<b>Bilge pumps required</b>	<b>Min. capacity required</b>
Any number	More than [65] ft	2 fixed power pumps	[50] GPM
More than [49] passengers and all ferry vessels.	Not more than [65] feet	1 fixed power pump and 1 portable hand pump	[25] GPM [10] GPM

**Charter Boat Model Rules – approved September 8, 2008**

Not more than [49] passengers (Other than ferry vessels)	[26] feet up to [65] feet	1 fixed power pump and 1 portable hand pump or 1 fixed hand pump and 1 portable hand pump.	[10] GPM
	Less than [26] ft	1 portable hand pump.	[5] GPM

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- (b) A portable hand bilge pump must be:
  - (1) Capable of pumping water, but not necessarily simultaneously, from all watertight compartments; and
  - (2) Provided with suitable suction hose capable of reaching the bilge of each watertight compartment and discharging overboard.
- (c) Each fixed power bilge pump must be self-priming. It may be driven off the main engine or other source of power. It must be permanently connected to the bilge manifold and may also be connected to the fire main. If of sufficient capacity, a power bilge pump may also serve as a fire pump.
- (d) Where two fixed power bilge pumps are installed, they must be driven by different sources of power. If one pump is driven off the main engine in a single propulsion engine installation, the other must be independently driven. In a twin propulsion engine installation, each pump may be driven off a different propulsion engine.
- (e) A submersible electric bilge pump may be used as a power bilge pump required by the table above only on a vessel of not more than [sixty five (65) feet] in length carrying not more than [forty nine (49) passengers], other than a ferry, provided that:
  - (1) The pump is listed by Underwriters' Laboratories Inc. or another independent laboratory;
  - (2) The pump is used to dewater not more than one watertight compartment;
  - (3) The pump is permanently mounted;
  - (4) The pump is equipped with a strainer that can be readily inspected and cleaned without removal;
  - (5) The pump discharge line is suitably supported;
  - (6) The opening in the hull for the pump discharge is placed as high above the waterline as possible;
  - (7) A positive shutoff valve is installed at the hull penetration; and
  - (8) The capacity of the electrical system, including wiring, and size and number of batteries, is designed to allow all bilge pumps to be operated simultaneously.
- (f) A flexible tube or hose may be used instead of fixed pipe for the discharge line of a submersible electric bilge pump provided the hose or tube does not penetrate any required watertight bulkheads and is:

- 90 (1) Of good quality and of substantial construction, suitable for the  
91 intended use; and  
92 (2) Highly resistant to salt water, petroleum oil, heat, and vibration.  
93 (g) If a fixed hand pump is used to comply with the table above, it must be  
94 permanently connected to the bilge system.  
95 (h) On a vessel of not more than [sixty-five (65) feet] in length, a power  
96 driven fire pump required by this section may serve as a fixed power bilge  
97 pump required by this subpart, provided it has the minimum flow rate  
98 required by the table above.  
99 (i) On a vessel of more than [sixty-five (65) feet] in length, a power driven fire  
100 pump may serve as one of the two fixed power bilge pumps required by  
101 this section, provided:  
102 (1) The bilge and fire pump systems are interconnected;  
103 (2) The dedicated bilge pump is capable of pumping the bilges at the same  
104 time the fire/bilge pump charges the firemain; and  
105 (3) Stop valves and check valves are installed in the piping to isolate the  
106 systems during simultaneous operation and prevent possible flooding  
107 through the bilge system.  
108 (j) A catamaran vessel must be equipped with bilge pumps for each hull, as if  
109 each hull is a separate vessel, in accordance with the table above, except  
110 where:  
111 (1) One dedicated pump is located in each hull;  
112 (2) Each dedicated pump is driven by an independent source of power; and  
113 (3) The bilge system is permanently cross-connected between hulls.  
114 (k) On a vessel using sail as primary power, one of the required bilge pumps  
115 may be a manually-operated pump if its normal capacity is equal to or  
116 exceeds the required capacity of the electrically-powered bilge pump.  
117

118 104.4 Bilge high level alarms

- 119 (a) On a vessel of at least [twenty-six (26) feet] in length, a visual and audible  
120 alarm must be provided at the operating station to indicate a high water  
121 level in each of the following normally unmanned spaces:  
122 (1) A space with a through-hull fitting below the deepest load waterline,  
123 such as a lazarette;  
124 (2) A machinery space bilge, bilge well, shaft alley bilge, or other spaces  
125 subject to flooding from sea water piping within the space; and  
126 (3) A space with a non-watertight closure, such as a space with a non-  
127 watertight hatch on the main deck.  
128 (b) Vessels constructed of wood must, in addition to paragraph (a), provide  
129 bilge level alarms in all watertight compartments except small buoyancy  
130 chambers.  
131 (c) A visual indicator must be provided at the operating station to indicate  
132 when any automatic bilge pump is operating.

**105 Steering Systems**

1 105.1 Main steering gear for a self-propelled vessel.

- 2 (a) A vessel must be provided with a main steering gear that is:  
3 (1) Of adequate strength and capable of steering the vessel at all service  
4 speeds;  
5 (2) Designed to operate at maximum astern speed without being damaged  
6 or jammed; and  
7 (3) Capable of moving the rudder from [thirty three (35) degrees] on one  
8 side to [thirty (30) degrees] on the other side in not more than [twenty  
9 eight (28) seconds] with the vessel moving ahead at maximum service  
10 speed.  
11 (b) Control of the main steering gear, including control of any necessary  
12 associated devices (motor, pump, valve, etc.), must be provided from the  
13 operating station.  
14 (c) The operating station must be arranged to permit the person steering to  
15 have the best possible all around vision.  
16 (d) Strong and effective rudder stops must be provided to prevent jamming  
17 and damage to the rudder and its fittings. These stops may be structural or  
18 internal to the main steering gear.  
19 (e) In addition to meeting the requirements above, a vessel with a power  
20 driven main steering gear must be provided with the following:  
21 (1) A disconnect switch located in the steering compartment, and  
22 instantaneous short circuit protection for electrical power and control  
23 circuits. Overload protection is prohibited;  
24 (2) An independent rudder angle indicator at the operating station;  
25 (3) An arrangement that automatically resumes operation, without reset,  
26 when power is restored after a power failure;  
27 (4) A manual means to center and steady the rudder(s) in an emergency;  
28 and  
29 (5) A limit switch to stop the steering gear before its reaches the rudder  
30 stops required by Section 105.1(d).  
31 (6) A vessel more than [sixty-five (65) feet] in length with a power driven  
32 main steering gear must be provided with a visual means, located at  
33 the operating station, to indicate operation of the power units.

**106 Piping Systems**

1 106.1 Piping for vital systems.

- 2 (a) Vital systems are those systems that are vital to a vessel's survivability and  
3 safety. For the purpose of this part the following are vital systems:  
4 (1) Fuel system;  
5 (2) Fire main;  
6 (3) CO2 and Halon systems;  
7 (4) Bilge system;  
8 (5) Steering system;  
9 (6) Propulsion system and its necessary auxiliaries and controls;

- 10 (7) Ship's service and emergency electrical generation system and its  
11 necessary auxiliaries; and  
12 (8) A marine engineering system identified by the marine inspector as  
13 being crucial to the survival of the vessel or to the protection of the  
14 personnel on board.  
15 (b) For the purpose of this part, a system not identified in paragraph (a) of this  
16 section is a non-vital system.  
17 (c) Piping used in a vital system must be composed of ferrous materials and if  
18 subject to a pressure of more than [one hundred and fifty (150) psig], be  
19 designed, fabricated, and inspected in accordance with the principles of  
20 American National Standards Institute (ANSI) B 31.1, "Code for Pressure  
21 Piping, Power Piping." The use of nonmetallic or nonferrous metallic  
22 piping in vital systems shall be specifically approved by the marine  
23 inspector.

## Section 110 - Electrical Systems

- 1 110.1 General provisions
- 2 110.1 Electrical equipment on a vessel must be installed and maintained to:
- 3 (a) Provide services necessary for safety under normal and emergency  
4 conditions;
- 5 (b) Protect passengers, crew, other persons, and the vessel from electrical  
6 hazards, including fire, caused by or originating in electrical equipment,  
7 and electrical shock;
- 8 (c) Minimize accidental personnel contact with energized parts; and  
9 (d) Prevent electrical ignition of flammable vapors.
- 10
- 11 110.2 General safety provisions:
- 12 (a) Electrical equipment and installations must be suitable for the roll, pitch,  
13 and vibration of the vessel underway.
- 14 (b) All equipment, including switches, fuses, lamp holders, etc., must be  
15 suitable for the voltage and current utilized.
- 16 (c) Receptacle outlets of the type providing a grounded pole or a specific  
17 direct current polarity must be of a configuration that will not permit  
18 improper connection.
- 19 (d) All electrical equipment and circuits must be clearly marked and  
20 identified.
- 21 (e) Any cabinet, panel, box, or other enclosure containing more than one  
22 source of power must be fitted with a sign warning persons of this  
23 condition and identifying the circuits to be disconnected.  
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110.3 Alternative standards:

- (a) A vessel, other than a high speed craft, of not more than [sixty-five (65) feet] in length carrying not more than [twelve (12) passengers], may comply with the following requirements instead of complying with the requirements of this part in their entirety:
- (b) following American Boat and Yacht Council (ABYC) Projects where applicable:
  - (1) E-8, “Alternating Current (AC) Electrical Systems on Boats;”
  - (2) E-9, “Direct Current (DC) Electrical Systems on Boats;” and
  - (3) A-16, “Electrical Navigation Lights.”
- (c) A vessel with an electrical installation operating at less than 50 volts may meet the requirements in 33 CFR 183.430.

**111 Power sources**

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111.1 Each vessel that relies on electricity to power the following loads must be arranged so that the loads can be energized from two sources of electricity:

- (a) The vital systems listed in Section 106.5(a).
- (b) Interior lighting except for decorative lights;
- (c) Communication systems including a public address system; and
- (d) Navigation equipment and lights.
- (e) A vessel with batteries of adequate capacity to supply the loads specified in this section for three hours, and a generator or alternator driven by a propulsion engine, complies with the requirement in this section.

111.2 Where a ship service generator driven by a propulsion engine is used as a source of electrical power, a vessel speed change, throttle movement or change in direction of the propeller shaft rotation must not interrupt power to any of the loads specified in this section.

**112 Generators and motors**

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112.1 Each generator and motor must be:

- (a) In a location that is accessible, adequately ventilated, and as dry as practicable; and
- (b) Mounted above the bilges to avoid damage by splash and to avoid contact with low-lying vapors.

112.2 Each generator and motor must be designed for an ambient temperature of 122[deg] F except that:

- (a) If the ambient temperature in the space where a generator or motor will be located will not exceed 104[deg] F under normal operating conditions, the generator or motor may be designed for an ambient temperature of 104[deg] F; and
- (b) A generator or motor designed for 104[deg] F may be used in 122[deg] F ambient locations provided the generator or motor is derated to 80% of the

15 full load rating, and the rating or setting of the overcurrent devices is  
16 reduced accordingly.

17  
18 112.3 A voltmeter and an ammeter, which can be used for measuring voltage  
19 and current of a generator that is in operation, must be provided for a generator  
20 rated at 50 volts or more. For each alternating current generator, a means for  
21 measuring frequency must also be provided.

22  
23 112.4 Each generator must have a nameplate attached to it containing the  
24 information required by Article 445 of the National Electric Code (NEC)  
25 (National Fire Protection Association (NFPA) 70), and for a generator derated in  
26 accordance with paragraph (b)(2) of this section, the derated capacity.

27  
28 112.5 Each motor must have a nameplate attached to it containing the  
29 information required by Article 430 of the NEC (NFPA 70), and for a motor  
30 derated in accordance with paragraph (b)(2) of this section, the derated capacity.

31  
32 112.6 Each generator must be protected by an overcurrent device set value not  
33 exceeding [one hundred and [fifteen (115) per cent] of the generator full load  
34 rating.

### 113 Distribution panels and switchboards

1 113.1 Each distribution panel and switchboard must be in as dry a location as  
2 practicable, adequately ventilated, and protected from falling debris and dripping  
3 or splashing water.

4  
5 113.2 Each distribution panel or switchboard must be totally enclosed and of the  
6 dead front type.

7  
8 113.3 Each switchboard must be fitted with a drip shield.

9  
10 113.4 Distribution panels and switchboards that are accessible from the rear must  
11 be constructed to prevent a person from accidentally contacting energized parts.

12  
13 113.5 Working space must be provided around all main distribution panels.

### 114 Cable and wiring requirements

1 114.1 If individual wires, rather than cable, are used in systems greater than [50  
2 volts], the wire must be in conduit.

3  
4 114.2 All cable and wire must:  
5 Have stranded copper conductors with sufficient current carrying capacity for the  
6 circuit in which they are used;

7 (a) Be installed in a manner to avoid or reduce interference with radio  
8 reception and compass indication;

- 9
- 10 (b) Be protected from the weather;
- 11 (c) Be installed with metal supports spaced not more than [twenty four (24)
- 12 inches] apart, and in such a manner as to avoid chafing and other damage.
- 13 The use of plastic tie wraps must be limited to bundling or retention of
- 14 multiple cable installations, and not used as a means of support, except
- 15 that on vessels of not more than [sixty-five (65) feet] in length,
- 16 installations in accordance with paragraph 14.h of ABYC E-8, and
- 17 paragraph 15.h of ABYC E-9, are acceptable as meeting the requirements
- 18 of this section;
- 19 (d) Not be installed with sharp bends;
- 20 (e) Be protected by metal coverings or other suitable means if in areas subject
- 21 to mechanical abuse. Horizontal pipes used for protection shall have [.25
- 22 inch] holes for drainage every [five (5) feet];
- 23 (f) Be suitable for low temperature and high humidity if installed in
- 24 refrigerated compartments;
- 25 (g) Not be located in a tank unless the cable provides power to equipment in
- 26 the tank; and
- 27 (h) Have sheathing or wire insulation compatible with the fluid in a tank when
- 28 installed as allowed by Section 114(b) (8).

29 114.3 Conductors in power and lighting circuits must be [No. 14 American Wire  
30 Gauge (AWG)] or larger. Conductors in control and indicator circuits must be No.  
31 [22 AWG] or larger.

32 114.5 Cable and wire for power and lighting circuits must:

- 33 (a) Meet Section 310-13 of the NEC (NFPA 70), except that asbestos
- 34 insulated cable and dry location cables cannot be used;
- 35 (b) Be listed by Underwriters Laboratories (UL), as UL Boat or UL Marine
- 36 cable; or
- 37 (c) Meet 46 CFR Subchapter J, Subpart 111.60, Wiring Materials and
- 38 Methods; Sec. 111.60-1 for cable, and Sec. 111.60-11 for wire.
- 39
- 40

41 114.6 Cable or wire serving vital systems or emergency loads must be routed as  
42 far as practicable from high risk fire areas, such as galleys, laundries, and  
43 machinery spaces.

44 114.7 Cable or wire serving duplicated equipment must be separated so that a  
45 casualty that affects one cable does not affect the other.

46 114.8 Each connection to a conductor or term:

- 47
- 48 (a) A pressure-type connector on each conductor;
- 49 (b) A solder lug on each conductor;
- 50 (c) A splice made with a pressure type connector to a flexible lead or
- 51 conductor; or
- 52 (d) A splice that is soldered, brazed, or welded to a flexible lead or conductor.
- 53
- 54



- 55 114.9 A connector or lug of the set screw type must not be used with a stranded  
56 conductor smaller than [No. 14 AWG] except if there is a nonrotating follower  
57 that travels with the set screw and makes pressure contact with the conductor.  
58
- 59 114.10 Each pressure type wire connector and lug must meet UL 486A, “Electric  
60 Wire Connectors and Soldering Lugs for Use With Copper Conductors.” The use  
61 of twist-on type wire nuts is permitted under the following conditions:  
62 (a) The connections must be made within an enclosure and the insulated cap  
63 of the connector must be secured to prevent loosening due to vibration;  
64 and  
65 (b) Twist-on type connectors may not be used for making joints in cables,  
66 facilitating a conductor splice, or extending the length of a circuit.  
67
- 68 114.11 Each terminal block must have [6-32 terminal] screws or larger.  
69
- 70 114.12 Wire connectors utilized in conjunction with screw type terminal blocks  
71 must be of the captive type such as the ring or the flanged spade type.  
72
- 73 114.13 A cable must not be spliced in a hazardous location.  
74
- 75 114.14 A cable may be spliced in a location, other than a hazardous location,  
76 under the following conditions:  
77 (a) A cable installed in a subassembly may be spliced to a cable installed in  
78 another subassembly;  
79 (b) For a vessel receiving alterations, a cable may be spliced to extend a  
80 circuit;  
81 (c) A cable having a large size or exceptional length may be spliced to  
82 facilitate its installation; and  
83 (d) A cable may be spliced to replace a damaged section of the cable if, before  
84 replacing the damaged section, the insulation resistance of the remainder  
85 of the cable is measured, and it is determined that the condition of the  
86 insulation is unimpaired.  
87
- 88 114.15 All material in a cable splice must be chemically compatible with all other  
89 material in the splice and with the materials in the cable.  
90
- 91 114.16 Ampacities of wires must meet Section 310-15 of the NEC (NFPA 70).  
92 Ampacities of cable must meet table A6 of Institute of Electrical and Electronic  
93 Engineers (IEEE) Standard 45, “Recommended Practice for Electrical  
94 Installations on Shipboard.” Ampacities for Navy cable must meet NAVSEA  
95 Design Data Sheet (DDS) 304-2 “Electrical Cable, Ratings and Characteristics”  
96 as appropriate.  
97
- 98 114.17 Conductors for direct current systems must be sized so that the voltage  
99 drop at the load terminals does not exceed [10%]. Values of conductor sizes can  
100 be computed by means of the following formula:  $cm=(K \times I \times L \times 2)$  for two-wire

101 circuit))/E. Where: cm=Circular-mil area of conductor K=10.75 ohm/mil-foot  
102 (English) (a constant representing the resistance of copper). I=Load current, in  
103 amperes. L=length of conductor from center of distribution, in feet, E=Voltage  
104 drop at load, in volts.

105

106 114.18 If used, each armored cable metallic covering must:

107

(a) Be electrically continuous; and

108

(b) Be grounded at each end of the run to:

109

(1) The metallic hull;

110

(2) The common ground plate on nonmetallic vessels; and

111

(c) Have final sub-circuits grounded at the supply end only.

## 115 Batteries

1

### 115.1 General

2

(a) Any electrical storage battery or batteries shall be compatible with its attendant electrical system.

3

4

(b) Where provisions are made for charging batteries, there must be natural or induced ventilation sufficient to dissipate the gases generated.

5

6

(c) Each battery must be located as high above the bilge as practicable, secured to protect against shifting with the roll and pitch of the vessel, and free from exposure to water splash or spray.

7

8

9

(d) Batteries must be accessible for maintenance and removal.

10

(e) Connections must be made to battery terminals with permanent type connectors. Spring clips or other temporary type clamps are prohibited.

11

12

(f) Batteries must be mounted in trays lined with, or constructed of, a material that is resistant to damage by the electrolyte.

13

14

(g) Battery chargers must have an ammeter connected in the charging circuit.

15

(h) If the batteries are not adjacent to a distribution panel or switchboard that distributes power to the lighting, motor, and appliance circuits, the battery lead must have a fuse in series as close as practicable to the battery.

16

17

(i) Batteries used for engine starting are to be located as close as possible to the engine or engines served.

18

19

20

21

### 115.2 Battery installations.

22

(a) Large batteries. Each large battery installation must be located in a locker, room or enclosed box solely dedicated to the storage of batteries. Ventilation must be provided.

23

24

(b) Small batteries. Each small battery installation must be located in a well ventilated space and protected from falling objects. A small battery installation must not be in a closet, storeroom or similar space.

25

26

27

## 116 Grounding

1 116.1 General grounding requirements.

- 2 (a) A vessel's hull must not carry current as a conductor except for the  
3 following systems:  
4 (1) Impressed current cathodic protection systems; or  
5 (2) Battery systems for engine starting.  
6 (b) Receptacle outlets and attachment plugs for portable lamps, tools, and  
7 similar apparatus operating at [one hundred (100) volts] or more, must  
8 have a grounding pole and a grounding conductor in the portable cord.  
9 (c) Each nonmetallic mast and topmast must have a lightning ground  
10 conductor.

11  
12 116.2 Equipment and conductor grounding.

- 13 (a) All metallic enclosures and frames of electrical equipment must be  
14 permanently grounded to the hull on a metallic vessel. On a nonmetallic  
15 vessel, the enclosures and frames of electrical equipment must be bonded  
16 together to a common ground by a normally non-current carrying  
17 conductor. Metallic cases of instruments and secondary windings of  
18 instrument transformers must be grounded.  
19 (b) On a nonmetallic vessel, where a ground plate is provided for radio  
20 equipment, it must be connected to the common ground.  
21 (c) Equipment grounding conductors must be sized in accordance with  
22 Section 250-95 of the NEC (NFPA 70).  
23 (d) Each insulated grounding conductor of a cable must be identified by one  
24 of the following means:  
25 (1) A green braid or green insulation;  
26 (2) Stripping the insulation from the entire exposed length of the  
27 grounding conductor; or  
28 (3) Marking the exposed insulation of the grounding conductor with green  
29 tape or green adhesive labels.  
30 (e) Cable armor must not be used to ground electrical equipment or systems.

31  
32 116.3 Grounded distribution systems (neutral grounded).

- 33 (a) If a grounded distribution system is provided, there must be only one  
34 connection to ground, regardless of the number of power sources. This  
35 ground connection must be at the switchboard or at the common ground  
36 plate, which must be accessible.  
37 (b) Each propulsion, power, lighting, or distribution system having a neutral  
38 bus or conductor must have the neutral grounded.  
39 (c) The neutral of each grounded generation and distribution system must be  
40 grounded at the generator switchboard and have the ground connection  
41 accessible for checking insulation resistance of the generator to ground  
42 before the generator is connected to the bus, except the neutral of an  
43 emergency power generation system must be grounded with:  
44 (1) No direct ground connection at the emergency switchboard;

- 45 (2) The neutral bus permanently connected to the neutral bus on the main  
46 switchboard; and  
47 (3) No switch, circuit breaker, or fuse in the neutral conductor of the bus-  
48 tie feeder connecting the emergency switchboard to the main  
49 switchboard.  
50 (d) On a metallic vessel, a grounded alternating current system must be  
51 grounded to the hull. On a nonmetallic vessel, the neutral must be  
52 connected to the common ground, except that aluminum grounding  
53 conductors must not be used.

## 117 Overcurrent protection

- 1 117.1 Overcurrent protection must be provided for each ungrounded conductor  
2 for the purpose of opening the electric circuit if the current reaches a value that  
3 causes an excessive or dangerous temperature in the conductor or conductor  
4 insulation.  
5  
6 117.2 The grounded conductor of a circuit must not be disconnected by a switch  
7 or circuit breaker, unless the ungrounded conductors are simultaneously  
8 disconnected.  
9  
10 117.3 A conductor of a control, interlock, or indicator circuit, such as a  
11 conductor for an instrument, pilot light, ground detector light, or potential  
12 transformer, must be protected by an overcurrent device.  
13  
14 117.4 Conductors must be protected in accordance with their current carrying  
15 capacities. If the allowable current carrying capacity does not correspond to a  
16 standard device size, the next larger overcurrent device may be used provided it  
17 does not exceed [one hundred and fifty (150) per cent] of the conductor current  
18 carrying capacity.  
19  
20 117.5 Steering gear control system circuits must be protected against short  
21 circuit.  
22  
23 117.6 Each steering gear feeder circuit must be protected by a circuit breaker.  
24  
25 117.7 Each lighting branch circuit must be protected against overcurrent either  
26 by fuses or circuit breakers rated at not more than [thirty (30) amperes].  
27  
28 117.8 Overcurrent devices capable of carrying the starting current of the motor  
29 must be installed to protect motors, motor conductors, and control apparatus  
30 against:  
31 (a) Overcurrent due to short circuits or ground faults; and  
32 (b) Overload due to motor running overcurrent. A protective device integral  
33 with the motor, which is responsive to both motor current and  
34 temperature, may be used.  
35

- 36 117.9 An emergency switch must be provided in the normally ungrounded main  
37 supply conductor from a battery. The switch must be accessible and located as  
38 close to the battery as practicable.  
39
- 40 117.10 Disconnect means must be provided on the supply side of and adjacent to  
41 all fuses for the purpose of de-energizing the fuses for inspection and maintenance  
42 purposes.  
43
- 44 117.11 If the disconnect means is not within sight of the equipment that the circuit  
45 supplies, means must be provided for locking the disconnect device in the open  
46 position.  
47
- 48 117.12 Fuses must be of the cartridge type only and be listed by Underwriters  
49 Laboratories or another recognized independent laboratory.  
50
- 51 117.13 Each circuit breaker must meet UL 489, “Molded--Case Circuit Breakers  
52 and Circuit Breaker Enclosures,” and be of the manually reset type designed for:  
53 (a) Inverse time delay;  
54 (b) Instantaneous short circuit protection; and  
55 (c) Switching duty if the breaker is used as a switch.  
56
- 57 117.14 Each circuit breaker must indicate whether it is in the open or closed  
58 position.

## 118 Shore power

- 1 118.1 A vessel with an electrical system operating at more than [fifty (50) volts],  
2 which is provided with a means to connect to shore power, must meet the  
3 following:  
4 (a) A shore power connection box or receptacle must be permanently installed  
5 at a convenient location;  
6 (b) A cable connecting the shore power connection box or receptacle to the  
7 switchboard or main distribution panel must be permanently installed;  
8 (c) A circuit breaker must be provided at the switchboard or main distribution  
9 panel for the shore power connection; and  
10 (d) The circuit breaker, required by paragraph (c) of this section, must be  
11 interlocked with the vessel's power sources so that shore power and the  
12 vessel's power sources may not be operated simultaneously.

## 119 Lighting

- 1 119.1 Lighting fixtures
- 2 (a) Each lighting fixture globe, lens, or diffuser must have a guard or be made  
3 of high strength material, except in an accommodation space, radio room,  
4 galley, or similar space where it is not subject to damage.

- 5 (b) A lighting fixture may not be used as a connection box for a circuit other  
6 than the branch circuit supplying the fixture.
- 7 (c) A lighting fixture must be installed as follows:
- 8 (1) Each lighting fixture and lampholder must be fixed. A fixture must not  
9 be supported by the screw shell of a lampholder.
- 10 (2) Each pendant type lighting fixture must be suspended by and supplied  
11 through a threaded, rigid conduit stem.
- 12 (3) Each table lamp, desk lamp, floor lamp, or similar equipment must be  
13 secured in place so that it cannot be displaced by the roll or pitch of  
14 the vessel.
- 15 (d) An exterior lighting fixture in an electrical system operating at more than  
16 50 volts must comply with the requirements of UL 595, “Marine Type  
17 Electric Lighting Fixtures,” or other standard specified by the marine  
18 inspector. A lighting fixture in an accommodation space, radio room,  
19 galley or similar interior space may comply with UL 1570 “Fluorescent  
20 Lighting Fixtures,” UL 1571 “Incandescent Lighting Fixtures,” UL 1572  
21 “High Intensity Discharge Lighting Fixtures,” UL 1573 “Stage and Studio  
22 Lighting Units,” or UL 1574 “Track Lighting Systems,” as long as the  
23 general marine requirements of UL 595 are satisfied.

24  
25

#### 119.2 Emergency lighting

- 26 (a) Each vessel must have adequate emergency lighting fitted along the line of  
27 escape to the main deck from all passenger and crew accommodation  
28 spaces located below the main deck.
- 29 (b) The emergency lighting required by Section 119.2(a) must automatically  
30 actuate upon failure of the main lighting system. If a vessel is not  
31 equipped with a single source of power for emergency lighting, it must  
32 have individual battery powered lights that:
- 33 (1) Are automatically actuated upon loss of normal power;
- 34 (2) Are not readily portable;
- 35 (3) Are connected to an automatic battery charger; and
- 36 (4) Have sufficient capacity for a minimum of 2 hours of continuous  
37 operation.

## Section 120 - Preparations for and Response to Emergencies

### 120 Passenger Count

- 1 120.1 The master of a vessel shall keep a correct, written count of all passengers  
2 that embark on and disembark from the vessel. Prior to departing on a voyage, the  
3 passenger count must be communicated verbally or in writing, and available  
4 ashore at the vessel's normal berthing location or with a representative of the  
5 owner or managing operator of the vessel. The passenger count shall be available  
6 upon request.

## 121 Passenger Safety Orientation

1 121.1 Except as allowed by Sections 121.2 and 121.3, before getting underway on  
2 a voyage or as soon as practicable thereafter, the master of a vessel shall ensure  
3 that suitable public announcements are made informing all passengers of the  
4 following:

- 5 (a) The location of emergency exits and ring life buoys;
- 6 (b) The stowage location(s) of life jackets;
- 7 (c) The proper method of donning and adjusting life jackets of the type(s)  
8 carried on the vessel including a demonstration of the proper donning of a  
9 lifejacket;
- 10 (d) The location of the instruction placards for life jackets and other lifesaving  
11 devices; and
- 12 (e) That all passengers will be required to don life jackets when possible  
13 hazardous conditions exist, as directed by the master.

14  
15 121.2 As an alternative to an announcement that complies with Section 121.1,  
16 the master or other designated person may;

- 17 (a) Prior to getting underway, deliver to each passenger or, on a vessel that  
18 does not carry vehicles and that has seats for each passenger, place near  
19 each seat, a card or pamphlet that has the information listed in Sections  
20 121.1(a)-(e); and
- 21 (b) Make an abbreviated announcement consisting of:
  - 22 (i) A statement that passengers should follow the instructions of the crew  
23 in an emergency;
  - 24 (ii) The location of life jackets; and
  - 25 (iii) That further information concerning emergency procedures including  
26 the donning of life jackets, location of other emergency equipment,  
27 and emergency evacuation procedures are located on the card or  
28 pamphlet that was given to each passenger or is located near each seat.

29  
30 121.3 Ferries operating on short runs of less than [fifteen (15) minutes] may  
31 substitute bulkhead placards or signs for the announcement required by Sections  
32 121.1 and 121.2 if it is not practical due to the vessel's unique operation.

33  
34 121.4 The master of a vessel shall ensure that a passenger, who boards the vessel  
35 on a voyage after the initial public announcement has been made as required by  
36 Sections 121.1 and 121.2, is also informed of the required safety information.

37  
38 121.5 On a vessel on a voyage of more than [twenty four (24) hours] duration,  
39 passengers shall be requested to don life jackets and go to the appropriate  
40 embarkation station during the safety orientation. If only a small number of  
41 passengers embark at a port after the original muster has been held, these  
42 passengers must be given the passenger safety orientation required by Sections  
43 121.1 or 121.2 if another muster is not held.

## 122 Wearing of life jackets

- 1 122.1 The master of a vessel shall require passengers to don life jackets when  
2 possible hazardous conditions exist, including, but not limited to:  
3 (a) When transiting hazardous bars and inlets;  
4 (b) During severe weather;  
5 (c) In event of flooding, fire, or other events that may possibly call for  
6 evacuation; and  
7 (d) When the vessel is being towed, except a non-self-propelled vessel under  
8 normal operating conditions.  
9
- 10 122.2 The master or crew shall assist each passenger in obtaining a life jacket  
11 and donning it, as necessary.

### 123 Emergency instructions

- 1 123.1 The master and crew of a vessel will be familiar with the content of and  
2 have mounted at the operating station, emergency instructions containing the  
3 actions to be taken in the event of fire, heavy weather, or man overboard  
4 conditions.  
5
- 6 123.2 If there is no suitable mounting surface aboard the vessel, the emergency  
7 instructions need not be posted but must be carried aboard the vessel and be  
8 available to the crew for familiarization  
9
- 10 123.3 The emergency instruction placard should contain at least the applicable  
11 portions of the “Emergency Instructions” listed below. The emergency  
12 instructions must be designed to address the particular equipment, arrangement,  
13 and operation of each individual vessel.  
14 (a) Radio-telephone distress.  
15 (1) Switch to Channel 16 – United States Coast Guard.  
16 (2) Give distress signal "MAYDAY" three times.  
17 (3) Give boat name, type, and color.  
18 (4) Give position.  
19 (b) Rough weather, crossing hazardous bars, or flooding.  
20 (1) Close all watertight and weathertight doors, hatches, and airports to  
21 prevent taking water aboard or further flooding in the vessel.  
22 (2) Keep bilges dry to prevent loss of stability due to water in bilges. Use  
23 power driven bilge pump, hand pump, and buckets to dewater.  
24 (3) Align fire pumps to use as bilge pump if possible.  
25 (4) Check all intake and discharge lines, which penetrate the hull, for  
26 leakage.  
27 (5) Passengers must remain seated and evenly distributed.  
28 (6) Passengers must don life jackets if the going becomes very rough, the  
29 vessel is about to cross a hazardous bar, or when otherwise instructed  
30 by the master.  
31 (7) Never abandon the vessel unless actually forced to do so.  
32 (8) If assistance is needed follow the procedures on the emergency  
33 broadcast placard posted by the radiotelephone.



**Charter Boat Model Rules – approved September 8, 2008**

- 34 (9) Prepare survival craft (life floats, inflatable rafts, inflatable buoyant  
35 apparatus, boats, etc.) for launching.
- 36 (c) Man overboard.
- 37 (e) Throw a ring buoy overboard as close to the person as possible.
- 38 (f) Post a lookout to keep the person overboard in sight.
- 39 (g) Launch rescue boat and maneuver to pick up person in the water, or  
40 maneuver the vessel to pick up the person in the water.
- 41 (h) Have crewmember put on life jacket, attach a safety line to him or her, and  
42 have him or her stand by jump into the water to assist the person  
43 overboard if necessary.
- 44 (i) If person is not immediately located, notify rescue resources and other  
45 vessels in vicinity by radiotelephone.
- 46 (j) Continue search until released by rescue resources.
- 47 (d) Fire.
- 48 (1) Cut off air supply to fire--close items such as hatches, ports, doors,  
49 ventilators, and louvers, and shut off ventilation system.
- 50 (2) Cut off electrical system supplying affected compartment if possible.
- 51 (3) If safe, immediately use portable fire extinguishers at base of flames  
52 for flammable liquid or grease fires or water for fires in ordinary  
53 combustible materials. Do not use water on electrical fires.
- 54 (4) If fire is in machinery spaces, shut off fuel supply and ventilation and  
55 activate fixed extinguishing system if installed.
- 56 (5) Maneuver vessel to minimize effect of wind on fire.
- 57 (6) If unable to control fire, immediately notify rescue resources and other  
58 craft in the vicinity by radiotelephone.
- 59 (7) Move passengers away from fire, have them put on life jackets, and if  
60 necessary, prepare to abandon the vessel.
- 61 (e) Explosion.
- 62 (1) Be ready to go overboard with personal flotation device (life jacket).
- 63 (2) When clear of danger, account for all passengers and assist.
- 64 (3) Stay together.

**124 Station bill**

- 1 124.1 A station bill must be posted by the master on a vessel of more than 65  
2 feet in length having a Certificate of Inspection requiring more than four crew  
3 members at any one time, including the master.
- 4
- 5 124.2 The station bill required by paragraph (a) of this section must set forth the  
6 special duties and duty station of each crew member for various emergencies. The  
7 duties must, as far as possible, be comparable with the regular work of the  
8 individual. The duties must include at least the following and any other duties  
9 necessary for the proper handling of a particular emergency:
- 10 (a) The closing of hatches, airports, watertight doors, vents, scuppers, and  
11 valves for intake and discharge lines that penetrate the hull, the stopping  
12 of fans and ventilating systems, and the operating of all safety equipment;
- 13 (b) The preparing and launching of survival craft and rescue boats;

- 14 (c) The extinguishing of fire; and
- 15 (d) The mustering of passengers including the following:
- 16 (1) Warning the passengers;
- 17 (2) Assembling the passengers and directing them to their appointed
- 18 stations; and
- 19 (3) Keeping order in the passageways and stairways and generally
- 20 controlling the movement of the passengers.

21  
22 124.3 The station bill must be posted at the operating station and in a  
23 conspicuous location in each crew accommodation space.

**125 Life jacket placards**

1 125.1.1 Placards containing instructions for the donning and use of the life jackets  
2 aboard the vessel must be posted in conspicuous places that are regularly  
3 accessible and visible to the crew and passengers.

4  
5 125.2 If there is no suitable mounting surface aboard the vessel, the life jacket  
6 placards need not be posted but must be carried aboard the vessel and be available  
7 to the crew and passengers for familiarization.

**126 Inflatable survival craft placards**

1 126.1 Every vessel equipped with an inflatable survival craft must have approved  
2 placards or other cards containing instructions for launching and inflating  
3 inflatable survival craft for the information of persons on board posted in  
4 conspicuous places by each inflatable survival craft.

**127 Public address systems**

1 127.1 Except as noted in Sections 127.4 and 127.5 below, each vessel must be  
2 equipped with a public address system.

3  
4 127.2 On a vessel of more than [sixty-five (65) feet] in length, the public address  
5 system must be a fixed installation and be audible during normal operating  
6 conditions throughout the accommodation spaces and all other spaces normally  
7 manned by crewmembers.

8  
9 127.3 A vessel with more than one passenger deck and a vessel with overnight  
10 accommodations must have the public address system operable from the operating  
11 station.

12  
13 127.4 On a vessel of not more than [sixty-five (65) feet] in length, a battery-  
14 powered bullhorn may serve as the public address system if audible throughout  
15 the accommodation spaces of the vessel during normal operating conditions. The  
16 bullhorn's batteries are to be continually maintained at a fully charged level by use  
17 of a battery charger or other means.

- 18  
19 127.5 On a vessel of not more than [sixty-five (65) feet] in length carrying not  
20 more than 49 passengers, a public address system is not required if a public  
21 announcement made from operating station without amplification can be heard  
22 throughout the accommodation spaces of the vessel during normal operating  
23 conditions to the satisfaction of the marine inspector.  
24  
25 127.6 All vessels with overnight accommodations must be equipped with a  
26 general alarm system. The public address system may be used to sound the  
27 general alarm signal.

## 128 Drills

- 1 128.1 Abandon ship and man overboard drills and training.
- 2 (a) The master shall conduct sufficient drills and give sufficient instructions to  
3 make sure that all crewmembers are familiar with their duties during  
4 emergencies that necessitate abandoning ship or the recovery of persons  
5 who have fallen overboard.  
6 (b) Each abandon ship drill must include:  
7 (1) Summoning the crew to report to assigned stations and prepare for  
8 assigned duties;  
9 (2) Summoning passengers on a vessel on an overnight voyage to muster  
10 stations or embarkation stations and ensuring that they are made aware  
11 of how the order to abandon ship will be given;  
12 (3) Checking that life jackets are correctly donned;  
13 (4) Operation of any davits used for launching life rafts; and  
14 (5) Instruction on the automatic and manual deployment of survival craft.  
15 (c) Each abandon ship drill must, as far as practicable, be conducted as if  
16 there were an actual emergency.  
17 (d) Each rescue boat required in accordance with Section 67 must be launched  
18 with its assigned crew aboard and maneuvered in the water as if during an  
19 actual man overboard situation:  
20 (1) Once each month, if reasonable and practicable; but  
21 (2) At least once within a [three (3) month] period before the vessel gets  
22 underway with passengers.  
23 (e) Onboard training in the use of davit-launched life rafts must take place at  
24 intervals of not more than [three (3) month] on a vessel with a davit  
25 launched life raft.  
26 (f) Otherwise documented for review upon request. The drill entry shall  
27 include the following information:  
28 (1) Date of the drill and training; and  
29 (2) General description of the drill scenario and training topics.  
30

- 31 128.2 Fire fighting drills and training
- 32 (a) The master shall conduct sufficient fire drills to make sure that each crew  
33 member is familiar with his or her duties in case of a fire.
- 34 (b) Each fire drill must include:
- 35 (i) Summoning passengers on a vessel on an overnight voyage to  
36 muster or embarkation stations;
- 37 (ii) Summoning the crew to report to assigned stations and to prepare for  
38 and demonstrate assigned duties; and
- 39 (iii) Instruction in the use and location of fire alarms, extinguishers, and  
40 any other fire fighting equipment on board.
- 41 (c) Each fire drill must, as far as practicable, be conducted as if there were an  
42 actual emergency.
- 43 (d) Fire fighting drills and training shall be logged or otherwise documented  
44 for review upon request. The drill entry shall include the following  
45 information:
- 46 (i) Date of the drill and training; and
- 47 (ii) General description of the drill scenario and training topics.

### 129 Response to a marine casualty

- 1 129.1 Immediately after the addressing of resultant safety concerns, the owner,  
2 agent, master, or person in charge of a vessel involved in a marine casualty shall  
3 make notification whenever a vessel is involved in a marine casualty consisting  
4 of:
- 5 (a) An unintended grounding, or an unintended strike of (allision with) a  
6 bridge;
- 7 (b) An intended grounding, or an intended strike of a bridge, that creates a  
8 hazard to navigation, the environment, or the safety of a vessel, or that  
9 meets any criterion of Sections 129.1(c) through 129.1(g);
- 10 (c) Loss of main propulsion or primary steering, or any associated component  
11 or control system, that reduces the maneuverability of the vessel;
- 12 (d) An occurrence materially and adversely affecting the vessel's  
13 seaworthiness or fitness for service or route, including but not limited to  
14 fire, flooding, failure of or damage to fixed fire extinguishing systems,  
15 lifesaving equipment, auxiliary power generating equipment, or bilge  
16 pumping systems;
- 17 (e) Loss of life;
- 18 (f) Injury that requires professional medical treatment (treatment beyond first  
19 aid) and, if the person is engaged or employed on board a vessel in  
20 commercial service, which renders the individual unfit to perform his or  
21 her routine duties; or
- 22 (g) An occurrence not meeting any of the above criteria but causing property  
23 damage in excess of \$25,000 or a value prescribed by [insert title of  
24 official who administers the state's boating laws]. This damage includes  
25 the cost of labor and material to restore the property to its condition before

26 the occurrence, but does not include the cost of salvage, cleaning, gas  
27 freeing, drydocking, or demurrage.

28 (h) Whenever there is a hazardous condition on board the vessel, the owner,  
29 master, agent, or person in charge shall immediately make notification in  
30 the port or place in which the vessel is located of the hazardous condition.  
31

32 129.2 For each marine casualty required to be reported, the owner, agent,  
33 charterer, master, or person in charge of the vessel shall determine whether there  
34 is any evidence of alcohol or drug use by individuals directly involved in the  
35 accident by arranging for timely chemically testing.  
36

37 129.3 The owner, agent, charterer, master, or person in charge of the vessel shall,  
38 within [5] days, file a written report of any marine casualty using a form approved  
39 by the [insert title of official who administers the state’s boating laws] or an  
40 accident report form similar to USCG Form 2692 (Report of Marine Casualty,  
41 Incident, or Death).  
42

43 129.4 The vessel owner shall carry marine liability insurance for bodily injury.  
44 The insurance coverage shall be for [one (1)] year and shall be renewed annually.  
45 The amount of the coverage, per accident, shall be not less than [insert dollar  
46 amount] multiplied by the number of passengers authorized to be carried by the  
47 certificate of inspection. However, vessels carrying more than [ten (10)]  
48 passengers shall carry not less than [insert dollar amount] coverage per accident.

## Section 130 – License and Manning Requirements

### 130 State Pilot's License; Requirements.

1 130.1 An applicant for a state pilot's license shall be not less than [eighteen (18)]  
2 years of age.  
3

4 130.2 When an applicant for a state pilot's license has been convicted by a court  
5 of record for a felony violation of the laws of the United States or the state of  
6 [insert state name] within [five (5)] years of the date of application, the marine  
7 inspector shall investigate the circumstances of the conviction. When the  
8 investigation shows continued illegal or questionable activity on the part of the  
9 applicant, the application shall be denied by the [insert title of official who  
10 administers state’s boating laws].  
11

12 130.3 When an applicant for a state pilot's license has been convicted by a court  
13 of record for a serious violation of the marine laws of the United States or the  
14 state of [insert state name] within [three (3)] years of the date of application, the  
15 marine inspector shall investigate the circumstances of the conviction. When the  
16 investigation shows continued illegal or questionable activity on the part of the

17 applicant, the application shall be denied by the [insert title of official who  
18 administers state’s boating laws]. A serious violation includes all of the following:  
19 (a) Careless operation.  
20 (b) Reckless operation.  
21 (c) Operation under the influence of alcoholic beverage or controlled  
22 substance.  
23 (d) Negligent operation.  
24 (e) Operation causing death or injury.  
25

26 130.4 An applicant for a state pilot's license shall have not less than [ninety (90)]  
27 days' experience, within the preceding [twenty-four (24)] months, operating a  
28 noncommercial vessel of a type similar to the vessel for which the pilot's license  
29 is sought, or [ninety (90)] days' experience, within the preceding [twenty-four  
30 (24)] months, as a full-time crew member on a commercial vessel of a type  
31 similar to the vessel for which the pilot's license is sought and shall have received  
32 instruction from a licensed pilot in the operation of the vessel.  
33

34 130.5 An applicant for an original state pilot's license shall pass a physical  
35 examination given by a licensed physician of this state and shall present a  
36 certificate signed by the physician attesting to the applicant's general physical  
37 condition. Epilepsy, insanity, senility, acute general disease or neurosyphilis,  
38 badly impaired hearing, or other defect that would render the applicant  
39 incompetent to perform the ordinary duties of a licensed operator may be cause  
40 for denial of the application.  
41

42 130.6 The department, when it has reason to doubt the operator's physical or  
43 visual abilities, may require him or her, at any time, to obtain a new physical  
44 examination. Notwithstanding, a physical examination shall be required once  
45 every [thirty-six (36)] months.  
46

47 130.7 An applicant for a state pilot's license shall not be color blind and, in the  
48 opinion of a qualified physician, shall have adequate vision, in at least one eye, to  
49 safely operate a vessel.  
50

51 130.8 A qualified applicant for a state pilot's license shall successfully complete  
52 examinations, both written and practical, administered by a marine inspector.

**131 Pilot's License; Display.**

1 131.1 A licensed operator, when operating a vessel for hire, shall place the pilot's  
2 license, framed under transparent material, in a conspicuous place on the vessel  
3 where it can be seen by passengers and other persons at all times. Where such  
4 display is impracticable, the pilot's license shall be carried onboard and shown on  
5 demand.

**132 Pilot's License; Duration; Renewal.**

- 1           132.1 A state pilot's license is valid for [three (3)] years from the date of issue.
- 2
- 3           132.2 A state pilot's license shall be renewed by application to the department.

**133 Pilot's License; Suspension or Revocation.**

- 1           133.1 The following conduct is cause for suspension or revocation of the state
- 2 pilot's license:
- 3           (a) The negligent or improper operation of a vessel.
- 4           (b) Physical impairment of the operator.
- 5           (c) Falsification of information given on a license application.
- 6
- 7           133.2 An issued state pilot's license shall remain the property of the department
- 8 and shall be surrendered to a marine inspector upon revocation.

**134 Crew Manning Requirements**

1           135.1 As the passenger carrying capacity increases on a Public Vessel, the need  
 2 for additional crewmembers to assist the operator increases. In the event of an  
 3 emergency, the vessel's operator may be too busy with other tasks to personally  
 4 assist the vessel's passengers. Additionally, larger vessels often require more than  
 5 the operator to provide a proper lookout, safely dock/undock the vessel, and  
 6 generally carry out the vessel's routine underway. In such cases the operator must  
 7 have personnel under his/her direction to carry out the necessary tasks. Realizing  
 8 this, the following minimum crew requirements have been established by the  
 9 marine inspectors. *The number of crewmembers required is based on the number*  
 10 *of passengers the vessel is carrying and is in addition to any licensed personnel*  
 11 *required for the vessel.* On vessels required to carry an Engineer, the Engineer  
 12 may count as one of the crewmembers provided that such duties do not interfere  
 13 with the operation or safety of the engineering plant. The Marine Inspector will  
 14 make this determination.  
 15  
 16

Number of Passengers	Crew Members
0 – 20	[0]
21 – 50	[1]
51 – 100	[2]
101 – 150	[3]*
151 – 200	[4]*
Over 200	One for each additional [50 passengers]*

17 \*Vessels of this size may carry fewer crewmembers when passenger total is  
18 lower. However, they may never carry less than [two (2) crewmembers] under  
19 any circumstances.

## Section 140 – Special Provisions

### 140 Equivalents

1 140.1 The [insert title of official who administers the state’s boating laws] may  
2 approve any arrangement, fitting, appliance, apparatus, equipment, calculation,  
3 information, or test, which provides a level of safety equivalent to that established  
4 by specific provisions of these rules.

1

### 1 141 Incorporation by Reference

1 141.1 Certain material is incorporated by reference into the rules with approval of  
2 [insert title of official who administers the state’s boating laws]. The material  
3 approved for incorporation by reference in these rules and the topics affected are:

- 4 (a) American Boat and Yacht Council (ABYC), 3069 Solomon’s Island Rd.,  
5 Edgewater, MD 21037  
6 (1) A-1-93--Marine Liquefied Petroleum Gas (LPG) Systems.  
7 (2) A-3-93--Galley Stoves  
8 (3) A-7-70--Boat Heating Systems  
9 (4) A-16-89--Electric Navigation Lights  
10 (5) A-22-93--Marine Compressed Natural Gas (CNG) Systems  
11 (6) E-8-94--Alternating Current (AC) Electrical Systems on Boats  
12 (7) E-9-90--Direct Current (DC) Electrical Systems on Boats  
13 (8) H-2-89--Ventilation of Boats Using Gasoline  
14 (9) H-22-86--DC Electric Bilge Pumps Operating Under 50 Volts  
15 (10) H-24-93--Gasoline Fuel Systems  
16 (11) H-25-94--Portable Gasoline Fuel Systems for Flammable Liquids  
17 (12) H-32-87--Ventilation of Boats Using Diesel Fuel  
18 (13) H-33-89--Diesel Fuel Systems  
19 (14) P-1-93--Installation of Exhaust Systems for Propulsion and  
20 Auxiliary Engines  
21 (15) P-4-89--Marine Inboard Engines.  
22 (b) American Bureau of Shipping (ABS), ABS Plaza, 16855 Northchase  
23 Drive, Houston, TX 77060  
24 (1) Guide for High Speed Craft, 1997  
25 (2) Rules for Building and 177.300 Classing Aluminum Vessels, 1975  
26 (3) Rules for Building and 177.300 Classing Reinforced Plastic Vessels,  
27 1978  
28 (4) Rules for Building and Classing Steel Vessels, 1995  
29 (5) Rules for Building and 177.300 Classing Steel Vessels Under 61  
30 Meters (200 feet) in Length, 1983



- 31 (6) Rules for Building and Classing Steel Vessels for Service on Rivers  
32 and Intracoastal Waterways, 1995.
- 33 (c) American National Standards Institute (ANSI), 11 West 42nd Street, New  
34 York, NY 10036
- 35 (1) B 31.1-1986—Code for Pressure Piping, Power Piping
- 36 (c) American Society for Testing and Materials (ASTM), 100 Barr Harbor  
37 Drive, West Conshohocken, PA 19428-2959
- 38 (1) ASTM B 96-93, Standard Specification for Copper-Silicon Alloy  
39 Plate, Sheet, Strip, and Rolled Bar for General Purposes and Pressure  
40 Vessels
- 41 (2) ASTM B 117-97, Standard 175.400 Practice for Operating Salt Spray  
42 (Fog) Apparatus.
- 43 (3) ASTM B 122/B 122M-95, Standard Specification for Copper-Nickel-  
44 Tin Alloy, Copper-Nickel-Zinc Alloy (Nickel Silver), and Copper-  
45 Nickel Alloy Plate, Sheet, Strip and Rolled Bar
- 46 (4) ASTM B 127-98, Standard Specification for Nickel- Copper Alloy  
47 (UNS NO4400) Plate, Sheet, and Strip
- 48 (5) ASTM B 152-97a, Standard Specification for Copper Sheet, Strip,  
49 Plate, and Rolled Bar
- 50 (6) ASTM B 209-96, Standard Specification for Aluminum and  
51 Aluminum-Alloy Sheet and Plate
- 52 (7) ASTM D 93-97, Standard Test Methods for Flash Point by Pensky-  
53 Martens Closed Cup Tester
- 54 (8) ASTM D 635-97, Standard test Method for Rate of Burning and or  
55 Extent and Time of Burning of Self-Supporting Plastics in a  
56 Horizontal Position
- 57 (9) ASTM D 2863-95, Standard Method for Measuring the Minimum  
58 Oxygen Concentration to Support Candle-Like Combustion of Plastics  
59 (Oxygen Index)
- 60 (10) ASTM E 84-98, Standard Test Method for Surface Burning  
61 Characteristics of Building Materials
- 62 (d) Institute of Electrical and Electronics Engineers, Inc. (IEEE), IEEE  
63 Service Center, 445 Hoes Lane, Piscataway, NJ 08854
- 64 (1) Standard 45-1977--Recommended Practice for Electrical Installations  
65 on Shipboard
- 66 (e) Lloyd's Register of Shipping, 17 Battery Place, Suite 1013, New York,  
67 NY 10004
- 68 (1) Rules and Regulations for the Classification of Yachts and Small  
69 Craft, as amended through 1983.
- 70 (g) National Fire Protection Association (NFPA), 1 Batterymarch Park,  
71 Quincy, MA 02269-9101
- 72 (1) NFPA 10-1994--Portable Fire 176.810 Extinguishers.
- 73 (2) NFPA 17-1994--Dry Chemical 181.425 Extinguishing Systems
- 74 (3) NFPA 17A-1994--Wet Chemical 181.425 Extinguishing Systems
- 75 (4) NFPA 70-1996--National Electrical Code (NEC)
- 76 (5) Section 250-95

Charter Boat Model Rules – approved September 8, 2008

- 77 (6) Section 310-13  
78 (7) Section 310-15  
79 (8) Article 430  
80 (9) Article 445  
81 (10) NFPA 302-1994--Pleasure and Commercial Motor Craft, Chapter  
82 6  
83 (11) NFPA 306-1993--Control of Gas Hazards on Vessels  
84 (12) NFPA 1963-1989--Fire Hose Connections  
85 (h) Naval Publications and Forms Center, Customer Service Code 1052, 5801  
86 Tabor Ave., Philadelphia, PA 19120  
87 (1) Military Specification MIL-P-21929C (1991)--Plastic Material,  
88 Cellular Polyurethane, Foam-in-Place, Rigid (2 and 4 pounds per cubic  
89 foot)  
90 (2) Military Specification MIL-R- 21607E(SH) (1990) Resins, Polyester,  
91 Low Pressure Laminating, Fire Retardant.  
92 (i) Society of Automotive Engineers (SAE), 400 Commonwealth Drive,  
93 Warrendale, PA 15096-0001  
94 (1) SAE J-1475--Hydraulic Hose Fittings For Marine Applications, 1984  
95 (2) SAE J-1928--Devices Providing Backfire Flame Control for Gasoline  
96 Engines in Marine Applications, August 1989.  
97 (3) SAE J-1942--Hose and Hose Assemblies for Marine Applications,  
98 1992.  
99 (j) Underwriters Laboratories Inc. (UL), 12 Laboratory Drive, Research  
100 Triangle Park, NC 27709  
101 (1) UL 19-1992--Lined Fire Hose and Hose Assemblies  
102 (2) UL 174-1989, as amended through June 23, 1994-- Household Electric  
103 Storage Tank Heaters  
104 (3) UL 217-1993--Single and Multiple Station Smoke Detectors  
105 (4) UL 486A-1992--Wire Connectors and Soldering Lugs For Use With  
106 Copper Conductors  
107 (5) UL 489-1995--Molded--Case Circuit Breakers and Circuit Breaker  
108 Enclosures  
109 (6) UL 595-1991--Marine Type Electric Lighting Fixtures  
110 (7) UL 710-1990, as amended through September 16, 1993-- Exhaust  
111 Hoods For Commercial Cooking Equipment  
112 (8) UL 1058-1989, as amended through April 19, 1994-- Halogenated  
113 Agent Extinguishing System Units  
114 (9) UL 1102-1992--Non integral Marine Fuel Tanks  
115 (10) UL 1110-1988, as amended through May 16, 1994--Marine  
116 Combustible Gas Indicators  
117 (11) UL 1111-1988--Marine 182.415 Carburetor Flame Arresters.  
118 (12) UL 1453-1988, as amended through June 7, 1994-- Electric  
119 Booster and Commercial Storage Tank Water Heaters  
120 (13) UL 1570-1995--Fluorescent Lighting Fixtures  
121 (14) UL 1571-1995--Incandescent Lighting Fixtures  
122 (15) UL 1572-1995--High Intensity Discharge Lighting Fixtures

**Charter Boat Model Rules – approved September 8, 2008**

- 123 (16) UL 1573-1995--Stage and Studio Lighting Units
- 124 (17) UL 1574-1995--Track Lighting Systems