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.
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Section 10 - Statutory Authority and Applicability

10 General

10.1 [Insert citation for statute authorizing promulgation of rules establishing minimum safety standards for charter boats and licensing pilots of charter boats.]

10.2 These rules do not apply to vessels required to be inspected by the United States Coast Guard under: 46 CFR Subchapter T, Parts 175-185; 46 CFR Subchapter K, Parts 114-122; or 46 CFR Subchapter H, Parts 70-80, for the purposes of carrying passengers for hire.

10.3. These rules shall apply to all other vessels, as defined in the act, carrying passengers for hire on waters of the state.

Section 20 – Definitions


20.2 “Auxiliary engine” means any other engine or motor carried or used onboard a vessel, other than the main propulsion engines.

20.3 “Accommodation space” means a space (including a space that contains a microwave oven or other low-heat appliance with a maximum heating element temperature of 250 [deg] F or less, used as a:

(a) Public space;
(b) Hall;
(c) Dining room and mess room;
(d) Lounge or cafe;
(e) Public sales room;
(f) Overnight accommodation space;
(g) Barber shop or beauty parlor;
(h) Office of conference room;
(i) Washroom or toilet space;
(j) Medical treatment room or dispensary; or
(k) Game or hobby room.

20.4 “Beam” means the maximum width of a vessel from:
(a) Outside of planking to outside of planking on wooden vessels; and
(b) Outside of frame to outside of frame on all other vessels.
20.5 “Buoyant Apparatus” means those devices approved as buoyant apparatus with United States Coast Guard-approval numbers beginning in 46 CFR 160.010/....N. The term does not include inflatable life rafts or ring life buoys.

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

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

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

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

20.10 “Cargo space” means a:
(a) Cargo hold;
(b) Refrigerated cargo space;
(c) A trunk leading to or from a space listed above: or
(d) A vehicle space.

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

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

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

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

20.15 “Class E vessel” means a bare boat charter of any type vessel twenty (20) feet in length or more or designed for overnight accommodations on any waters of this state carrying any number of passengers.
20.16 “Cockpit vessel” means a vessel with an exposed recess in the weather deck extending not more than one-half of the length of the vessel measured over the weather deck.

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

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

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

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

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

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

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

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

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

20.25 “Dockside inspection” means an examination of a vessel when the vessel is moored alongside a dock and afloat in the water so that the entire exterior above the waterline and the interior of the vessel may be examined.
20.26 “Embarkation station” means the place on the vessel from which a survival craft is boarded.

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

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

20.29 “Ferry” means a vessel that:
(a) Has provisions only for deck passengers or vehicles, or both;
(b) Operates on a short run on a frequent schedule between two points over the most direct water route; and
(c) Offers a public service of a type normally attributed to a bridge or tunnel.

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

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

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

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

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

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

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

20.37 “General maintenance” means dry docking or hauling out of a vessel for painting or cleaning the hull and rudder, or the changing of a propeller, propeller shaft, and associated bearings.
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:
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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.
20.57 “Open to the atmosphere” means a compartment that has at least [fifteen 15 square inches] of open area directly exposed to the atmosphere for each [thirty-five 35 ft$^3$] of net compartment volume.

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

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

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

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

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

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

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

(a) Waters not more than twenty 20 nautical miles from the mouth of a harbor of safe refuge; and

(b) Rivers, estuaries, harbors, lakes, and similar waters not otherwise classified as protected.

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

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

(a) The owner or an individual representative of the owner, or in the case of a vessel under charter, an individual charterer or individual representative of the charterer;

(b) The master; or

(c) A member of the crew engaged in the business of the vessel that has not contributed consideration for carriage and who is paid for on board services.
20.67 “Passenger accommodation space” means an accommodation space
designated for the use of passengers.

20.68 “Person” means any natural person or individual.

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

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

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

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

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

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

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

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

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

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

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

20.80 “Stairway” means an inclined means of escape between two decks.
20.81 “Steel or equivalent material” means steel or any noncombustible material that, by itself or due to insulation provided, has structural and integrity properties equivalent to steel at the end of the standard fire test.

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

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

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

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

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

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

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

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

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

20.91 “Wire” means an individual insulated conductor without an outer protective jacket.
20.92 “Wood vessel” means, for the purposes of subdivision and lifesaving equipment requirements in this subchapter, a traditionally built, plank-on-frame vessel, where mechanical fasteners (screws, nails, trunnels) are used to maintain hull integrity.

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

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

Section 30 - Certification

30 General

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

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

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

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

31 Suspensions and Revocation of Certificates.

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

31.2 Violation of the act or any other act or falsification of information on an application for inspection may also be cause for immediate suspension or revocation of the certificate.
31.3 An issued inspection certificate and stickers shall remain the property of the department and shall be surrendered to a marine inspector upon revocation.

Section 40 - Inspection

40 Inspection Standards

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

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

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

41 Dockside Inspection (Initial Inspection for Certification)

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

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

(a) The arrangement, installation, materials, and scantlings of the structure including the hull and superstructure, yards, masts, spars, rigging, sails, piping, main and auxiliary machinery, pressure vessels, steering apparatus, electrical installation, fire resistant construction materials, life saving appliances, fire detecting and extinguishing equipment, pollution prevention equipment, and all other equipment;

(b) Sanitary conditions and fire hazards; and

(c) Certificates and operating manuals, including certificates issued by the FCC.
41.3 During an initial inspection for certification the owner or managing operator shall conduct all tests and make the vessel available for all applicable inspections discussed in this section including the following:

(a) The installation of each rescue boat, life raft, inflatable buoyant apparatus, and launching appliance as listed on its Certificate of Inspection.

(b) The operation of each required rescue boat and survival craft launching appliance.

(c) Required machinery, fuel tanks, and pressure vessels.

(d) A stability test or a simplified stability test when required.

(e) Required watertight bulkheads.

(f) Required firefighting systems.

(g) The operation of all smoke and fire detecting systems, and fire alarms and sensors.

42 Dockside Inspection (Annual Inspection for Certification)

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

42.2 Hull inspection items

(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 inspections of the hull structure and its appurtenances, including the following:

(1) Inspection of all accessible parts of the exterior and interior of the hull, the watertight bulkheads, and weather decks;

(2) Inspection and operation of all watertight closures in the hull, decks, and bulkheads including through hull fittings and sea valves;

(3) Inspection of the condition of the superstructure, masts, and similar arrangements constructed on the hull, and on a sailing vessel all spars, standing rigging, running rigging, blocks, fittings, and sails;

(4) Inspection of all railings and bulwarks and their attachment to the hull structure;

(5) Inspection to ensure that guards or rails are provided in dangerous places;

(6) Inspection and operation of all weathertight closures above the weather deck and the provisions for drainage of sea water from the exposed decks; and

(7) Inspection of all interior spaces to ensure that they are adequately ventilated and drained, and that means of escape are adequate and properly maintained.

(b) The vessel must be afloat for at least a portion of the inspection as required by the marine inspector.
(c) When required by the marine inspector, a portion of the inspection must be conducted while the vessel is underway so that the hull and internal structure can be observed.

42.3 Machinery inspection items.

(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 inspections of machinery, fuel, and piping systems, including the following:

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

42.4 Electrical inspection items.

(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 electrical equipment and systems, including the following:

1. Inspection of all cable as far as practicable without undue disturbance of the cable or electrical apparatus;
2. Test of circuit breakers by manual operation;
3. Inspection of fuses including ensuring the ratings of fuses are suitable for the service intended;
4. Inspection of rotating electrical machinery essential to the routine operation of the vessel;
5. Inspection of all generators, motors, lighting fixtures and circuit interrupting devices located in spaces or areas that may contain flammable vapors;
6. Inspection of batteries for condition and security of stowage;
7. Operational test of electrical apparatus, which operates as part of or in conjunction with a fire detection or alarms system installed on board the vessel, by simulating, as closely as practicable, the actual operation in case of fire; and
8. Operational test of all emergency electrical systems.
42.5 Lifesaving inspection items

(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:

(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.

(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;
(3) Operation of the fire main system and checking of the pressure at the most remote and highest outlets;
(4) Testing of each fire hose to a test pressure equivalent to its maximum service pressure;
(5) Checking of each cylinder containing compressed gas to ensure it has been tested and marked;
(6) Testing or renewal of flexible connections and discharge hoses on semi-portable extinguishers and fixed gas extinguishing systems; and
(7) Inspection and testing of all smoke and fire detection systems, including sensors and alarms.

(b) The owner, managing operator, or a qualified servicing facility as applicable shall conduct the following inspections and tests:

(1) For portable fire extinguishers, the inspections, maintenance procedures, and hydrostatic pressure tests required by Chapter 4 of NFPA 10, “Portable Fire Extinguishers,” with the frequency specified by NFPA 10. In addition, carbon dioxide and Halon portable fire extinguishers must be refilled when the net content weight loss exceeds [10%] of the weight of charge. The owner or managing operator shall provide satisfactory evidence of the required servicing to the marine inspector. If any of the equipment or record has not been properly maintained, a qualified servicing facility must be required to perform the required inspections, maintenance procedures, and hydrostatic pressure tests. A tag issued by a qualified servicing organization, and attached to each extinguisher, may be accepted as evidence that the necessary maintenance procedures have been conducted.

(2) For semi-portable and fixed gas fire extinguishing systems. The owner or managing operator shall provide satisfactory evidence of the required servicing to the marine inspector. If any of the equipment or record has not been properly maintained, a qualified servicing facility may be required to perform the required inspections, maintenance procedures, and hydrostatic pressure tests.

(i) Carbon dioxide - Weigh cylinders. Recharge if weight loss exceeds [10%] of weight of charge. Test time delays, alarms, and ventilation shutdowns with carbon dioxide, nitrogen, or other nonflammable gas as stated in the system manufacturer's instruction manual. Inspect hoses and nozzles to be sure they are clean.

(ii) Halon - Weigh cylinders. Recharge if weight loss exceeds 10% of weight of charge. If the system has a pressure gauge, also recharge if pressure loss (adjusted for temperature) exceeds [10%]. Test time delays, alarms, and ventilation shutdowns with carbon dioxide, nitrogen, or other nonflammable gas as stated in the system manufacturer's instruction manual. Inspect hoses and nozzles to be sure they are clean.
(iii) Dry Chemical (cartridge operated) - Examine pressure cartridge and replace if end is punctured or if determined to have leaked or to be in unsuitable condition. Inspect hose and nozzle to see if they are clear. Insert charged cartridge. Ensure dry chemical is free flowing (not caked) and extinguisher contains full charge.

(iv) Dry chemical (stored pressure) - See that pressure gauge is in operating range. If not, or if the seal is broken, weigh or otherwise determine that extinguisher is fully charged with dry chemical. Recharge if pressure is low or if dry chemical is needed.

(v) Foam (stored pressure) - See that pressure gauge, if so equipped, is in the operating range. If not, or if the seal is broken, weigh or otherwise determine that extinguisher is fully charged with foam. Recharge if pressure is low or if foam is needed. Replace premixed agent every [3] years.

(c) The owner, managing operator, or master shall destroy, in the presence of the marine inspector, each fire hose found to be defective and incapable of repair.

(d) At each initial and subsequent inspection for certification, the marine inspector may require that a fire drill be held under simulated emergency conditions to be specified by the inspector.

42.7 Pressure vessels and boilers

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

42.8 Steering and miscellaneous systems and equipment

(a) At each initial and subsequent inspection for certification the owner or managing operator shall be prepared to test the steering systems of the vessel and make them available for inspection to the extent necessary to determine that they are in suitable condition and fit for the service intended. Servo-type power systems, such as orbital systems, must be tested and capable of smooth operation by a single person in the manual mode, with hydraulic pumps secured.

(b) At each initial and subsequent inspection for certification the owner or managing operator shall be prepared to test and make available for inspection all items in the ship's outfit, such as ground tackle, navigation lights and equipment, markings, and placards, which are required to be carried by the regulations in this subchapter, as necessary to determine that they are fit for the service intended.

42.9 Unsafe practices

(a) At each inspection for certification and at every other vessel inspection all observed unsafe practices, fire hazards, and other hazardous situations
must be corrected and all required guards and protective devices must be in satisfactory condition.

(b) At each inspection for certification and at every other vessel inspection the bilges and other spaces may be examined to see that there is no excessive accumulation of oil, trash, debris, or other matter that might create a fire 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

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

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

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

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

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

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

44.7 Repairs or alterations to the hull, machinery, or equipment that affect the safety of the vessel must not be made without the approval, except during an emergency. When repairs are made during an emergency, the owner, managing operator, or master shall make notification as soon as practicable after such repairs or alterations are made. Repairs or alterations that affect the safety of the vessel include, but are not limited to: replacement, repair, or refastening of deck or hull planking, plating, and structural members; repair of plate or frame cracks; damage repair or replacement, other than replacement in kind, of electrical wiring, fuel lines, tanks, boilers and other pressure vessels, and steering, propulsion and
45.8 Notification and inspection shall not be required for general maintenance dry
docking or hauling out.

45 Passenger Loading

45.1 Passengers permitted.

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

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

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

(i) Rail space in congested areas unsafe for passengers, such as near
anchor handling equipment or line handling gear, in the way of sail
booms, running rigging, or paddle wheels, or along pulpits;

(ii) Rail space on stairways; and

(iii) Rail space where persons standing in the space would block the
vision of the licensed individual operating the vessel.

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

(i) Areas for which the number of persons permitted is determined
using the fixed seating criteria;

(ii) Obstructions, including stairway and elevator enclosures,
elevated stages, bars, and cashier stands, but not including slot
machines, tables, or other room furnishings;

(iii) Toilets and washrooms;

(iv) Spaces occupied by and necessary for handling lifesaving
equipment, anchor handling equipment or line handling gear, or
in the way of sail booms or running rigging;

(v) Spaces below deck that are unsuitable for passengers or that
would not normally be used by passengers;

(vi) Interior passageways less than [thirty-four (34) inches] wide and
passageways on open deck, less than [twenty-eight (28) inches]
wide;
(vii) Bow pulpits, swimming platforms and areas that do not have a solid deck, such as netting on multi-hull vessels;
(viii) Deck areas in way of paddle wheels; and
(ix) Aisle area provided in accordance with Section 45.2.

(c) Fixed seating criterion. One passenger may be permitted for each [eighteen (18) inches] of width of fixed seating provided by Section 45.2. Each sleeping berth in overnight accommodation spaces shall be counted as only one seat.

(d) Different passenger capacity criteria may be used on each deck of a vessel and added together to determine the total passenger capacity of that vessel. Where seats are provided on part of a deck and not on another, the number of passengers permitted on a vessel may be the sum of the number permitted by the seating criterion for the space having seats and the number permitted by the deck area criterion for the space having no seats.

The length of rail criterion may not be combined with either the deck area criterion or the fixed seating criterion when determining the maximum number of passengers permitted on an individual deck.

(e) For a vessel operating on short runs on protected waters such as a ferry, special consideration may be given to increases in passenger allowances.

45.2 Seating.

(a) A seat must be provided for each passenger permitted in a space for which the fixed seating criterion has been used to determine the number of passengers permitted.

(b) A seat must be constructed to minimize the possibility of injury and avoid trapping occupants.

(c) Installation of seats must provide for ready escape.

(d) Seats, including fixed, temporary, or portable seats, must be arranged as follows:

(1) An aisle of not more than [fifteen (15) feet] in overall length must be not less than [24 inches] in width.

(2) An aisle of more than [fifteen (15) feet] in overall length must be not less than [thirty (30) inches] in width.

(3) Where seats are in rows, the distance from seat front to seat front must be not less than [thirty (30) inches] and the seats must be secured to a deck or bulkhead.

(4) Seats used to determine the number of passengers permitted must be secured to the deck, bulkhead, or bulwark.

Section 50 - Navigation

50 Safe Navigation
50.1 The movement of a vessel shall be under the direction and control of the master or a licensed operator at all times. The master shall operate the vessel keeping the safety of the passengers and crew foremost in mind directing the vessel in order to prevent accidents. Special attention should be paid to:

- The current velocity and direction of the transiting area;
- Tidal state;
- Prevailing visibility and weather conditions;
- Density of marine traffic;
- Potential damage caused by own wake;
- The danger of each closing visual or radar contact;
- Vessel’s handling characteristics; and
- Magnetic variation and deviation errors of the compass.

51 Navigation Lights

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

52 Sound Making Devices

52.1 All vessels must be equipped with a horn or whistle capable of producing a four-to-six second blast, audible at a range of at least one-half mile from the vessel. The whistle and its actuating mechanism must be permanently installed in the vessel. It must be electro-mechanical, air, or steam-actuated and capable of being sounded by the operator at the helm.

52.2 Vessels less than thirty-nine feet in length may utilize a portable sound signaling device such as a mouth whistle, hand-held air horn, or similar device in lieu of a permanently installed device provided it meets all of the criteria listed above. A portable device must be kept in a position that is immediately accessible to the operator of the vessel.

52.3 Vessels greater than thirty-nine feet in length are required to be equipped with a bell. The bell must be permanently mounted to the vessel's exterior structure in the vicinity of the control station. A lanyard or wire must be attached to the bell's clapper to enable the operator to sound the bell from the control station.

53 Compasses

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

54 Charts and nautical Publications
54.1 As appropriate for the intended voyage, a vessel must carry adequate and up-to-date:
   (a) Charts of large enough scale to make safe navigation possible;
   (b) U.S. Coast Pilot or similar publication;
   (c) United States Coast Guard Light List;
   (d) Tide tables; and
   (e) Current tables or a river current publication issued by the U.S. Army Corps of Engineers or a river authority.

54.2 Extracts from the publications listed above for the areas to be transited may be provided instead of the complete publication.

Section 60 - Life Saving Systems

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

60.1 The vessel owner shall provide [one (1)] United States Coast Guard-approved 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.

60.2 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.

60.3 The vessel owner 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 Section 66.

60.4 The vessel owner 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.

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

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

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.
62.4 The owner of a vessel, except those vessels operating exclusively on rivers, 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.

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

63.1 The vessel owner shall provide one (1) United States Coast Guard-approved 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.

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

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

63.4 The vessel owner shall provide a 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.

64 Class E Vessel Equivalent Requirements

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

65 Visual Distress Signals.

65.1 The owner of a vessel which operates on the [insert body of water] shall have aboard the vessel at least one option, from the following list, of United States Coast Guard-approved visual distress signals:
<table>
<thead>
<tr>
<th>Option</th>
<th>Number Required</th>
<th>Type</th>
<th>Accepted</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>[1]</td>
<td>Orange flag distress signal and electric distress light</td>
<td>Day Only</td>
</tr>
<tr>
<td></td>
<td>[1]</td>
<td></td>
<td>Night Only</td>
</tr>
<tr>
<td>D</td>
<td>[3]</td>
<td>Floating or hand-held orange smoke and electric distress light</td>
<td>Day Only</td>
</tr>
<tr>
<td></td>
<td>[1]</td>
<td></td>
<td>Night Only</td>
</tr>
<tr>
<td>E</td>
<td>[3]</td>
<td>Floating or hand-held orange smoke and Option (a) or Option (b)</td>
<td>Day and Night</td>
</tr>
<tr>
<td>F</td>
<td>[1]</td>
<td>Orange distress flag and Option (a) or (b)</td>
<td>Day and Night</td>
</tr>
</tbody>
</table>

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

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

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.

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.

66 Personal Flotation Devices - General.

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.

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

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

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

67 First Aid Kit

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

68 Rescue boats and survival craft

68.1 A vessel of more than [sixty-five (65) feet] in length must carry at least one rescue boat unless the marine inspector determines that:

(a) The vessel is sufficiently maneuverable, arranged, and equipped to allow the crew to recover a helpless person from the water;

(b) Recovery of a helpless person can be observed from the operating station; and

(c) The vessel does not regularly engage in operations that restrict its maneuverability.

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

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

69 General

69.1 Life saving safety equipment carried in excess of the requirements specified above must meet the same type approval requirements.
Section 70 - Stability & Subdivision

70 Stability Testing

70.1 A vessel’s stability must be assessed against the applicable requirements of Sec. 170.170, 170.173, 171.050, 171.055, and 171.057 in 46 CFR Subchapter S if it meets the following:
   (a) The vessel is more than [sixty five (65) feet] in length
   (b) The vessel carries more than [one hundred and fifty (150) passengers].
   (c) The vessel carries passengers on two or more decks.
   (d) The vessel is a pontoon vessel that operates on other than protected (sheltered) waters or carries more than [forty nine (49) passengers].
   (d) Any other vessel whose stability is questioned by the marine inspector.

70.2 A single deck passenger vessel carrying between [7 and 150 passengers] must have its stability assessed against the simplified (proof test) stability standards as follows:
   (a) Sailing vessels - 46 CFR 178.325
   (b) Mono-hull vessels – 46 CFR 178.330
   (c) The deadweight simulation for each passenger shall be [one hundred and eighty five (185) pounds].
   (d) The number of passengers used to determine passenger weight shall in no case exceed the maximum number calculated by the appropriate method in Section 45.
   (e) Any solid fixed ballast used to meet stability standards must be stowed in a manner that prevents shifting and installed to the satisfaction of the marine inspector. Removal of solid ballast constitutes a modification if the vessel requiring notification of the [insert title of official who administers the state’s boating laws].

70.3 A single deck pontoon passenger vessel carrying between [7 and 49 passengers] must have its stability assessed against the simplified (proof test) stability standards as follows:
   (a) Pontoon vessels – 46 CFR 178.340
   (b) The deadweight simulation for each passenger shall be [one hundred and eighty five (185) pounds].
   (c) The number of passengers used to determine passenger weight shall in no case exceed the maximum number calculated by the appropriate method in Section 45.
   (d) Any solid fixed ballast used to meet stability standards must be stowed in a manner that prevents shifting, and be installed to the satisfaction of the marine inspector. Removal of solid ballast constitutes a modification if the vessel requires notification of the [insert title of official who administers the state’s boating laws].
70.4 A pontoon vessel that has more than two pontoons or has decks higher than [6 inches] above the pontoons must meet the stability standard found in ABYC Standard H-35, “Powering and Load Capacity of Pontoon Boats.”

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

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

71 Weather deck drainage

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

72 Sub-division, damage stability, and watertight integrity

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

Section 80 - Fire Fighting Systems

80 Portable Fire Fighting Equipment.

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

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

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
(8) A storeroom containing flammable liquids (including liquors of 80 proof or higher where liquor is packaged in individual containers of [2.5 gallons] capacity or greater).

(b) The following spaces must be equipped with a United States Coast Guard-approved fire detecting system, except when a fixed gas fire extinguishing system that is capable of automatic discharge upon heat detection is installed or when the space is manned:

(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 any other fuels having a flash point of 110[deg] F or lower; and

(5) A space containing a fuel tank for gasoline or any other fuel having a flash point of 110[deg] F or lower.

(c) All griddles, broilers, and deep fat fryers must be fitted with a grease extraction hood.

(d) Each overnight accommodation space on a vessel with overnight accommodations for passengers must be fitted with an independent modular smoke detecting and alarm unit.

81.2 Servicing and maintenance of fixed fire extinguishing and detecting systems shall be performed by a qualified fire fighting equipment repair service annually.

82 Fire Main System.

82.1 Fire pumps.

(a) A self priming, power driven fire pump must be installed on each vessel:

(1) Of not more than [sixty-five (65) feet] in length which is a ferry vessel;

(2) Of not more than [sixty-five (65) feet] in length that carries more than [forty nine (49) passengers]; or

(3) Of more than [sixty-five (65) feet] in length.

(b) On a vessel of not more than [sixty-five (65) feet] in length carrying more than [forty-nine (49) passengers], and on a vessel of more than [sixty five (65) feet] in length, the minimum capacity of the fire pump must be [fifty (50) gallons per minute] at a pressure of not less than [60 psi] at the pump outlet. The pump outlet must be fitted with a pressure gauge.

(c) On a ferry vessel of not more than [sixty-five (65) feet] in length carrying not more than [forty-nine (49) passengers], the minimum capacity of the fire pump must be [10 gallons per minute]. The fire pump must be capable of projecting a hose stream from the highest hydrant, through the hose and nozzle, a distance of [twenty-five (25) feet].

(d) The power-driven fire pump system shall be self-priming and of such size as to discharge an effective stream from a hose connected to the highest outlet of the pump. The power fire pump system may be driven by a propulsion engine or other source of power. The pump may also be
connected to the bilge system so that it can serve as either a fire pump or a bilge pump.

(e) A fire pump must be capable of both remote operation from the operating station and local operations at the pump.

(f) The power-driven fire pump system shall be of a type that allows any part of the vessel to be reached with an effective stream of water from one length of fire hose.

82.2 Fire main and hydrants.

(a) A vessel that has a power driven fire pump must have a sufficient number of fire hydrants to reach any part of the vessel using a single length of fire hose.

(b) Piping, valves, and fittings in a fire main system must of material acceptable to the marine inspector.

(c) Each fire hydrant must have a valve installed to allow the fire hose to be removed while the fire main is under pressure.

(d) At least one length of fire hose shall be attached to each power-drive fire pump or hydrant in the system at all times. Fire hose may be commercial fire hose or equivalent which is not more than one and a half (1 1/2) inches in diameter or garden hose which is not less than five eighths (5/8) inch nominal inside diameter. The fire hose shall be in one piece which is not less than twenty-five (25), nor more than fifty (50), feet in length. Garden hose, when used, shall be of a good commercial grade constructed of an inner tube, plies of braided cotton reinforcement, and an outer rubber cover or equivalent material and shall be fitted with a commercial garden hose nozzle of good grade bronze or equivalent metal.

83 Miscellaneous Firefighting Equipment

83.1 Fire axe.

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

83.2 Fire bucket.

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

Section 90 - Vessel Construction and Arrangement

90 Plans and Information Required
90.1 The owner of a new vessel requesting initial inspection for certification shall, prior to the start of construction submit for approval to [insert title of official who administers the state’s boating laws] at least [two] copies of the following plans:
   (a) Outboard profile;
   (b) Inboard profile; and
   (c) Arrangement of decks.

90.2 In addition, the owner shall, prior to receiving a Certificate of Inspection, submit for approval at least [two] copies of the following plans, manuals, analyses, and calculations that are applicable to the vessel:
   (a) Midship section;
   (b) Survival craft embarkation stations;
   (c) Machinery installation, including but not limited to:
      (1) Propulsion and propulsion control, including shaft details;
      (2) Steering and steering control, including rudder details;
      (3) Ventilation diagrams; and
      (4) Engine exhaust diagram;
   (d) Electrical installation including, but not limited to:
      (1) Elementary one-line diagram of the power system.
      (2) Cable lists;
      (3) Bills of materials;
      (4) Type and size of generators and prime movers;
      (5) Type and size of generator cables, bus-tie cables, feeders, and branch circuit cables;
      (6) Power, lighting, and interior communication panelboards with number of circuits and rating of energy consuming devices;
      (7) Type of capacity of storage batteries;
      (8) Rating of circuit breakers and switches, interrupting capacity of circuit breakers, and rating and setting of overcurrent devices; and
      (9) Electrical plant load analysis.
   (e) Lifesaving equipment locations and installation;
   (f) Fire protection equipment installation including, but not limited to:
      (1) Fire main system plans and calculations;
      (2) Fixed gas fire extinguishing system plans and calculations;
      (3) Fire detecting system and smoke detecting system plans;
      (4) Sprinkler system diagram and calculations; and
      (5) Portable fire extinguisher types, sizes and locations;
   (g) Fuel tanks;
   (h) Piping systems including: bilge, ballast, hydraulic, sanitary, compressed air, combustible and flammable liquids, vents, soundings, and overflows;
   (i) Hull penetrations and shell connections;
   (j) Marine sanitation device model number, approval number, connecting wiring and piping; and
   (k) Lines and offsets, curves of form, cross curves of stability, and tank capacities including size and location on vessel; and
   (l) On sailing vessels:
(1) Masts, including integration into the ship's structure; and
(2) Rigging plan showing sail areas and centers of effort as well as the
    arrangement, dimensions, and connections of the standing rigging.

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

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

91 Structural Hull Design

91.1 Except as otherwise allowed by section, a vessel must comply with the
structural design requirements of one of the standards listed below for the hull
material of the vessel.
(a) Wooden hull vessels--Rules and Regulations for the Classification of
    Yachts and Small Craft, Lloyd's Register of Shipping (Lloyd's);
(b) Steel hull vessels:
    (1) Rules and Regulations for the Classification of Yachts and Small
        Craft, Lloyd's; or
    (2) Rules for Building and Classing Steel Vessels Under 61 Meters (200
        Ft) in Length, American Bureau of Shipping (ABS);
(c) Fiber reinforced plastic vessels:
    (1) Rules and Regulations for the Classification of Yachts and Small
        Craft, Lloyd's; or
    (2) Rules for Building and Classing Reinforced Plastic Vessels, ABS; or
    (3) ABS Guide for High Speed Craft;
(d) Aluminum hull vessels:
    (1) Rules and Regulations for the Classification of Yachts and Small
        Craft, Lloyd's; or
        (i) For a vessel of more than 30.5 meters (100 feet) in length-- Rules
            for Building and Classing Aluminum Vessels, ABS; or
        (ii) For a vessel of not more than 30.5 meters (100 feet) in length--
            Rules for Building and Classing Steel Vessels Under 61 Meters
            (200 Feet) in Length, ABS, with the appropriate conversions from
            the ABS Rules for Building and Classing Aluminum Vessels; or
    (2) ABS Guide for High Speed Craft;
(e) Steel hull vessels operating in protected waters--Rules for Building and
    Classing Steel Vessels for Service on Rivers and Intracoastal Waterways,
    ABS.
91.2 Alternate Structural Acceptance Criteria

(a) When the scantlings for the hull, deckhouse, and frames of the vessel differ from those specified by the standards listed in Section 91.1, and the owner can demonstrate that the vessel, or another vessel approximating the same size, power, and displacement, has been built to such scantlings and has been in satisfactory service insofar as structural adequacy is concerned for a period of at least 5 years, such scantlings may be approved by the marine inspector.

(b) The scantlings for a vessel of not more than [sixty-five (65) feet] in length carrying not more than [twelve (12) passengers] that do not meet the standards in Section 91.1 may be approved by the marine inspector if the builder of the vessel establishes to the satisfaction of the [insert title of official who administers the state’s boating laws] that the design and construction of the vessel is adequate for the intended service.

(c) The design, materials, and construction of masts, posts, yards, booms, bowsprits, and standing rigging on a sailing vessel must be suitable for the intended service. The hull structure must be adequately reinforced to ensure sufficient strength and resistance to plate buckling. The marine inspector may require the owner to submit detailed calculations on the strength of the mast, post, yards, booms, bowsprits, and standing rigging to [insert title of official who administers the state’s boating laws] for evaluation.

(d) When the structure of vessel is of novel design, unusual form, or special materials, which cannot be reviewed or approved in accordance with Section 91.1, the structure may be approved by the [insert title of official who administers the state’s boating laws], when it can be shown by systematic analysis based on engineering principles that the structure provides adequate safety and strength. The owner shall submit detailed plans, material component specifications, and design criteria, including the expected operating environment, resulting loads on the vessel, and design limitations for such vessel, to the [insert title of official who administers the state’s boating laws].

92 Fire Protection

92.1 General arrangement and outfitting.

(a) Fire hazards to be minimized. The general construction of the vessel must be such as to minimize fire hazards insofar as it is reasonable and practicable.

(b) Combustibles insulated from heated surfaces. Internal combustion engine exhausts, boiler and galley uptakes, and similar sources of ignition must be kept clear of and suitably insulated from combustible material. Dry exhaust systems for internal combustion engines on wooden or fiber reinforced plastic vessels must be installed in accordance with American...
Boat and Yacht Council (ABYC) Standard P-1 “Installation of Exhaust Systems for Propulsion and Auxiliary Engines.”

(c) Separation of machinery and fuel tank spaces from accommodation spaces. Machinery and fuel tank spaces must be separated from accommodation spaces by boundaries that prevent the passage of vapors.

(d) Paint and flammable liquid lockers. Paint and flammable liquid lockers must be constructed of steel or equivalent material, or wholly lined with steel or equivalent material.

(e) Vapor barriers. Vapor barriers must be provided where insulation of any type is used in spaces where flammable and combustible liquids or vapors are present, such as machinery spaces and paint lockers.

(f) Waste receptacles. Unless other means are provided to ensure that a potential waste receptacle fire would be limited to the receptacle, waste receptacles must be constructed of noncombustible materials with no openings in the sides or bottom.

(g) Mattresses. All mattresses must comply with either:

1. The U.S. Department of Commerce “Standard for Mattress Flammability” (FF 4-72.16), 16 CFR Part 1632, Subpart A and not contain polyurethane foam; or

2. International Maritime Organization Resolution A.688(17) “Fire Test Procedures For Ignitability of Bedding Components.” Mattresses that are tested to this standard may contain polyurethane foam.

92.2 Cooking and Heating


The following provisions also apply:

1. The use of gasoline for cooking, heating, or lighting is prohibited on all vessels.

2. Fireplaces or other space heating equipment with open flames are prohibited from being used on all vessels.

3. Galley stoves aboard a vessel shall be operated only by the vessel owner, the operator, or a crew member while carrying passengers. The vessel owner, the operator, or the crew member shall be present in the galley at all times while the galley stove is being operated.

4. Heating appliances, when present on a vessel, shall be of a type commonly manufactured for use aboard vessels.

5. Heating appliances, when present on a vessel, shall be installed in adequately ventilated areas and shall be securely fastened to the vessel.

6. Woodwork and other combustible material immediately surrounding heating appliances installed on a vessel shall be effectively insulated with noncombustible material.
(7) All fuel tanks for heating appliances installed on a vessel shall have an in-line shutoff valve as close to the fuel tank as practical. The fuel line shall have as few other fittings as practicable between the shutoff valve and the heating appliance. All remotely installed fuel tanks shall be securely fastened to the vessel in an accessible location.

(8) Heating appliances, when present on a vessel, using liquefied petroleum gas, liquefied natural gas, or compressed natural gas shall be installed in accordance with good marine practice and standards, except for Class A and Class D vessels on which these type appliances are prohibited by federal regulation.

(9) A person shall not ignite or start a liquefied petroleum gas, compressed natural gas, or liquefied natural gas heating or cooking appliance onboard a vessel while passengers are onboard the vessel.

(b) Cooking systems using liquefied petroleum gas (LPG) and compressed natural gas (CNG) must meet the following requirements:


(2) The design, installation and testing of each CNG system must meet ABYC A-22, “Marine Compressed Natural Gas (CNG) Systems,” Chapter 6 of NFPA 302.

(3) Cooking systems using Chapter 6 of NFPA 302 as the standard must meet the following additional requirements:

(i) The storage or use of CNG containers within the accommodation area, machinery spaces, bilges, or other enclosed spaces is prohibited;

(ii) LPG or CNG must be odorized in accordance with ABYC A-1 appendix 4 or A-22 appendix 4, respectively;

(iii) The marking and mounting of LPG cylinders must be in accordance with ABYC A-1 appendix 7; and

(iv) LPG cylinders must be of the vapor withdrawal type as specified in ABYC A-1 Section 1.7.

(4) Continuous pilot lights or automatic glow plugs are prohibited for an LPG or CNG installation using ABYC A-1 or A-22 as the standard.

(5) CNG installation using ABYC A-22 as the standard must meet the following additional requirements:

(i) The storage or use of CNG containers within the accommodation area, machinery spaces, bilges, or other enclosed spaces is prohibited;

(ii) CNG cylinders, regulating equipment, and safety equipment must meet the installation, stowage, and testing requirements of paragraph 6-5.12 of NFPA 302.

(iii) The use or stowage of stoves with attached CNG cylinders is prohibited as specified in paragraph 6-5.1 of NFPA 302.

(6) If the fuel supply line of an LPG or CNG system enters an enclosed space on the vessel, a remote shutoff valve must be installed that can
be operated from a position adjacent to the appliance. The valve must
be located between the fuel tank and the point where the fuel supply
line enters the enclosed portion of the vessel. A power-operated valve
installed to meet this requirement must be of a type that will fail
closed.

(7) The following variances from ABYC A-1 Section 1.12 are allowed for
CNG:
(i) The storage locker or housing access opening need not be in the
top.
(ii) The locker or housing need not be above the waterline.

(8) The following variances from NFPA 302 are allowed:
(i) The storage locker or housing for CNG tank installations need not
be above the waterline as required by paragraph 6-5.12.1.1(a);
(ii) Ignition protection need not be provided as required by paragraph
6-5.4. Note to Sec. 184.240: The ABYC and NFPA standards
referred to in this section require the posting of placards containing
safety precautions for gas cooking systems.

92.3 Structural fire protection

(a) Cooking areas. Vertical or horizontal surfaces within 3 feet of cooking
appliances must have an American Society for Testing and Materials
(ASTM) E-84 “Surface Burning Characteristics of Building Materials”
flame spread rating of not more than 75. Curtains, draperies, or free
hanging fabrics must not be fitted within 3 feet of cooking or heating
appliances.

(b) Composite materials. When the hull, bulkheads, decks, deckhouse, or
superstructure of a vessel is partially or completely constructed of a
composite material, including fiber reinforced plastic, the resin used must
be fire retardant as meeting MIL-R-21607. Resin systems that have not
been accepted as meeting MIL-R-21607 may be accepted as fire retardant
if they have an ASTM E-84 flame spread rating of not more than 100
when tested in laminate form. The laminate submitted for testing the resin
system to ASTM E-84 must meet the following requirements:
1. The test specimen laminate total thickness must be between 1/8 and
1/4 inch.
2. The test specimen laminate must be reinforced with glass fiber of any
form and must have a minimum resin content of 40% by weight.
3. Tests must be performed by an independent laboratory.
4. Test results must include, at a minimum, the resin manufacturer's
name and address, the manufacturer's designation (part number) for
the resin system including any additives used, the test laboratory's
name and address, the test specimen laminate schedule, and the flame
spread index resulting from the ASTM E-84 test.
5. Specific laminate schedules, regardless of resin type, that have an
ASTM E-84 flame spread rating of not more than 100 may be
(c) Use of general purpose resin. General purpose resins may be used instead of fire retardant resins if the following additional requirements are met:

(1) Cooking and heating appliances. Galleys must be surrounded by B-15 Class fire boundaries. This may not apply to concession stands that are not considered high fire hazards areas (galleys) as long as they do not contain medium to high heat appliances such as deep fat fryers, flat plate griddles, and open ranges with heating surfaces exceeding 250 [deg] F. Open flame systems for cooking and heating are not allowed.

(2) Sources of ignition. Electrical equipment and switchboards must be protected from fuel or water sources. Fuel lines and hoses must be located as far as practical from heat sources. Internal combustion engine exhausts, boiler and galley uptakes, and similar sources of ignition must be kept clear of and suitability insulated from any woodwork or other combustible matter. Internal combustion engine dry exhaust systems must be installed in accordance with ABYC Standard P-1.

(3) Fire detection and extinguishing systems. Fire detection and extinguishing systems must be installed. Additionally, all fiber reinforced plastic (FRP) vessels constructed with general purpose resins must be fitted with a smoke activated fire detection system of an approved type, installed in all accommodation spaces, all service spaces, and in isolated spaces such as voids and storage lockers that contain an ignition source such as electric equipment or piping for a dry exhaust system.

(4) Machinery space boundaries. Boundaries that separate machinery spaces from accommodation spaces, service spaces, and control spaces must be lined with noncombustible panels or insulation.

(5) Furnishings. Furniture and furnishings must be fire resistant meting the standards of UL 1056, “Fire Test of Upholstered Furniture”.

(d) Limitations on the use of general purpose resin

(1) Overnight accommodations. Vessels with overnight passenger accommodations for more than [twelve (12) persons] must not be constructed with general-purpose resin.

(2) Gasoline fuel systems. Vessels with engines powered by gasoline or other fuels having a flash point of 110[deg] F or lower must not be constructed with general purpose resin, except for vessels powered by outboard engines with portable fuel tanks stored in an open area aft, if the arrangement does not produce an unreasonable hazard.

(3) Cargo. Vessels carrying or intended to carry hazardous combustible or flammable cargo must not be constructed with general-purpose resin.

93 Means of Escape

42
93.1 Except as otherwise provided in this section, each space accessible to passengers or used by the crew on a regular basis, must have at least two means of escape, one of which must not be a watertight door.

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

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

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

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

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

93.6 The minimum clear opening of a door or passageway used as a means of escape must not be less than [thirty-two (32) inches] in width, however, doors or
passageways used solely by crew members must have a clear opening not less than [twenty-eight (28) inches]. The sum of the width of all doors and passageways used as means of escape from a space must not be less than [0.333 inches] multiplied by the number of passengers for which the space is designed.

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

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

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

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

93.11 Each ladder used as a means of escape must be mounted at least [seven (7) inches] from the nearest permanent object in back of the ladder. Rungs must be:
   (a) At least [sixteen (16) inches] in width; and
   (b) Not more than [twelve (12) inches] apart, and uniformly spaced for the length of the ladder with at least [forty five (45) inches] clearance above each rung.

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

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

93.14 On a vessel of not more than [sixty-five (65) feet] in length, a window or windshield of sufficient size and proper accessibility may be used as one of the required means of escape from an enclosed space, provided it:
(a) Does not lead directly overboard;
(b) Can be opened or is designed to be kicked or pushed out; and
(c) Is suitably marked.

93.15 Only one means of escape is required from a space where:
(a) The space has a deck area less than [three hundred and twenty two (322) square feet];
(b) There is no stove, heater, or other source of fire in the space;
(c) The means of escape is located as far as possible from a machinery space or fuel tank; and
(d) If an accommodation space, the single means of escape does not include a deck scuttle or a ladder.

94 General Passenger Accommodation Requirements

94.1 All passenger accommodations must be arranged and equipped to provide for the safety of the passengers in consideration of the route, modes of operation, and speed of the vessel.

94.2 The height of ceilings in a passenger accommodation space, including aisles and passageways, must be at least [seventy four (74) inches], but may be reduced at the sides of a space to allow the camber, wiring, ventilation ducts, and piping.

94.3 A passenger accommodation space must be maintained to minimize fire and safety hazards and to preserve sanitary conditions. Aisles must be kept clear of obstructions.

94.4 A passenger accommodation space must not contain:
(a) Electrical generation equipment or transformers, high temperature parts, pipelines, rotating assemblies, or any other item that could injure a passenger, unless such an item is adequately shielded or isolated; and
(b) A control for operating the vessel, unless the control is so protected and located that operation of the vessel by a crewmember will not be impeded by a passenger during normal or emergency operations.

94.5 The deck above a passenger accommodation space must be located above the deepest load waterline.

94.6 A variation from a requirement of this subpart may be authorized for an unusual arrangement or design provided there is no significant reduction of space, accessibility, safety, or sanitation.

95 Ventilation of Enclosed and Partially Enclosed Spaces

95.1 An enclosed or partially enclosed space within a vessel must be adequately ventilated in a manner suitable for the purpose of the space.
95.2 A power ventilation system must be capable of being shut down from the pilot house.

95.3 An enclosed passenger or crew accommodation space and any other space occupied by a crew member on a regular basis must be ventilated by a power ventilation system unless natural ventilation in all ordinary weather conditions is satisfactory to the marine inspector.

96 Class A Vessel Specific Construction Requirements

96.1 Deck Rails.

(a) A vessel, except for an open boat which operates exclusively on rivers, shall have deck rails or equivalent protection at the periphery of all weather decks, including the cockpit, which are accessible to the passengers and crew. The top rail course of the deck rails shall be not less than [twenty-six (26) inches] above the deck.

(b) Deck rails shall consist of evenly spaced horizontal courses and the spacing between courses shall not be greater than [thirteen (13) inches]. However, rail courses are not required where the space between the top rail course and the deck is fitted with a bulwark, chain link fencing, wire mesh, or equivalent.

(c) A vessel with a flying bridge shall have suitable deck rails or equivalent protection at the periphery of the flying bridge deck. If passengers are allowed on the flying bridge, the rails shall be at least [twenty-six (26) inches] above the deck and meet all other requirements of this rule.

(d) An open boat which operates exclusively on rivers shall have suitable deck rails or equivalent protection.

(e) All deck rails or equivalent protection shall be in good and serviceable condition.

(f) Passengers shall not be allowed in any deck area where the rails do not meet the requirements of this rule. Deck areas not meeting these requirements shall be clearly marked indicating passengers are prohibited with signs or other suitable means.

96.2 Marine Radio and Compass.

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

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

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

96.4 Anchor and Anchor Line.

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

97 Class B Vessel Specific Construction Requirements

97.1 Deck Rails.

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

97.2 Anchor and Anchor Line.

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

98 Class C Vessel Specific Construction Requirements

98.1 Deck Rails.

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

98.2 Vessels Carrying Vehicles.

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

98.3 Toilet and Sanitary Facilities.

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

<table>
<thead>
<tr>
<th>Number of Passengers</th>
<th>Toilets</th>
<th>Washbasins</th>
</tr>
</thead>
<tbody>
<tr>
<td>[49] or less</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Over [49]</td>
<td>1 for men; 1 for women</td>
<td>1 for men; 1 for women</td>
</tr>
</tbody>
</table>
(b) Toilet and washbasin facilities shall be maintained in a serviceable and sanitary condition.

98.4 Anchors and Anchor Line.

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

99 Class D Vessel Specific Construction Requirements

99.1 Sailing Apparatus; Inspection.

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

99.2 Deck Rails.

(a) A vessel shall have deck rails or equivalent protection at the periphery of all weather decks, including the cockpit, which are accessible to the passengers and crew. The top course of the deck rails shall be located as follows:
(1) Not less than [twenty-four (24) inches] above the deck where accompanied by handgrabs.
(2) Not less than [twenty-six (26) inches] above the deck where not accompanied by handgrabs.
(b) Passengers shall not be allowed forward of the cabin unless the deck rails are [twenty-six (26) inches] high.
(c) Deck rails shall consist of evenly spaced courses and the spaces between courses shall not be greater than [twelve (12) inches] on [twenty-four (24)-inch] high deck rails or [thirteen (13) inches] on [twenty-six (26)-inch] high deck rails. However, rail courses are not required where the space between the top rail course and the deck is fitted with a bulwark, chain link fencing, wire mesh, or equivalent.
(d) All deck rails shall be in good and serviceable condition.
(e) Passengers shall not be allowed in any deck area where the rails do not meet the requirements of this rule. Deck areas not meeting these
requirements shall be clearly marked, indicating passengers are prohibited, with signs or other suitable means.

99.3 Marine Radio and Compass.

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

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

99.4 Toilet Facilities.

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

99.5 Anchors and Anchor Line.

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

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

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

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

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

100 Class E Vessel Specific Construction Requirements

100.1 Equivalent Requirements.

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

Section 100 - Machinery Systems

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

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

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

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

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

100.6 The exhaust pipe system of the main engines shall comply with all of the following provisions:
   (a) Be gastight to the hull interior.
   (b) Be designed and installed to prevent cooling water or seawater from returning to the engines.
   (c) Be so accessible that it can be inspected and repaired throughout its length.
   (d) Be supported so as to prevent undue stress which may cause fractures. Hangers, brackets, and other supporting components shall be made of fireproof materials and shall be installed so as to prevent the transmission of heat to adjacent combustible materials.
   (e) Where personnel or combustibles might come in contact with hot surfaces, effective protection shall be provided by water jacketing, lagging, shielding, or suitable guards.

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

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

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

102 Alternative Standards

102.1 A vessel, other than a high speed craft, of not more than 65 feet in length carrying not more than [twelve (12) passengers] propelled by gasoline or diesel internal combustion engines may comply with the following American Boat and Yacht Council (ABYC) Projects or 33 CFR subchapter S (Boating Safety), where indicated in this section, in lieu of complying with those requirements:

(a) H-2--"Ventilation of Boats Using Gasoline", or 33 CFR 183, subpart K, "Ventilation";
(b) H-22--"DC Electric Bilge Pumps Operating Under 50 Volts";
(c) H-24--"Gasoline Fuel Systems", or 33 CFR 183, subpart J-- "Fuel System";
(d) H-25--"Portable Gasoline Fuel Systems for Flammable Liquids";
(e) H-32--"Ventilation of Boats Using Diesel Fuel";
(f) H-33--"Diesel Fuel Systems";
(g) P-1--"Installation of Exhaust Systems for Propulsion and Auxiliary Engines"; and
(h) P-4--"Marine Inboard Engines".

103 Specific Machinery Requirements

103.1 General requirements.

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

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

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

(d) In systems and applications where flexible hoses are permitted to be clamped:
   (1) Double hose clamping is required where practicable;
   (2) The clamps must be of a corrosion-resistant metallic material;
(3) The clamps must not depend on spring tension for their holding power; and

(4) Two clamps must be used on each end of the hose, or one hose clamp can be used if the pipe ends are expanded or beaded to provide a positive stop against hose slippage.

103.2 Gasoline Engines; Ventilation.

(a) Any enclosed compartment or space, including the lower portion and bilge, in which a gasoline engine or fuel tank is located shall be provided with a ventilation system capable of preventing, and effectively removing, an accumulation of flammable or explosive vapors. The ventilation system shall be constructed and installed as follows:

(1) Where a gasoline engine and fuel tank are in the same enclosed or interconnected compartment, not less than [two (2)] supply ducts should be located at one end or side of the compartment and should extend halfway into the compartment so as to be lower than the level of the carburetor air intake. Not less than [two (2)] exhaust ducts, one of which should be power-assisted, should be located at the opposite end or side of the compartment and extend to the lowest portion of the compartment.

(2) When a gasoline engine and fuel tank are not in the same enclosed or interconnected compartment, each compartment should be ventilated in the manner described in subdivision (a) of this sub-rule. However, a separate fuel tank compartment may be foamed in with United States Coast Guard-approved type foam instead of ventilating the compartment.

(3) The exterior termination of a ventilation duct should be fitted with a cowl, scoop, or louver and should be elevated, in a suitable manner, to prevent the return of displaced vapors to any enclosed space and to avoid the pickup of vapors from fuel-filling operations. Cowls, scoops, or louvers should be trimmed for maximum effectiveness.

(b) A duct should be constructed of noncombustible, not readily collapsible materials. It should be reasonably gastight from end to end. It should lead as directly as possible and be properly fastened and supported. A duct should be installed so that low spots in the ducting will not collect water and the ordinary collection of water in the bilge will not block the duct.

(c) The internal cross-sectional area of each intake and exhaust ventilation duct in a compartment should be the same. The minimum total aggregate internal cross-sectional area of the intake ventilation ducts should be not less than [one and a half (1 1/2) square inches per foot] of beam. Notwithstanding, each round-type duct should have an inside diameter of not less than [three (3) inches], and each rectangular-type duct should have inside dimensions equivalent to not less than [two (2) inches] by [three and a half (3 1/2) inches].

(d) All cowls, scoops, or louvers should have an open mouth area of not less than twice the required duct area. When screened, the mouth area should
be increased to compensate for the area of the screen wire. A damper should not be fitted in a duct.

(e) At least one exhaust duct of each compartment required to be ventilated should be fitted with a power-operated exhaust blower with a pickup capacity of not less than [one hundred (100) cubic feet per minute] and should be of a type approved for marine use. The exhaust blower should be installed as high above the bilges as possible and should be in good and serviceable condition.

(f) At each helm position, where ignition of the main engine can be accomplished, there should be an exhaust blower switch which is independent from the ignition system or the blower switch should have an automatic delay interlock with the ignition system. The blower switch should be in good and serviceable condition.

(g) At each helm position, where ignition of the main engines can be accomplished, a label should be posted which is in plain view of the operator, which is as close to the ignition switch as practicable, and which contains, at a minimum, the following statement: "Warning - Before starting engine(s) operate blower(s)."

103.3 Diesel Engines; Ventilation.

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

103.4 Fixed Fuel Tank Systems

(a) A fixed fuel tank on a vessel shall be installed as follows:

(1) To permit examination with minimum disturbance to the hull structure.

(2) With adequate support and bracing to prevent movement. The supports and braces shall be insulated from contact with the tank surfaces with a non-abrasive and non-absorbent material.

(3) With openings for fill and vent pipes and for fuel level gauges, where used, on the topmost surfaces of the tank. The tank shall not have openings in the bottom, sides, or ends, except that an opening fitted with a threaded plug or cap may be used for cleaning the tank.

(4) On fuel tanks for diesel fuel, the opening for the fuel supply piping is not restricted to the top of the tank.
(b) Fixed fuel tank piping shall be installed as follows:

1. Fuel supply lines to the engines shall be tubing of copper, nickel-copper, steel, or United States Coast Guard-approved Type A flexible fuel line. Fuel supply lines shall run as direct as practicable, shall be accessible, and shall be supported in a suitable manner. They shall have a readily accessible, manually operated, in-line shutoff valve installed as close to the fuel tank as practicable. They shall be protected in a suitable manner from mechanical injury at all supports and where they pass through bulkheads and structural members.

2. Metal fuel supply lines shall be fitted with flexible vibration hoses as close to the engine as practicable.

3. A filling pipe shall be fitted to the highest point of the fuel tank and shall have an inside diameter of not less than [one and one quarter (1 1/4)] inches.

4. A fuel tank shall be fitted with a marine-type fuel gauge or a sounding pipe if sounding cannot be accomplished through the filling pipe.

5. A filling or sounding pipe shall be arranged so that overflow of liquid or vapor cannot escape to the inside of the vessel.

6. A fuel tank shall be fitted with a vent pipe connected at the highest point of the tank, shall have an inside diameter of not less than [seven sixteenths (7/16)] of an inch, and shall terminate on the hull exterior as far as practicable from any hull openings and below deck spaces. The vent pipe shall be installed to prevent accidental contamination of the fuel by water and shall be fitted with a removable flame screen at its point of termination.

7. Devices in fuel lines for drawing fuel below decks for any purpose are prohibited.

8. All accessories installed in the fuel line shall be supported in a suitable manner.

(c) The vessel owner or operator shall maintain the entire fuel system and accessories in good and serviceable condition.

(d) The owner or operator of a vessel with a fixed fuel system shall not carry fuel onboard the vessel outside of the fixed fuel system, unless the fuel is carried in conjunction with an auxiliary outboard engine. When fuel is carried, it shall be in portable fuel tanks as provided by manufacturers of outboard engines and shall be safely secured outside of the engine or living compartment.

(f) During fueling operations, smoking aboard the vessel by any person is prohibited.

(g) The vessel operator shall not allow passengers onboard the vessel while taking on fuel.

103.5 Fixed Fuel System Grounding

(a) A fixed fuel system shall be grounded by one or more of the following methods:

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

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

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

104 Bilge and Ballast Systems
104.1 General.
(a) A vessel must be provided with a satisfactory arrangement for draining any watertight compartment, other than small buoyancy compartments, under all practicable conditions. Sluice valves are not permitted in watertight bulkheads.
(b) A vessel of not more than [sixty-five (65) feet] in length carrying not more than [12 passengers] may meet the requirements of ABYC Project H-22, “DC Electric Bilge Pumps Operating Under 50 Volts,” in lieu of the requirements of this subpart, provided that each watertight compartment, other than small buoyancy compartments and the compartment forward of the collision bulkhead, is provided with a means for dewatering.
(c) Special consideration may be given to vessels, such as high-speed craft, which have a high degree of subdivision and utilize numerous small buoyancy compartments. Where the probability of flooding of the space is limited to external hull damage, compartment drainage may be omitted.
provided it can be shown by stability calculations that the safety of the vessel will not be impaired.

104.2 Bilge piping system.

(a) A vessel of at least [twenty-six (26) feet] in length must be provided with individual bilge lines and bilge suctions for each watertight compartment, except that the space forward of the collision bulkhead need not be fitted with a bilge suction line when the arrangement of the vessel is such that ordinary leakage may be removed from this compartment by the use of a hand portable bilge pump or other equipment, and such equipment is provided.

(b) A bilge pipe in a vessel of not more than [sixty-five (65) feet] in length must be not less than [one (1) inch] nominal pipe size. A bilge pipe in a vessel of more than [sixty-five (65) feet] in length must be not less than [one and one half (1.5) inches] nominal pipe size. A bilge suction must be fitted with a suitable strainer having an open area not less than three times the area of the bilge pipe.

(c) Except when individual pumps are provided for separate spaces, individual bilge suction lines must be led to a central control point or manifold and provided with a stop valve at the control point or manifold and a check valve at some accessible point in the bilge line. A stop-check valve located at a control point or manifold will meet the requirements for both a stop valve and a check valve.

(d) A bilge pipe piercing the collision bulkhead must be fitted with a screw-down valve located on the forward side of the collision bulkhead and operable from the weather deck, or, if it is readily accessible under service conditions, a screw-down valve without a reach rod may be fitted to the bilge line on the after side of the collision bulkhead.

104.3 Bilge pumps.

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

<table>
<thead>
<tr>
<th>Number of passengers</th>
<th>Length of vessel</th>
<th>Bilge pumps required</th>
<th>Min. capacity required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any number</td>
<td>More than [65] ft</td>
<td>2 fixed power pumps</td>
<td>[50] GPM</td>
</tr>
<tr>
<td>passengers and all ferry vessels.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Charter Boat Model Rules – approved September 8, 2008

<table>
<thead>
<tr>
<th>Not more than [49] passengers (Other than ferry vessels)</th>
<th>[26] feet up to [65] feet</th>
<th>1 fixed power pump and 1 portable hand pump or 1 fixed hand pump and 1 portable hand pump.</th>
<th>[10] GPM</th>
</tr>
</thead>
</table>

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

104.4 Bilge high level alarms

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

105 Steering Systems
105.1 Main steering gear for a self-propelled vessel.

(a) A vessel must be provided with a main steering gear that is:

(1) Of adequate strength and capable of steering the vessel at all service speeds;
(2) Designed to operate at maximum astern speed without being damaged or jammed; and
(3) Capable of moving the rudder from [thirty three (35) degrees] on one side to [thirty (30) degrees] on the other side in not more than [twenty eight (28) seconds] with the vessel moving ahead at maximum service speed.

(b) Control of the main steering gear, including control of any necessary associated devices (motor, pump, valve, etc.), must be provided from the operating station.

(c) The operating station must be arranged to permit the person steering to have the best possible all around vision.

(d) Strong and effective rudder stops must be provided to prevent jamming and damage to the rudder and its fittings. These stops may be structural or internal to the main steering gear.

(e) In addition to meeting the requirements above, a vessel with a power driven main steering gear must be provided with the following:

(1) A disconnect switch located in the steering compartment, and instantaneous short circuit protection for electrical power and control circuits. Overload protection is prohibited;
(2) An independent rudder angle indicator at the operating station;
(3) An arrangement that automatically resumes operation, without reset, when power is restored after a power failure;
(4) A manual means to center and steady the rudder(s) in an emergency; and
(5) A limit switch to stop the steering gear before it reaches the rudder stops required by Section 105.1(d).

(6) A vessel more than [sixty-five (65) feet] in length with a power driven main steering gear must be provided with a visual means, located at the operating station, to indicate operation of the power units.

106 Piping Systems

106.1 Piping for vital systems.

(a) Vital systems are those systems that are vital to a vessel's survivability and safety. For the purpose of this part the following are vital systems:

(1) Fuel system;
(2) Fire main;
(3) CO2 and Halon systems;
(4) Bilge system;
(5) Steering system;
(6) Propulsion system and its necessary auxiliaries and controls;
(7) Ship's service and emergency electrical generation system and its necessary auxiliaries; and
(8) A marine engineering system identified by the marine inspector as being crucial to the survival of the vessel or to the protection of the personnel on board.

(b) For the purpose of this part, a system not identified in paragraph (a) of this section is a non-vital system.

(c) Piping used in a vital system must be composed of ferrous materials and if subject to a pressure of more than [one hundred and fifty (150) psig], be designed, fabricated, and inspected in accordance with the principles of American National Standards Institute (ANSI) B 31.1, “Code for Pressure Piping, Power Piping.” The use of nonmetallic or nonferrous metallic piping in vital systems shall be specifically approved by the marine inspector.

Section 110 - Electrical Systems

110.1 General provisions

110.1 Electrical equipment on a vessel must be installed and maintained to:
(a) Provide services necessary for safety under normal and emergency conditions;
(b) Protect passengers, crew, other persons, and the vessel from electrical hazards, including fire, caused by or originating in electrical equipment, and electrical shock;
(c) Minimize accidental personnel contact with energized parts; and
(d) Prevent electrical ignition of flammable vapors.

110.2 General safety provisions:
(a) Electrical equipment and installations must be suitable for the roll, pitch, and vibration of the vessel underway.
(b) All equipment, including switches, fuses, lamp holders, etc., must be suitable for the voltage and current utilized.
(c) Receptacle outlets of the type providing a grounded pole or a specific direct current polarity must be of a configuration that will not permit improper connection.
(d) All electrical equipment and circuits must be clearly marked and identified.
(e) Any cabinet, panel, box, or other enclosure containing more than one source of power must be fitted with a sign warning persons of this condition and identifying the circuits to be disconnected.
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


(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

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

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

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

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

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

113 Distribution panels and switchboards

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

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

113.3 Each switchboard must be fitted with a drip shield.

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

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

114 Cable and wiring requirements

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

114.2 All cable and wire must:
   Have stranded copper conductors with sufficient current carrying capacity for the circuit in which they are used;
   (a) Be installed in a manner to avoid or reduce interference with radio reception and compass indication;
(b) Be protected from the weather;

(c) Be installed with metal supports spaced not more than [twenty four (24) inches] apart, and in such a manner as to avoid chafing and other damage. The use of plastic tie wraps must be limited to bundling or retention of multiple cable installations, and not used as a means of support, except that on vessels of not more than [sixty-five (65) feet] in length, installations in accordance with paragraph 14.h of ABYC E-8, and paragraph 15.h of ABYC E-9, are acceptable as meeting the requirements of this section;

(d) Not be installed with sharp bends;

(e) Be protected by metal coverings or other suitable means if in areas subject to mechanical abuse. Horizontal pipes used for protection shall have [.25 inch] holes for drainage every [five (5) feet];

(f) Be suitable for low temperature and high humidity if installed in refrigerated compartments;

(g) Not be located in a tank unless the cable provides power to equipment in the tank; and

(h) Have sheathing or wire insulation compatible with the fluid in a tank when installed as allowed by Section 114(b) (8).

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

114.5 Cable and wire for power and lighting circuits must:

(a) Meet Section 310-13 of the NEC (NFPA 70), except that asbestos insulated cable and dry location cables cannot be used;

(b) Be listed by Underwriters Laboratories (UL), as UL Boat or UL Marine cable; or

(c) Meet 46 CFR Subchapter J, Subpart 111.60, Wiring Materials and Methods; Sec. 111.60-1 for cable, and Sec. 111.60-11 for wire.

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

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

114.8 Each connection to a conductor or term:

(a) A pressure-type connector on each conductor;

(b) A solder lug on each conductor;

(c) A splice made with a pressure type connector to a flexible lead or conductor; or

(d) A splice that is soldered, brazed, or welded to a flexible lead or conductor.
114.9 A connector or lug of the set screw type must not be used with a stranded conductor smaller than [No. 14 AWG] except if there is a nonrotating follower that travels with the set screw and makes pressure contact with the conductor.

114.10 Each pressure type wire connector and lug must meet UL 486A, “Electric Wire Connectors and Soldering Lugs for Use With Copper Conductors.” The use of twist-on type wire nuts is permitted under the following conditions:
   (a) The connections must be made within an enclosure and the insulated cap of the connector must be secured to prevent loosening due to vibration; and
   (b) Twist-on type connectors may not be used for making joints in cables, facilitating a conductor splice, or extending the length of a circuit.

114.11 Each terminal block must have [6-32 terminal] screws or larger.

114.12 Wire connectors utilized in conjunction with screw type terminal blocks must be of the captive type such as the ring or the flanged spade type.

114.13 A cable must not be spliced in a hazardous location.

114.14 A cable may be spliced in a location, other than a hazardous location, under the following conditions:
   (a) A cable installed in a subassembly may be spliced to a cable installed in another subassembly;
   (b) For a vessel receiving alterations, a cable may be spliced to extend a circuit;
   (c) A cable having a large size or exceptional length may be spliced to facilitate its installation; and
   (d) A cable may be spliced to replace a damaged section of the cable if, before replacing the damaged section, the insulation resistance of the remainder of the cable is measured, and it is determined that the condition of the insulation is unimpaired.

114.15 All material in a cable splice must be chemically compatible with all other material in the splice and with the materials in the cable.

114.16 Ampacities of wires must meet Section 310-15 of the NEC (NFPA 70). Ampacities of cable must meet table A6 of Institute of Electrical and Electronic Engineers (IEEE) Standard 45, “Recommended Practice for Electrical Installations on Shipboard.” Ampacities for Navy cable must meet NAVSEA Design Data Sheet (DDS) 304-2 “Electrical Cable, Ratings and Characteristics” as appropriate.

114.17 Conductors for direct current systems must be sized so that the voltage drop at the load terminals does not exceed [10%]. Values of conductor sizes can be computed by means of the following formula: cm=(KxIxL(x2 for two-wire
circuit))/E. Where: \( cm = \text{Circular-mil area of conductor} \) \( K = 10.75 \text{ ohm/mil-foot} \) (English) (a constant representing the resistance of copper). \( I = \text{Load current, in amperes.} \) \( L = \text{length of conductor from center of distribution, in feet,} \) \( E = \text{Voltage drop at load, in volts.} \)

114.18 If used, each armored cable metallic covering must:

(a) Be electrically continuous; and

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

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

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

115 Batteries

115.1 General

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

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

(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.

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

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

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

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

(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.

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

115.2 Battery installations.

(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.

(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.

116 Grounding
116.1 General grounding requirements.

(a) A vessel's hull must not carry current as a conductor except for the following systems:

   (1) Impressed current cathodic protection systems; or
   (2) Battery systems for engine starting.

(b) Receptacle outlets and attachment plugs for portable lamps, tools, and similar apparatus operating at [one hundred (100) volts] or more, must have a grounding pole and a grounding conductor in the portable cord.

(c) Each nonmetallic mast and topmast must have a lightning ground conductor.

116.2 Equipment and conductor grounding.

(a) All metallic enclosures and frames of electrical equipment must be permanently grounded to the hull on a metallic vessel. On a nonmetallic vessel, the enclosures and frames of electrical equipment must be bonded together to a common ground by a normally non-current carrying conductor. Metallic cases of instruments and secondary windings of instrument transformers must be grounded.

(b) On a nonmetallic vessel, where a ground plate is provided for radio equipment, it must be connected to the common ground.

(c) Equipment grounding conductors must be sized in accordance with Section 250-95 of the NEC (NFPA 70).

(d) Each insulated grounding conductor of a cable must be identified by one of the following means:

   (1) A green braid or green insulation;
   (2) Stripping the insulation from the entire exposed length of the grounding conductor; or
   (3) Marking the exposed insulation of the grounding conductor with green tape or green adhesive labels.

(e) Cable armor must not be used to ground electrical equipment or systems.

116.3 Grounded distribution systems (neutral grounded).

(a) If a grounded distribution system is provided, there must be only one connection to ground, regardless of the number of power sources. This ground connection must be at the switchboard or at the common ground plate, which must be accessible.

(b) Each propulsion, power, lighting, or distribution system having a neutral bus or conductor must have the neutral grounded.

(c) The neutral of each grounded generation and distribution system must be grounded at the generator switchboard and have the ground connection accessible for checking insulation resistance of the generator to ground before the generator is connected to the bus, except the neutral of an emergency power generation system must be grounded with:

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

### 117 Overcurrent protection

117.1 Overcurrent protection must be provided for each ungrounded conductor for the purpose of opening the electric circuit if the current reaches a value that causes an excessive or dangerous temperature in the conductor or conductor insulation.

117.2 The grounded conductor of a circuit must not be disconnected by a switch or circuit breaker, unless the ungrounded conductors are simultaneously disconnected.

117.3 A conductor of a control, interlock, or indicator circuit, such as a conductor for an instrument, pilot light, ground detector light, or potential transformer, must be protected by an overcurrent device.

117.4 Conductors must be protected in accordance with their current carrying capacities. If the allowable current carrying capacity does not correspond to a standard device size, the next larger overcurrent device may be used provided it does not exceed [one hundred and fifty (150) per cent] of the conductor current carrying capacity.

117.5 Steering gear control system circuits must be protected against short circuit.

117.6 Each steering gear feeder circuit must be protected by a circuit breaker.

117.7 Each lighting branch circuit must be protected against overcurrent either by fuses or circuit breakers rated at not more than [thirty (30) amperes].

117.8 Overcurrent devices capable of carrying the starting current of the motor must be installed to protect motors, motor conductors, and control apparatus against:
   (a) Overcurrent due to short circuits or ground faults; and
   (b) Overload due to motor running overcurrent. A protective device integral with the motor, which is responsive to both motor current and temperature, may be used.
117.9 An emergency switch must be provided in the normally ungrounded main supply conductor from a battery. The switch must be accessible and located as close to the battery as practicable.

117.10 Disconnect means must be provided on the supply side of and adjacent to all fuses for the purpose of de-energizing the fuses for inspection and maintenance purposes.

117.11 If the disconnect means is not within sight of the equipment that the circuit supplies, means must be provided for locking the disconnect device in the open position.

117.12 Fuses must be of the cartridge type only and be listed by Underwriters Laboratories or another recognized independent laboratory.

117.13 Each circuit breaker must meet UL 489, “Molded--Case Circuit Breakers and Circuit Breaker Enclosures,” and be of the manually reset type designed for:
   (a) Inverse time delay;
   (b) Instantaneous short circuit protection; and
   (c) Switching duty if the breaker is used as a switch.

117.14 Each circuit breaker must indicate whether it is in the open or closed position.

118 Shore power

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

119 Lighting

119.1 Lighting fixtures
   (a) Each lighting fixture globe, lens, or diffuser must have a guard or be made of high strength material, except in an accommodation space, radio room, galley, or similar space where it is not subject to damage.
(b) A lighting fixture may not be used as a connection box for a circuit other than the branch circuit supplying the fixture.

(c) A lighting fixture must be installed as follows:
   (1) Each lighting fixture and lampholder must be fixed. A fixture must not be supported by the screw shell of a lampholder.
   (2) Each pendant type lighting fixture must be suspended by and supplied through a threaded, rigid conduit stem.
   (3) Each table lamp, desk lamp, floor lamp, or similar equipment must be secured in place so that it cannot be displaced by the roll or pitch of the vessel.

(d) An exterior lighting fixture in an electrical system operating at more than 50 volts must comply with the requirements of UL 595, “Marine Type Electric Lighting Fixtures,” or other standard specified by the marine inspector. A lighting fixture in an accommodation space, radio room, galley or similar interior space may comply with UL 1570 “Fluorescent Lighting Fixtures,” UL 1571 “Incandescent Lighting Fixtures,” UL 1572 “High Intensity Discharge Lighting Fixtures,” UL 1573 “Stage and Studio Lighting Units,” or UL 1574 “Track Lighting Systems,” as long as the general marine requirements of UL 595 are satisfied.

119.2 Emergency lighting

(a) Each vessel must have adequate emergency lighting fitted along the line of escape to the main deck from all passenger and crew accommodation spaces located below the main deck.

(b) The emergency lighting required by Section 119.2(a) must automatically actuate upon failure of the main lighting system. If a vessel is not equipped with a single source of power for emergency lighting, it must have individual battery powered lights that:
   (1) Are automatically actuated upon loss of normal power;
   (2) Are not readily portable;
   (3) Are connected to an automatic battery charger; and
   (4) Have sufficient capacity for a minimum of 2 hours of continuous operation.

Section 120 - Preparations for and Response to Emergencies

120 Passenger Count

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

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

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

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

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

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

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

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

122 Wearing of life jackets
122.1 The master of a vessel shall require passengers to don life jackets when possible hazardous conditions exist, including, but not limited to:

   (a) When transiting hazardous bars and inlets;
   (b) During severe weather;
   (c) In event of flooding, fire, or other events that may possibly call for evacuation; and
   (d) When the vessel is being towed, except a non-self-propelled vessel under normal operating conditions.

122.2 The master or crew shall assist each passenger in obtaining a life jacket and donning it, as necessary.

123 Emergency instructions

123.1 The master and crew of a vessel will be familiar with the content of and have mounted at the operating station, emergency instructions containing the actions to be taken in the event of fire, heavy weather, or man overboard conditions.

123.2 If there is no suitable mounting surface aboard the vessel, the emergency instructions need not be posted but must be carried aboard the vessel and be available to the crew for familiarization.

123.3 The emergency instruction placard should contain at least the applicable portions of the “Emergency Instructions” listed below. The emergency instructions must be designed to address the particular equipment, arrangement, and operation of each individual vessel.

   (a) Radio-telephone distress.
      (1) Switch to Channel 16 – United States Coast Guard.
      (2) Give distress signal "MAYDAY" three times.
      (3) Give boat name, type, and color.
      (4) Give position.
   (b) Rough weather, crossing hazardous bars, or flooding.
      (1) Close all watertight and weathertight doors, hatches, and airports to prevent taking water aboard or further flooding in the vessel.
      (2) Keep bilges dry to prevent loss of stability due to water in bilges. Use power driven bilge pump, hand pump, and buckets to dewater.
      (3) Align fire pumps to use as bilge pump if possible.
      (4) Check all intake and discharge lines, which penetrate the hull, for leakage.
      (5) Passengers must remain seated and evenly distributed.
      (6) Passengers must don life jackets if the going becomes very rough, the vessel is about to cross a hazardous bar, or when otherwise instructed by the master.
      (7) Never abandon the vessel unless actually forced to do so.
      (8) If assistance is needed follow the procedures on the emergency broadcast placard posted by the radiotelephone.
(9) Prepare survival craft (life floats, inflatable rafts, inflatable buoyant
apparatus, boats, etc.) for launching.
(c) Man overboard.
(e) Throw a ring buoy overboard as close to the person as possible.
(f) Post a lookout to keep the person overboard in sight.
(g) Launch rescue boat and maneuver to pick up person in the water, or
maneuver the vessel to pick up the person in the water.
(h) Have crewmember put on life jacket, attach a safety line to him or her, and
have him or her stand by jump into the water to assist the person
overboard if necessary.
(i) If person is not immediately located, notify rescue resources and other
vessels in vicinity by radiotelephone.
(j) Continue search until released by rescue resources.
(d) Fire.
(1) Cut off air supply to fire--close items such as hatches, ports, doors,
ventilators, and louvers, and shut off ventilation system.
(2) Cut off electrical system supplying affected compartment if possible.
(3) If safe, immediately use portable fire extinguishers at base of flames
for flammable liquid or grease fires or water for fires in ordinary
combustible materials. Do not use water on electrical fires.
(4) If fire is in machinery spaces, shut off fuel supply and ventilation and
activate fixed extinguishing system if installed.
(5) Maneuver vessel to minimize effect of wind on fire.
(6) If unable to control fire, immediately notify rescue resources and other
craft in the vicinity by radiotelephone.
(7) Move passengers away from fire, have them put on life jackets, and if
necessary, prepare to abandon the vessel.
(e) Explosion.
(1) Be ready to go overboard with personal flotation device (life jacket).
(2) When clear of danger, account for all passengers and assist.
(3) Stay together.

124 Station bill

124.1 A station bill must be posted by the master on a vessel of more than 65
feet in length having a Certificate of Inspection requiring more than four crew
members at any one time, including the master.

124.2 The station bill required by paragraph (a) of this section must set forth the
special duties and duty station of each crew member for various emergencies. The
duties must, as far as possible, be comparable with the regular work of the
individual. The duties must include at least the following and any other duties
necessary for the proper handling of a particular emergency:
(a) The closing of hatches, airports, watertight doors, vents, scuppers, and
valves for intake and discharge lines that penetrate the hull, the stopping
of fans and ventilating systems, and the operating of all safety equipment;
(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

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

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

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.
127.5 On a vessel of not more than [sixty-five (65) feet] in length carrying not
more than 49 passengers, a public address system is not required if a public
announcement made from operating station without amplification can be heard
throughout the accommodation spaces of the vessel during normal operating
conditions to the satisfaction of the marine inspector.

127.6 All vessels with overnight accommodations must be equipped with a
general alarm system. The public address system may be used to sound the
general alarm signal.

128 Drills

128.1 Abandon ship and man overboard drills and training.

(a) The master shall conduct sufficient drills and give sufficient instructions to
make sure that all crewmembers are familiar with their duties during
emergencies that necessitate abandoning ship or the recovery of persons
who have fallen overboard.

(b) Each abandon ship drill must include:

(1) Summoning the crew to report to assigned stations and prepare for
assigned duties;

(2) Summoning passengers on a vessel on an overnight voyage to muster
stations or embarkation stations and ensuring that they are made aware
of how the order to abandon ship will be given;

(3) Checking that life jackets are correctly donned;

(4) Operation of any davits used for launching life rafts; and

(5) Instruction on the automatic and manual deployment of survival craft.

(c) Each abandon ship drill must, as far as practicable, be conducted as if
there were an actual emergency.

(d) Each rescue boat required in accordance with Section 67 must be launched
with its assigned crew aboard and maneuvered in the water as if during an
actual man overboard situation:

(1) Once each month, if reasonable and practicable; but

(2) At least once within a [three (3) month] period before the vessel gets
underway with passengers.

(e) Onboard training in the use of davit-launched life rafts must take place at
intervals of not more than [three (3) month] on a vessel with a davit
launched life raft.

(f) Otherwise documented for review upon request. The drill entry shall
include the following information:

(1) Date of the drill and training; and

(2) General description of the drill scenario and training topics.
128.2 Fire fighting drills and training

(a) The master shall conduct sufficient fire drills to make sure that each crew member is familiar with his or her duties in case of a fire.

(b) Each fire drill must include:
   (i) Summoning passengers on a vessel on an overnight voyage to muster or embarkation stations;
   (ii) Summoning the crew to report to assigned stations and to prepare for and demonstrate assigned duties; and
   (iii) Instruction in the use and location of fire alarms, extinguishers, and any other fire fighting equipment on board.

(c) Each fire drill must, as far as practicable, be conducted as if there were an actual emergency.

(d) Fire fighting drills and training shall be logged or otherwise documented for review upon request. The drill entry shall include the following information:
   (i) Date of the drill and training; and
   (ii) General description of the drill scenario and training topics.

129 Response to a marine casualty

129.1 Immediately after the addressing of resultant safety concerns, the owner, agent, master, or person in charge of a vessel involved in a marine casualty shall make notification whenever a vessel is involved in a marine casualty consisting of:

(a) An unintended grounding, or an unintended strike of (allision with) a bridge;

(b) An intended grounding, or an intended strike of a bridge, that creates a hazard to navigation, the environment, or the safety of a vessel, or that meets any criterion of Sections 129.1(c) through 129.1(g);

(c) Loss of main propulsion or primary steering, or any associated component or control system, that reduces the maneuverability of the vessel;

(d) An occurrence materially and adversely affecting the vessel's seaworthiness or fitness for service or route, including but not limited to fire, flooding, failure of or damage to fixed fire extinguishing systems, lifesaving equipment, auxiliary power generating equipment, or bilge pumping systems;

(e) Loss of life;

(f) Injury that requires professional medical treatment (treatment beyond first aid) and, if the person is engaged or employed on board a vessel in commercial service, which renders the individual unfit to perform his or her routine duties; or

(g) An occurrence not meeting any of the above criteria but causing property damage in excess of $25,000 or a value prescribed by [insert title of official who administers the state’s boating laws]. This damage includes the cost of labor and material to restore the property to its condition before
the occurrence, but does not include the cost of salvage, cleaning, gas
freeing, drydocking, or demurrage.

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

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

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

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

Section 130 – License and Manning Requirements

130 State Pilot's License; Requirements.

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

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

130.3 When an applicant for a state pilot's license has been convicted by a court
of record for a serious violation of the marine laws of the United States or the
state of [insert state name] within [three (3)] years of the date of application, the
marine inspector shall investigate the circumstances of the conviction. When the
investigation shows continued illegal or questionable activity on the part of the
applicant, the application shall be denied by the [insert title of official who administers state’s boating laws]. A serious violation includes all of the following:
(a) Careless operation.
(b) Reckless operation.
(c) Operation under the influence of alcoholic beverage or controlled substance.
(d) Negligent operation.
(e) Operation causing death or injury.

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

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

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

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

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

131 Pilot's License; Display.

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

132 Pilot's License; Duration; Renewal.
132.1 A state pilot's license is valid for [three (3)] years from the date of issue.

132.2 A state pilot's license shall be renewed by application to the department.

133 Pilot's License; Suspension or Revocation.

133.1 The following conduct is cause for suspension or revocation of the state pilot's license:
   (a) The negligent or improper operation of a vessel.
   (b) Physical impairment of the operator.
   (c) Falsification of information given on a license application.

133.2 An issued state pilot's license shall remain the property of the department and shall be surrendered to a marine inspector upon revocation.

134 Crew Manning Requirements

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

<table>
<thead>
<tr>
<th>Number of Passengers</th>
<th>Crew Members</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 – 20</td>
<td>[0]</td>
</tr>
<tr>
<td>21 – 50</td>
<td>[1]</td>
</tr>
<tr>
<td>51 – 100</td>
<td>[2]</td>
</tr>
<tr>
<td>101 – 150</td>
<td>[3]*</td>
</tr>
<tr>
<td>151 – 200</td>
<td>[4]*</td>
</tr>
<tr>
<td>Over 200</td>
<td>One for each additional [50 passengers]*</td>
</tr>
</tbody>
</table>
*Vessels of this size may carry fewer crewmembers when passenger total is lower. However, they may never carry less than two (2) crewmembers under any circumstances.

Section 140 – Special Provisions

140 Equivalents

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

141 Incorporation by Reference

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

(a) American Boat and Yacht Council (ABYC), 3069 Solomon’s Island Rd., Edgewater, MD 21037
   (2) A-3-93--Galley Stoves
   (3) A-7-70--Boat Heating Systems
   (4) A-16-89--Electric Navigation Lights
   (5) A-22-93--Marine Compressed Natural Gas (CNG) Systems
   (6) E-8-94--Alternating Current (AC) Electrical Systems on Boats
   (7) E-9-90--Direct Current (DC) Electrical Systems on Boats
   (8) H-2-89--Ventilation of Boats Using Gasoline
   (9) H-22-86--DC Electric Bilge Pumps Operating Under 50 Volts
   (10) H-24-93--Gasoline Fuel Systems
   (12) H-32-87--Ventilation of Boats Using Diesel Fuel
   (13) H-33-89--Diesel Fuel Systems
   (14) P-1-93--Installation of Exhaust Systems for Propulsion and Auxiliary Engines
   (15) P-4-89--Marine Inboard Engines.
(b) American Bureau of Shipping (ABS), ABS Plaza, 16855 Northchase Drive, Houston, TX 77060
   (1) Guide for High Speed Craft, 1997
   (2) Rules for Building and 177.300 Classing Aluminum Vessels, 1975
   (3) Rules for Building and 177.300 Classing Reinforced Plastic Vessels, 1978
   (4) Rules for Building and Classing Steel Vessels, 1995
   (5) Rules for Building and 177.300 Classing Steel Vessels Under 61 Meters (200 feet) in Length, 1983
(6) Rules for Building and Classing Steel Vessels for Service on Rivers
and Intracoastal Waterways, 1995.
(c) American National Standards Institute (ANSI), 11 West 42nd Street, New
York, NY 10036
(1) B 31.1-1986—Code for Pressure Piping, Power Piping
(2) American Society for Testing and Materials (ASTM), 100 Barr Harbor
Drive, West Conshohocken, PA 19428-2959
(1) ASTM B 96-93, Standard Specification for Copper-Silicon Alloy
Plate, Sheet, Strip, and Rolled Bar for General Purposes and Pressure
Vessels
(2) ASTM B 117-97, Standard 175.400 Practice for Operating Salt Spray
(Fog) Apparatus.
(3) ASTM B 122/B 122M-95, Standard Specification for Copper-Nickel-
Tin Alloy, Copper-Nickel-Zinc Alloy (Nickel Silver), and Copper-
Nickel Alloy Plate, Sheet, Strip and Rolled Bar
(4) ASTM B 127-98, Standard Specification for Nickel-Copper Alloy
(UNS NO4400) Plate, Sheet, and Strip
(5) ASTM B 152-97a, Standard Specification for Copper Sheet, Strip,
Plate, and Rolled Bar
(6) ASTM B 209-96, Standard Specification for Aluminum and
Aluminum-Alloy Sheet and Plate
(7) ASTM D 93-97, Standard Test Methods for Flash Point by Pensky-
Martens Closed Cup Tester
(8) ASTM D 635-97, Standard test Method for Rate of Burning and or
Extent and Time of Burning of Self-Supporting Plastics in a
Horizontal Position
(9) ASTM D 2863-95, Standard Method for Measuring the Minimum
Oxygen Concentration to Support Candle-Like Combustion of Plastics
(Oxygen Index)
(10) ASTM E 84-98, Standard Test Method for Surface Burning
Characteristics of Building Materials
(d) Institute of Electrical and Electronics Engineers, Inc. (IEEE), IEEE
Service Center, 445 Hoes Lane, Piscataway, NJ 08854
(1) Standard 45-1977--Recommended Practice for Electrical Installations
on Shipboard
(e) Lloyd's Register of Shipping, 17 Battery Place, Suite 1013, New York,
NY 10004
(1) Rules and Regulations for the Classification of Yachts and Small
Craft, as amended through 1983.
(g) National Fire Protection Association (NFPA), 1 Batterymarch Park,
Quincy, MA 02269-9101
(2) NFPA 17-1994--Dry Chemical 181.425 Extinguishing Systems
(3) NFPA 17A-1994--Wet Chemical 181.425 Extinguishing Systems
(4) NFPA 70-1996--National Electrical Code (NEC)
(5) Section 250-95
Charter Boat Model Rules – approved September 8, 2008

(6) Section 310-13
(7) Section 310-15
(8) Article 430
(9) Article 445
(10) NFPA 302-1994--Pleasure and Commercial Motor Craft, Chapter 6
(11) NFPA 306-1993--Control of Gas Hazards on Vessels
(12) NFPA 1963-1989--Fire Hose Connections
(h) Naval Publications and Forms Center, Customer Service Code 1052, 5801 Tabor Ave., Philadelphia, PA 19120
(1) Military Specification MIL-P-21929C (1991)--Plastic Material, Cellular Polyurethane, Foam-in-Place, Rigid (2 and 4 pounds per cubic foot)
(i) Society of Automotive Engineers (SAE), 400 Commonwealth Drive, Warrendale, PA 15096-0001
(1) SAE J-1475--Hydraulic Hose Fittings For Marine Applications, 1984
(3) SAE J-1942--Hose and Hose Assemblies for Marine Applications, 1992.
(j) Underwriters Laboratories Inc. (UL), 12 Laboratory Drive, Research Triangle Park, NC 27709
(1) UL 19-1992--Lined Fire Hose and Hose Assemblies
(2) UL 174-1989, as amended through June 23, 1994-- Household Electric Storage Tank Heaters
(3) UL 217-1993--Single and Multiple Station Smoke Detectors
(4) UL 486A-1992--Wire Connectors and Soldering Lugs For Use With Copper Conductors
(5) UL 489-1995--Molded--Case Circuit Breakers and Circuit Breaker Enclosures
(6) UL 595-1991--Marine Type Electric Lighting Fixtures
(7) UL 710-1990, as amended through September 16, 1993-- Exhaust Hoods For Commercial Cooking Equipment
(8) UL 1058-1989, as amended through April 19, 1994-- Halogenated Agent Extinguishing System Units
(9) UL 1102-1992--Non integral Marine Fuel Tanks
(10) UL 1110-1988, as amended through May 16, 1994--Marine Combustible Gas Indicators
(12) UL 1453-1988, as amended through June 7, 1994-- Electric Booster and Commercial Storage Tank Water Heaters
(13) UL 1570-1995--Fluorescent Lighting Fixtures
(14) UL 1571-1995--Incandescent Lighting Fixtures
(15) UL 1572-1995--High Intensity Discharge Lighting Fixtures
(16)  UL 1573-1995--Stage and Studio Lighting Units
(17)  UL 1574-1995--Track Lighting Systems