

## SUBCHAPTER T—SMALL PASSENGER VESSELS (UNDER 100 GROSS TONS)

### PART 175—GENERAL PROVISIONS

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SOURCE: CGD 85-080, 61 FR 947, Jan. 10, 1996, unless otherwise noted.

#### § 175.100 Purpose.

The purpose of this subchapter is to implement applicable sections of Subtitle II of Title 46, United States Code, which require the inspection and certification of small passenger vessels. The regulations in this subchapter have preemptive effect over State or local regulations in the same field.

[CGD 85-080, 61 FR 947, Jan. 10, 1996, as amended by USCG-2012-0196, 81 FR 48296, July 22, 2016]

#### § 175.110 General applicability.

(a) Except as in paragraph (b) of this section, this subchapter applies to each vessel of less than 100 gross tons that carries 150 or less passengers, or has overnight accommodations for 49 or less passengers, and that—

- (1) Carries more than six passengers, including at least one for hire;
- (2) Is chartered with a crew provided or specified by the owner or the own-

er's representative and is carrying more than six passengers;

(3) Is chartered with no crew provided or specified by the owner or the owner's representative and is carrying more than 12 passengers; or

(4) If a submersible vessel, carries at least one passenger for hire; or

(5) Is a ferry carrying more than six passengers.

NOTE TO PARAGRAPH (a): For a vessel of less than 100 gross tons that carries more than 150 passengers or has overnight accommodations for more than 49 passengers, see subchapter K of this chapter.

(b) This subchapter does not apply to:

(1) A vessel operating exclusively on inland waters that are not navigable waters of the United States;

(2) An oceanographic research vessel;

(3) A boat forming part of a vessel's lifesaving equipment and that is not used for carrying passengers except in emergencies or during emergency drills;

(4) A vessel of a foreign country that is a party to the International Convention for the Safety of Life at Sea, 1974, as amended (SOLAS), to which the United States Government is currently a party, and that has on board a current valid SOLAS Passenger Ship Safety Certificate; or

(5) A vessel of a foreign country, whose government has inspection laws approximating those of the United States and that by its laws accords similar privileges to vessels of the United States, which has on board a current valid certificate of inspection, permitting the carrying of passengers, issued by its government.

[CGD 85-080, 61 FR 947, Jan. 10, 1996; 61 FR 20557, May 7, 1996, as amended at 62 FR 51355, Sept. 30, 1997; USCG-2008-1107, 74 FR 63664, Dec. 4, 2009]

#### § 175.112 Specific applicability for individual parts.

At the beginning of certain parts of this subchapter, a more specific application is given for all or particular portions of that part. This application sets forth the type, size, service, or age of a

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vessel to which certain portions of that part apply or particular dates by which an existing vessel must comply with certain portions of that part.

**§ 175.115 Applicability to offshore supply vessels.**

(a) Existing OSVs of more than 15 but less than 100 gross tons are subject to inspection under this subchapter. New OSVs of more than 15 but less than 100 gross tons are subject to inspection under subchapter L of this chapter.

(b) Each existing OSV permitted grandfathering under paragraph (a) of this section must complete construction and have a Certificate of Inspection by March 16, 1998.

[CGD 82-004, CGD 86-074, 62 FR 49355, Sept. 19, 1997]

**§ 175.118 Vessels operating under an exemption afforded in the Passenger Vessel Safety Act of 1993 (PVSA).**

(a) The Passenger Vessel Safety Act of 1993 (PVSA) contained an allowance for the exemption of certain passenger vessels that are—

(1) At least 100 gross tons but less than 300 gross tons; or

(2) Former public vessels of at least 100 gross tons but less than 500 gross tons.

(b) The owner or operator of a vessel must have applied for an exemption under PVSA by June 21, 1994, and then brought the vessel into compliance with the interim guidance in Navigation and Inspection Circular (NVIC) 7-94 not later than December 21, 1996. The PVSA exemption is valid for the service life of the vessel, as long as the vessel remains certified for passenger service. If the Certificate of Inspection (COI) is surrendered or otherwise becomes invalid (not including a term while the vessel is out of service but undergoing an inspection for recertification), the owner or operator must meet the appropriate inspection regulations to obtain a new COI without the PVSA exemption.

(c) Except where the provisions of subchapter H of this chapter apply, the owner or operator must ensure that the vessel meets the requirements of this subchapter, meets any requirements the OCMI deems applicable, and meets

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any specific additions or exceptions as follows:

(1) If a vessel does not meet the intact stability requirements of subchapter S of this chapter, the vessel's route(s) will be limited to an area within 20 nautical miles from a harbor of safe refuge, provided the vessel has a history of safe operation on those waters. The OCMI may further restrict the vessel's routes if the vessel's service history, condition, or other factors affect its seaworthiness or safety.

(2) The vessel may not carry more than 150 passengers, and not more than 49 passengers in overnight accommodations.

(3) The owner or operator must crew the vessel under the requirements of this subchapter. All officers must be endorsed for the appropriate vessel tonnage. The OCMI may require an appropriately endorsed engineer officer for those vessels of at least 200 gross tons. Vessels carrying more than 50 passengers must have an additional deckhand, and all deckhands on vessels carrying more than 50 passengers must be adequately trained. The crew members on a vessel of at least 200 gross tons, except those operated exclusively on lakes and rivers, are required to hold merchant mariner credentials or merchant mariner documents and 50 percent of the merchant mariner credentials or at least an able seaman.

(4) The vessel owner or operator must comply with the lifesaving arrangements located in part 180 of this chapter, except that inflatable liferafts are required for primary lifesaving. A rescue boat or suitable rescue arrangement must be provided to the satisfaction of the OCMI.

(5) The vessel owner or operator must comply with the fire protection requirements located in part 181 of this chapter. When a vessel fails to meet the fire protection and structural fire protection requirements of this subchapter, the vessel owner or operator must meet equivalent requirements to the satisfaction of the cognizant OCMI or submit plans for approval from the Coast Guard Marine Safety Center.

(6) At a minimum, the owner or operator must outfit the vessel with portable fire extinguishers per 46 CFR 76.50. In addition, the vessel must meet any

additional requirements of the OCMI, even if they exceed the requirements in 46 CFR 76.50.

(7) In addition to the means-of-escape requirements of 46 CFR 177.500, the vessel owner or operator must also meet the requirements for means of escape found in 46 CFR 78.47–40.

(d) The OCMI conducts an inspection and may issue a COI if the vessel meets these requirements. The COI's condition of operation must contain the following endorsement: "This vessel is operating under an exemption afforded in The Passenger Vessel Safety Act of 1993 and as such is limited to domestic voyages and a maximum \_\_\_\_\_ of passengers and may be subject to additional regulations and restrictions as provided for in Sections 511 and 512 of the Act."

[USCG–1999–5040, 67 FR 34799, May 15, 2002, as amended by USCG–2006–24371, 74 FR 11266, Mar. 16, 2009]

**§ 175.120 Vessels on an international voyage.**

A mechanically propelled vessel that carries more than 12 passengers on an international voyage must comply with the applicable requirements of SOLAS, as well as this subchapter.

**§ 175.122 Load lines.**

A vessel of 24 meters (79 feet) in length or more, the keel of which was laid or that was at a similar stage of construction on or after July 21, 1968, and that is on a voyage other than a domestic voyage is subject to load line assignment, certification, and marking under subchapter E (Load Lines) of this chapter.

[CGD 85–080, 61 FR 947, Jan. 10, 1996, as amended by USCG–2014–0688, 79 FR 58288, Sept. 29, 2014]

**§ 175.200 Gross tonnage as criterion for requirements.**

(a) The regulations in this subchapter take into account a vessel's length, passenger capacity, construction, equipment, intended service, and operating area. The criterion for application of this subchapter is the gross tonnage of the vessel. When the Commandant determines that the gross tonnage of a particular vessel, which is attained by exemptions, reductions, or

other devices in the basic gross tonnage formulation, will circumvent or be incompatible with the application of specific regulations for a vessel of such physical size, the Commandant will prescribe the regulations to be made applicable to the vessel.

(b) When the Commandant determines that the gross tonnage is not a valid criterion for the use of certain regulations based on the relative size of the vessel, the owner will be informed of the determination and of the regulations applicable to the vessel. The vessel must be brought into compliance with all additional requirements before a Certificate of Inspection is issued.

**§ 175.400 Definitions of terms used in this subchapter.**

The following terms are used in this subchapter:

*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 less than 121 °C (250 °F)) used as a:

- (1) Public space;
- (2) Hall;
- (3) Dining room and mess room;
- (4) Lounge or cafe;
- (5) Public sales room;
- (6) Overnight accommodation space;
- (7) Barber shop or beauty parlor;
- (8) Office of conference room;
- (9) Washroom or toilet space;
- (10) Medical treatment room or dispensary; or
- (11) Game or hobby room.

*Adequate hull protection system* means a method of protecting the vessel's hull from corrosion. It includes, as a minimum, either hull coatings and a cathodic protection (CP) system consisting of sacrificial anodes, or an impressed current CP system.

*Alternative Hull Examination (AHE) Program* means a program in which an eligible vessel may receive an initial and subsequent credit hull examination through a combination of underwater surveys, internal examinations and annual hull condition assessment.

*Anniversary date* means the day and the month of each year, which corresponds to the date of expiration of the Certificate of Inspection.

*Approval series* means the first six digits of a number assigned by the Coast Guard to approved equipment. Where approval is based on a subpart of subchapter Q of this chapter, the approval series corresponds to the number of the subpart. A listing of current and formerly approved equipment and materials may be found on the Internet at: <http://cgmix.uscg.mil/equipment>.

*Beam* or *B* means the maximum width of a vessel from:

- (1) Outside of planking to outside of planking on wooden vessels; and
- (2) Outside of frame to outside of frame on all other vessels.

*Bulbous bow* means a design of bow in which the forward underwater frames ahead of the forward perpendicular are swelled out at the forefoot into a bulbous formation.

*Bulkhead deck* means the uppermost deck to which watertight bulkheads and the watertight shell extend.

*Cable* means single or multiple insulated conductors with an outer protective jacket.

*Cargo space* means a:

- (1) Cargo hold;
- (2) Refrigerated cargo space;
- (3) A trunk leading to or from a space listed above; or
- (4) A vehicle space.

*Coast Guard District Commander* or *District Commander* means an officer of the Coast Guard designated as such by the Commandant to command Coast Guard activities within a district.

*Coastwise* means a route that is not more than 20 nautical miles offshore on any of the following waters:

- (1) Any ocean;
- (2) The Gulf of Mexico;
- (3) The Caribbean Sea;
- (4) The Bering Sea;
- (5) The Gulf of Alaska; or
- (6) Such other similar waters as may be designated by a Coast Guard District Commander.

*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.

*Cold water* means water where the monthly mean low water temperature is normally 15 degrees Celsius (59 degrees Fahrenheit) or less.

*Commandant* means the Commandant of the Coast Guard or an authorized Headquarters staff officer designated in §1.01 of this chapter.;

*Consideration* means an economic benefit, inducement, right, or profit including pecuniary payment accruing to an individual, person, or entity, but not including a voluntary sharing of the actual expenses of the voyage, by monetary contribution or donation of fuel, food, beverage, or other supplies.

*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:

- (1) Silver;
- (2) Copper;
- (3) Brass;
- (4) Bronze;
- (5) Aluminum alloys with a copper content of no more than 0.4 percent;
- (6) Cooper-nickel;
- (7) Plastics;
- (8) Stainless steel;
- (9) Nickel-copper; or
- (10) A material, which when tested in accordance with ASTM B 117 (incorporated by reference, see 46 CFR 175.600) for 200 hours, does not show pitting, cracking, or other deterioration.

*Crew accommodation space* means an accommodation space designated for the use of crew members and that passengers are normally not allowed to occupy.;

*Custom engineered* means, when referring to a fixed gas fire extinguishing system, a system that is designed for a specific space requiring individual calculations for the extinguishing agent volume, flow rate, piping, and similar factors for the space.

*Dead cover* means a metal cover to close or protect a port light to avoid glass breakage in case of heavy weather.

*Distribution panel* means an electrical panel that receives energy from the switchboard and distributes the energy to energy consuming devices or other panels.;

*Draft* means the vertical distance from the molded baseline of a vessel amidships to the waterline.;

*Dripproof* means enclosed equipment so constructed or protected that falling

drops of liquid or solid particles striking the enclosure at any angle from 0 to 15 degrees downward from the vertical do not interfere with the operation of the equipment. A National Electrical Manufacturers Association type 1 enclosure with a dripshield is considered to be dripproof.

*Drydock examination* means hauling out a vessel or placing a vessel in a drydock or slipway for an examination of all accessible parts of the vessel's underwater body and all through-hull fittings and appurtenances.

*Embarkation station* means the place on the vessel from which a survival craft is boarded.

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

*Existing OSV* means an OSV that was contracted for, or the keel of which was laid, before March 15, 1996.

*Existing vessel* means a vessel that is not a new vessel.

*Exposed waters* is a term used in connection with stability criteria and means:

(1) Waters, except the Great Lakes, more than 20 nautical miles from a harbor of safe refuge;

(2) Those portions of the Great Lakes more than 20 nautical miles from a harbor of safe refuge from October 1 of one year through April 15 of the next year (winter season); and

(3) Those waters less than 20 nautical miles from a harbor of safe refuge that the cognizant Officer in Charge, Marine Inspection, determines are not partially protected waters or protected waters because they present special hazards due to weather or other circumstances.

*Ferry* means a vessel that is used on a regular schedule—

(1) To provide transportation only between places that are not more than 300 miles apart; and

(2) To transport only—

(i) Passengers; or

(ii) Vehicles, or railroad cars, that are being used, or have been used, in transporting passengers or goods.

*Fiber reinforced plastic* means plastics reinforced with fibers or strands of some other material.

*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 (incorporated by reference, see 46 CFR 175.600).

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

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

*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.

*Galley* means a space containing appliances with cooking surfaces that may exceed 121 °C (250 °F), such as ovens, griddles, and deep fat fryers.

*Great Lakes* means a route on the waters of any of the Great Lakes, except that for the purposes of parts 178 and 179 of this subchapter, "Great Lakes" means both the waters of the Great Lakes and of the St. Lawrence River as far east as a straight line drawn from Cap de Rosiers to West Point, Anticosti Island, and west of a line along the 63rd meridian from Anticosti Island to the north shore of the St. Lawrence River.

*Gross tonnage* and *gross tons* is an indicator of a vessel's approximate volume as determined in accordance with part 69 (Measurement of Vessels) of this chapter and recorded on the vessel's Tonnage Certificate (formerly Certificate of Admeasurement).

*Harbor of safe refuge* means a port, inlet, or other body of water normally sheltered from heavy seas by land and in which a vessel can navigate and safely moor. The suitability of a location as a harbor of safe refuge shall be determined by the cognizant Officer in Charge, Marine Inspection, and varies for each vessel, dependent on the vessel's size, maneuverability, and mooring gear.

*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 navigable water of the United States. This

condition could include but is not limited to, fire, explosion, grounding, leaking, damage, illness of a person on board, or a manning shortage.

*High seas* means all waters that are neither territorial seas (the waters in a belt 3 nautical miles wide, that is adjacent to the coast and seaward of the territorial sea baseline) nor internal waters of the United States or of any foreign country.

*High speed craft* means a craft that is operable on or above the water and has characteristics so different from those of conventional displacement ships, to which the existing international conventions, particularly SOLAS, apply, that alternative measures should be used to achieve an equivalent level of safety. In order to be considered a high speed craft, the craft must be capable of a maximum speed equal to or exceeding  $V = 3.7 \times \text{displ}^{.1667}$ , where “V” is the maximum speed and “displ” is the vessel displacement corresponding to the design waterline in cubic meters.

*Ignition source* means an internal combustion engine regardless of horsepower or continuously running electrical motors without overload protection or other run-limiting devices. Properly installed electrical wire or cabling with associated connections and outlets must not be considered an ignition source.

*Independent laboratory* means a laboratory accepted under part 159, Subpart 159.010 of this chapter.

*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.

*Internal structural examination* means an examination of the vessel while afloat or in drydock and consists of a complete examination of the vessel’s main strength members, including the major internal framing, the hull plating, voids, and ballast tanks, but not including cargo, sewage, or fuel oil tanks.

*International voyage* means a voyage between a country to which SOLAS applies and a port outside that country. A country, as used in this definition, includes every territory for the international relations of which a contracting government to the convention

is responsible or for which the United Nations is the administering authority. For the U.S., the term “territory” includes the Commonwealth of Puerto Rico, all possessions of the United States, and all lands held by the United States under a protectorate or mandate. For the purposes of this subchapter, vessels are not considered as being on an “international voyage” when solely navigating the Great Lakes and the St. Lawrence River as far east as a straight line drawn from Cap des Rosiers to West Point, Anticosti Island and, on the north side of Anticosti Island, the 63rd meridian.

*Isolated space* means a closed, watertight space infrequently accessed by the crew while the vessel is in operation. Examples of these spaces are the fore-peak spaces, lazarettes, and spaces with unattended continuously running electrical motors. Small, non-watertight compartments visible to the crew and passengers such as storage lockers under the operating station or passenger seating areas, are not considered isolated spaces.

*Lakes, bays, and sounds* means a route on any of the following waters:

- (1) A lake other than the Great Lakes;
- (2) A bay;
- (3) A sound; or
- (4) Such other similar waters as may be designated by a Coast Guard District Commander.

*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.

*Length* when used in terms of the vessel’s length (excluding bow sprits, bumpkins, rudders, outboard motor brackets, handles, and other similar fittings, attachments, and extensions), means:

- (1) The length listed on the vessel’s Certificate of Documentation issued under the provisions of part 67 (Documentation of Vessels) of this chapter or Certificate of Number issued under the provisions of 33 CFR part 173, subpart B (Numbering); or
- (2) For a vessel that does not have a Certificate of Documentation or a Certificate of Number, the “registered

length” as defined in §69.53 in subchapter G of this chapter or, for a vessel that is less than 24 meters (79 feet) in overall length and is measured using simplified admeasurement, the registered length as defined in §69.203 in subchapter G of this chapter; or

(3) For the purposes of part 179 of this subchapter, the “length” of a vessel with a bulbous bow means the larger of the length as defined in the first paragraph of this definition or the straight line horizontal measurement from the forwardmost tip of the bulbous bow to the aftermost part of the vessel measured parallel to the centerline.

*Length between perpendiculars* or *LBP* means the horizontal distance measured between perpendiculars taken at the forwardmost and aftermost points on the waterline corresponding to the deepest operating draft.

*Limited coastwise* means a route that is not more than 20 nautical miles from a harbor of safe refuge.

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

- (1) Propulsion machinery of any type;
- (2) Steam or internal combustion machinery;
- (3) Oil transfer equipment;
- (4) Electrical motors of more than 10 hp;
- (5) Refrigeration equipment;
- (6) One or more oil-fired boilers or heaters; or
- (7) Electrical generating machinery.

*Main transverse watertight bulkhead* means a transverse bulkhead that must be maintained watertight in order for the vessel to meet the damage stability and subdivision requirements of this subchapter.

*Major conversion* means a conversion of a vessel that, as determined by the Commandant:

- (1) Substantially changes the dimensions or carrying capacity of the vessel;
- (2) Changes the type of vessel;
- (3) Substantially prolongs the life of the vessel; or
- (4) Otherwise so changes the vessel that it is essentially a new vessel.

*Marine inspector* or *inspector* means any civilian employee or military member of the Coast Guard assigned by an Officer in Charge, Marine Inspec-

tion, or the Commandant to perform duties with respect to the inspection, enforcement, and administration of vessel safety and navigation laws and regulations.

*Master* means the individual having command of the vessel and who is the holder of a valid merchant mariner credential that authorized the individual to serve as master of a small passenger vessel.

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

*New OSV* means an OSV—

- (1) That was contracted for, or the keel of which was laid, on or after March 15, 1996; or
- (2) That underwent a major conversion initiated on or after March 15, 1996.

*New vessel* means a vessel:

- (1) The initial construction of which began on or after March 11, 1996;
- (2) Which was issued an initial Certificate of Inspection on or after September 11, 1996;
- (3) Which underwent a major conversion that was initiated on or after March 11, 1996; or
- (4) Which underwent a major conversion that was completed and for which an amended Certificate of Inspection was issued on or after September 11, 1996.

*Noncombustible material* means any material approved in accordance with §164.009 in subchapter Q, of this chapter or other standard specified by the Commandant.

*Non-self-propelled vessel* means a vessel that does not have installed means of propulsion, including propulsive machinery, masts, spars, or sails.

*Oceans* means a route that is more than 20 nautical miles offshore on any of the following waters:

- (1) Any ocean;
- (2) The Gulf of Mexico;

- (3) The Caribbean Sea;
- (4) The Bering Sea;
- (5) The Gulf of Alaska; or
- (6) Such other similar waters as may be designated by a Coast Guard District Commander.

*Officer In Charge, Marine Inspection, or OCMI* means an officer of the Coast Guard designated as such by the Commandant and who, under the direction of the Coast Guard District Commander, is in charge of a marine inspection zone, described in part 1 of this chapter, for the performance of duties with respect to the inspection, enforcement, and administration of vessel safety and navigation laws and regulations. The “cognizant OCMI” is the OCMI that has immediate jurisdiction over a vessel for the purpose of performing the duties previously described.

*Offshore supply vessel (OSV)* means a vessel that—

- (1) Is propelled by machinery other than steam;
- (2) Is of above 15 gross tons and of less than 500 gross tons (as measured under the Standard, Dual, or Simplified Measurement System under part 69, subpart C, D, or E, of this chapter), or is less than 6,000 gross tons (as measured under the Convention Measurement System under part 69, subpart B, of this chapter); and
- (3) Regularly carries goods, supplies, or equipment in support of exploration, exploitation, or production of offshore mineral or energy resources.

*Open boat* means a vessel not protected from entry of water by means of a complete weathertight deck, or by a combination of a partial weathertight deck and superstructure that is structurally suitable for the waters upon which the vessel operates.

*Open deck* means a deck that is permanently open to the weather on one or more sides and, if covered, any spot on the overhead is less than 4.5 meters (15 feet) from the nearest opening to the weather.

*Open to the atmosphere* means a compartment that has at least 0.342 square meters of open area directly exposed to the atmosphere for each cubic meter (15 square inches for each cubic foot) of net compartment volume.

*Operating station* means the principal steering station on the vessel from which the individual on duty normally navigates the vessel.

*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.

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

*Partially protected waters* is a term used in connection with stability criteria and means:

- (1) Waters not more than 20 nautical miles from the mouth of a harbor of safe refuge, unless determined by the cognizant OCMI to be exposed waters;
- (2) Those portions of rivers, estuaries, harbors, lakes, and similar waters that the cognizant OCMI determines not to be protected waters; and
- (3) Waters of the Great Lakes from April 16 through September 30 of the same year (summer season).

*Passenger* means an individual carried on a vessel, except:

- (1) 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;
- (2) The master; or
- (3) A member of the crew engaged in the business of the vessel who has not contributed consideration for carriage and who is paid for on board services.

*Passenger accommodation space* means an accommodation space designated for the use of passengers.

*Passenger for hire* means a passenger for whom consideration is contributed as a condition of carriage on the vessel, whether directly or indirectly flowing to the owner, charterer, operator, agent, or any other person having an interest in the vessel.



*Pilothouse control* means that controls to start and stop the engines and control the direction and speed of the propeller of the vessel are located at the operating station.

*Piping system* includes piping, fittings, and appurtenances as described in §56.07-5 in subchapter F of this chapter.

*Pontoon vessel* means any vessel having two or more watertight hulls, which are structurally independent from the vessel's deck or cross structure.

*Port light* means a hinged glass window, generally circular, in a vessel's side or deckhouse for light and ventilation.

*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, and that is not determined to be exposed waters or partially protected waters by the cognizant OCMI.

*Pre-engineered* means, when referring to a fixed gas fire extinguishing system, a system that is designed and tested to be suitable for installation without modification as a complete unit in a space of a set volume, regardless of the specific design of the vessel on which it is installed.

*Remotely operated vehicle (ROV) team*, at a minimum, consist of an ROV operator, a non-destructive testing inspector, an ROV tender or mechanic, and a team supervisor who is considered by the Officer in Charge, Marine Inspection (OCMI), have the appropriate training and experience to perform the survey and to safely operate the ROV in an effective manner. The team must also have a hull-positioning technician present. This position may be assigned to a team member already responsible for another team duty.

*Rivers* means a route on any of the following waters:

- (1) A river;
- (2) A canal; or
- (3) Such other similar waters as may be designated by a Coast Guard District Commander.

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

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

*Scupper* means a pipe or tube of at least 30 millimeters (1.25 inches) in diameter leading down from a deck or sole and through the hull to drain water overboard.

*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.

*Shallow water* is an ascertained water depth at which the uppermost deck(s) of a sunken vessel remain above the water's surface. The determination of the water's depth is made by the Officer in Charge, Marine Inspection (OCMI) who considers the vessel's stability (passenger heeling moment), the contour of the hull, the composition of the river bottom, and any other factors that would tend to prevent a vessel from resting an even keel.

*Ship's service loads* means services necessary for maintaining the vessel in normal operational and habitable conditions. These loads include, but are not limited to, safety, lighting, ventilation, navigational, and communications loads.

*Short international voyage* means an international voyage where:

- (1) The vessel is not more than 200 nautical miles from a port or place in which the passengers and crew could be placed in safety; and
- (2) The total distance between the last port of call in the country in which the voyage began and the final port of destination does not exceed 600 nautical miles.

*Stairway* means an inclined means of escape between two decks.

*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.

*Submersible vessel* means a vessel that is capable of operating below the surface of the water.

*Survival craft* means a lifeboat, rigid liferaft, inflatable liferaft, life float, inflatable buoyant apparatus, buoyant apparatus, or a small boat carried

aboard a vessel in accordance with § 180.200(b) of this subchapter.

*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.

*Third party examiner* means an entity:

(1) With a thorough knowledge of diving operations, including diving limitations as related to diver safety and diver supervision;

(2) Having a familiarity with, but not limited to, the following—

(i) The camera used during the AHE; and

(ii) The NDT equipment used during the AHE, including the effect of water clarity, and marine growth in relation to the quality of the readings obtained;

(3) Having a familiarity with the communications equipment used during the AHE;

(4) Possessing the knowledge of vessel structures, design features, nomenclature, and the applicable AHE regulations; and

(5) Able to present the Officer in Charge, Marine Inspection, with evidence of formal training, demonstrated ability, past acceptance, or a combination of these.

*Total test weight* means the weight used to simulate heeling and trimming moments when a simplified stability test is performed in accordance with § 178.330 or § 178.340 of this subchapter.

*Trunk* means a vertical shaft or duct for the passage of pipes, wires, or other devices except that for the purposes of part 179 of this chapter, “trunk” means a large enclosed passageway through any deck or bulkhead of a vessel.

*Underwater Survey in Lieu of Drydocking (UWILD)* means a program in which an eligible vessel may alternate between an underwater survey and the required drydock examinations.

*Variable load* means the weight of all items brought on board a vessel for which explicit account is not made in approved stability calculations, including but not limited to, personal effects, carry-on items, luggage, and equipment of any kind.

*Vehicle space* means a space not on an open deck, for the carriage of motor ve-

hicles with fuel in their tanks, into and from which such vehicles can be driven and to which passengers have access.

*Vessel* includes every description of watercraft or other artificial contrivance, used or capable of being used as a means of transportation on water.

*Vessel of the United States* means a vessel documented or numbered under the laws of the United States, the states of the United States, Guam, Puerto Rico, the Virgin Islands, American Samoa, the District of Columbia, the Northern Mariana Islands, and any other territory or possession of the United States.

*Warm water* means water where the monthly mean low water temperature is normally more than 15 degrees Celsius (59 degrees Fahrenheit).

*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 246 liters (65 gallons) per minute is sprayed on the enclosure from any direction from a distance of ten feet for five minutes.

*Weather deck* means a deck that is partially or completely exposed to the weather from above or from at least two sides, except that for the purposes of parts 178 and 179 of this chapter, “weather deck” means the uppermost deck exposed to the weather to which a weathertight sideshell extends.

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

*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.

*Wire* means an individual insulated conductor without an outer protective jacket.

*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.

*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.

[CGD 85-080, 61 FR 947, Jan. 10, 1996; 61 FR 20557, May 7, 1996]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting § 175.400, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and at [www.fdsys.gov](http://www.fdsys.gov).

#### § 175.540 **Equivalents.**

(a) The Commandant 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 this subchapter. Requests for approval must be submitted to the Marine Safety Center via the cognizant OCMI. If necessary, the Marine Safety Center may require engineering evaluations and tests to demonstrate the equivalence of the substitute.

(b) The Commandant may accept compliance by a high speed craft with the provisions of the International Maritime Organization (IMO) "Code of Safety for High Speed Craft" as an equivalent to compliance with applicable requirements of this subchapter. Requests for a determination of equivalency for a particular vessel must be submitted to the Marine Safety Center via the cognizant OCMI.

(c) The Commandant may approve a novel lifesaving appliance or arrangement as an equivalent if it has performance characteristics at least equivalent to the appliance or arrangement required under this part, and:

(1) Is evaluated and tested under IMO Resolution A. 520(13) (incorporated by reference, see 46 CFR 175.600); or

(2) Has successfully undergone an evaluation and tests that are substantially equivalent to those recommendations.

(d) The Commandant may accept alternative compliance arrangements in lieu of specific provisions of the International Safety Management (ISM) Code (IMO Resolution A.741(18)) for the purpose of determining that an equivalent safety management system is in place on board a vessel. The Commandant will consider the size and corporate structure of a vessel's company when determining the acceptability of an equivalent system. Requests for determination of equivalency must be submitted to Commandant (CG-CVC) via the cognizant OCMI.

[CGD 85-080, 61 FR 947, Jan. 10, 1996; 61 FR 24464, May 15, 1996, as amended by CGD 95-073, 62 FR 67515, Dec. 24, 1997; USCG-2003-16630, 73 FR 65203, Oct. 31, 2008; USCG-2009-0702, 74 FR 49240, Sept. 25, 2009; USCG-2012-0832, 77 FR 59788, Oct. 1, 2012]

#### § 175.550 **Special consideration.**

In applying the provisions of this subchapter, the OCMI may give special consideration to authorizing departures from the specific requirements when unusual circumstances or arrangements warrant such departures and an equivalent level of safety is provided. The OCMI of each marine inspection zone in which the vessel operates must approve any special consideration granted to a vessel.

#### § 175.560 **Appeals.**

Any person directly affected by a decision or action taken under this subchapter, by or on behalf of the Coast Guard, may appeal therefrom in accordance with § 1.03 in subchapter A of this chapter.

#### § 175.600 **Incorporation by reference.**

(a) Certain material is incorporated by reference into this subchapter with the approval of the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. All approved material is available for inspection at the U.S. Coast Guard, Office of Design and Engineering Standards (CG-ENG), 2703 Martin Luther King Jr. Avenue SE., Stop 7509, Washington, DC 20593-7509, and is available from the sources listed below. It is also available for inspection at the National Archives and Records Administration

(NARA). For information on the availability of this material at NARA, call 202-741-6030 or go to [http://www.archives.gov/federal\\_register/code\\_of\\_federal\\_regulations/ibr\\_locations.html](http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html).

(b) American Boat and Yacht Council (ABYC), 613 Third St., Suite 10, Annapolis, MD 21403, 410-990-4460, <http://www.abycinc.org>.

(1) A-1-93, Marine Liquefied Petroleum Gas (LPG) Systems (“ABYC A-1”), IBR approved for §184.240(a), (c), (d), and (g).

(2) A-3-93, Galley Stoves (“ABYC A-3”), IBR approved for §184.200.

(3) A-7-70, Boat Heating Systems (“ABYC A-7”), IBR approved for §184.200.

(4) A-16-89, Electric Navigation Lights (“ABYC A-16”), IBR approved for §183.130(a).

(5) A-22-93, Marine Compressed Natural Gas (CNG) Systems (“ABYC A-22”), IBR approved for §184.240(b) through (e).

(6) E-8, Alternating Current (AC) Electrical Systems on Boats, July 2001 (“ABYC E-8”), IBR approved for §§183.130(a) and 183.340(b).

(7) E-9, Direct Current (DC) Electrical Systems on Boats (May 28, 1990) (“ABYC E-9”), IBR approved for §§183.130(a) and 183.340(b).

(8) H-2-89, Ventilation of Boats Using Gasoline (“ABYC H-2”), IBR approved for §§182.130 and 182.460(m).

(9) H-22-86, DC Electric Bilge Pumps Operating Under 50 Volts (“ABYC H-22”), IBR approved for §§182.130 and 182.500(b).

(10) H-24-93, Gasoline Fuel Systems (“ABYC H-24”), IBR approved for §§182.130, 182.440(d), 182.445, 182.450(f) and 182.455(c).

(11) H-25-94, Portable Gasoline Fuel Systems for Flammable Liquids (“ABYC H-25”), IBR approved for §§182.130 and 182.458(b).

(12) H-32-87, Ventilation of Boats Using Diesel Fuel (“ABYC H-32”), IBR approved for §§182.130, 182.465(i) and 182.470(c).

(13) H-33-89, Diesel Fuel Systems (“ABYC H-33”), IBR approved for §§182.130, 182.440(d), 182.445(f), 182.450(f) and 182.455(c).

(14) P-1-93, Installation of Exhaust Systems for Propulsion and Auxiliary

Engines (“ABYC P-1”), IBR approved for §§177.405(b), 177.410(c), 182.130, 182.425(c), and 182.430(k).

(15) P-4-89, Marine Inboard Engines (“ABYC P-4”), IBR approved for §§182.130 and 182.420(b) and (d).

(c) American Bureau of Shipping (ABS), ABS Plaza, 16855 Northchase Drive, Houston, TX 77060, 281-877-5800, <http://www2.eagle.org>.

(1) Guide for High Speed Craft, 1997 (“ABS High Speed Craft”), IBR approved for §177.300(c) and (d).

(2) Rules for Building and Classing Aluminum Vessels, 1975 (“ABS Aluminum Vessel Rules”), IBR approved for §177.300(d).

(3) Rules for Building and Classing Reinforced Plastic Vessels, 1978 (“ABS Plastic Vessel Rules”), IBR approved for §177.300(c).

(4) Rules for Building and Classing Steel Vessels, 1995 (“ABS Steel Vessel Rules”), IBR approved for §183.360(b).

(5) Rules for Building and Classing Steel Vessels Under 61 Meters (200 feet) in Length, 1983 (“ABS Steel Vessel Rules (≤61 Meters)”), IBR approved for §177.300.

(6) Rules for Building and Classing Steel Vessels for Service on Rivers and Intracoastal Waterways, 1995 (“ABS Steel Vessel Rules (Rivers/Intracoastal)”), IBR approved for §177.300(e).

(d) American National Standards Institute (ANSI), 25 West 43rd St., New York, NY 10036, 212-642-4900, <http://www.ansi.org>.

(1) A 17.1-1984, including supplements A 17.1a and B-1985, Safety Code for Elevators and Escalators (“ANSI A 17.1”), IBR approved for §183.540.

(2) B 31.1-1986, Code for Pressure Piping, Power Piping (“ANSI B 31.1”), IBR approved for §182.710(c).

(3) Motor Vehicles Operating on Land Highways (“ANSI Z 26.1”), IBR approved for §177.1030(b).

(e) ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428, 877-909-2786, <http://www.astm.org>.

(1) ASTM B 96-93, Standard Specification for Copper-Silicon Alloy Plate, Sheet, Strip, and Rolled Bar for General Purposes and Pressure Vessels (“ASTM B 96”), IBR approved for §182.440(a).

(2) ASTM B 117-97, Standard Practice for Operating Salt Spray (Fog) Apparatus (“ASTM B 117”), IBR approved for §175.400.

(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 (“ASTM B 122”), IBR approved for §182.440(a).

(4) ASTM B 127-98, Standard Specification for Nickel-Copper Alloy (UNS NO4400) Plate, Sheet, and Strip (“ASTM B 127”), IBR approved for §182.440(a).

(5) ASTM B 152-97a, Standard Specification for Copper Sheet, Strip, Plate, and Rolled Bar (“ASTM B 152”), IBR approved for §182.440(a).

(6) ASTM B 209-96, Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate (“ASTM B 209”), IBR approved for §182.440(a).

(7) ASTM D 93-97, Standard Test Methods for Flash Point by Pensky-Martens Closed Cup Tester (“ASTM D 93”), IBR approved for §175.400.

(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 (“ASTM D 635”), IBR approved for §182.440(a).

(9) ASTM D 2863-95, Standard Method for Measuring the Minimum Oxygen Concentration to Support Candle-Like Combustion of Plastics (Oxygen Index) (“ASTM D 2863”), IBR approved for §182.440(a).

(10) ASTM E 84-98, Standard Test Method for Surface Burning Characteristics of Building Materials (“ASTM E 84”), IBR approved for §177.410(a) and (b).

(f) DLA Document Services, Building 4D, 700 Robbins Avenue, Philadelphia, PA 19111, <http://quicksearch.dla.mil>.

(1) Military Specification MIL-P-21929C, Plastic Material, Cellular Polyurethane, Foam-in-Place, Rigid (2 and 4 pounds per cubic foot), 1991 (“NPFC MIL-P-21929C”), IBR approved for §179.240(b).

(2) Military Specification MIL-R-21607E(SH), Resins, Polyester, Low Pressure Laminating, Fire Retardant (“NPFC MIL-R-21607E(SH)”), 1990 IBR approved for §177.410.

(g) Institute of Electrical and Electronics Engineers, Inc. (IEEE), IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854, 800-678-4333, <http://www.ieee.org>.

(1) Standard 45-1977, Recommended Practice for Electrical Installations on Shipboard (“IEEE 45-1977”), IBR approved for §183.340(o).

(2) [Reserved]

(h) International Maritime Organization (IMO) Publishing, 4 Albert Embankment, London SE1 7SR, United Kingdom, +44 (0)20 7735 7611, <http://www.imo.org>.

(1) Resolution A.520(13), Code of Practice for the Evaluation, Testing and Acceptance of Prototype Novel Life-Saving Appliances and Arrangements, dated 17 November 1983 (“IMO Resolution A.520(13)”), IBR approved for §175.540(c).

(2) Resolution A.658(16), Use and Fitting of Retro-Reflective Materials on Life-Saving Appliances, dated 20 November 1989 (“IMO Resolution A.658(16)”), IBR approved for §185.604(h) and (i).

(3) Resolution A.688(17), Fire Test Procedures For Ignitability of Bedding Components (“IMO Resolution A.688(17)”), dated 6 November 1991, IBR approved for §177.405(g).

(4) Resolution A.760(18), Symbols Related to Life-Saving Appliances and Arrangements (“IMO Resolution A.760(18)”), dated 17 November 1993, IBR approved for §185.604(f).

(5) International Convention for the Safety of Life at Sea (SOLAS), as amended, Consolidated Edition, 2009, including Erratum, IBR approved for §177.420.

(i) International Organization for Standardization (ISO), Case postale 56, CH-1211 Geneva 20, Switzerland, +41 22 749 01 11, <http://www.iso.org>.

(1) ISO 8846, Small Craft-Electrical Devices-Protection Against Ignition of Surrounding Flammable Gases, December 1990 (“ISO 8846”), IBR approved for §182.500(b).

(2) ISO 8849, Small Craft-Electrically Operated Bilge Pumps, December 15, 1990 (“ISO 8849”), IBR approved for §182.500(b).

(j) Lloyd’s Register of Shipping, 71 Fenchurch Street, London EC3M 4BS, +44 (0)20 7709 9166, <http://www.lr.org>.

(1) Rules and Regulations for the Classification of Yachts and Small Craft, as amended through 1983 (“Lloyd’s Yachts and Small Craft”), IBR approved for § 177.300(a).

(2) [Reserved]

(k) National Fire Protection Association (NFPA), 1 Batterymarch Park, Quincy, MA 02169, 617-770-3000, <http://www.nfpa.org>.

(1) NFPA 10, Standard for Portable Fire Extinguishers, 2010 Edition, effective December 5, 2009, IBR approved for § 176.810(b).

(2) NFPA 17–1994, Dry Chemical Extinguishing Systems, 1994 Edition, IBR approved for § 181.425(b).

(3) NFPA 17A–1994, Wet Chemical Extinguishing Systems, 1994 Edition, IBR approved for § 181.425(b).

(4) NFPA 70–1996, National Electrical Code (NEC), 1996 Edition, IBR approved for §§ 183.320(d) and (e), 183.340(d) and (o), and 183.372(c).

(5) NFPA 302–1994, Pleasure and Commercial Motor Craft, Chapter 6, 1994 Edition, IBR approved for §§ 184.200 and 184.240(a) through (c), (d) and (h).

(6) NFPA 306–1993, Control of Gas Hazards on Vessels, 1993 Edition, IBR approved for § 176.710(a).

(7) NFPA 1963–1989, Fire Hose Connections, 1989 Edition, IBR approved for § 181.320(b).

(1) Society of Automotive Engineers (SAE), 400 Commonwealth Drive, Warrendale, PA 15096, 724-776-4841, <http://www.sae.org>.

(1) SAE J-1475, Hydraulic Hose Fittings For Marine Applications, 1984 (“SAE J-1475”), IBR approved for § 182.720(e).

(2) SAE J-1928, Devices Providing Backfire Flame Control for Gasoline Engines in Marine Applications, August 1989 (“SAE J-1928”), IBR approved for § 182.415(c).

(3) SAE J-1942, Hose and Hose Assemblies for Marine Applications, 1992 (“SAE J-1942”), IBR approved for § 182.720(e).

(m) UL (formerly Underwriters Laboratories), 12 Laboratory Drive, P.O. Box 13995, Research Triangle Park, NC 27709, 919-549-1400, <http://www.ul.com>.

(1) UL 19—Standard for Safety for Lined Fire Hose and Hose Assemblies, Twelfth Edition, approved November 30, 2001, IBR approved for § 181.320(b).

(2) UL 174–1989, as amended through June 23, 1994, Household Electric Storage Tank Heaters (“UL 174”), IBR approved for § 182.320(a).

(3) UL 217–1998, Single and Multiple Station Smoke Detectors (“UL 217”), IBR approved for § 181.450(a).

(4) UL 486A–1992, Wire Connectors and Soldering Lugs For Use With Copper Conductors (“UL 486A”), IBR approved for § 183.340(i).

(5) UL 489–1995, Molded-Case Circuit Breakers and Circuit Breaker Enclosures (“UL 489”), IBR approved for § 183.380(m).

(6) UL 595–1991, Marine Type Electric Lighting Fixtures (“UL 595”), IBR approved for § 183.410(d).

(7) UL 710–1990, as amended through September 16, 1993, Exhaust Hoods For Commercial Cooking Equipment (“UL 710”), IBR approved for § 181.425(a).

(8) UL 1058–1989, as amended through April 19, 1994, Halogenated Agent Extinguishing System Units (“UL 1058”), IBR approved for § 181.410(g).

(9) UL 1102–1992, Non integral Marine Fuel Tanks (“UL 1102”), IBR approved for § 182.440(a).

(10) UL 1110–1988, as amended through May 16, 1994, Marine Combustible Gas Indicators (“UL 1110”), IBR approved for § 182.480(a).

(11) UL 1111–1988, Marine Carburetor Flame Arresters (“UL 1111”), IBR approved for § 182.415(c).

(12) UL 1113, Electrically Operated Pumps for Nonflammable Liquids, Marine, Third Edition (Sep. 4, 1997) (“UL 1113”), IBR approved for § 182.520(e).

(13) UL 1453–1988, as amended through June 7, 1994, Electric Booster and Commercial Storage Tank Water Heaters (“UL 1453”), IBR approved for § 182.320(a).

(14) UL 1570–1995, Fluorescent Lighting Fixtures (“UL 1570”), IBR approved for § 183.410(d).

(15) UL 1571–1995, Incandescent Lighting Fixtures (“UL 1571”), IBR approved for § 183.410(d).

(16) UL 1572–1995, High Intensity Discharge Lighting Fixtures (“UL 1572”), IBR approved for § 183.410(d).

(17) UL 1573–1995, Stage and Studio Lighting Units (“UL 1573”), IBR approved for § 183.410(d).

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(18) UL 1574–1995, Track Lighting Systems (“UL 1574”), IBR approved for §183.410(d).

[USCG–2012–0196, 81 FR 48296, July 22, 2016]

**§ 175.800 Approved equipment and material.**

(a) Equipment and material that is required by this subchapter to be approved or of an approved type, must have been manufactured and approved in accordance with the design and testing requirements in subchapter Q (Equipment, Construction, and Materials: Specifications and Approval) of this chapter or as otherwise specified by the Commandant.

(b) Coast Guard publication COMDTINST M16714.3 (Series) “Equipment Lists, Items Approved, Certificated or Accepted under Marine Inspection and Navigation Laws” lists approved equipment by type and manufacturer. COMDTINST M16714.3 (Series) may be obtained from New Orders, Superintendent of Documents, P.O. Box 371954, Pittsburgh, PA 15250–7954.

[CGD 85–080, 61 FR 947, Jan. 10, 1996, as amended at 62 FR 51355, Sept. 30, 1997]

**§ 175.900 OMB control numbers.**

(a) *Purpose.* This section lists the control numbers assigned to information collection and recordkeeping requirements in this subchapter by the Office of Management and Budget (OMB) pursuant to the Paperwork Reduction Act of 1980 (44 U.S.C. 3501 *et seq.*). The Coast Guard intends that this section comply with the requirements of 44 U.S.C. 3507(f) which requires that agencies display a current control number assigned by the Director of OMB for each approved agency information collection requirement.

(b) *Display.*

46 CFR Section where identified	Current OMB Control Number
176.105(a)	1625–0057
176.202	1625–0057
176.204	1625–0057
176.302	1625–0057
176.306	1625–0057
176.310	1625–0057
176.500(a)	1625–0057
176.612	1625–0057
176.700	1625–0057
176.704	1625–0057
176.710	1625–0057
176.810(b)	1625–0057

46 CFR Section where identified	Current OMB Control Number
176.920(c)	1625–0057
176.930	1625–0057
177.202	1625–0057
177.315	1625–0057
177.330	1625–0057
177.335	1625–0057
177.340	1625–0057
178.210	1625–0057
178.220	1625–0057
178.230	1625–0057
181.610	1625–0057
182.460(e)	1625–0057
182.610(f)	1625–0057
183.220(d)	1625–0057
183.320 (d) and (e)	1625–0057
184.420	1625–0057
184.506	1625–0057
185.202	1625–0001
185.206	1625–0001
185.208	1625–0057
185.220	1625–0057
185.230	1625–0057
185.280	1625–0057
185.340(c)	1625–0057
185.402	1625–0057
185.420	1625–0057
185.502	1625–0057
185.503	1625–0057
185.504	1625–0057
185.506	1625–0057
185.510	1625–0057
185.514	1625–0057
185.516	1625–0057
185.518	1625–0057
185.520	1625–0057
185.524	1625–0057
185.602	1625–0057
185.604	1625–0057
185.606	1625–0057
185.608	1625–0057
185.610	1625–0057
185.612	1625–0057
185.702	1625–0057
185.704(c)	1625–0057
185.728(c)	1625–0057

[CGD 85–080, 61 FR 947, Jan. 10, 1996, as amended by USCG–2004–18884, 69 FR 58351, Sept. 30, 2004]

**PART 176—INSPECTION AND CERTIFICATION**

**Subpart A—General Provisions; Certificate of Inspection**

- Sec.
- 176.1 Preemptive effect.
  - 176.2–176.99 [Reserved]
  - 176.100 When required.
  - 176.103 Description.
  - 176.105 How to obtain or renew.
  - 176.107 Period of validity for a Certificate of Inspection.
  - 176.110 Routes permitted.
  - 176.112 Total persons permitted.
  - 176.113 Passengers permitted.

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- 176.114 Alternative requirements for a vessel operating as other than a small passenger vessel.
- 176.120 Certificate of Inspection amendment.

### Subpart B—Special Permits and Certificates

- 176.202 Permit to proceed.
- 176.204 Permit to carry excursion party.

### Subpart C—Posting of Certificates, Permits, and Stability Letters

- 176.302 Certificates and permits.
- 176.306 Stability letter.
- 176.310 Certification Expiration Date Stickers.

### Subpart D—Inspection for Certification

- 176.400 General.
- 176.402 Initial inspection for certification.
- 176.404 Subsequent inspections for certification.

### Subpart E—Reinspection

- 176.500 When required.
- 176.502 Certificate of Inspection: Conditions of validity.

### Subpart F—Hull and Tailshaft Examinations

- 176.600 Drydock examination, internal structural examination, and underwater survey intervals.
- 176.610 Scope of drydock and internal structural examinations.
- 176.615 Underwater Survey in Lieu of Drydocking (UWILD).
- 176.620 Description of the Alternative Hull Examination (AHE) Program for certain passenger vessels.
- 176.625 Eligibility requirements for the Alternative Hull Examination (AHE) Program for certain passenger vessels.
- 176.630 The Alternative Hull Examination (AHE) Program application.
- 176.635 Preliminary examination requirements.
- 176.640 Pre-survey meeting.
- 176.645 AHE Procedure.
- 176.650 Alternative Hull Examination Program options: Divers or underwater ROV.
- 176.655 Hull examination reports.
- 176.660 Continued participation in the Alternative Hull Examination (AHE) Program.
- 176.665 Notice and plans required.
- 176.670 Tailshaft examinations.
- 176.675 Extension of examination intervals.

### Subpart G—Repairs and Alterations

- 176.700 Permission for repairs and alterations.

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- 176.702 Installation tests and inspections.
- 176.704 Breaking of safety valve seals.
- 176.710 Inspection and testing prior to hot work.

### Subpart H—Material Inspections

- 176.800 Inspection standards.
- 176.801 Notice of inspection deficiencies and requirements.
- 176.802 Hull.
- 176.804 Machinery.
- 176.806 Electrical.
- 176.808 Lifesaving.
- 176.810 Fire protection.
- 176.812 Pressure vessels and boilers.
- 176.814 Steering systems.
- 176.816 Miscellaneous systems and equipment.
- 176.818 Sanitary inspection.
- 176.830 Unsafe practices.
- 176.840 Additional tests and inspections.

### Subpart I—International Convention for Safety of Life at Sea, 1974, as Amended (SOLAS)

- 176.900 Applicability.
- 176.910 Passenger Ship Safety Certificate.
- 176.920 Exemptions.
- 176.925 Safety Management Certificate.
- 176.930 Equivalents.

AUTHORITY: 33 U.S.C. 1321(j); 46 U.S.C. 2103, 3205, 3306, 3307; 49 U.S.C. App. 1804; E.O. 11735, 38 FR 21243, 3 CFR, 1971–1975 Comp., p. 743; E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp., p. 277; Department of Homeland Security Delegation No. 0170.1.

SOURCE: CGD 85–080, 61 FR 953, Jan. 10, 1996, unless otherwise noted.

### Subpart A—General Provisions; Certificate of Inspection

#### § 176.1 Preemptive effect.

The regulations in this part have preemptive effect over State or local regulations in the same field.

[USCG–2006–24797, 77 FR 33890, June 7, 2012]

#### §§ 176.2–176.99 [Reserved]

#### § 176.100 When required.

(a) A vessel to which this subchapter applies may not be operated without having on board a valid U.S. Coast Guard Certificate of Inspection.

(b) Except as noted in § 176.114 of this part, each vessel inspected and certificated under the provisions of this subchapter must, when any passengers are



aboard during the tenure of the certificate, be in full compliance with the terms of the certificate.

(c) If necessary to prevent delay of the vessel, a temporary Certificate of Inspection may be issued pending the issuance and delivery of the regular Certificate of Inspection. The temporary certificate must be carried in the same manner as the regular certificate and is considered the same as the regular Certificate of Inspection that it represents.

(d) A vessel on a foreign voyage between a port in the United States and a port in a foreign country, whose Certificate of Inspection expires during the voyage, may lawfully complete the voyage without a valid Certificate of Inspection provided the voyage is completed within 30 days of expiration and the certificate did not expire within 15 days of sailing on the foreign voyage from a U.S. port.

[CGD 85-080, 61 FR 953, Jan. 10, 1996; 61 FR 20557, May 7, 1996]

#### § 176.103 Description.

The Certificate of Inspection issued to a vessel describes the vessel, the route(s) that it may travel, the minimum manning requirements, the survival and rescue craft carried, the minimum fire extinguishing equipment and lifejackets required to be carried, the maximum number of passengers and total persons that may be carried, the number of passengers the vessel may carry in overnight accommodation spaces, the name of the owner and managing operator, any equivalencies accepted or authorized by the Commandant or any Officer in Charge, Marine Inspection (OCMI) in accordance with § 175.540 or § 175.550 of this chapter, and such other conditions of operations as may be determined by the cognizant OCMI.

#### § 176.105 How to obtain or renew.

(a) A Certificate of Inspection is obtained or renewed by making application on Form CG 3752, "Application for Inspection of U.S. Vessel," to the Coast Guard OCMI of the marine inspection zone in which the inspection is to be made. Form CG-3752 may be obtained at any U.S. Coast Guard Sector Office or Marine Inspection Office.

(b) The application for initial inspection of a vessel being newly constructed or converted must be submitted prior to the start of the construction or conversion.

(c) The construction, arrangement, and equipment of each vessel must be acceptable to the cognizant OCMI as a prerequisite of the issuance of the initial Certificate of Inspection. Acceptance is based on the information, specifications, drawings and calculations available to the OCMI, and on the successful completion of an initial inspection for certification.

(d) A Certificate of Inspection is renewed by the issuance of a new Certificate of Inspection.

(e) The condition of the vessel and its equipment must be acceptable to the cognizant OCMI as a prerequisite to the Certificate of Inspection renewal. Acceptance is based on the condition of the vessel as found at the periodic inspection for certification.

[CGD 85-080, 61 FR 953, Jan. 10, 1996; 61 FR 20557, May 7, 1996, as amended by USCG-2006-25556, 72 FR 36331, July 2, 2007]

#### § 176.107 Period of validity for a Certificate of Inspection.

(a) A Certificate of Inspection is valid for 1 year for vessels carrying more than 12 passengers on international voyages.

(b) A Certificate of Inspection is valid for 5 years for all other vessels.

(c) A Certificate of Inspection may be suspended and withdrawn or revoked by the cognizant OCMI at any time for noncompliance with the requirements of this subchapter.

[USCG-1999-4976, 65 FR 6508, Feb. 9, 2000]

#### § 176.110 Routes permitted.

(a) The area of operation for each vessel and any necessary operational limits are determined by the cognizant OCMI, and recorded on the vessel's Certificate of Inspection. Each area of operation, referred to as a route, is described on the Certificate of Inspection under the major headings "Oceans," "Coastwise," "Limited Coastwise," "Great Lakes," "Lakes, Bays, and Sounds," or "Rivers," as applicable.

## § 176.112

Further limitations imposed or extensions granted are described by reference to bodies of waters, geographical points, distance from geographical points, distances from land, depths of channel, seasonal limitations, and similar factors.

(b) Operation of a vessel on a route of lesser severity than those specifically described or designated on the Certificate of Inspection is permitted unless expressly prohibited on the Certificate of Inspection. The general order of severity of routes is: oceans, coastwise, limited coastwise, Great Lakes, lakes, bays, and sounds, and rivers. The cognizant OCMI may prohibit a vessel from operating on a route of lesser severity than the primary route a vessel is authorized to operate on if local conditions necessitate such a restriction.

(c) Non-self-propelled vessels are prohibited from operating on an oceans, coastwise, limited coastwise, or Great Lakes route unless the Commandant approves such a route.

(d) When designating a permitted route or imposing any operational limits on a vessel, the OCMI may consider:

(1) Requirements of this subchapter for which compliance is based on the route of the vessel;

(2) The performance capabilities of the vessel based on design, scantlings, stability, subdivision, propulsion, speed, operating modes, maneuverability, and other characteristics;

(3) The suitability of the vessel for nighttime operations; and

(4) The suitability of the vessel for all environmental conditions.

[CGD 85-080, 61 FR 953, Jan. 10, 1996; 61 FR 20557, May 7, 1996, as amended by USCG-2007-0030, 75 FR 78087, Dec. 14, 2010]

### § 176.112 Total persons permitted.

The cognizant Officer in Charge, Marine Inspection (OCMI) determines the total number of persons permitted to be carried on a vessel. In determining the total number of persons, the OCMI may consider the total weight of passengers, crew, and variable loads; stability restrictions and subdivision requirements of the vessel; the vessel's route, general arrangement, means of escape, and lifesaving equipment; minimum manning requirements; and the maximum number of passengers per-

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mitted in accordance with § 176.113 of this part.

[USCG-2007-0030, 75 FR 78087, Dec. 14, 2010]

### § 176.113 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 by the OCMI under paragraph (d) of this section.

(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 paragraph (c) of this section.

(1) *Length of rail criterion.* One passenger may be permitted for each 760 millimeters (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 individual operating the vessel.

(2) *Deck area criterion.* One passenger may be permitted for each 0.9 square meters (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 840 millimeters (34 inches) wide and passageways on open deck, less than 710 millimeters (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 §177.820(d) in this subchapter.

(3) *Fixed seating criterion.* One passenger may be permitted for each 455 millimeter (18 inches) of width of fixed seating provided by §177.820 of this subchapter. Each sleeping berth in overnight accommodation spaces shall be counted as only one seat.

(c) 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.

(d) For a vessel operating on short runs on protected waters such as a ferry, the cognizant OCMI may give special consideration to increases in passenger allowances.

[CGD 85-080, 61 FR 953, Jan. 10, 1996, as amended by USCG-2006-24371, 74 FR 11266, Mar. 16, 2009]

**§176.114 Alternative requirements for a vessel operating as other than a small passenger vessel.**

(a) When authorized by the cognizant OCMI by an endorsement of the vessel's Certificate of Inspection, a small passenger vessel carrying six or less passengers, or operating as a commercial fishing vessel or other uninspected vessel, or carrying less than twelve pas-

sengers and operating as a recreational vessel, need not meet requirements of:

(1) Subparts C, D, and E, of part 180 of this chapter if the vessel is in satisfactory compliance with the lifesaving equipment regulations for an uninspected vessel or recreational vessel in a similar service;

(2) Subpart C of part 177, and parts 178 and 179 of this chapter if the vessel is in satisfactory compliance with applicable regulations for an uninspected vessel or recreational vessel in a similar service or if the owner of the vessel otherwise establishes to the satisfaction of the cognizant OCMI that the vessel is seaworthy for the intended service; and

(3) Sections 184.404 and 184.410 of this chapter providing the vessel is in satisfactory compliance with applicable regulations for an uninspected or recreational vessel in a similar service.

(b) A vessel operating under the alternative regulations of paragraph (a) of this section must:

(1) Not alter the arrangement of the vessel nor remove any equipment required by the certificate for the intended operation, without the consent of the cognizant OCMI;

(2) Comply with the minimum manning specified on the Certificate of Inspection, which may include reduced manning depending on the number of passengers and operation of the vessel;

(3) When carrying from one to six passengers, except for a vessel being operated as a recreational vessel, make the announcement required by §185.506(a) of this chapter before getting underway; and

(4) If a vessel of more than 15 gross tons, not carry freight for hire.

(c) The endorsement issued under paragraph (a) of this section must indicate the route, maximum number of passengers, and the manning required to operate under the provisions of this section.

[CGD 85-080, 61 FR 953, Jan. 10, 1996, as amended by CGD 97-057, 62 FR 51049, Sept. 30, 1997]

**§176.120 Certificate of Inspection amendment.**

(a) An amended Certificate of Inspection may be issued at any time by any

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OCMI. The amended Certificate of Inspection replaces the original, but the expiration date remains the same as that of the original. An amended Certificate of Inspection may be issued to authorize and record a change in the dimensions, gross tonnage, owner, managing operator, manning, persons permitted, route permitted, conditions of operations, or equipment of a vessel, from that specified in the current Certificate of Inspection.

(b) A request for an amended Certificate of Inspection must be made to the cognizant OCMI by the owner or managing operator of the vessel at any time there is a change in the character of a vessel or in its route, equipment, ownership, operation, or similar factors specified in its current Certificate of Inspection.

(c) The OCMI may require an inspection prior to the issuance of an amended Certificate of Inspection.

### Subpart B—Special Permits and Certificates

#### § 176.202 Permit to proceed.

(a) When a vessel is not in compliance with its Certificate of Inspection or fails to comply with a regulation of this subchapter, the cognizant OCMI may permit the vessel to proceed to another port for repair, if in the judgment of the OCMI, the trip can be completed safely, even if the Certificate of Inspection of the vessel has expired or is about to expire.

(b) Form CG-948, “Permit to Proceed to another Port for Repairs,” may be issued by the cognizant OCMI to the owner, managing operator, or the master of the vessel stating the conditions under which the vessel may proceed to another port. The permit may be issued only upon the written application of the owner, managing operator, or master, and after the vessel’s Certificate of Inspection is turned over to the OCMI.

(c) A vessel may not carry passengers when operating in accordance with a permit to proceed, unless the cognizant OCMI determines that it is safe to do so.

[CGD 85-080, 61 FR 953, Jan. 10, 1996, as amended by USCG-2014-0688, 79 FR 58288, Sept. 29, 2014]

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#### § 176.204 Permit to carry excursion party.

(a) The cognizant OCMI may permit a vessel to engage in a temporary excursion operation with a greater number of persons or on a more extended route, or both, than permitted by its Certificate of Inspection when, in the opinion of the OCMI, the operation can be undertaken safely.

(b) Upon the written application of the owner or managing operator of the vessel, the cognizant OCMI may issue a Form CG-949, “Permit To Carry Excursion Party,” to indicate his or her permission to carry an excursion party. The OCMI will indicate on the permit the conditions under which it is issued, the number of persons the vessel may carry, the crew required, any additional lifesaving or safety equipment required, the route for which the permit is granted, and the dates on which the permit is valid.

(c) The number of passengers normally permitted on an excursion vessel shall be governed by § 176.113.

(d) The OCMI will not normally waive the applicable minimum safety standards when issuing an excursion permit. In particular, a vessel that is being issued an excursion permit will normally be required to meet the minimum stability, survival craft, life jacket, fire safety, and manning standards applicable to a vessel in the service for which the excursion permit is requested.

(e) The permit acts as a temporary, limited duration supplement to the vessel’s Certificate of Inspection and must be carried with the Certificate of Inspection. A vessel operating under a permit to carry an excursion party must be in full compliance with the terms of its Certificate of Inspection as supplemented by the permit.

(f) The OCMI may require an inspection prior to the issuance of a permit to carry an excursion party.

### Subpart C—Posting of Certificates, Permits, and Stability Letters

#### § 176.302 Certificates and permits.

The Certificate of Inspection and any SOLAS Certificates must be posted

under glass or other suitable transparent material, such that all pages are visible, in a conspicuous place on the vessel where observation by passengers is likely. If posting is impracticable, such as in an open boat, the certificates must be kept on board in a weathertight container readily available for use by the crew and display to passengers and others on request.

[CGD 85-080, 61 FR 953, Jan. 10, 1996, as amended by CGD 97-057, 62 FR 51049, Sept. 30, 1997]

#### § 176.306 Stability letter.

When, in accordance with §178.210 of this chapter, a vessel must be provided with a stability letter, the stability letter must be posted under glass or other suitable transparent material, such that all pages are visible, at the operating station of the vessel. If posting is impracticable, the stability letter must be kept on board in a weathertight container readily available for use by the crew and display to passengers and others on request.

[CGD 85-080, 61 FR 953, Jan. 10, 1996, as amended by CGD 97-057, 62 FR 51049, Sept. 30, 1997]

#### § 176.310 Certification Expiration Date Stickers.

(a) A Certification Expiration Date Sticker indicates the date upon which the vessel's Certificate of Inspection expires and is provided by the cognizant OCMI in the number required, upon issuance or renewal of the Certificate of Inspection.

(b) A vessel that is issued a Certificate of Inspection under the provisions of this subchapter must not be operated without a valid Certification Expiration Date Sticker affixed to the vessel on a place that is:

- (1) A glass or other smooth surface from which the sticker may be removed without damage to the vessel;
- (2) Readily visible to each passenger prior to boarding the vessel and to patrolling Coast Guard law enforcement personnel; and
- (3) Acceptable to the Coast Guard marine inspector.

(c) The Coast Guard marine inspector may require the placement of more than one sticker in order to insure

compliance with paragraph (b)(2) of this section.

[CGD 85-080, 61 FR 953, Jan. 10, 1996; 61 FR 20557, May 7, 1996]

### Subpart D—Inspection for Certification

#### § 176.400 General.

(a) An inspection is required before the issuance of a Certificate of Inspection. Such an inspection for certification is not made until after receipt of the application for inspection required by §176.105.

(b) Upon receipt of a written application for inspection, the cognizant OCMI assigns a marine inspector to inspect the vessel for compliance with this subchapter at a time and place mutually agreed upon by the OCMI and the owner, managing operator, or representative thereof.

(c) The owner, managing operator, or a representative thereof shall be present during the inspection.

[CGD 85-080, 61 FR 953, Jan. 10, 1996; 61 FR 20557, May 7, 1996, as amended at 62 FR 51356, Sept. 30, 1997]

#### § 176.402 Initial inspection for certification.

(a) Before construction or conversion of a vessel intended for small passenger vessel service, the owner of the vessel shall submit plans, manuals, and calculations indicating the proposed arrangement, construction, and operations of the vessel, to the cognizant OCMI for approval, except when submitted to the Marine Safety Center (MSC) as allowed by part 177 of this subchapter. The plan, manuals, and calculations required to be submitted and the disposition of these plans are set forth in part 177, Subpart B of this chapter.

(b) 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

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satisfactory in all respects for the service intended.

(c) 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:

(1) 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;

(2) Sanitary conditions and fire hazards; and

(3) Certificates and operating manuals, including certificates issued by the FCC.

(d) 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 paragraph, and in Subpart H of this part, to the satisfaction of the cognizant OCMI, including the following:

(1) The installation of each rescue boat, liferaft, inflatable buoyant apparatus, and launching appliance as listed on its Certificate of Approval (Form CGHQ-10030).

(2) The operation of each rescue boat and survival craft launching appliance required by part 180 of this chapter.

(3) Machinery, fuel tanks, and pressure vessels as required by part 182 of this chapter.

(4) A stability test or a simplified stability test when required by §170.175 of this chapter or §178.320 of this chapter.

(5) Watertight bulkheads as required by part 179 of this chapter.

(6) Firefighting systems as required by part 181 of this chapter.

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

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### § 176.404 Subsequent inspections for certification.

(a) An inspection for renewal of a Certificate of Inspection is conducted to determine if the vessel is in satisfactory condition, fit for the service intended, and complies with all applicable regulations. It normally includes inspection and testing of the structure, machinery, equipment, and on a sailing vessel, rigging and sails. The owner or operator must conduct all tests as required by the OCMI, and make the vessel available for all specific inspections and drills required by subpart H of this part. In addition, the OCMI may require the vessel to get underway.

(b) You must submit your written application for renewal of a Certificate of Inspection to the OCMI at least 30 days prior to the expiration date of the Certificate of Inspection, as required in §176.105 of this part.

[CGD 85-080, 61 FR 953, Jan. 10, 1996; 61 FR 20557, May 7, 1996; USCG-1999-4976, 65 FR 6508, Feb. 9, 2000; USCG-2003-14749, 68 FR 39315, July 1, 2003]

## Subpart E—Reinspection

### § 176.500 When required.

(a) Vessels carrying more than 12 passengers on international voyages must undergo an inspection for certification each year as specified in §176.404.

(b) All other vessels must undergo an inspection for certification as specified in §176.404 and annual inspection as specified in paragraph (b)(1) of this section.

(1) *Annual inspection.* Your vessel must undergo an annual inspection within the 3 months before or after each anniversary date.

(i) You must contact the cognizant OCMI to schedule an inspection at a time and place which he or she approves. No written application is required.

(ii) The scope of the annual inspection is the same as the inspection for certification but in less detail unless the cognizant marine inspector finds deficiencies or determines that a major change has occurred since the last inspection. If deficiencies are found or a

major change to the vessel has occurred, the marine inspector will conduct an inspection more detailed in scope to ensure that the vessel is in satisfactory condition and fit for the service for which it is intended. If your vessel passes the annual inspection, the marine inspector will endorse your current Certificate of Inspection.

(iii) If the annual inspection reveals deficiencies in your vessel's maintenance, you must make any or all repairs or improvements within the time period specified by the OCMI.

(iv) Nothing in this subpart limits the marine inspector from conducting such tests or inspections he or she deems necessary to be assured of the vessel's seaworthiness.

(2) [Reserved]

[USCG-1999-4976, 65 FR 6508, Feb. 9, 2000]

**§ 176.502 Certificate of Inspection: Conditions of validity.**

To maintain a valid Certificate of Inspection, you must complete your annual inspection within the periods specified in § 176.500(b)(1) and your Certificate of Inspection must be endorsed.

[USCG-1999-4976, 65 FR 6508, Feb. 9, 2000]

**Subpart F—Hull and Tailshaft Examinations**

**§ 176.600 Drydock and internal structural examination intervals.**

(a) The owner or managing operator shall make a vessel available for drydock examinations, internal structural examinations, and underwater surveys (UWILD) required by this section.

(b) If your vessel is operated on international voyages subject to SOLAS requirements, it must undergo a drydock examination once every 12 months unless it has been approved to undergo an underwater survey (UWILD) per § 176.615 of this part. If the vessel becomes due for a drydock examination or an internal structural examination during the voyage, it may lawfully complete the voyage prior to the examination if it undergoes the required examination upon completion of the voyage to the United States but not later than 30 days after the examination was due. If the vessel is due for an examination within 15 days of sailing on an

international voyage from the United States port, it must undergo the required examination before sailing.

(c) If your vessel is not operated on international voyages and does not meet the conditions in paragraph (d) of this section, it must undergo a drydock and internal structural examination as follows unless it has been approved to undergo an underwater survey (UWILD) per § 176.615 of this part:

(1) A vessel that is exposed to salt water more than three months in any 12 month period since the last examination must undergo a drydock examination and an internal structural at least once every two years; and

(2) A vessel that is exposed to salt water not more than three months in any 12 month period since the last examination must undergo a drydock examination and an internal structural examination at least once every five years.

(d) Whenever damage or deterioration to hull plating or structural members that may affect the seaworthiness of a vessel is discovered or suspected, the cognizant OCMI may conduct an internal structural examination in any affected space including fuel tanks, and may require the vessel to be drydocked or taken out of service to assess the extent of the damage, and to effect permanent repairs. The OCMI may also decrease the drydock examination intervals to monitor the vessel's structural condition.

(e) For a vessel that is eligible per § 115.625, and if the owner opts for an alternate hull examination with the underwater survey portion conducted exclusively by divers, the vessel must undergo two alternate hull exams and two internal structural exams within any five-year period. If a vessel completes a satisfactory alternate hull exam, with the underwater survey portion conducted predominantly by an approved underwater remotely operated vehicle (ROV), the vessel must undergo one alternate hull and one internal structural exam, within any five-year period. The vessel may undergo a drydock exam to satisfy any of the required alternate hull exams.

[CGD 85-080, 61 FR 953, Jan. 10, 1996, as amended at 62 FR 51356, Sept. 30, 1997; USCG-2000-6858, 67 FR 21084, Apr. 29, 2002]

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**§ 176.610 Scope of drydock and internal structural examinations.**

(a) A drydock examination conducted in compliance with §176.600 must be conducted while the vessel is hauled out of the water or placed in a drydock or slipway. During the examination all accessible parts of the vessel's underwater body and all through hull fittings, including the hull plating and planking, appendages, propellers, shafts, bearings, rudders, sea chests, sea valves, and sea strainers shall be made available for examination. Sea chests, sea valves, and sea strainers must be opened for examination. On wooden vessels, fastenings may be required to be pulled for examination. The accuracy of draft or loading marks, if required by §185.602 of this chapter, must be verified if not verified at a previous drydock examination.

(b) An internal structural examination conducted in compliance with §176.600 may be conducted while the vessel is afloat or out of the water and consists of a complete examination of the vessel's main strength members, including the major internal framing, the hull plating and planking, voids, and ballast, cargo, and fuel oil tanks. Where the internal framing, plating, or planking of the vessel is concealed, sections of the lining, ceiling or insulation may be removed or the parts otherwise probed or exposed so that the inspector may be satisfied as to the condition of the hull structure. Fuel oil tanks need not be cleaned out and internally examined if the marine inspector is able to determine by external examination that the general condition of the tanks is satisfactory.

[CGD 85-080, 61 FR 953, Jan. 10, 1996, as amended by USCG-2007-0030, 75 FR 78087, Dec. 14, 2010]

**§ 176.615 Underwater Survey in Lieu of Drydocking (UWILD).**

(a) The Officer in Charge, Marine Inspection (OCMI), may approve an underwater survey instead of a drydock examination at alternating intervals if your vessel is—

- (1) Less than 15 years of age;
- (2) A steel or aluminum hulled vessel;
- (3) Fitted with an effective hull protection system; and

(4) Described in §176.600(b) or (c) of this part.

(b) For vessels less than 15 years of age, you must submit an application for an underwater survey to the OCMI at least 90 days before your vessel's next required drydock examination. The application must include—

- (1) The procedure for carrying out the underwater survey;
- (2) The time and place of the underwater survey;
- (3) The method used to accurately determine the diver's or remotely operated vehicle's (ROV) location relative to the hull;
- (4) The means for examining all through-hull fittings and appurtenances;
- (5) The condition of the vessel, including the anticipated draft of the vessel at the time of survey;
- (6) A description of the hull protection system; and
- (7) The name and qualifications of any third party examiner.

(c) If your vessel is 15 years old or older, the cognizant District Commander, may approve an underwater survey instead of a drydock examination at alternating intervals (UWILD). You must submit an application for an underwater survey to the OCMI at least 90 days before your vessel's next required drydock examination. You may be allowed this option if—

- (1) The vessel is qualified under paragraphs (a)(2) through (4) of this section;
- (2) Your application includes the information in paragraphs (b)(1) through (b)(7) of this section; and
- (3) During the vessel's drydock examination, preceding the underwater survey, a complete set of hull gaugings was taken and they indicated that the vessel was free from appreciable hull deterioration.

(d) After the drydock examination required by paragraph (c)(3) of this section, the OCMI submits a recommendation for future underwater surveys, the results of the hull gauging, and the results of the Coast Guards' drydock examination results to the cognizant District Commander for review.

[USCG-2000-6858, 67 FR 21084, Apr. 29, 2002]



**§ 176.620 Description of the Alternative Hull Examination (AHE) Program for certain passenger vessels.**

The Alternative Hull Examination (AHE) Program provides you with an alternative to a drydock examination by allowing your vessel's hull to be examined while it remains afloat. If completed using only divers, this program has four steps: the application process, the preliminary examination, the pre-survey meeting, and the hull examination. If the vessel is already participating in the program, or if a remotely operated vehicle (ROV) is used during the program, the preliminary exam step may be omitted. Once you complete these steps, the Officer in Charge, Marine Inspection (OCMI), will evaluate the results and accept the examination as a credit hull exam if the vessel is in satisfactory condition. If only divers are used for the underwater survey portion of the examination process, you may receive credit for a period of time such that subsequent AHEs would be conducted at intervals of twice in every five years, with no more than three years between any two AHEs. The OCMI may waive an underwater survey in accordance with §176.655(d) provided that the interval does not exceed five years between any two underwater surveys. If an underwater ROV is used as the predominate method to examine the vessel's underwater hull plating, you may receive credit up to five years. At the end of this period, you may apply for further participation under the AHE Program.

NOTE TO §176.620: The expected hull coverage when using an ROV must be at least 80 percent.

[USCG-2000-6858, 69 FR 47384, Aug. 5, 2004]

**§ 176.625 Eligibility requirements for the Alternative Hull Examination (AHE) Program for certain passenger vessels.**

(a) Your vessel may be eligible for the AHE Program if—

- (1) It is constructed of steel or aluminum;
- (2) It has an effective hull protection system;
- (3) It has operated exclusively in fresh water since its last drydock examination;

(4) It operates in rivers or protected lakes; and

(5) It operates exclusively in shallow water or within 0.5 nautical miles from shore.

(b) In addition to the requirements in paragraph (a), the Officer in Charge, Marine Inspection (OCMI) will evaluate the following information when determining your vessel's eligibility for the AHE Program:

(1) The overall condition of the vessel, based on its inspection history.

(2) The vessel's history of hull casualties and hull-related deficiencies.

(3) The AHE Program application, as described in §176.630 of this part.

(c) When reviewing a vessel's eligibility for the AHE program, the OCMI may modify the standards given by paragraph (a)(5) of this section where it is considered safe and reasonable to do so. In making this determination, the OCMI will consider the vessel's overall condition, its history of safe operation, and any other factors that serve to mitigate overall safety risks.

[USCG-2000-6858, 67 FR 21085, Apr. 29, 2002]

**§ 176.630 The Alternative Hull Examination (AHE) Program application.**

If your vessel meets the eligibility criteria in §176.625 of this part, you may apply to the AHE Program. You must submit an application at least 90 days before the requested hull examination date to the Officer in Charge, Marine Inspection (OCMI) who will oversee the survey. The application must include—

(a) The proposed time and place for conducting the hull examination;

(b) The name of the participating diving contractor and underwater remotely operated vehicle (ROV) company accepted by the OCMI under §176.650 of this part;

(c) The name and qualifications of the third party examiner. This person must be familiar with the inspection procedures and his or her responsibilities under this program. The OCMI has the discretionary authority to accept or deny use of a particular third party examiner;

(d) A signed statement from your vessel's master, chief engineer, or the person in charge stating the vessel meets the eligibility criteria of § 176.625

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of this part and a description of the vessel's overall condition, level of maintenance, known or suspected damage, underwater body cleanliness (if known), and the anticipated draft of the vessel at the time of the examination;

(e) Plans or drawings that illustrate the external details of the hull below the sheer strake;

(f) A detailed plan for conducting the hull examination in accordance with §§ 176.645 and 176.650 of this part, which must address all safety concerns related to the removal of sea valves during the inspection; and

(g) A preventative maintenance plan for your vessel's hull, its related systems and equipment.

[USCG-2000-6858, 67 FR 21085, Apr. 29, 2002, as amended at 69 FR 47384, Aug. 5, 2004]

### § 176.635 Preliminary examination requirements.

(a) If you exclusively use divers to examine the underwater hull plating, you must arrange to have a preliminary examination conducted by a third party examiner, with the assistance of qualified divers. The purpose of the preliminary examination is to assess the overall condition of the vessel's hull and identify any specific concerns to be addressed during the underwater hull examination.

(b) The preliminary examination is required only upon the vessel's entry or reentry into the AHE program.

(c) If you use an underwater remotely operated vehicle (ROV) as the predominate means to examine your vessel's hull plating, a preliminary examination and the participation of a third party examiner will not be necessary.

[USCG-2000-6858, 67 FR 21085, Apr. 29, 2002]

### § 176.640 Pre-survey meeting.

(a) In advance of each AHE, you must conduct a pre-survey meeting to discuss the details of the AHE procedure with the Officer in Charge, Marine Inspection (OCMI). If you exclusively use divers to examine the underwater hull plating, the third party examiner must attend the meeting and you must present the results of the preliminary examination. If you use an underwater remotely operated vehicle (ROV) as the

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predominate means to examine the vessel's hull plating, then the pre-survey meeting must be attended by a representative of the ROV operating company who is qualified to discuss the ROV's capabilities and limitations related to your vessel's hull design and configuration.

(b) A vessel owner, operator, or designated agent must request this meeting in writing at least 30 days in advance of the examination date.

(c) The pre-survey meeting may be conducted by teleconference, if agreed to in advance by the OCMI.

[USCG-2000-6858, 67 FR 21086, Apr. 29, 2002, as amended at 69 FR 47384, Aug. 5, 2004]

### § 176.645 AHE Procedure.

(a) To complete the underwater survey you must—

(1) Perform a general examination of the underwater hull plating and a detailed examination of all hull welds, propellers, tailshafts, rudders, and other hull appurtenances;

(2) Examine all sea chests;

(3) Remove and inspect all sea valves in the presence of a marine inspector once every five years;

(4) Remove all passengers from the vessel when the sea valves are being examined, if required by the Officer in Charge, Marine Inspection (OCMI);

(5) Allow access to all internal areas of the hull for examination, except internal tanks that carry fuel (unless damage or deterioration is discovered or suspect), sewage, or potable water. Internal sewage and potable water tanks may be examined visually or by non-destructive testing to the satisfaction of the attending marine inspector; and

(6) Meet the requirements in § 176.650 of this part.

(b) A marine inspector may examine any other areas deemed necessary by the OCMI.

(c) If the AHE reveals significant deterioration or damage to the vessel's hull plating or structural members, the OCMI must be immediately notified. The OCMI may require the vessel be drydocked or otherwise taken out of service to further assess the extent of damage or to effect permanent repairs if the assessment or repairs cannot be

completed to the satisfaction of the OCMI while the vessel is waterborne.

[USCG-2000-6858, 67 FR 21086, Apr. 29, 2002, as amended at 69 FR 47384, Aug. 5, 2004]

**§ 176.650 Alternative Hull Examination Program options: Divers or underwater ROV.**

To complete the underwater survey portion of the AHE, you may use divers or an underwater remotely operated vehicle (ROV).

(a) If you use divers to conduct the underwater survey, you must—

(1) Locate the vessel so the divers can work safely under the vessel's keel and around both sides. The water velocity must be safe for dive operations;

(2) Provide permanent hull markings, a temporary grid system of wires or cables spaced not more than 10 feet apart and tagged at one-foot intervals, or any other acoustic or electronic positioning system approved by the OCMI to identify the diver's location with respect to the hull, within one foot of accuracy;

(3) Take ultrasonic thickness gaugings at a minimum of 5 points on each plate, evenly spaced;

(4) Take hull plating thickness gaugings along transverse belts at the bow, stern, and midships, as a minimum. Plating thickness gaugings must also be taken along a longitudinal belt at the wind and water strake. Individual gaugings along the transverse and longitudinal belts must be spaced no more than 3 feet apart;

(5) Ensure the third party examiner observes the entire underwater examination process;

(6) Record the entire underwater survey with audio and video recording equipment and ensure that communications between divers and the third party examiner are recorded; and

(7) Use appropriate equipment, such as a clear box, if underwater visibility is poor, to provide the camera with a clear view of the hull.

(b) You may use an underwater ROV to conduct the underwater survey. The underwater ROV operating team, survey process and equipment, quality assurance methods, and the content and format of the survey report must be accepted by the Officer in Charge, Marine

Inspection (OCMI) prior to the survey. If you choose this option, you must—

(1) Locate the vessel to ensure that the underwater ROV can operate effectively under the vessel's keel and around both sides; and

(2) Employ divers to examine any sections of the hull and appurtenances that the underwater ROV cannot access or is otherwise unable to evaluate.

(3) If the OCMI determines that the data obtained by the ROV, including non-destructive testing results, readability of the results, and positioning standards, will not integrate into the data obtained by the divers, then a third party examiner must be present during the divers portion of the examination.

[USCG-2000-6858, 67 FR 21086, Apr. 29, 2002, as amended at 69 FR 47384, Aug. 5, 2004]

**§ 176.655 Hull examination reports.**

(a) If you use only divers for the underwater survey portion of the Alternative Hull Examination (AHE), you must provide the Officer in Charge, Marine Inspection (OCMI), with a written hull examination report. This report must include thickness gauging results, bearing clearances, a copy of the audio and video recordings, and any other information that will help the OCMI evaluate your vessel for a credit hull exam. The third party examiner must sign the report and confirm the validity of its contents.

(b) If you use an underwater remotely operated vehicle (ROV) as the predominate means to examine the vessel's underwater hull plating, you must provide the OCMI with a report in a format that is acceptable to the OCMI, per § 176.650(b) of this part.

(c) The OCMI will evaluate the hull examination report and grant a credit hull exam if satisfied with the condition of the vessel. If approved and you exclusively use divers to examine the hull plating, you will receive a credit hull exam of up to 36 months. (Underwater examinations are required twice every 5 years.) If approved and you use an underwater ROV as the predominate means to examine the hull plating, you will receive a credit hull exam of up to 60 months (5 years).

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(d) At least 60 days prior to each scheduled underwater exam, the owner may request a waiver from the OCMI if:

(1) A satisfactory exam has been completed within the last three years;

(2) The conditions during the last exam allowed at least 80 percent of the bottom surface to be viewed and recorded; and

(3) The results of the last exam indicated that an extended interval is safe and reasonable.

[USCG-2000-6858, 67 FR 21086, Apr. 29, 2002, as amended at 69 FR 47384, Aug. 5, 2004]

**§ 176.660 Continued participation in the Alternative Hull Examination (AHE) Program.**

(a) To continue to participate in the AHE Program, vessel operators must conduct an annual hull condition assessment. At a minimum, vessel operators must conduct an internal examination and take random hull gaugings internally during the hull condition assessment, unless waived by the Officer in Charge, Marine Inspection (OCMI). If the annual hull assessment reveals significant damage or corrosion, where temporary repairs have been made, or where other critical areas of concern have been identified, the OCMI may require an expanded examination to include an underwater hull examination using divers. If an underwater examination is required, the examination must focus on areas at higher risk of damage or corrosion and must include a representative sampling of hull gaugings.

(b) If an underwater survey is required for the annual hull condition assessment, the OCMI may require the presence of a third party examiner and a written hull examination report must be submitted to the OCMI. This report must include thickness gauging results, a copy of the audio and video recordings and any other information that will help the OCMI evaluate your vessel for continued participation in the AHE program. The third party examiner must sign the report and confirm the validity of its contents.

(c) You must submit your preventive maintenance reports or checklists on an annual basis to the OCMI. These reports or checklists must conform to the plans you submitted in your appli-

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cation under §176.630 of this part, which the OCMI approved.

(d) Prior to each scheduled annual hull condition assessment—

(1) The owner may submit to the OCMI a plan for conducting the assessment, or a request for a waiver of this requirement, no fewer than 30 days before the scheduled assessment; and

(2) The OCMI may reduce the scope or extend the interval of the assessment if the operational, casualty, and deficiency history of the vessel, along with a recommendation of the vessel's master, indicates that it is warranted.

[USCG-2000-6858, 67 FR 21086, Apr. 29, 2002, as amended at 69 FR 47384, Aug. 5, 2004]

**§ 176.665 Notice and plans required.**

(a) The owner or managing operator shall notify the cognizant OCMI as far in advance as possible whenever a vessel is to be hauled out or placed in a drydock or slipway in compliance with §176.600 or to undergo repairs or alterations affecting the safety of the vessel, together with the nature of any repairs or alterations contemplated. Hull repairs or alterations that affect the safety of the vessel include but are not limited to the replacement, repair, or refastening of planking, plating, or structural members including the repair of cracks.

(b) Whenever a vessel is hauled out or placed in a drydock or slipway in excess of the requirements of this subpart for the purpose of maintenance, including, but not limited to, changing a propeller, painting, or cleaning the hull, no report need be made to the cognizant OCMI.

(c) The owner or managing operator of each vessel that holds a Load Line Certificate shall make plans showing the vessel's scantlings available to the Coast Guard marine inspector whenever the vessel undergoes a drydock examination, internal structural examination, or an underwater survey or whenever repairs or alterations affecting the safety or seaworthiness of the vessel are made to the vessel's hull.

[CGD 85-080, 61 FR 953, Jan. 10, 1996, as amended at 62 FR 51356, Sept. 30, 1997. Redesignated and amended by USCG-2000-6858, 67 FR 21084, 21087, Apr. 29, 2002; USCG-2006-25697, 71 FR 55747, Sept. 25, 2006]

**§ 176.670 Tailshaft examinations.**

(a) The marine inspector may require any part or all of the propeller shafting to be drawn for examination of the shafting and stern bearing of a vessel whenever the condition of the shafting and bearings are in question.

(b) The marine inspector may conduct a visual examination and may require nondestructive testing of the propeller shafting whenever the condition of shafting is in question.

[CGD 85-080, 61 FR 953, Jan. 10, 1996. Redesignated by USCG-2000-6858, 67 FR 21084, Apr. 29, 2002]

**§ 176.675 Extension of examination intervals.**

The intervals between drydock examinations and internal structural examinations specified in § 176.600 of this part may be extended by the cognizant OCMI or Commandant.

[CGD 85-080, 61 FR 953, Jan. 10, 1996. Redesignated and amended by USCG-2000-6858, 67 FR 21084, 21087, Apr. 29, 2002; USCG-2013-0671, 78 FR 60164, Sept. 30, 2013]

### Subpart G—Repairs and Alterations

**§ 176.700 Permission for repairs and alterations.**

(a) Repairs or alterations to the hull, machinery, or equipment that affect the safety of the vessel must not be made without the approval of the cognizant OCMI, except during an emergency. When repairs are made during an emergency, the owner, managing operator, or master shall notify the OCMI 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 re-fastening 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 power supply systems; alterations affecting stability; and repair or alteration of lifesaving, fire detecting, or fire extinguishing equipment.

(b) The owner or managing operator shall submit drawings, sketches, or written specifications describing the details of any proposed alterations to the cognizant OCMI. Proposed alterations must be approved by the OCMI before work is started.

(c) Drawings are not required to be submitted for repairs or replacements in kind.

(d) The OCMI may require an inspection and testing whenever a repair or alteration is undertaken.

**§ 176.702 Installation tests and inspections.**

Whenever a launching appliance, survival craft, rescue boat, fixed gas fire extinguishing system, machinery, fuel tank, or pressure vessel is installed aboard a vessel after completion of the initial inspection for certification of the vessel, as replacement equipment or as a new installation, the owner or managing operator shall conduct the tests and make the vessel ready for the inspections required by § 176.402(d) to the satisfaction of the cognizant OCMI.

**§ 176.704 Breaking of safety valve seals.**

The owner, managing operator, or master shall notify the cognizant OCMI as soon as practicable after the seal on a boiler safety valve on a vessel is broken.

**§ 176.710 Inspection and testing prior to hot work.**

(a) An inspection for flammable or combustible gases must be conducted by a certified marine chemist or other person authorized by the cognizant OCMI in accordance with the provisions of NFPA 306 (incorporated by reference, see 46 CFR 175.600) before alterations, repairs, or other operations involving riveting, welding, burning, or other fire producing actions may be made aboard a vessel:

(1) Within or on the boundaries of fuel tanks; or

(2) To pipelines, heating coils, pumps, fittings, or other appurtenances connected to fuel tanks.

(b) An inspection required by paragraph (a) of this section must be conducted as required by this paragraph.

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(1) In ports or places in the United States or its territories and possessions, the inspection must be conducted by a marine chemist certified by the NFPA. However, if the services of a certified marine chemist are not reasonably available, the cognizant OCMI, upon the recommendation of the vessel owner or managing operator, may authorize another person to inspect the vessel. If the inspection indicates that the operations can be undertaken safely, a certificate setting forth this fact in writing must be issued by the certified marine chemist or the authorized person before the work is started. The certificate must include any requirements necessary to reasonably maintain safe conditions in the spaces certified throughout the operation, including any precautions necessary to eliminate or minimize hazards that may be present from protective coatings or residues from cargoes.

(2) When not in a port or place in the United States or its territories and possessions, and when a marine chemist or a person authorized by the cognizant OCMI is not reasonably available, the master shall conduct the inspection and enter the results in the inspection in the vessel's logbook.

(c) The owner, managing operator, or master shall obtain a copy of certificates issued by the certified marine chemist or the other person authorized by the cognizant OCMI, and shall ensure that all conditions on the certificates are observed and that the vessel is maintained in a safe condition. The owner, managing operator, or master shall maintain a safe condition on the vessel by requiring full observance, by persons under his or her control, of all requirements listed in the certificate.

[CGD 85–080, 61 FR 953, Jan. 10, 1996, as amended by USCG–2003–16630, 73 FR 65205, Oct. 31, 2008]

**Subpart H—Material Inspections**

**§ 176.800 Inspection standards.**

(a) A vessel is inspected for compliance with the standards required by this subchapter. Machinery, equipment, materials, and arrangements not covered by standards in this subchapter may be inspected in accordance with standards acceptable to the

cognizant OCMI as good marine practice.

(b) 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.

(c) The published standards of classification societies and other recognized safety associations may be used as guides in the inspection of vessels when such standards do not conflict with the requirements of this subchapter.

**§ 176.801 Notice of inspection deficiencies and requirements.**

(a) If during the inspection of a vessel, the vessel or its equipment is found not to conform to the requirements of law or the regulations in this subchapter, the marine inspector will point out deficiencies observed and discuss all requirements with the owner, managing operator, or a representative thereof. Normally, the marine inspector will list all such requirements that have not been completed and present the list to the owner, managing operator, or a representative thereof. However, when a deficiency presents a serious safety hazard to the vessel or its passengers or crew, and exists through negligence or willful noncompliance, the marine inspector may issue a Report of Violation (ROV) to the owner, managing operator, or a representative thereof.

(b) In any case where further clarification of or reconsideration of any requirement placed against the vessel is desired, the owner, managing operator, or a representative thereof, may discuss the matter with the cognizant OCMI.

[CGD 85–080, 61 FR 953, Jan. 10, 1996, as amended by CGD 97–057, 62 FR 51049, Sept. 30, 1997]

**§ 176.802 Hull.**

(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:

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(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.

[CGD 85-080, 61 FR 953, Jan. 10, 1996; 61 FR 20557, May 7, 1996, as amended at 62 FR 51356, Sept. 30, 1997]

### § 176.804 Machinery.

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:

(a) Operation of the main propulsion machinery both ahead and astern;

(b) Operational test and inspection of engine control mechanisms including primary and alternate means of starting machinery;

(c) Inspection of all machinery essential to the routine operation of the ves-

sel including generators and cooling systems;

(d) External inspection of fuel tanks and inspection of tank vents, piping, and pipe fittings;

(e) Inspection of all fuel system;

(f) Operational test of all valves in fuel lines by operating locally and at remote operating positions;

(g) Operational test of all overboard discharge and intake valves and watertight bulkhead pipe penetration valves;

(h) Operational test of the means provided for pumping bilges; and

(i) Test of machinery alarms including bilge high level alarms.

### § 176.806 Electrical.

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:

(a) Inspection of all cable as far as practicable without undue disturbance of the cable or electrical apparatus;

(b) Test of circuit breakers by manual operation;

(c) Inspection of fuses including ensuring the ratings of fuses are suitable for the service intended;

(d) Inspection of rotating electrical machinery essential to the routine operation of the vessel;

(e) Inspection of all generators, motors, lighting fixtures and circuit interrupting devices located in spaces or areas that may contain flammable vapors;

(f) Inspection of batteries for condition and security of stowage;

(g) 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

(h) Operational test of all emergency electrical systems.

### § 176.808 Lifesaving

(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

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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 in accordance with §185.520 of this chapter;

(2) Inspection of each lifejacket, work vest, and marine buoyant device;

(3) If used, inspection of the passenger safety orientation cards or pamphlets allowed by §185.506(b)(2) of this chapter;

(4) Inspection of each inflatable life-raft, inflatable buoyant apparatus, and inflatable lifejacket to determine that it has been serviced as required by §185.730 of this chapter; and

(5) Inspection of each hydrostatic release unit to determine that it is in compliance with the servicing and usage requirements of §185.740 of this chapter.

(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 adult size lifejacket for each person authorized. The vessel must also be equipped with child size lifejackets equal to at least:

(1) 10 percent of the maximum number of passengers permitted to be carried unless children are prohibited from being carried aboard the vessel; or

(2) 5 percent of the maximum number of passengers permitted to be carried if all extended size lifejackets are provided.

(f) Lifejackets, work vests, and marine buoyant devices may be marked with the date and marine inspection zone to indicate that they have been inspected and found to be in serviceable condition by a marine inspector.

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

[CGD 85-080, 61 FR 953, Jan. 10, 1996, as amended at 62 FR 51356, Sept. 30, 1997]

### § 176.810 Fire protection.

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

(1) Inspection of each 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 detection 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 firehose 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 in accordance with 46 CFR 147.60;

(6) Testing or renewal of flexible connections and discharge hoses on semi-portable extinguishers and fixed gas extinguishing systems in accordance with 46 CFR 147.65; 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 must conduct the following inspections and tests:

(1) Portable and semi-portable extinguishers must be inspected and maintained in accordance with NFPA 10 (incorporated by reference, see §175.600 of this chapter) as amended here:

(i) Certification or licensing by a state or local jurisdiction as a fire extinguisher servicing agency will be accepted by the Coast Guard as meeting



the personnel certification requirements of NFPA 10 for annual maintenance and recharging of extinguishers.

(ii) Monthly inspections required by NFPA 10 may be conducted by the owner, operator, person-in-charge, or a designated member of the crew.

(iii) Non-rechargeable or non-refillable extinguishers must be inspected and maintained in accordance with NFPA 10; however, the annual maintenance need not be conducted by a certified person and can be conducted by the owner, operator, person-in-charge, or a designated member of the crew.

(iv) The owner or managing operator must provide satisfactory evidence of the required servicing to the marine inspector. If any of the equipment or records have not been properly maintained, a qualified servicing facility must 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 fixed-gas fire extinguishing systems, the inspections and tests required by Table 176.810(b) of this section, in addition to the tests required by 46 CFR 147.60 and 147.65. The owner or managing operator must provide satisfactory evidence of the required servicing to the marine inspector. If any of the equipment or records have not been properly maintained, a qualified servicing facility may be required to perform the required inspections, maintenance procedures, and hydrostatic pressure tests.

TABLE 176.810(b)—FIXED FIRE EXTINGUISHING SYSTEMS

Type system	Test
Carbon dioxide .....	Weigh cylinders. Recharge if weight loss exceeds 10 percent 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.
Halon .....	Weigh cylinders. Recharge if weight loss exceeds 5 percent of weight of charge. If the system has a pressure gauge, also recharge if pressure loss (adjusted for temperature) exceeds 10 percent. 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.
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 extinguisher contains full charge.
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.
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.
Clean Agents (Halon replacements).	Same as Halon.

(c) The owner, managing operator, or master must destroy, in the presence of the marine inspector, each firehose 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.

[USCG-2012-0196, 81 FR 48298, July 22, 2016]

**§ 176.812 Pressure vessels and boilers.**

(a) Pressure vessels must be tested and inspected in accordance with part 61, subpart 61.10, of this chapter.

(b) Periodic inspection and testing requirements for boilers are contained in §61.05 in subchapter F of this chapter.

[CGD 85-080, 61 FR 953, Jan. 10, 1996, as amended at 62 FR 51356, Sept. 30, 1997; USCG-1999-4976, 65 FR 6508, Feb. 9, 2000]

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### § 176.814 Steering systems.

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.

### § 176.816 Miscellaneous systems and equipment.

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.

[CGD 85-080, 61 FR 953, Jan. 10, 1996, as amended by USCG-2008-0906, 73 FR 56510, Sept. 29, 2008]

### § 176.818 Sanitary inspection.

At each inspection for certification and at every other vessel inspection, quarters, toilet and washing spaces, galleys, serving pantries, lockers, and similar spaces may be examined to determine that they are serviceable and in a sanitary condition.

### § 176.830 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.

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### § 176.840 Additional tests and inspections.

The cognizant OCMI may require that a vessel and its equipment undergo any additional test or inspection deemed reasonable and necessary to determine that the vessel and its equipment are suitable for the service in which they are to be employed.

## Subpart I—International Convention for Safety of Life at Sea, 1974, as Amended (SOLAS)

### § 176.900 Applicability.

(a) Except as otherwise provided in this subpart, a mechanically propelled vessel of the United States, which is certificated for or carries more than 12 passengers on international voyages must be in compliance with the applicable requirements of the International Convention for Safety of Life at Sea, 1974, as Amended (SOLAS), to which the United States Government is currently a party.

(b) SOLAS does not apply to a vessel solely navigating the Great Lakes and the St. Lawrence River as far east as a straight line drawn from Cap des Rosiers to West Point, Anticosti Island and, on the north side of Anticosti Island, the 63rd Meridian.

[CGD 85-080, 61 FR 953, Jan. 10, 1996, as amended by USCG-2007-0030, 75 FR 78087, Dec. 14, 2010]

### § 176.910 Passenger Ship Safety Certificate.

(a) A vessel, which carries more than 12 passengers on an international voyage must have a valid SOLAS Passenger Ship Safety Certificate. The Commandant authorizes the cognizant OCMI to issue the original SOLAS Passenger Ship Safety Certificate after receiving notification from the cognizant OCMI that the vessel complies with the applicable SOLAS regulations. Subsequent SOLAS Passenger Ship Safety Certificates are issued by the cognizant OCMI unless any changes to the vessel or its operations have occurred which changes the information on the certificate, in which case the Commandant will authorize the cognizant OCMI to reissue the certificate.

(b) The route specified on the Certificate of Inspection and the SOLAS Passenger Ship Safety Certificate must agree.

(c) A SOLAS Passenger Ship Safety Certificate is issued for a period of not more than 12 months.

(d) The SOLAS Passenger Ship Safety Certificate may be withdrawn, revoked, or suspended at any time when the vessel is not in compliance with applicable SOLAS requirements.

[CGD 85-080, 61 FR 953, Jan. 10, 1996, as amended by USCG-2007-0030, 75 FR 78087, Dec. 14, 2010]

#### § 176.920 Exemptions.

(a) In accordance with Chapter I (General Provisions) Regulation 4, of SOLAS, the Commandant may exempt a vessel, which is not normally engaged on an international voyage but that in exceptional circumstances is required to undertake a single international voyage from any of the requirements of the regulations of SOLAS provided that the vessel complies with safety requirements that are adequate, in the Commandant's opinion, for the voyage that is to be undertaken.

(b) In accordance with Chapter II-1 (Construction—Subdivision and Stability, Machinery and Electrical Installations) Regulation 1, Chapter II-2 (Construction—Fire Protection, Fire Detection and Fire Extinction) Regulation 1, and Chapter III (Life Saving Appliances and Arrangements) Regulation 2 of SOLAS, the Commandant may exempt a vessel that does not proceed more than 20 miles from the nearest land from any of the specific requirements of Chapters II-1, II-2, and III of SOLAS if the Commandant determines that the sheltered nature and conditions of the voyage are such as to render the application of such requirements unreasonable or unnecessary.

(c) The Commandant may exempt a vessel from requirements of the regulations of SOLAS in accordance with paragraphs (a) and (b) of this section upon a written request from the owner or managing operator submitted to the Commandant via the cognizant OCMI.

(d) When the Commandant grants an exemption to a vessel in accordance with this section, the Commandant will authorize the cognizant OCMI to

issue the original SOLAS Exemption Certificate describing the exemption. Subsequent SOLAS Exemption Certificates are issued by the cognizant OCMI unless any changes to the vessel or its operations have occurred that changes the information on the SOLAS Exemption or Passenger Ship Safety Certificates, in which case the Commandant will authorize the cognizant OCMI to reissue the certificate. A SOLAS Exemption Certificate is not valid for longer than the period of the SOLAS Passenger Ship Safety Certificate to which it refers.

[CGD 85-080, 61 FR 953, Jan. 10, 1996; 61 FR 20557, May 7, 1996, as amended by USCG-2007-0030, 75 FR 78087, Dec. 14, 2010]

#### § 176.925 Safety Management Certificate.

(a) All vessels that carry more than 12 passengers on an international voyage must have a valid Safety Management Certificate and a copy of their company's valid Document of Compliance certificate on board.

(b) All such vessels must meet the applicable requirements of 33 CFR part 96.

(c) A Safety Management Certificate is issued for a period of not more than 60 months.

[CGD 95-073, 62 FR 67515, Dec. 24, 1997]

#### § 176.930 Equivalents.

As outlined in Chapter I (General Provisions) Regulation 5, of SOLAS, the Commandant may accept an equivalent to a particular fitting, material, apparatus, or any particular provision required by SOLAS regulations if satisfied that such equivalent is at least as effective as that required by the regulations. An owner or managing operator of a vessel may submit a request for the acceptance of an equivalent following the procedures in §175.540 of this chapter. The acceptance of an equivalent must be indicated on the vessel's SOLAS Passenger Ship Safety Certificate or Safety Management Certificate, as appropriate.

[CGD 95-073, 62 FR 67515, Dec. 24, 1997, as amended by USCG-2007-0030, 75 FR 78087, Dec. 14, 2010]

## PART 177—CONSTRUCTION AND ARRANGEMENT

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AUTHORITY: 46 U.S.C. 2103, 3306; E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp., p. 277; Department of Homeland Security Delegation No. 0170.1.

SOURCE: CGD 85–080, 61 FR 961, Jan. 10, 1996, unless otherwise noted.

### Subpart A—General Provisions

#### § 177.100 General requirement.

The construction and arrangement of a vessel must allow the safe operation of the vessel in accordance with the terms of its Certificate of Inspection giving consideration to provisions for a seaworthy hull, protection against fire, means of escape in case of a sudden unexpected casualty, guards and rails in hazardous places, ventilation of enclosed spaces, and necessary facilities for passengers and crew.

[CGD 85–080, 61 FR 961, Jan. 10, 1996, as amended by CGD 97–057, 62 FR 51050, Sept. 30, 1997]

#### § 177.115 Applicability to existing vessels.

(a) Except as otherwise required by paragraph (b) of this section, an existing vessel must comply with the construction and arrangement regulations that were applicable to the vessel on March 10, 1996, or, as an alternative, the vessel may comply with the regulations in this part.

(b) Alterations, or modifications made to the structure or arrangements of an existing vessel, that are a major conversion, on or after March 11, 1996, must comply with the regulations of this part. Repairs or maintenance conducted on an existing vessel, resulting in no significant changes to the original structure or arrangement of the vessel, must comply with the regulations applicable to the vessel on March 10, 1996, or, as an alternative, with the regulations in this part. However, when outfit items such as furnishings and mattresses are renewed, they must comply with the regulations in this part.

### Subpart B—Plans

#### § 177.202 Plans and information required.

(a) Except as provided in paragraph (c) of this section and §177.210 of this

part, the owner of a vessel requesting initial inspection for certification shall, prior to the start of construction unless otherwise allowed by the cognizant Officer in Charge, Marine Inspection (OCMI), submit for approval to the cognizant OCMI, at least two copies of the following plans:

- (1) Outboard profile;
- (2) Inboard profile; and
- (3) Arrangement of decks.

(b) In addition, the owner shall, prior to receiving a Certificate of Inspection, submit for approval to the cognizant OCMI, at least two copies of the following plans, manuals, analyses, and calculations that are applicable to the vessel as determined by the OCMI:

- (1) Midship section;
- (2) Survival craft embarkation stations;
- (3) Machinery installation, including but not limited to:
  - (i) Propulsion and propulsion control, including shaft details;
  - (ii) Steering and steering control, including rudder details;
  - (iii) Ventilation diagrams; and
  - (iv) Engine exhaust diagram;
- (4) Electrical installation including, but not limited to:
  - (i) Elementary one-line diagram of the power system;
  - (ii) Cable lists;
  - (iii) Bills of materials;
  - (iv) Type and size of generators and prime movers;
  - (v) Type and size of generator cables, bus-tie cables, feeders, and branch circuit cables;
  - (vi) Power, lighting, and interior communication panelboards with number of circuits and rating of energy consuming devices;
  - (vii) Type of capacity of storage batteries;
  - (viii) Rating of circuit breakers and switches, interrupting capacity of circuit breakers, and rating and setting of overcurrent devices; and
  - (ix) Electrical plant load analysis.
- (5) Lifesaving equipment locations and installation;
- (6) Fire protection equipment installation including, but not limited to:
  - (i) Fire main system plans and calculations;
  - (ii) Fixed gas fire extinguishing system plans and calculations;

(iii) Fire detecting system and smoke detecting system plans;

(iv) Sprinkler system diagram and calculations; and

(v) Portable fire extinguisher types, sizes and locations;

(7) Fuel tanks;

(8) Piping systems including: bilge, ballast, hydraulic, sanitary, compressed air, combustible and flammable liquids, vents, soundings, and overflows;

(9) Hull penetrations and shell connections;

(10) Marine sanitation device model number, approval number, connecting wiring and piping; and

(11) Lines and offsets, curves of form, cross curves of stability, and tank capacities including size and location on vessel; and

(12) On sailing vessels:

(i) Masts, including integration into the ship's structure; and

(ii) Rigging plan showing sail areas and centers of effort as well as the arrangement, dimensions, and connections of the standing rigging.

(c) For a vessel of not more than 19.8 meters (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 and acceptable to the cognizant OCMI.

(d) An owner may submit any plans, manuals, or calculations, required to be submitted to the OCMI under this part, to the Commanding Officer (MSC), Attn: Marine Safety Center, U.S. Coast Guard Stop 7430, 2703 Martin Luther King Jr. Avenue SE., Washington, DC 20593-7430. Three copies of all documents are required to be submitted for Marine Safety Center plan approval.

(e) For a vessel, the construction of which was begun prior to approval of the plans and information required by paragraphs (a) and (b) of this section, the cognizant OCMI may require any additional plans and information, manufacturers' certifications of construction, testing including reasonable destructive testing, and inspections,

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which the OCMI determines are necessary to verify that the vessel complies with the requirements of this subchapter.

[CGD 85-080, 61 FR 961, Jan. 10, 1996, as amended by USCG-2004-18884, 69 FR 58351, Sept. 30, 2004; USCG-2007-29018, 72 FR 53968, Sept. 21, 2007; USCG-2009-0702, 74 FR 49240, Sept. 25, 2009; USCG-2013-0671, 78 FR 60164, Sept. 30, 2013 USCG-2016-0498, 82 FR 35093, July 28, 2017]

### § 177.210 Plans for sister vessels.

(a) Plans are not required for a vessel that is a sister vessel, provided:

(1) Approved plans for the original vessel are on file at the Marine Safety Center or in the files of the cognizant OCMI;

(2) The owner of the plans authorizes their use for the new construction of the sister vessel;

(3) The regulations used for the original plan approval have not changed since the original approval; and

(4) There are no major modifications to any of the systems to be used.

(b) If approved plans for the original vessel are not on file at the MSC or with the cognizant OCMI, the vessel owner shall submit plans as described in § 177.202 of this part.

## Subpart C—Hull Structure

### § 177.300 Structural design.

Except as otherwise allowed by this subpart, 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: Lloyd's Yachts and Small Craft (incorporated by reference, see 46 CFR 175.600);

(b) Steel hull vessels:

(1) Lloyd's Yachts and Small Craft; or

(2) ABS Steel Vessel Rules (<61 Meters)(incorporated by reference, see 46 CFR 175.600);

(c) Fiber reinforced plastic vessels:

(1) Lloyd's Yachts and Small Craft;

(2) ABS Plastic Vessel Rules (incorporated by reference, see 46 CFR 175.600); or

(3) ABS High Speed Craft (incorporated by reference, see 46 CFR 175.600);

(d) Aluminum hull vessels:

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(1) Lloyd's Yachts and Small Craft; or

(i) For a vessel of more than 30.5 meters (100 feet) in length: ABS Aluminum Vessel Rules (incorporated by reference, see 46 CFR 175.600); or

(ii) For a vessel of not more than 30.5 meters (100 feet) in length: ABS Steel Vessel Rules (<61 Meters), with the appropriate conversions from the ABS Aluminum Vessel Rules; or

(2) ABS High Speed Craft;

(e) Steel hull vessels operating in protected waters: ABS Steel Vessel Rules (Rivers/Intracoastal) (incorporated by reference, see 46 CFR 175.600).

[USCG-2003-16630, 73 FR 65205, Oct. 31, 2008]

### § 177.310 Satisfactory service as a design basis.

When scantlings for the hull, deckhouse, and frames of the vessel differ from those specified by the standards listed in § 177.300 of this part, 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 cognizant OCMI instead of the scantlings required by the applicable standards specified in § 177.300 of this part.

### § 177.315 Vessels of not more than 19.8 meters (65 feet) in length carrying not more than 12 passengers.

The scantlings for a vessel of not more than 19.8 meters (65 feet) in length carrying not more than 12 passengers that do not meet the standards in § 177.300 or § 177.310 may be approved by the cognizant OCMI if the builder of the vessel establishes to the satisfaction of the OCMI that the design and construction of the vessel is adequate for the intended service.

### § 177.330 Sailing vessels.

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 cognizant OCMI may require the owner to submit detailed calculations on the strength of the mast, post, yards, booms, bowsprits, and standing rigging to the Marine Safety Center for evaluation.

**§ 177.340 Alternate design considerations.**

When the structure of vessel is of novel design, unusual form, or special materials, which cannot be reviewed or approved in accordance with § 177.300, § 177.310 or § 177.315, the structure may be approved by the Commanding Officer, Marine Safety Center, 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 Marine Safety Center.

**Subpart D—Fire Protection**

**§ 177.405 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 ABYC P-1 (incorporated by reference, see 46 CFR 175.600).

(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 non-combustible 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) IMO Resolution A.688(17) (incorporated by reference, see 46 CFR 175.600). Mattresses that are tested to this standard may contain polyurethane foam.

[CGD 85-080, 61 FR 961, Jan. 10, 1996, as amended by USCG-2003-16630, 73 FR 65206, Oct. 31, 2008]

**§ 177.410 Structural fire protection.**

(a) *Cooking areas.* Vertical or horizontal surfaces within 910 millimeters (3 feet) of cooking appliances must have an ASTM E-84 (incorporated by reference, see 46 CFR 175.600) flame spread rating of not more than 75. Curtains, draperies, or free hanging fabrics must not be fitted within 910 millimeters (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 and meet as accepted by the Commandant as meeting NPFC MIL-R-21607E(SH) (incorporated by reference, see 46 CFR 175.600). Resin systems that have not been accepted as meeting NPFC MIL-R-21607E(SH) 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 3.2 and 6.4 millimeters ( $\frac{1}{8}$  to  $\frac{1}{4}$  inch).

(2) The test specimen laminate must be reinforced with glass fiber of any form and must have a minimum resin content of 40 percent 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 considered as equivalent to the requirement in this section to use a fire retardant resin. Requests for qualifying a specific laminate schedule as fire retardant for use in a particular vessel may be submitted for consideration by visitors to the Commanding Officer, Marine Safety Center, U.S. Coast Guard, 2703 Martin Luther King Jr. Avenue SE., Washington, DC 20593, or by mail to: Commanding Officer (MSC), Attn: Marine Safety Center, U.S. Coast Guard Stop 7430, 2703 Martin Luther King Jr. Avenue SE., Washington, DC 205930-7430, in a written or electronic format. Information for submitting the VSP electronically can be found at <http://www.uscg.mil/HQ/MSC>.

(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 121 °C (250 °F). Open flame systems for cooking and heating are not allowed.

(2) *Sources of ignition.* Electrical equipment and switch boards 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 suitably insulated from any woodwork or other combustible matter. Internal combustion engine dry exhaust systems must be installed in accordance with ABYC P-1 (incorporated by reference, see 46 CFR 175.600).

(3) *Fire detection and extinguishing systems.* (i) Fire detection and extinguishing systems must be installed in compliance with §§ 181.400 through 181.420 of this subchapter.

(ii) 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 accordance with § 76.27 in subchapter H of this chapter, in—

(A) Accommodation spaces;

(B) Service spaces; and

(C) Isolated spaces that contain an ignition source as defined in § 175.400 of this chapter.

(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 approved in accordance with § 164.009 in subchapter Q of this chapter, or other standard specified by the Commandant.

(5) *Furnishings.* Furniture and furnishings must comply with § 116.423 in subchapter K of this chapter.

(d) *Limitations on the use of general purpose resin—(1) Overnight accommodations.* Vessels with overnight passenger accommodations for more than 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 43.3 °C (110 °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, as determined by the cognizant OCMI, 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.

[CGD 85-080, 61 FR 961, Jan. 10, 1996; 61 FR 24464, May 15, 1996, as amended at 62 FR 51356, Sept. 30, 1997; USCG-1999-6216, 64 FR 53228, Oct. 1, 1999; USCG-2007-29018, 72 FR 53968, Sept. 21, 2007; USCG-2003-16630, 73 FR 65206, Oct. 31, 2008; USCG-2009-0702, 74 FR 49240, Sept. 25, 2009; USCG-2013-0671, 78 FR 60164, Sept. 30, 2013; USCG-2012-0196, 81 FR 48299, July 22, 2016; USCG-2016-0498, 82 FR 35093, July 28, 2017]

**§ 177.420 Vessels complying with SOLAS structural fire protection requirements.**

Vessels meeting the structural fire protection requirements of SOLAS, Chapter II-2, Regulations 5, 6, 8, 9, and 11 (incorporated by reference, see § 175.600 of this chapter) may be considered equivalent to the provisions of this subpart.

[USCG-2012-0196, 81 FR 48299, July 22, 2016]

**Subpart E—Escape Requirements**

**§ 177.500 Means of escape.**

(a) 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.

(b) 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.

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

(d) 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:

(1) Passenger overnight accommodation spaces: Designed capacity;

(2) Accommodation spaces having fixed seating for passengers: Maximum seating capacity;

(3) Public spaces, including spaces such as casinos, restaurants, club

rooms, and cinemas, and public accommodation spaces as defined in § 175.400 of this subchapter, except overnight accommodation spaces: One person may be permitted for each 0.9 square meters (10 square feet) of deck area. In computing such deck area, the following areas must be excluded:

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

(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) Interior passageways less than 860 millimeters (34 inches) wide and passageways on open deck less than 710 millimeters (28 inches) wide;

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

(vi) Bow pulpits, swimming platforms, and areas that do not have a solid deck, such as netting on multi hull vessels;

(4) Crew overnight accommodation spaces: Two-thirds designed capacity; and

(5) Work spaces: Occupancy under normal operating conditions.

(e) 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.

(f) The minimum clear opening of a door or passageway used as a means of escape must not be less than 810 millimeters (32 inches) in width, however, doors or passageways used solely by crew members must have a clear opening not less than 710 millimeters (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 8.4 millimeters (0.333 inches) multiplied by the number of passengers for which the space is designed.

(g) A dead end passageway, or the equivalent, of more than 6.1 meters (20 feet) in length is prohibited.

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(h) 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.

(i) A means of escape which is not readily apparent to a person from both inside and outside the space must be adequately marked in accordance with § 185.606 of this chapter.

(j) A ladder leading to a deck scuttle may not be used as a means of escape except:

(1) On a vessel of not more than 19.8 meters (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

(2) As not more than one of the means of escape from any crew accommodation space or work space.

(k) Each ladder used as a means of escape must be mounted at least 180 millimeters (7 inches) from the nearest permanent object in back of the ladder. Rungs must be:

(1) At least 405 millimeters (16 inches) in width; and

(2) Not more than 305 millimeters (12 inches) apart, and uniformly spaced for the length of the ladder with at least 114 millimeters (4.5 inches) clearance above each rung.

(l) When a deck scuttle serves as a means of escape, it must not be less than 455 millimeters (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.

(m) 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.

(n) On a vessel of not more than 19.8 meters (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:

(1) Does not lead directly overboard;

(2) Can be opened or is designed to be kicked or pushed out; and

(3) Is suitably marked.

(o) Only one means of escape is required from a space where:

(1) The space has a deck area less than 30 square meters (322 square feet);

(2) There is no stove, heater, or other source of fire in the space;

(3) The means of escape is located as far as possible from a machinery space or fuel tank; and

(4) If an accommodation space, the single means of escape does not include a deck scuttle or a ladder.

(p) Alternative means of escape from spaces may be provided if acceptable to the cognizant OCMI.

[CGD 85–080, 61 FR 961, Jan. 10, 1996; 62 FR 64306, Dec. 5, 1997]

**Subpart F—Ventilation**

**§ 177.600 Ventilation of enclosed and partially enclosed spaces.**

(a) An enclosed or partially enclosed space within a vessel must be adequately ventilated in a manner suitable for the purpose of the space.

(b) A power ventilation system must be capable of being shut down from the pilot house.

(c) 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 OCMI.

(d) An exhaust duct over a frying vat or a grill must be of at least 11 U.S. Standard Gauge steel.

(e) Combustibles and other foreign materials are not allowed within ventilation ducts. However, metal piping and electrical wiring installed in a metal protective enclosure may be installed within ventilation ducts, provided that the piping or the wiring does not interfere with the operation of fire dampers. Electrical wiring and piping

may not be installed in an exhaust duct over a frying vat or grill.

[CGD 85-080, 61 FR 961, Jan. 10, 1996, as amended at 62 FR 51356, Sept. 30, 1997]

**§ 177.620 Ventilation of machinery and fuel tank spaces.**

In addition to the requirements of this subpart, ventilation systems for spaces containing machinery or fuel tanks must comply with the requirements of part 182 of this chapter.

**Subpart G—Crew Spaces**

**§ 177.700 General requirements.**

(a) A crew accommodation space and a work space must be of sufficient size, adequate construction, and with suitable equipment to provide for the safe operation of the vessel and the protection and accommodation of the crew in a manner practicable for the size, facilities, service, route, speed, and modes of operation of the vessel.

(b) The deck above a crew accommodation space must be located above the deepest load waterline.

**§ 177.710 Overnight accommodations.**

Overnight accommodations must be provided for all crew members if the vessel is operated more than 12 hours in a 24 hour period, unless the crew is put ashore and the vessel is provided with a new crew.

[CGD 85-080, 61 FR 961, Jan. 10, 1996, as amended by CGD 97-057, 62 FR 51050, Sept. 30, 1997]

**Subpart H—Passenger Accommodations**

**§ 177.800 General requirements.**

(a) 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.

(b) The height of ceilings in a passenger accommodation space, including aisles and passageways, must be at least 1,880 millimeters (74 inches), but may be reduced at the sides of a space to allow the camber, wiring, ventilation ducts, and piping.

(c) 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.

(d) A passenger accommodation space must not contain:

(1) 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

(2) A control for operating the vessel, unless the control is so protected and located that operation of the vessel by a crew member will not be impeded by a passenger during normal or emergency operations.

(e) The deck above a passenger accommodation space must be located above the deepest load waterline.

(f) A variation from a requirement of this subpart may be authorized by the cognizant OCMI for an unusual arrangement or design provided there is no significant reduction of space, accessibility, safety, or sanitation.

**§ 177.810 Overnight accommodations.**

(a) A berth must be provided for each passenger authorized to be carried in overnight accommodation spaces. Each berth must measure at least 1,880 millimeters (74 inches) by 610 millimeters (24 inches) and have at least 610 millimeters (24 inches) of clear space above.

(b) Berths must not be located more than three high and must be constructed of wood, fiber reinforced plastic, or metal. A berth located more than 1520 millimeters (60 inches) above the deck must be fitted with a suitable aid for access.

(c) The construction and arrangement of berths and other furniture must allow free and unobstructed access to each berth. Each berth must be immediately adjacent to an aisle leading to a means of escape from the accommodation space. An aisle alongside a berth must be at least 610 millimeters (24 inches) wide. An aisle joining two or more aisles in an overnight accommodation space must be at least 1,060 millimeters (42 inches) wide.

[CGD 85-080, 61 FR 961, Jan. 10, 1996, as amended by CGD 97-057, 62 FR 51050, Sept. 30, 1997]

**§ 177.820 Seating.**

(a) A seat must be provided for each passenger permitted in a space for which the fixed seating criterion in § 176.113(b)(3) of this subchapter 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 4.572 meters (15 feet) in overall length must be not less than 610 millimeters (24 inches) in width.

(2) An aisle of more than 4.572 meters (15 feet) in overall length must be not less than 760 millimeters (30 inches) in width.

(3) Where seats are in rows, the distance from seat front to seat front must be not less than 760 millimeters (30 inches) and the seats must be secured to a deck or bulkhead.

(4) Seats used to determine the number of passengers permitted, in accordance with § 176.113(b)(3) of this chapter, must be secured to the deck, bulkhead, or bulwark.

[CGD 85–080, 61 FR 961, Jan. 10, 1996, as amended by USCG–2010–0759, 75 FR 60004, Sept. 29, 2010]

**Subpart I—Rails and Guards**

**§ 177.900 Deck rails.**

(a) Except as otherwise provided in this section, rails or equivalent protection must be installed near the periphery of all decks of a vessel accessible to passengers or crew. Equivalent protection may include lifelines, wire rope, chains, and bulwarks, which provide strength and support equivalent to fixed rails. Deck rails must include a top rail with the minimum height required by this section, and lower courses or equivalent protection as required by this section.

(b) Deck rails must be designed and constructed to withstand a point load of 91 kilograms (200 pounds) applied at any point in any direction, and a uniform load of 74 kilograms per meter (50

pounds per foot) applied to the top rail in any direction. The point and uniform loads do not need to be applied simultaneously.

(c) Where space limitations make deck rails impractical for areas designed for crew use only, such as at narrow catwalks in way of deckhouse sides, hand grabs may be substituted.

(d) The height of top rails required by paragraph (a) of this section must be as follows:

(1) Rails on passenger decks of a ferry or a vessel engaged in excursion trips, including but not limited to sight-seeing trips, dinner and party cruises, and overnight cruises, must be at least 1,000 millimeters (39.5 inches) high.

(2) Rails on a vessel subject to the 1966 International Convention on Load Lines must be at least 1,000 millimeters (39.5 inches) high.

(3) All other rails must be at least 910 millimeters (36 inches) high.

(4) While engaged in big game angling, the minimum rail height may be reduced to not less than 760 millimeters (30 inches) in way of a person using specialized angling techniques or equipment, such as when using a pedestal mounted fixed fighting chair on a low freeboard vessel, if it can be shown that a higher rail would interfere with the fishing operation and the lower rail would not significantly reduce safety. A rail complying with the requirements of paragraphs (d)(1), (2), or (3) of this section as applicable must be installed when big game angling is not being conducted.

(e) Where the principal business of the vessel requires the discharge of persons or cargo in a seaway, such as on pilot boats and dive boats, the cognizant OCMI may accept alternatives to the rails required in paragraphs (d)(1), (2), and (3) of this section for those areas of a deck where passengers or cargo are discharged and for which removable rails, lifelines, or chains would hinder discharge operations.

(f) A sailing vessel, an open boat, or any other vessel not specifically covered elsewhere in this section, must have rails of a minimum height or equivalent protection as considered necessary by the cognizant OCMI, based on the vessel's operation, route, and seating arrangement.

(g) Rail courses or the equivalent must be installed between a top rail required by paragraph (a) of this section, and the deck so that no open space exists that is more than 305 millimeters (12 inches) high except:

(1) On passenger decks of a ferry or of a vessel on an excursion trip the following must be installed:

- (i) Bulwarks;
- (ii) Chain link fencing or wire mesh that has openings of not more than 4 inches in diameter; or
- (iii) Bars, slats, rail courses, or an equivalent spaced at intervals of not more than 100 millimeters (4 inches).

(2) On a vessel subject to the 1966 International Convention on Load Lines, rail courses, or an equivalent, must be installed so that there is not an open space higher than 230 millimeters (9 inches) from the deck to the first rail course or equivalent.

(h) Rails must be permanently installed except that the following rails may be removable;

(1) Rails in way of embarkation stations and boarding locations;

(2) Rails over 760 millimeters (30 inches) high in way of fishing seats addressed by paragraph (d)(4) of this section; and

(3) Rails on a vessel when the service of the vessel is routinely changed, as determined by the cognizant OCMI, and the required top rail height varies depending on the service of the vessel at a particular time.

#### § 177.920 Storm rails.

Suitable storm rails or hand grabs must be installed where necessary in passageways, at deckhouse sides, and at ladders and hatches.

#### § 177.940 Guards in vehicle spaces.

On a vessel authorized to carry one or more vehicles, suitable chains, cables, or other barriers must be installed at the end of each vehicle runway. In addition, temporary rails or equivalent protection must be installed in way of each vehicle ramp, in compliance with §177.900, when the vessel is underway.

#### § 177.960 Guards for exposed hazards.

An exposed hazard, such as gears or rotating machinery, must be properly protected by a cover, guard, or rail.

#### § 177.970 Protection against hot piping.

Piping, including valves, pipe fittings and flanges, conveying vapor, gas, or liquid, the temperature of which exceeds 65.5 °C (150 °F), must be suitably insulated where necessary to prevent injuries.

### Subpart J—Window Construction and Visibility

#### § 177.1010 Safety glazing materials.

Glass and other glazing material used in windows accessible to passengers and crew must be of material that will not break into dangerous fragments if fractured.

[CGD 85-080, 61 FR 961, Jan. 10, 1996; 61 FR 20557, May 7, 1996]

#### § 177.1020 Strength.

Each window, port hole, and its means of attachment to the hull or deck house, must be capable of withstanding the maximum load from wave and wind conditions expected due to its location on the vessel and the authorized route of the vessel.

#### § 177.1030 Operating station visibility.

(a) Windows and other openings at the operating station must be of sufficient size and properly located to provide an adequate view for safe navigation in all operating conditions.

(b) Glass or other glazing material used in windows at the operating station must have a light transmission of not less than 70 percent according to Test 2 of ANSI Z 26.1 (incorporated by reference, see 46 CFR 175.600) and must comply with Test 15 of ANSI Z 26.1 for Class I Optical Deviation.

[CGD 85-080, 61 FR 961, Jan. 10, 1996, as amended by USCG-2003-16630, 73 FR 65206, Oct. 31, 2008]

## PART 178—INTACT STABILITY AND SEAWORTHINESS

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178.510 Ballast.

AUTHORITY: 43 U.S.C. 1333; 46 U.S.C. 2103, 3306, 3703; E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp., p. 277; Department of Homeland Security Delegation No. 0170.1.

SOURCE: CGD 85–080, 61 FR 966, Jan. 10, 1996, unless otherwise noted.

### Subpart A—General Provisions

#### § 178.115 Applicability to existing vessels.

Except where specifically stated otherwise, an existing vessel must comply with the intact stability and seaworthiness regulations which were applicable to the vessel on March 10, 1996, or, as an alternative, the vessel may comply with the regulations in this part.

[CGD 85–080, 61 FR 966, Jan. 10, 1996, as amended by USCG–2007–0030, 75 FR 78087, Dec. 14, 2010]

## Subpart B—Stability Instructions for Operating Personnel

### § 178.210 Stability information.

(a) Stability information (stability details indicated on the Certificate of Inspection, a stability letter, or a stability booklet), is required on certain vessels by paragraphs (b), (c), or (d) of this section. Enough stability information, including stability calculations and assumptions made to use them, must be provided to allow the master to be able to determine operating guidelines, loading restrictions, and ensure compliance with the applicable intact and damage stability regulations of this chapter.

(b) A vessel which, under § 178.310 of this part, complies with requirements in subchapter S of this chapter, must have stability details on the vessel's Certificate of Inspection, a stability letter issued by the cognizant Officer in Charge, Marine Inspection (OCMI) or the Commanding Officer, Marine Safety Center, or an approved stability booklet. The form in which the stability information must be contained (*i.e.*, stability details on the Certificate of Inspection, a stability letter, or a stability booklet) will be determined by the Commanding Officer, Marine Safety Center.

(c) When necessary for safe operation, the cognizant OCMI may place specific stability restrictions in a stability letter or on the Certificate of Inspection of a vessel not more than 65 feet (19.8 meters) in length, which, under § 178.310 of this part, complies with the requirements of § 178.320 of this part.

(d) Each pontoon vessel must have a stability letter and each stability letter issued after March 14, 2011 must be issued by the Commanding Officer, Marine Safety Center.

[CGD 85–080, 61 FR 966, Jan. 10, 1996, as amended by USCG–2007–0030, 75 FR 78087, Dec. 14, 2010]

### § 178.215 Weight of passengers and crew.

(a) This section applies to each vessel, regardless of when constructed, for which stability information is based on the results of a simplified stability proof test.

(b) Except as provided in paragraph (c) of this section, and if not provided in the stability information required, the owner of each vessel must provide the master with the total test weight used in the simplified stability proof test and the number of passengers and crew included in the total test weight. Owners and masters must use a total weight of passengers and crew carried that is based upon an assumed weight per person, which is determined in accordance with §170.090 of this chapter.

(c) The information specified in paragraph (b) of this section need not be provided if the owner attests that the vessel complies with applicable intact stability requirements when carrying the number of passengers and crew permitted by the Certificate of Inspection with an assumed weight per person determined in accordance with §170.090 of this chapter.

[USCG-2007-0030, 75 FR 78087, Dec. 14, 2010]

#### § 178.220 Stability booklet.

When the Commanding Officer, Marine Safety Center determines, in accordance with §178.210(b), that a vessel must have a stability booklet, the owner or operator must prepare the booklet in accordance with subchapter S of this chapter, and submit it to the Commanding Officer, Marine Safety Center.

#### § 178.230 Stability letter or Certificate of Inspection stability details.

(a) When the cognizant OCMI or the Commanding Officer, Marine Safety Center determines, in accordance with §178.210, that a vessel must have stability details indicated on its Certificate of Inspection or a stability letter, the owner or operator must submit the information listed in paragraph (b) of this section:

(1) If §178.210(c) is applicable, to the OCMI for approval; or

(2) If §178.210(b) is applicable, to the Commanding Officer, Marine Safety Center for approval.

(b) If §178.210(b) of this part applies, the applicable information described in subpart C of part 170 of this title, and the calculations used to determine that information, must be submitted in addition to the applicable information listed in paragraph (b) of this section.

(1) Allowable weight and number of passengers and crew on each deck;

(2) Deepest waterline drafts or freeboard;

(3) Location of watertight bulkheads and openings in watertight bulkheads;

(4) Explanation of the vessel's subdivision and specific identification of the vessel's subdivision bulkheads;

(5) Location of openings through watertight bulkheads, such as watertight doors, which must be closed to limit flooding in an emergency;

(6) Location, type and amount of fixed ballast;

(7) Location and details of foam flotation material; and

(8) Maximum weight of portable equipment permitted on the vessel including diving equipment.

(c) If §178.210(c) of this part applies, the allowable weight and number of passengers and crew on each deck, and the necessary calculations used to determine that information, must be submitted in accordance with paragraph (a) of this section.

[CGD 85-080, 61 FR 966, Jan. 10, 1996, as amended by USCG-2007-0030, 75 FR 78087, Dec. 14, 2010]

### Subpart C—Intact Stability Standards

#### § 178.310 Intact stability requirements—general.

(a) Except as provided in paragraph (c) of this section, each vessel must, in each condition of loading and operation, comply with the applicable requirements of—

(1) Part 170 of this chapter, except subparts G and H; and

(2) Part 171 of this chapter, subparts A and B.

(b) Sailing vessels must meet the appropriate requirements of §171.055 or §171.057 in subchapter S in this chapter while under sail, as well as the requirements of §170.170 in subchapter S in this chapter while under bare poles (if an auxiliary sailing vessel as defined in §170.055(a) of this chapter) and with storm sails set and trimmed flat (if a sailing vessel as defined in §170.055(n) of this chapter).

(c) As an alternative to meeting the requirements of paragraphs (a) and (b)

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of this section, a vessel may demonstrate compliance with an appropriate standard set forth in either §178.320 of this part for non-sailing vessels or §178.325 of this part for monohull sailing vessels if all of the following criteria are satisfied:

- (1) The length is not more than 19.8 meters (65 feet) in length;
- (2) The vessel does not carry more than 12 passengers on an international voyage;
- (3) The vessel either does not have more than one deck above the bulkhead deck or, if without a bulkhead deck, does not have more than one deck above the deck from which freeboard is measured excluding a pilot house; and

(4) The vessel's stability has not been questioned by the cognizant Officer in Charge, Marine Inspection (OCMI).

(d) In lieu of the requirements in paragraphs (a) through (c) of this section, a vessel may meet another stability standard approved by the Commanding Officer, Marine Safety Center.

[USCG–2007–0030, 75 FR 78088, Dec. 14, 2010]

**§ 178.320 Intact stability requirements—non-sailing vessels.**

(a) As permitted by §178.310(c) of this part, the following vessels may undergo the simplified stability proof test detailed in §178.330 of this part, in the presence of a Coast Guard marine inspector, if they do not have tumblehome at the deck, measured amidships, that exceeds 2 percent of the beam:

- (1) Monohull vessels; and
- (2) Flush deck catamaran vessels which are not pontoon vessels and carry not more than 49 passengers.

(b) As permitted by §178.310(c) of this part, a self-propelled pontoon vessel may undergo the pontoon simplified stability proof test detailed in §178.340 of this part, in the presence of a Coast Guard marine inspector, if it satisfies all of the following requirements:

- (1) The vessel carries not more than 49 passengers and does not make international voyages;
- (2) The vessel operates on Protected Waters only;
- (3) The vessel is constructed with only one deck;

(4) The buoyant hull volume consists of two symmetric, fully enclosed hulls;

(5) The cross section of each hull is circular or of wall-sided construction without tumblehome, and constant for at least 90 percent of the length of the hull;

(6) The hulls contain no machinery or tanks;

(7) The portion of the deck accessible to passengers does not extend beyond—

- (i) The outboard edge of the hulls, and
- (ii) The forward or the aft end of the hulls;

(8) There is no deck more than 0.15 meters (6 inches) above any point on any of the buoyant hulls;

(9) The distance between the centerlines of the hulls is not less than 1.83 meters (6 feet); and

(10) Each hull has a beam or diameter, as applicable, of not less than 0.61 meters (2 feet).

(c) For a vessel that carries not more than 49 passengers, carries no deck cargo, and is otherwise eligible to undergo the simplified stability proof test detailed in §178.330 or §178.340 of this part, the authority issuing the stability letter may—

(1) Dispense with the requirements of the simplified stability proof test in §178.330 or §178.340 of this part when the vessel's stability can be adequately assessed by alternate means giving due consideration to each item that impacts a vessel's stability characteristics which include, but are not limited to, the form, arrangement, construction, number of decks, route, and operating restrictions of the vessel; or

(2) Authorize a change in the requirements of the simplified stability proof test in either §178.330 or §178.340 of this part, when necessary to adequately assess the vessel's stability.

[USCG–2007–0030, 75 FR 78088, Dec. 14, 2010]

**§ 178.325 Intact stability requirements—monohull sailing vessels.**

(a) As permitted by §178.310(c) of this part, a monohull sailing vessel may demonstrate compliance with paragraphs (b) or (c) of this section if it satisfies all of the following requirements:

- (1) It does not operate on exposed waters;



(2) It only operates during the day-light hours;

(3) It is of the usual type, rig, and hull form, excluding vessels without a weathertight deck, such as open boats;

(4) It carries not more than 49 passengers;

(5) It is not a sailing school vessel that carries a combined total of six or more sailing school students and instructors;

(6) Its minimum downflooding angle is greater than 60 degrees;

(7) It does not have a cockpit greater than 20 percent of the Length Over Deck; and

(8) If equipped with a cockpit and operating on Partially Protected Waters, the cockpit must be self-bailing.

(b) The vessel may undergo the simplified stability proof test detailed in §178.330 of this part, in the presence of a Coast Guard marine inspector, if it does not have tumblehome at the deck, measured amidships, that exceeds 2 percent of the beam.

(c) The cognizant Officer in Charge, Marine Inspection (OCMI) may perform operational tests to determine whether the vessel has adequate stability and satisfactory handling characteristics under sail for protected waters or partially protected waters.

(d) The Commanding Officer, Marine Safety Center, may prescribe additional or different stability requirements for a broad, shallow draft vessel with little or no ballast outside the hull.

[USCG-2007-0030, 75 FR 78088, Dec. 14, 2010]

**§ 178.330 Simplified stability proof test (SST).**

(a) A vessel must be in the condition specified in this paragraph when a simplified stability proof test is performed.

(1) The construction of the vessel is complete in all respects.

(2) Ballast, if necessary, is in compliance with §178.510 of this part and is on board and in place.

(3) Each fuel and water tank is approximately three-quarters full. Any sewage tank should be either empty or full.

(4) A weight equal to the total weight of all passengers, crew, and variable loads permitted on the vessel is on

board and distributed so as to provide normal operating trim and to simulate the vertical center of gravity, causing the least stable condition that is likely to occur in service. The assumed weight per person of passengers and crew must be representative of the passengers and crew on board the vessel while engaged in the service intended. Unless the cognizant Officer in Charge, Marine Inspection (OCMI) permits or requires the use of other values in writing, weight and vertical center of gravity are to be assumed as follows:

(i) The weight of primary lifesaving equipment should be simulated at its normal location, if not on board at the time of the test.

(ii) The assumed weight per person is determined as provided by §170.090 of this chapter.

(iii) The weight and associated vertical center of gravity of variable loads must be included as appropriate for the service intended and documented in the stability information required by subpart B of this part.

(iv) The vertical center for the total test weight must be at least 30 inches (760 millimeters) above the deck for seated passengers, and at least 39 inches (1.0 meter) above the deck for standing passengers.

(v) If the vessel carries passengers on diving excursions, the total weight of diving gear must be included in the loaded condition and placed in its stowed position. Not less than 80 pounds (36.3 kilograms) should be assumed for each person for whom diving gear is provided.

(vi) On vessels having one upper deck available to passengers above the main deck, the weight distribution must not be less severe than the following:

Total Test Weight (W) = \_\_\_\_\_  
Passenger Capacity of Upper Deck:

Weight on Upper Deck = (Number of Passengers on Upper Deck) \* (Wt per Passenger) \* 1.33

Weight on Main Deck = Total Test Weight - Weight on Upper Deck.

(5) All non-return closures on cockpit scuppers or on weather deck drains must be kept open during the test.

(b) A vessel must not exceed the limitations in paragraph (d) of this section,

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when subjected to the greater of the following heeling moments:

$$M_p = (W) (B_p)/6; \text{ or}$$

$$M_w = (P) (A) (H)$$

Where:

$M_p$  = passenger heeling moment in foot-pounds (kilogram-meters);

$M_w$  = Wind heeling moment in foot-pounds (kilogram-meters)

W = the total weight of persons other than required crew, plus the personal effects of those persons expected to be carried while aboard the vessel (total test weight) in pounds (meters);

$B_p$  = the maximum transverse distance in feet (meters) of a deck that is accessible to passengers;

A = Area, in square feet (square meters), of the projected lateral surface of the vessel above the waterline (including each projected area of the hull, superstructure, cargo, masts, area bounded by railings and canopies, but not protruding fixed objects such as antennas or running rigging).

(c) For sailing vessels the heeling moment used for this test must be the greater of the following:

(1) Passenger heeling moment from paragraph (b) of this section.

(2) Wind heeling moment from paragraph (b) of this section.

(3) Wind heeling moment calculated from the wind heeling moment equation in paragraph (b) of this section, where:

$M_w$  = wind heeling moment in kilogram-meters (foot-pounds);

P = 4.9 kilograms/square meter (1.0 pounds/square foot) for both protected and partially protected waters.

A = the windage area of the vessel in square meters (square feet) with all sails set and trimmed flat;

H = height, in meters (feet), of the center of effort of area (A) above the waterline, measured up from the waterline; and

(d) A vessel must not exceed the following limits of heel:

(1) On a flush deck vessel, not more than one-half of the freeboard may be immersed.

(2) On a well deck vessel, not more than one-half of the freeboard may be immersed, except that, on a well deck vessel that operates on protected waters and has non-return scuppers or freeing ports, the full freeboard may be immersed if the full freeboard is not more than one-quarter of the distance from the waterline to the gunwale.

(3) On a cockpit vessel, the maximum allowable immersion is calculated from the following equation:

(i) On exposed waters—

$$i = f(2L - 1.5L')/4L$$

(ii) On protected or partially protected waters—

$$i = f(2L - L')/4L$$

where:

i = maximum allowable immersion in meters (feet);

f = freeboard in meters (feet);

L = length of the weather deck, in meters (feet); and

L' = length of cockpit in meters (feet).

(4) On an open boat, not more than one quarter of the freeboard may be immersed.

(5) On a flush deck sailing vessel, the full freeboard may be immersed.

(6) On a non-sailing flush deck catamaran that is propelled by mechanical means, not more than one-third of the freeboard or one-third of the draft, whichever is less, may be immersed.

(7) In no case may the angle of heel exceed 14 degrees.

(e) The limits of heel must be measured at:

(1) The point of minimum freeboard; or

(2) At a point three-quarters of the vessel's length from the bow if the point of minimum freeboard is aft of this point.

(f) When demonstrating compliance with paragraph (d) of this section, the freeboard must be measured as follows:

(1) For a flush deck or well deck vessel, the freeboard must be measured to the top of the weatherdeck at the side of the vessel; and

(2) For a cockpit vessel or for an open boat, the freeboard must be measured to the top of the gunwale.

(g) A ferry must also be tested in a manner acceptable to the cognizant OCMI to determine whether the trim or heel during loading or unloading will submerge the deck edge. A ferry passes this test if, with the total number of passengers and the maximum vehicle weight permitted on board, the deck

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edge is not submerged during loading or unloading of the vessel.

[CGD 85-080, 61 FR 966, Jan. 10, 1996; 61 FR 20557, May 7, 1996, as amended at 62 FR 51356, Sept. 30, 1997; 62 FR 64306, Dec. 5, 1997; USCG-2007-0030, 75 FR 78088, Dec. 14, 2010]

**§ 178.340 Stability standards for pontoon vessels on protected waters.**

(a) A pontoon vessel meeting the applicability requirements of §178.320 of this part must be in the condition described in §178.330(a) of this part when the PSST is performed, except that fuel, water and sewage tanks should either be empty or filled to 100 percent capacity, whichever is more conservative.

(b) A pontoon vessel must not exceed the limitations in paragraph (c) of this section when subjected to the greater of the following heeling moments:

$$M_{pc} = [(W)(B_p - K)]/2; \text{ or}$$

$$M_w = (P) (A) (H)$$

Where:

$M_{pc}$  = passenger and crew heeling moment in foot-pounds (kilogram-meters);

W = the total weight of passengers and crew aboard (total test weight) in pounds (kilograms);

$B_p$  = the maximum transverse distance of the deck accessible to passengers in feet (meters);

K = 2.0 feet (0.61 meters);

$M_w$  = Wind heeling moment in foot-pounds (kilogram-meters)

P = Wind pressure of 7.5 pounds/square foot (36.6 kilograms/square meter);

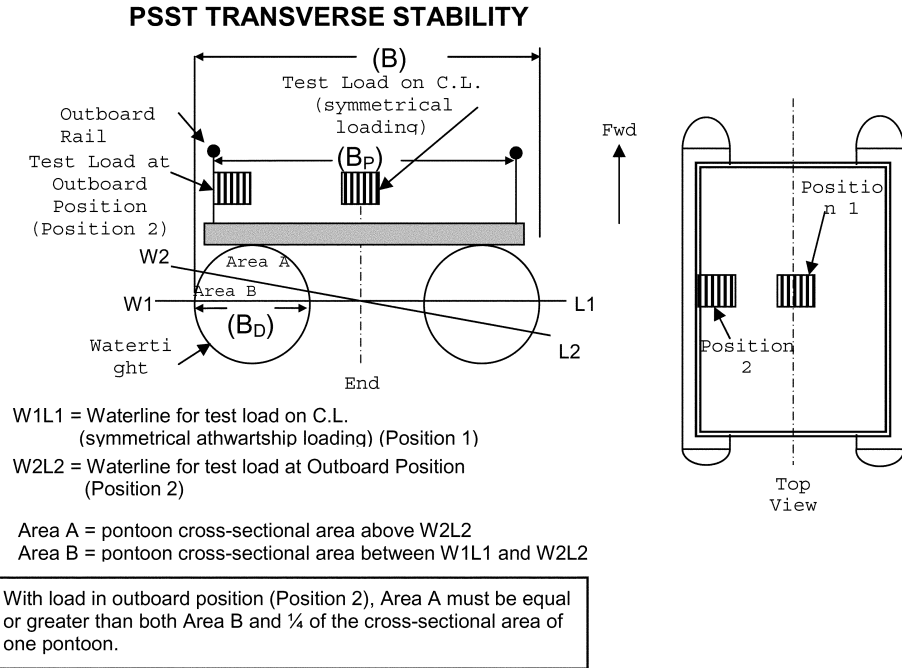
A = Area, in square feet (square meters), of the projected lateral surface of the vessel above the waterline (including each projected area of the pontoons, superstructure and area bounded by railings and structural canopies); and

H = Height, in feet (meters), of the center of area (A) above the waterline, measured up from the waterline.

(c) With the appropriate heeling moment applied to the most adversely affected side of the vessel, the remaining exposed cross-sectional area of the pontoon must be equal to or greater than both—

(1) The cross-sectional area submerged due to the load shift (for an example, see Figure 178.340(c)(1) of this section); and

Figure 178.340(c) (1)

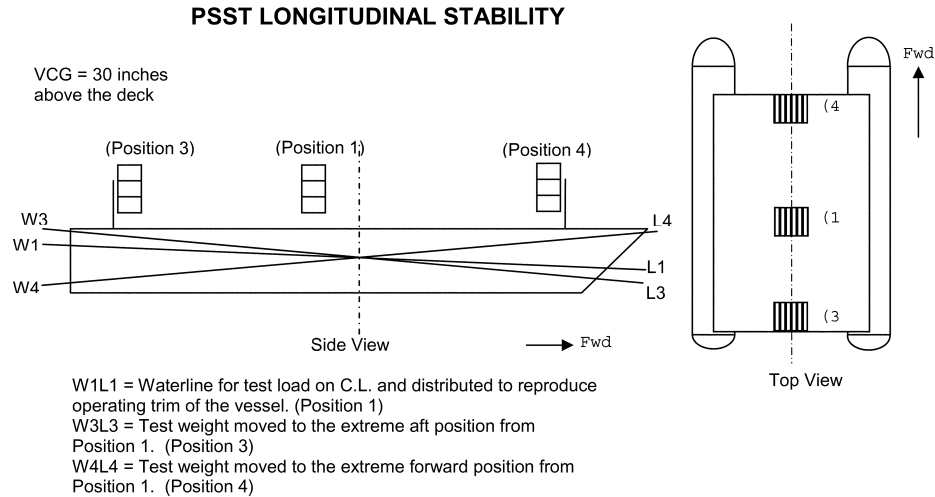


(2) One-quarter of the cross-sectional area on one pontoon.

(d) A pontoon vessel must also be tested to determine whether trimming moments will submerge the bow or stern of the buoyant hull. The top of any pontoon must not be submerged at

any location, as indicated in Figure 178.340(d) of this section, with the total test weight (W) located on the centerline and positioned as far forward or aft on the deck as practicable, whichever position results in the least freeboard.

Figure 178.340 (d)



With the test load at the extreme aft position (Position 3) and at the extreme forward position (Position 4), the top of the pontoon must not be submerged.

[USCG-2007-0030, 75 FR 78089, Dec. 14, 2010]

**Subpart D—Drainage of Weather Decks**

**§ 178.410 Drainage of flush deck vessels.**

(a) Except as provided in paragraph (b) of this section, the weather deck on a flush deck vessel must be watertight and have no obstruction to overboard drainage.

(b) Each flush deck vessel may have solid bulwarks in the forward one-third length of the vessel if:

(1) The bulwarks do not form a well enclosed on all sides; and

(2) The foredeck of the vessel has sufficient sheer to ensure drainage aft.

[CGD 85-080, 61 FR 966, Jan. 10, 1996, as amended at 62 FR 51357, Sept. 30, 1997]

**§ 178.420 Drainage of cockpit vessels.**

(a) Except as follows, the cockpit on a cockpit vessel may be watertight:

(1) A cockpit may have companionways if the companionway openings

have watertight doors, or weathertight doors and coamings which meet § 179.360 of this subchapter.

(2) A cockpit may have ventilation openings along its inner periphery if the vessel operates only on protected or partially protected waters.

(b) The cockpit deck of a cockpit vessel that operates on exposed or partially protected waters must be at least 255 millimeters (10 inches) above the deepest load waterline unless the vessel complies with:

(1) The intact stability requirements of §§ 170.170, 170.173, 171.050, 171.055, and 171.057 in subchapter S of this chapter;

(2) The Type II subdivision requirements in §§ 171.070, 171.072, and 171.073 in subchapter S of this chapter; and

(3) The damage stability requirements in § 171.080 in subchapter S of this chapter.

(c) The cockpit deck of a cockpit vessel that does not operate on exposed or partially protected waters must be located as high above the deepest load waterline as practicable.

§ 178.430

(d) The cockpit must be self-bailing. Scuppers or freeing ports for the cockpit deck of a cockpit vessel must:

(1) Be located to allow rapid clearing of water in all probable conditions of list and trim;

(2) Have a combined drainage area of at least the area required by §178.450 of this part; and

(3) If the deck is less than 255 millimeters (10 inches) above the deepest load waterline of the vessel, be fitted with non-return devices.

§ 178.430 Drainage of well deck vessels.

(a) The weather deck on a well deck vessel must be watertight.

(b) The area required on a well deck vessel for drainage of well formed by the bulwarks shall be determined by §178.450.

(c) The freeing ports or scuppers on a well deck vessel must be located to allow rapid clearing of water in all probable conditions of list and trim.

(d) The deck of well deck vessel that operates on exposed or partially protected waters must be at least 255 millimeters (10 inches) above the deepest load waterline unless the vessel complies with:

(1) The intact stability requirements of §§170.170, 170.173, 171.050, 171.055, and 171.057 in subchapter S of this chapter;

(2) The Type II subdivision requirements in §§171.070, 171.072, and 171.073 in subchapter S of this chapter; and

(3) The damage stability requirements in §171.080 in subchapter S of this chapter.

§ 178.440 Drainage of open boats.

The deck within the hull of an open boat must drain to the bilge. Overboard drainage of the deck is not permitted.

§ 178.450 Calculation of drainage area for cockpit and well deck vessels.

(a) The drainage area required on a vessel must be computed using the following formula:

For protected waters required drainage = .1 × Basic Drainage

For partially protected waters required drainage = .5 × Basis Drainage

For exposed waters required drainage = Basic Drainage

where:

Basic Drainage area in centimeters<sup>2</sup> = 4389.12 × [(Recess Volume × Recess Ratio) + (Weather Deck Volume × Weather Deck Ratio)]; or

Basic Drainage area in inch<sup>2</sup> = (Recess Volume × Recess Ratio) + (Weather Deck Volume × Weather Deck Ratio)

Recess Volume = (B<sub>R</sub> × D<sub>R</sub>) - V<sub>R</sub>

B<sub>R</sub> = average height in centimeters (feet) of the bulwark above the well deck or cockpit deck;

D<sub>R</sub> = total deck area of the cockpit or well deck in the after 2/3 of the vessel length (LOD) measured in centimeters<sup>2</sup> (feet<sup>2</sup>).

V<sub>R</sub> = volume of any weather tight structure below the bulwark of the well deck or cockpit deck.

Recess Ratio = L<sub>R</sub> / L<sub>C</sub>

L<sub>R</sub> = the length of the recess in the after 2/3 vessel length (LOD).

L<sub>C</sub>=2/3 vessel length (LOD).

Weather Deck Volume = (B<sub>D</sub> × D<sub>D</sub>) - V<sub>S</sub>

B<sub>D</sub> = average height in centimeters (feet) of the bulwark above the weather deck;

D<sub>D</sub> = total deck area of the weather deck adjacent to bulwarks but not in way of the cockpit or well deck in the after 2/3 of the vessel length (LOD) measured in centimeters<sup>2</sup> (feet<sup>2</sup>).

V<sub>S</sub> = volume of any weather tight superstructure below the bulwark on the weather deck located within D<sub>D</sub>.

Weather Deck Ratio = L<sub>D</sub> / L<sub>C</sub>

L<sub>D</sub> = the length of the weather deck bulwark in the after 2/3 of the vessel length (LOD). L<sub>C</sub>=2/3 vessel length (LOD).

(b) Vessels with bulwarks in the forward part of the vessel shall not form a well with the deckhouse which retains water.

[CGD 85-080, 61 FR 966, Jan. 10, 1996; 61 FR 20557, May 7, 1996]

Subpart E—Special Installations

§ 178.510 Ballast.

(a) Any solid fixed ballast used to comply with the requirements of parts 170, 171, 178, and 179 of this chapter must be:

(1) Stowed in a manner that prevents shifting of the ballast; and

(2) Installed to the satisfaction of the cognizant OCMI.

(b) Solid fixed ballast may not be located forward of the collision bulkhead unless the installation and arrangement of the ballast and the collision bulkhead minimizes the risk of the ballast penetrating the bulkhead in a collision.

(c) Solid fixed ballast may not be removed from a vessel or relocated unless approved by the cognizant OCMI except that ballast may be temporarily moved for a vessel examination or repair if it is replaced to the satisfaction of the OCMI.

(d) Water ballast, either as an active system or permanent, must be approved by the Commanding Officer, Marine Safety Center.

## PART 179—SUBDIVISION, DAMAGE STABILITY, AND WATERTIGHT INTEGRITY

### Subpart A—General Provisions

Sec.

- 179.15 Incorporation by reference.  
179.115 Applicability to existing vessels.

### Subpart B—Subdivision and Damage Stability Requirements

- 179.210 Collision bulkhead.  
179.212 Watertight bulkheads for subdivision and damage stability.  
179.220 Location of watertight bulkheads for subdivision.  
179.230 [Reserved]  
179.240 Foam flotation material.

### Subpart C—Watertight Integrity Requirements

- 179.310 Collision bulkheads.  
179.320 Watertight bulkheads.  
179.330 Watertight doors.  
179.340 Trunks.  
179.350 Openings in the side of a vessel below the bulkhead or weather deck.  
179.360 Watertight integrity.

AUTHORITY: 43 U.S.C. 1333; 46 U.S.C. 2103, 3306, 3703; E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp., p. 277; Department of Homeland Security Delegation No. 0170.1.

SOURCE: CGD 85-080, 61 FR 971, Jan. 10, 1996, unless otherwise noted.

### Subpart A—General Provisions

#### § 179.15 Incorporation by reference.

(a) Certain material is incorporated by reference into this part with the ap-

proval of the Director of the Federal Register under 5 U.S.C. 552(a) and 1 CFR part 51. To enforce any edition other than that specified in this section, the Coast Guard must publish a notice of change in the FEDERAL REGISTER and the material must be available to the public. All approved material is available for inspection at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030 or go to [http://www.archives.gov/federal\\_register/code\\_of\\_federal\\_regulations/ibr\\_locations.html](http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html). It is also available for inspection at Coast Guard Headquarters. Contact Commandant (CG-ENG-2), Attn: Naval Architecture Division, U.S. Coast Guard Stop 7509, 2703 Martin Luther King Jr. Avenue SE., Washington, DC 20593-7509. The material is also available from the sources listed in paragraph (b) of this section.

(b) International Maritime Organization (IMO), Publications Section, 4 Albert Embankment, London SE1 7SR, United Kingdom, + 44 (0)20 7735 7611, <http://www.imo.org/>.

(1) Resolution MSC.216(82), Adoption of Amendments to the International Convention for the Safety of Life At Sea, 1974, As Amended (IMO Res. MSC.216(82)), Adopted on 8 December 2006, IBR approved for § 179.212.

(2) [Reserved]

[USCG-2007-0030, 75 FR 78091, Dec. 14, 2010, as amended by USCG-2012-0832, 77 FR 59789, Oct. 1, 2012; USCG-2013-0671, 78 FR 60164, Sept. 30, 2013]

#### § 179.115 Applicability to existing vessels.

An existing vessel must comply with the subdivision, damage stability, and watertight integrity regulations which were applicable to the vessel on March 10, 1996, or, as an alternative, the vessel may comply with the regulations in this part.

### Subpart B—Subdivision and Damage Stability Requirements

#### § 179.210 Collision bulkhead.

(a) A vessel of more than 19.8 meters (65 feet) in length must have a collision bulkhead.

**§ 179.212**

(b) A vessel of not more than 19.8 meters (65 feet) in length must have a collision bulkhead if it:

- (1) Carries more than 49 passengers;
- (2) Operates on exposed waters;
- (3) Is of more than 12.2 meters (40 feet) in length and operates on partially protected waters; or
- (4) Is constructed of wood on or after March 11, 2001, and operates in cold water.

(c) A double-ended ferry required to have a collision bulkhead must have a collision bulkhead at each end of the vessel.

**§ 179.212 Watertight bulkheads for subdivision and damage stability.**

(a) Except as provided in paragraph (c) of this section, each vessel must comply with the Type II subdivision and damage stability requirements of §§ 171.070 through 171.073 and 171.080 of this chapter if it meets one or more of the following criteria:

- (1) Is more than 19.8 meters (65 feet) in length;
- (2) Carries more than 49 passengers;
- (3) Is constructed of wood on or after March 11, 2001, and operates in cold water; or
- (4) Is constructed before January 1, 2009 and carries more than 12 passengers on an international voyage.

(b) Vessels constructed on or after January 1, 2009 and carrying more than 12 passengers on an international voyage must comply with the applicable requirements of IMO Res. MSC.216(82) (incorporated by reference, see § 179.15) unless permitted otherwise.

(c) As an alternative to complying with the Type II subdivision and damage stability requirements of §§ 171.070 through 171.073 and 171.080 of this chapter, a monohull vessel which undergoes a simplified stability proof test in accordance with § 178.330 of this chapter may comply with § 179.220 of this part.

(d) For the purpose of demonstrating compliance with the Type II subdivision and damage stability requirements of §§ 171.070 through 171.073 and 171.080 of this chapter, the requirements of IMO Res. MSC.216(82) may be considered equivalent.

[USCG-2007-0030, 75 FR 78091, Dec. 14, 2010]

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**§ 179.220 Location of watertight bulkheads for subdivision.**

(a) The maximum distance between adjacent main transverse watertight bulkheads on a vessel, required by § 179.212(a) of this part to comply with this section, must not be more than the smaller of the following:

- (1) One third of the length of the bulkhead deck; or
- (2) The distance given by the following equation:

$$d = \frac{(F)(f)(L)}{D}$$

where:

d = the maximum length of the bulkhead deck in meters (feet) between adjacent main transverse watertight bulkheads;

F = the floodable length factor from Table 179.220(a);

f = the effective freeboard in meters (feet) calculated for each pair of adjacent bulkheads in accordance with paragraph (b) of this section;

L = Length Over Deck in meters (feet) measured over the bulkhead deck; and

D = the depth in meters (feet), measured amidships at a point one-quarter of the maximum beam out from the centerline, from the inside of the bottom planking or plating to the level of the top of the bulkhead deck at side as shown in Figure 179.220(a).

**TABLE 179.220(a)—TABLE OF FLOODABLE LENGTH FACTORS**

(x/L) × 100	F
0-15	0.33
20	0.34
25	0.36
30	0.38
35	0.43
40	0.48
45	0.54
50	0.61
55	0.63
60	0.58
65	0.53
70	0.48
75	0.44
80	0.40
85	0.37
90-100	0.34

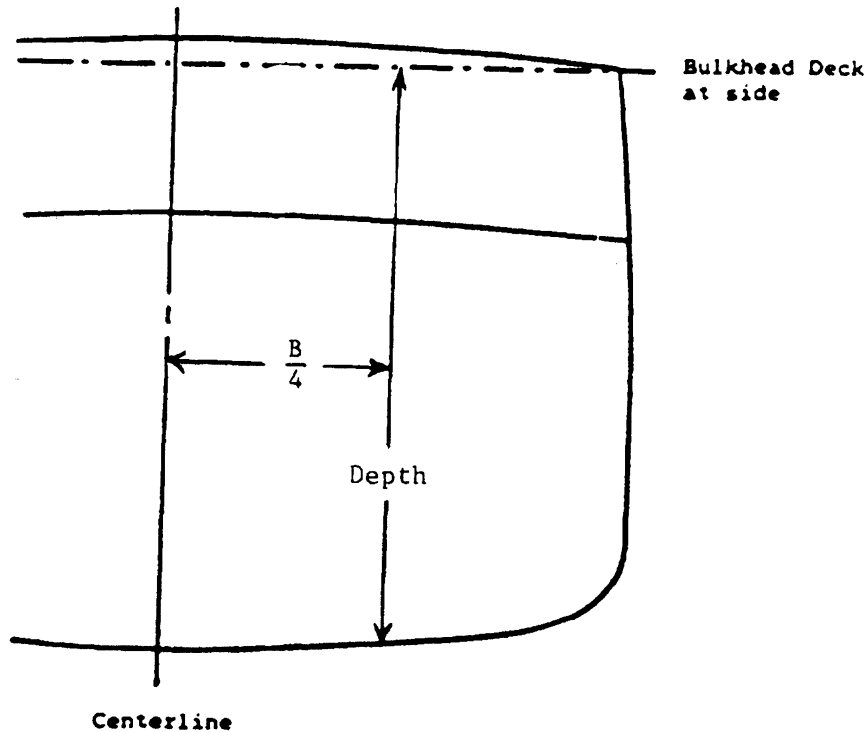
*Note 1:* Where: x = distance in meters (feet) from the mid-point of the compartment to the forward-most point on the bulkhead deck excluding sheer; and L = length over deck in meters (feet) measured over the bulkhead deck.

*Note 2:* Intermediate values of floodable length factor may be obtained by interpolation.



Figure 179.220(a)

Transverse Location for Measuring Depth (D)



(b) The effective freeboard for each compartment is calculated by the following equation:

$$f = (a + b)/2$$

where:

f = the effective freeboard in meters (feet).

a = the freeboard in meters (feet) measured:

- (1) At the forward main transverse watertight bulkhead; and
- (2) From the deepest waterline to:

(i) The top of the bulkhead deck on a flush deck vessel; or

(ii) If a vessel has a stepped bulkhead deck, the line shown in Figure 179.220(b); or

(iii) If a vessel has an opening port light below the bulkhead deck, the line shown in Figure 179.220(c).

b = the freeboard in meters (feet) measured:

- (1) At the aft main transverse watertight bulkhead; and
- (2) From the deepest waterline to:

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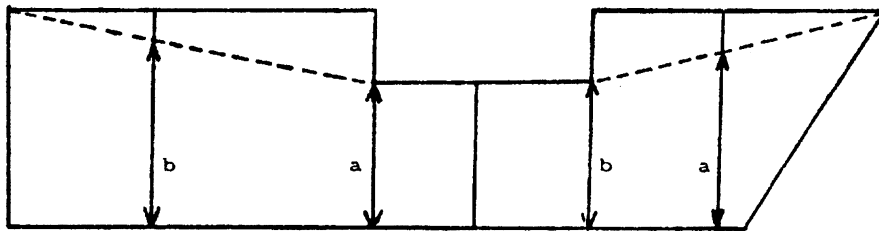
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(i) The top of the bulkhead deck on a flush deck vessel; or

(ii) If a vessel has a stepped bulkhead deck, the line shown in Figure 1 to § 179.220(b); or

Figure 1 to § 179.220(b)

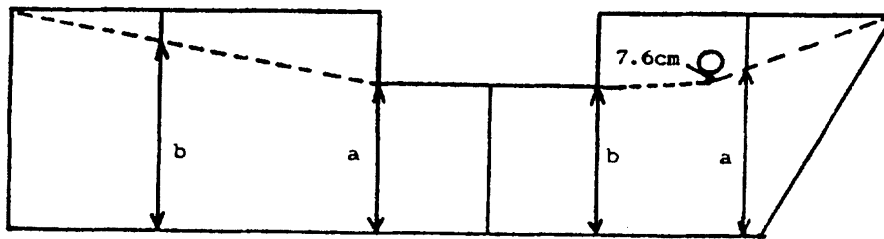
Freeboard Measurement -  
Vessel with Stepped Bulkhead Deck



(a and b shown for two sample compartments)

Figure 2 to § 179.220(b)

**Freeboard Measurement -**  
**Vessel with Stepped Bulkhead Deck and**  
**a Port Light Below the Bulkhead Deck**



(iii) if a vessel has an opening port light below the bulkhead deck, the line shown in Figure 2 to § 179.220(b).

(c) Calculations needed to demonstrate compliance with paragraphs (a) and (b) of this section must be submitted to, and approved by, the Commanding Officer, Marine Safety Center.

[CGD 85-080, 61 FR 971, Jan. 10, 1996; 61 FR 20557, May 7, 1996, as amended by USCG-2007-0030, 75 FR 78092, Dec. 14, 2010]

**§ 179.230 [Reserved]**

**§ 179.240 Foam flotation material.**

(a) Foam may only be installed as flotation material on a vessel when approved by the cognizant OCMI.

(b) If foam is installed as flotation material on a vessel, the owner shall ensure that the following tests are conducted and requirements are met, to the satisfaction of the cognizant OCMI:

(1) All foam must comply with NFFC MIL-P-21929C (incorporated by reference, see 46 CFR 175.600). The fire resistance test is not required.

(2) Foam may be installed only in void spaces that are free of ignition

sources, unless the foam complies with the requirements of 33 CFR 183.114;

(3) Foam may be installed adjacent to fuel tanks only if the boundary between the tank and the space has double continuous fillet welds;

(4) The structure enclosing the foam must be strong enough to accommodate the buoyancy of the foam;

(5) Piping and cables must not pass through foamed spaces unless they are within piping and cable ways accessible from both ends;

(6) Blocked foam must:

(i) Be used in each area that may be exposed to water; and

(ii) Have a protective cover, approved by the cognizant OCMI, to protect it from damage;

(7) A water submergence test must be conducted on the foam for a period of at least 7 days to demonstrate to the satisfaction of the cognizant OCMI that the foam has adequate strength to withstand a hydrostatic head equivalent to that which would be imposed if the vessel were submerged to its bulkhead deck;

(8) The effective buoyancy of the foam must be determined at the end of

## § 179.310

the submergence test required by paragraph (b)(7) of this section. The effective buoyancy or 881 kilograms per cubic meter (55 pounds per cubic foot), whichever is less, must be used in determining the location of watertight bulkheads for subdivision required by § 179.212; and

(9) The owner or operator must obtain sample foam specimens during installation of the foam and determine the density of the installed foam.

[CGD 85-080, 61 FR 971, Jan. 10, 1996, as amended at 62 FR 51357, Sept. 30, 1997; USCG-2003-16630, 73 FR 65206, Oct. 31, 2008]

### Subpart C—Watertight Integrity Requirements

#### § 179.310 Collision bulkheads.

(a) Each collision bulkhead required by § 179.210, must be constructed in accordance with § 179.320, except that a collision bulkhead:

(1) Must extend to the weather deck or to one deck above the bulkhead deck, whichever is lower, for service on oceans or coastwise routes; and

(2) Must not be fitted with any type of penetration or opening except penetrations may be made if they are located as high and as far inboard as practicable and they have a means to make them watertight.

(b) The forward collision bulkhead required to be on a vessel by § 179.210 must be:

(1) Located at least 5 percent but not more than 15 percent of the length between perpendiculars (LBP) aft of the forward perpendicular, or for vessels with bulbous bows extending forward of the forward perpendicular and contributing more than 2 percent of the underwater volume of the vessel, located at least 5 percent but not more than 15 percent of the LBP aft of the mid-length of such extension; and

(2) Installed in a single plane, with no recess or step, up to the bulkhead deck;

(c) The after collision bulkhead on a double-ended ferry of more than 19.8 meters (65 feet) in length must be:

(1) At least 5 percent but not more than 15 percent of the LBP forward of the after perpendicular; and

(2) Installed in a single plane, with no recess or step, at least up to the bulkhead deck.

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#### § 179.320 Watertight bulkheads.

(a) Each watertight bulkhead must be of sufficient strength to be capable of remaining watertight with a head of water to the top of the bulkhead.

(b) Each watertight bulkhead must extend to the bulkhead deck and be installed in one plane without steps or recesses insofar as is reasonable and practicable. Any steps or recesses permitted must comply with the applicable subdivision requirements in this subchapter.

(c) The number of penetrations in a watertight bulkhead must be minimized. A penetration in a watertight bulkhead must be as high and as far inboard in the bulkhead as practicable, and made watertight.

(d) Sluice valves are not permitted in watertight bulkheads.

#### § 179.330 Watertight doors.

(a) Hinged watertight doors are not permitted in bulkheads required by § 179.210 or § 179.212 unless the vessel will not proceed more than 20 nautical miles from shore and:

(1) The door separates a machinery space from an accommodation space and, in the judgment of the cognizant OCMI, the door will be kept closed except when a person is passing through the door; or

(2) The Commandant determines that, due to the arrangements of the vessel, the door will be kept closed except when a person is passing through the door.

(b) A hinged watertight bulkhead door must be fitted with a quick action closing device operable from both sides of the door and indicator lights at the operating station showing whether the door is open or closed.

(c) Sliding watertight doors must meet the requirements of part 170, subpart H in subchapter S of this chapter.

(d) No more than one watertight door may be fitted in a watertight bulkhead, and it must be located as high and as far inboard as practicable.

#### § 179.340 Trunks.

Where a trunk (*i.e.*, an enclosed passageway through a deck or bulkhead) is installed, it must comply with the requirements of § 179.360(a)(1) and with

the requirements of §171.113 in subchapter S of this chapter.

**§ 179.350 Openings in the side of a vessel below the bulkhead or weather deck.**

(a) On a vessel operating on exposed or partially protected waters, an opening port light is not permitted below the weather deck unless the sill of the port light is at least 760 millimeters (30 inches) above the deepest load waterline.

(b) A port light must have an inside, hinged dead cover regardless of whether the port light is or is not capable of being opened.

(c) Except for engine exhausts, each inlet or discharge pipe that penetrates the hull below a line drawn parallel to and at least 150 millimeters (6 inches) above the deepest load waterline must have means to prevent water from entering the vessel if the pipe fractures or otherwise fails.

(d) A positive action valve or cock that is located as close as possible to the hull is an acceptable means for complying with paragraph (c) of this section.

(e) If an inlet or discharge pipe is inaccessible, the means for complying with paragraph (c) of this section must be a shut-off valve that is:

(1) Operable from the weather deck or any other accessible location above the bulkhead deck; and

(2) Labeled at the operating point for identity and direction of closing.

(f) Any connecting device or valve in a hull penetration must not be cast iron.

(g) Each plug cock in an inlet or discharge pipe must have a means, other than a cotter pin, to prevent its loosening or removal from the body.

**§ 179.360 Watertight integrity.**

(a) A hatch exposed to the weather must be watertight, except that the following hatches may be weather-tight:

(1) A hatch on a watertight trunk that extends at least 305 millimeters (12 inches) above the weather deck;

(2) A hatch in a cabin top; and

(3) A hatch on a vessel that operates only on protected waters.

(b) A hatch cover must:

(1) Have securing devices; and

(2) Be attached to the hatch frame or coaming by hinges, captive chains, or other devices of substantial strength to prevent its loss.

(c) A hatch cover that provides access to accommodation spaces must be operable from either side.

(d) A weathertight door must be provided for each opening located in a deck house or companionway. Permanent watertight coamings must be provided as follows:

(1) On a vessel on an exposed or partially protected route, a watertight coaming with a height of at least 150 millimeters (6 inches) must be provided under each weathertight door in a cockpit or a well, or on the main deck of a flush deck vessel.

(2) On a vessel on a protected route, a watertight coaming with a height of at least 75 millimeters (3 inches) must be provided under each weathertight door in a cockpit or a well.

(3) The height of the watertight coaming for a hinged watertight door need only be sufficient to accommodate the door.

**PART 180—LIFESAVING EQUIPMENT AND ARRANGEMENTS**

**Subpart A—General Provisions**

Sec.

180.10 Applicability to vessels on an international voyage.

180.15 Applicability to existing vessels.

180.25 Additional requirements.

**Subpart B—Emergency Communications**

180.64 Emergency Position Indicating Radiobeacons (EPIRB).

180.68 Distress flares and smoke signals.

**Subpart C—Ring Life Buoys and Life Jackets**

180.70 Ring life buoys.

180.71 Life jackets.

180.72 Personal flotation devices carried in addition to life jackets.

180.75 Life jacket lights.

180.78 Stowage of life jackets.

**Subpart D—Survival Craft Arrangements and Equipment**

180.130 Stowage of survival craft.

180.137 Stowage of life floats and buoyant apparatus.

## § 180.10

- 180.150 Survival craft embarkation arrangements.  
180.175 Survival craft equipment.

### Subpart E—Number and Type of Survival Craft

- 180.200 Survival craft—general.  
180.202 Survival craft—vessels operating on oceans routes.  
180.204 Survival craft—vessels operating on coastwise routes.  
180.205 Survival craft—vessels operating on limited coastwise routes.  
180.206 Survival craft—vessels operating on Great Lakes routes.  
180.207 Survival craft—vessels operating on lakes, bays, and sounds routes.  
180.208 Survival craft—vessels operating on rivers routes.  
180.210 Rescue boats.

AUTHORITY: 46 U.S.C. 2104, 3306; E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp., p. 277; Department of Homeland Security Delegation No. 0170.1.

SOURCE: CGD 85-080, 61 FR 975, Jan. 10, 1996, unless otherwise noted.

### Subpart A—General Provisions

#### § 180.10 Applicability to vessels on an international voyage.

A vessel on an international voyage subject to the International Convention for the Safety of Life at Sea, 1974, (SOLAS) must meet the requirements in subchapter W of this chapter for passenger vessels in the same service, instead of the requirements of this part.

[CGD 85-080, 62 FR 51357, Sept. 30, 1997]

#### § 180.15 Applicability to existing vessels.

An existing vessel must comply with the requirements of this part except as otherwise specified by this section.

(a) A vessel that meets the following requirements shall be considered in compliance with the subdivision requirements contained in §§ 180.202, 180.204, 180.205, 180.206, 180.207 and 180.208:

(1) The vessel was constructed before March 11, 2001.

(2) The vessel is of not more than 19.8 meters (65 feet) in length and carries not more than 49 passengers;

(3) The vessel meets the standards for collision bulkheads in § 179.310 of this chapter; and

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(4) The vessel meets the standards for one-compartment subdivision in §§ 179.220 and 179.320 of this chapter, at least in way of the engine room and lazarette.

(b) Each inflatable liferaft, inflatable buoyant apparatus, life float, and buoyant apparatus on the vessel on March 11, 1996, may be used to meet the requirements of this part for these survival craft as long as the survival craft is continued in use on the vessel, and is in good and serviceable condition.

(c) An existing vessel need not comply with § 180.78(a)(4).

(d) An existing vessel must comply with § 180.210 or may comply with the regulations for rescue boats that were in effect for the vessel prior to March 11, 1996.

[CGD 85-080, 61 FR 975, Jan. 10, 1996; 61 FR 24464, May 15, 1996, as amended by USCG-2012-0832, 77 FR 59789, Oct. 1, 2012]

#### § 180.25 Additional requirements.

(a) Each item of lifesaving equipment carried on board a vessel but not required under this part, must be approved by the Commandant.

(b) The cognizant Officer in Charge, Marine Inspection (OCMI) may require a vessel to carry specialized or additional lifesaving equipment if:

(1) The OCMI determines the conditions of the voyage render the requirements of this part inadequate; or

(2) The vessel is operated in Arctic, Antarctic, or other severe conditions not covered under this part.

### Subpart B—Emergency Communications

#### § 180.64 Emergency Position Indicating Radiobeacons (EPIRB).

Each vessel that operates on the high seas, or that operates beyond three miles from the coastline of the Great Lakes, must have on board a FCC Type Accepted Category 1, 406 MHz EPIRB, installed to automatically float free and activate.

#### § 180.68 Distress flares and smoke signals.

(a) *Oceans, coastwise, limited coastwise, and Great Lakes routes.* A vessel on an oceans, coastwise, limited coastwise, or Great Lakes route must carry—

(1) Six hand red flare distress signals approved in accordance with § 160.021 in subchapter Q of this chapter, or other standard specified by the Commandant, including, but not limited to, approval series 160.121; and

(2) Six hand orange smoke distress signals approved in accordance with § 160.037 in subchapter Q of this chapter, or other standard specified by the Commandant.

(b) *Lakes, bays, and sounds, and rivers routes.* A vessel on a lakes, bays, and sounds, or rivers route must carry:

(1) Three hand red flare distress signals approved in accordance with § 160.021 in subchapter Q of this chapter, or other standard specified by the Commandant; and

(2) Three hand orange smoke distress signals approved in accordance with § 160.037 in subchapter Q of this chapter, or other standard specified by the Commandant.

(c) *Substitutions.* (1) A rocket parachute flare approved in accordance with § 160.036 in subchapter Q of this chapter, or other standard specified by the Commandant may be substituted for any of the hand red flare distress signals required under paragraph (a) or (b) of this section.

(2) One of the following may be substituted for any of the hand orange smoke distress signals required under paragraph (a) or (b) of this section:

(i) A rocket parachute flare approved in accordance with § 160.036 in subchapter Q of this chapter, or other standard specified by the Commandant.

(ii) A hand red flare distress signal approved in accordance with § 160.021 in subchapter Q of this chapter, or other standard specified by the Commandant, including, but not limited to, approval series 160.121.

(iii) A floating orange smoke distress signal approved in accordance with § 160.022 in subchapter Q of this chapter, or other standard specified by the Commandant, including, but not limited to, approval series 160.122.

(d) *Exemption for vessels on short runs.* A vessel operating on short runs limited to approximately 30 minutes away from the dock is not required to carry distress flares and smoke signals under this section.

(e) *Stowage.* Each flare carried to meet this section must be stowed in one of the following:

(1) A portable watertight container marked as required by § 185.614 of this chapter, carried at the operating station; or

(2) A pyrotechnic locker secured above the freeboard deck, away from heat, in the vicinity of the operating station.

[CGD 85-080, 61 FR 975, Jan. 10, 1996; 61 FR 20557, May 7, 1996, as amended at 62 FR 51357, Sept. 30, 1997; USCG-2015-0867, 80 FR 62470, Oct. 16, 2015]

### Subpart C—Ring Life Buoys and Life Jackets

#### § 180.70 Ring life buoys.

(a) A vessel must have one or more ring life buoys as follows:

(1) A vessel of not more than 7.9 meters (26 feet) in length must carry a minimum of one life buoy of not less than 510 millimeters (20 inches) in diameter;

(2) A vessel of more than 7.9 meters (26 feet) in length, but not more than 19.8 meters (65 feet), must carry a minimum of one life buoy of not less than 610 millimeters (24 inches) in diameter; and

(3) A vessel of more than 19.8 meters (65 feet) in length must carry a minimum of three life buoys of not less than 610 millimeters (24 inches) in diameter.

(b) Each ring life buoy on a vessel must:

(1) Be approved in accordance with § 160.050 in subchapter Q of this chapter, or other standard specified by the Commandant, including, but not limited to, approval series 160.150;

(2) Be readily accessible;

(3) Be stowed in a way that it can be rapidly cast loose;

(4) Not be permanently secured in any way; and

(5) If on a vessel on an oceans or coastwise route, be orange in color.

(c) At least one ring life buoy must be fitted with a lifeline. If more than one ring life buoy is carried, at least one must not have a lifeline attached. Each lifeline on a ring life buoy must:

(1) Be buoyant;

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(2) Be of at least 18.3 meters (60 feet) in length;

(3) Be non-kinking;

(4) Have a diameter of at least 7.9 millimeters ( $\frac{5}{16}$  inch);

(5) Have a breaking strength of at least 5 kilonewtons (1,124 pounds); and

(6) Be of a dark color if synthetic, or of a type certified to be resistant to deterioration from ultraviolet light.

(d) A vessel must carry one floating waterlight, unless it is limited to daytime operation, in which case no floating waterlight is required.

(1) Each floating waterlight must be approved in accordance with §161.010 in subchapter Q of this chapter, or other standard specified by the Commandant, including, but not limited to, approval series 160.110.

(2) Each ring life buoy with a floating waterlight must have a lanyard of at least 910 millimeters (3 feet) in length, but not more than 1,830 millimeters (6 feet), securing the waterlight around the body of the ring life buoy.

(3) Each floating waterlight installed after March 11, 1997, on a vessel carrying only one ring buoy, must be attached to the lanyard with a corrosion-resistant clip. The clip must have a strength of at least 22.7 kilograms (50 pounds), and allow the waterlight to be quickly disconnected from the ring life buoy.

[CGD 85-080, 61 FR 975, Jan. 10, 1996; 61 FR 20557, May 7, 1996, as amended by CGD 97-057, 62 FR 51050, Sept. 30, 1997; 62 FR 51357, Sept. 30, 1997; USCG-2015-0867, 80 FR 62470, Oct. 16, 2015]

### § 180.71 Life jackets.

(a) An adult life jacket must be provided for each person carried on board a vessel.

(b) In addition, a number of child size life jackets equal to at least 10% of the number of persons permitted on board must be provided, or such greater number as necessary to provide a life jacket for each person being carried that is smaller than the lower size limit of the adult life jackets provided to meet this section, except that:

(1) Child-size life jackets are not required if the vessel's Certificate of Inspection is endorsed for the carriage of adults only; or

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(2) When all "extended size" life preservers (those with a lower size limit for persons of 1,195 millimeters (47 inches) in height or weighing 20.4 kilograms (45 pounds)) are carried on board, a minimum of only 5% additional child size devices need be carried.

(c) Except as allowed by paragraph (d) of this section, each life jacket must be approved in accordance with either §160.002, §160.005, or §160.055 in subchapter Q of this chapter, or other standard specified by the Commandant, including, but not limited to, approval series 160.155 or 160.176.

(d) Cork and balsa wood life jackets previously approved in accordance with §106.003, or 160.004 in subchapter Q of this section, on board an existing vessel prior to March 11, 1996, may continue to be used to meet the requirements of this section until March 11, 1999, provided the life jackets are maintained in good and serviceable condition.

(e) Each life jacket carried on board the vessel must be marked in accordance with §185.604 of this chapter.

[CGD 85-080, 61 FR 975, Jan. 10, 1996; 61 FR 24464, May 15, 1996, as amended by CGD 97-057, 62 FR 51050, Sept. 30, 1997; 62 FR 51357, Sept. 30, 1997; USCG-2015-0867, 80 FR 62470, Oct. 16, 2015]

### § 180.72 Personal flotation devices carried in addition to life jackets.

(a) Equipment carried under this section is not acceptable in lieu of any portion of the required number of approved life jackets and must not be substituted for the approved life jackets required to be worn during drills and emergencies.

(b) Wearable marine buoyant devices that include "ski vests," "boating vests," and "fishing vests," approved in accordance with §160.064 in subchapter Q of this chapter, or other standard specified by the Commandant, may be carried as additional equipment.

(c) Buoyant work vests approved in accordance with §160.053 in subchapter Q of this chapter, or other standard specified by the Commandant, may be carried as additional equipment for use of persons working near or over the water.



(d) Commercial hybrid personal flotation devices (PFD) approved in accordance with §160.077 of this chapter, or other standard specified by the Commandant, may be carried as additional equipment for use of persons working near or over the water. Each commercial hybrid PFD must be:

(1) Used, stowed, and maintained in accordance with the procedures set out in the manual required for these devices under §160.077–29 in subchapter Q of this chapter and any limitation(s) marked on them; and

(2) Of the same or similar design and have the same method of operation as each other hybrid PFD carried on board.

#### § 180.75 Life jacket lights.

(a) Each life jacket carried on a vessel on oceans, coastwise, or Great Lakes route, must have a life jacket light approved in accordance with §161.012 in subchapter Q of this chapter, or other standard specified by the Commandant, including, but not limited to, approval series 160.112. Each life jacket light must be securely attached to the front shoulder area of the life jacket.

(b) Notwithstanding the requirements of paragraph (a) of this section, life jacket lights are not required for life jackets on:

(1) Ferries; and

(2) Vessels with Certificates of Inspection endorsed only for routes that do not extend more than 20 miles from a harbor of safe refuge.

[CGD 85–080, 61 FR 975, Jan. 10, 1996, as amended by USCG–2015–0867, 80 FR 62470, Oct. 16, 2015]

#### § 180.78 Stowage of life jackets.

(a) *General.* Unless otherwise stated in this section, life jackets must be stored in convenient places distributed throughout accommodation spaces.

(1) Each stowage container for life jackets must not be capable of being locked. If practicable, the container must be designed to allow the life jackets to float free.

(2) Each life jacket kept in a stowage container must be readily available.

(3) Each life jacket stowed overhead must be supported in a manner that allows quick release for distribution.

(4) If life jackets are stowed more than 2,130 millimeters (7 feet) above the deck, a means for quick release must be provided and must be capable of operation by a person standing on the deck.

(5) Each child size life jacket must be stowed in a location that is appropriately marked and separated from adult life jackets so the child size life jackets are not mistaken for adult life jackets.

(b) *Additional personal flotation devices.* The stowage locations of the personal flotation devices carried in addition to life jackets under §180.72, must be separate from the life jackets, and such as not to be easily confused with that of the life jackets.

### Subpart D—Survival Craft Arrangements and Equipment

#### § 180.130 Stowage of survival craft.

(a) Each survival craft must be:

(1) Secured to the vessel by a painter with a float-free link permanently attached to the vessel except that a float-free link is not required if the vessel operates only on waters not as deep as the length of the painter;

(2) Stowed so that when the vessel sinks the survival craft floats free and, if inflatable, inflates automatically;

(3) Stowed in a position that is readily accessible to crew members for launching, or else provided with a remotely operated device that releases the survival craft into launching position or into the water;

(4) Stowed in a way that permits manual release from its securing arrangements;

(5) Ready for immediate use so that crew members can carry out preparations for embarkation and launching in less than 5 minutes;

(6) Provided with means to prevent shifting;

(7) Stowed in a way that neither the survival craft nor its stowage arrangements will interfere with the embarkation and operation of any other survival craft at any other launching station;

(8) Stowed in a way that any protective covers will not interfere with launching and embarkation;

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(9) Fully equipped as required under this part; and

(10) Stowed, as far as practicable, in a position sheltered from breaking seas and protected from damage by fire.

(b) A hydrostatic release unit when used in a float-free arrangement must be approved under approval series 160.062 or 160.162 or other standard specified by the Commandant.

(c) A mechanical, manually operated device to assist in launching a survival craft must be provided if:

(1) The survival craft weights more than 90.7 kilograms (200 pounds); and

(2) The survival craft requires lifting more than 300 vertical millimeters (one vertical foot) to be launched.

[CGD 85-080, 61 FR 975, Jan. 10, 1996, as amended at 62 FR 51357, Sept. 30, 1997; 62 FR 64306, Dec. 5, 1997]

**§ 180.137 Stowage of life floats and buoyant apparatus.**

(a) In addition to meeting §180.130, each life float and buoyant apparatus must be stowed as required under this section,

(b) The float-free link required by §180.130(a)(1) must be:

(1) Certified to meet §160.073 in subchapter Q of this chapter, or other standard specified by the Commandant;

(2) Of proper strength for the size of the life float or buoyant apparatus as indicated on its identification tag; and

(3) Secured to the painter at one end and to the vessel on the other end.

(c) The means used to attach the float-free link to the vessel must:

(1) Have a breaking strength of at least the breaking strength of the painter;

(2) If synthetic, be of a dark color or of a type certified to be resistant to deterioration from ultraviolet light; and

(3) If metal, be corrosion resistant.

(d) If the life float or buoyant apparatus does not have a painter attachment fitting, a means for attaching the painter must be provided by a wire or line that:

(1) Encircles the body of the device;

(2) Will not slip off;

(3) Has a breaking strength that is at least the strength of the painter; and

(4) If synthetic, is of a dark color or is of a type certified to be resistant to deterioration from ultraviolet light.

(e) If the vessel carries more than one life float or buoyant apparatus in a group with each group secured by a single painter:

(1) The combined weight of each group of life floats and buoyant apparatus must not exceed 181 kilograms (400 pounds);

(2) Each group of life floats and buoyant apparatus is considered a single survival craft for the purposes of §180.130(c);

(3) Each life float and buoyant apparatus must be individually attached to the painter by a line meeting §180.175(f)(3) (ii), (iii), and (iv) and long enough that each life float or buoyant apparatus can float without contacting any other life float or buoyant apparatus in the group; and

(4) The strength of the float-free link under paragraph (b)(2) of this section and the strength of the painter under §180.175(f)(3)(ii) must be determined by the combined capacity of the group of life floats and buoyant apparatus.

(f) Life floats and buoyant apparatus must not be stowed in tiers more than 1,220 millimeters (4 feet) high. When stowed in tiers, the separate units must be kept apart by spacers.

[CGD 85-080, 61 FR 975, Jan. 10, 1996; 61 FR 20557, May 7, 1996, as amended by USCG-2013-0671, 78 FR 60164, Sept. 30, 2013]

**§ 180.150 Survival craft embarkation arrangements.**

(a) A launching appliance described in paragraph (c) of this section, or a marine evacuation system approved under approval series 160.175, must be provided for each inflatable liferaft and inflatable buoyant apparatus when either—

(1) The embarkation station for the survival craft is on a deck more than 4.5 meters (15 feet) above the waterline; or

(2) The inflatable liferaft and inflatable buoyant apparatus is boarded prior to being placed in the water.

(b) An embarkation ladder, approved in accordance with §160.017 in subchapter Q of this chapter, or other standard specified by the Commandant, must be at each embarkation station if the distance from the deck on which an embarkation station is located to the

vessel's lightest operating waterline is more than 3,050 millimeters (10 feet).

(c) Each launching appliance for a davit-launched liferaft must include an automatic disengaging apparatus approved under 46 CFR part 160, subpart 160.170 and be either—

(1) A davit approved under 46 CFR part 160, subpart 160.132 for use with a liferaft, with a winch approved under 46 CFR part 160, subpart 160.115 for use with a liferaft; or

(2) A launching appliance approved on or before November 10, 2011 under approval series 160.163.

[CGD 85-080, 61 FR 975, Jan. 10, 1996, as amended by CGD 97-057, 62 FR 51050, Sept. 30, 1997; 62 FR 51357, Sept. 30, 1997; USCG-2010-0048, 76 FR 63015, Oct. 11, 2011; 76 FR 70062, Nov. 10, 2011]

#### § 180.175 Survival craft equipment.

(a) *General.* Each item of survival craft equipment must be of good quality, and efficient for the purpose it is intended to serve. Unless otherwise stated in this section, each item of equipment carried, whether required under this section or not, must be secured by lashings, stored in lockers, compartments, brackets, or have equivalent mounting or storage arrangements that do not:

- (1) Reduce survival craft capacity;
- (2) Reduce space available to the occupants;
- (3) Interfere with launching, recovery, or rescue operations; or
- (4) Adversely affect seaworthiness of the survival craft.

(b) *Inflatable liferafts.* Each inflatable liferaft must have one of the following equipment packs as shown by the markings on its container:

- (1) Safety of Life at Sea (SOLAS) B Pack; or
- (2) SOLAS A Pack.

(c) *Inflatable buoyant apparatus.* Each inflatable buoyant apparatus must be equipped in accordance with the manufacturer's approved servicing manual.

(d) *Life floats.* Each life float must be fitted with a lifeline, pendants, two paddles, a painter, and a light.

(e) *Buoyant apparatus.* Each buoyant apparatus must be fitted with a lifeline, pendants, a painter, and a light.

(f) *Equipment specifications for life floats and buoyant apparatus.* The

equipment required for lifefloats and buoyant apparatus must meet the following specifications:

(1) *Lifeline and pendants.* The lifeline and pendants must be as furnished by the manufacturer with the approved life float or buoyant apparatus. Replacement lifelines and pendants must meet the requirements in Subpart 160.010 of this chapter.

(2) *Paddle.* Each paddle must be of at least 1,220 millimeters (4 feet) in length, lashed to the life float to which it belongs and buoyant.

(3) *Painter.* The painter must:

(i) Be of at least 30.5 meters (100 feet) in length, but not less than 3 times the distance between the deck where the life float or buoyant apparatus it serves is stowed and the lowest load waterline of the vessel;

(ii) Have a breaking strength of at least 680 kilograms (1,500 pounds), except that if the capacity of the life float or buoyant apparatus is 50 persons or more, the breaking strength must be at least 1,360 kilograms (3,000 pounds);

(iii) Be of a dark color if synthetic, or of a type certified to be resistant to deterioration from ultraviolet light; and

(iv) Be stowed in such a way that it runs out freely when the life float or buoyant apparatus floats away from a sinking vessel.

(4) *Light.* The light must be a floating waterlight approved under approval series 161.010 or other standard specified by the Commandant. The floating waterlight must be attached around the body of the life float or buoyant apparatus by a 10 mm (3/8 inch) lanyard, resistant to deterioration from ultraviolet light, and at least 5.5 meters (18 feet) in length.

(g) *Other survival craft.* If survival craft other than inflatable liferafts, life floats, inflatable buoyant apparatus, and buoyant apparatus are carried on the vessel, such as lifeboats or rigid liferafts, they must be installed, arranged, and equipped as required under subchapter H (Passenger Vessels) of this chapter for passenger vessels on the same route.

[CGD 85-080, 61 FR 975, Jan. 10, 1996, as amended at 62 FR 51357, Sept. 30, 1997]

**Subpart E—Number and Type of Survival Craft**

**§ 180.200 Survival craft—general.**

(a) Each survival craft required on a vessel by this part must meet one of the following:

(1) For an inflatable liferaft—Approved under approval series 160.151 or other standard specified by the Commandant, with the applicable equipment pack, as determined by the cognizant OCMI. Each inflatable liferaft required on a vessel by this part must have a capacity of 6 persons or more. Inflatable liferafts may be substituted for inflatable buoyant apparatus or life floats required under this section;

(2) For a life float—Approved under approval series 160.027 or other standard specified by the Commandant. Buoyant apparatus may be used to meet requirements for life floats if the buoyant apparatus was installed on board the vessel on or before March 11, 1996, and if the buoyant apparatus remains in good and serviceable condition;

(3) For an inflatable buoyant apparatus—Approved under approval series 160.010 or other standard specified by the Commandant. Inflatable buoyant apparatus may be substituted for life floats required under this section.

(4) For a buoyant apparatus—Approved under approval series 160.010 or other standard specified by the Commandant. An existing buoyant apparatus may not be used to satisfy the requirements for life floats on existing vessels wishing to upgrade the total number of passengers carried on an oceans route.

(b) If the vessel carries a small boat or boats, the capacity of these boats may be counted toward life float capacity required by this part. Such boats must meet the requirements for safe loading and flotation in 33 CFR part 183, and must meet the stowage, launching, and equipment requirements in this part for the survival craft they replace.

(c) A summary of survival craft requirements is provided in Table 180.200(c).

TABLE 180.200(c)

Route	Survival craft requirements
Oceans .....	(a) cold water <sup>1</sup> —100% IBA—§ 180.202(a)(1). (i) w/subdivision <sup>2</sup> —100% LF—§ 180.202(a)(2). (b) warm water <sup>3</sup> —67% IBA <sup>4</sup> —§ 180.202(b).
Coastwise .....	(a) wood vsls in cold water. (i) 67% IBA—§ 180.204(a)(1). (ii) w/subdivision—100% LF—§ 180.204(a)(2). (b) nonwood and vsls operating in warm water. (i) 100% LF—§ 180.204 (b) and (c). (c) within three miles of shore. (i) w/o subdivision—100% LF—§ 180.204(d)(1). (ii) w/subdivision—50% LF—§ 180.204(d)(2). (iii) w/float free 406 MHz EPIRB—50% LF—§ 180.204(d)(3).
Limited Coastwise (Not more than 20 miles from a harbor of safe refuge).	(a) wood vsls in cold water. (i) 67% IBA—§ 180.205(a)(1). (ii) w/subdivision—100% LF—§ 180.205(a)(2). (b) nonwood vessels in cold water—100% LF—§ 180.205(b). (c) within three miles of shore—§ 180.205(d). (A) w/o subdivision—100% LF. (B) w/subdivision—50% LF. (C) w/float free 406 MHz EPIRB—50% LF. (d) vessels operating in warm water. (i) 50% LF—§ 180.205(c). (ii) within three miles of shore. (A) w/o subdivision—50% LF—§ 180.205(e)(1). (B) w/subdivision—NONE—§ 180.205(e)(2). (C) w/float free 406 MHz EPIRB—NONE—§ 180.205(e)(3).
Great Lakes .....	(a) same as Limited Coastwise (a) & (b)—§ 180.206(a). (b) within one mile of shore—NONE <sup>5</sup> —§ 180.206(b).
Lakes, Bays, & Sounds <sup>6,7</sup> .....	(a) wood vsls in cold water. (i) 100% LF—§ 180.207(a)(1). (ii) w/subdivision—50% LF—§ 180.207(a)(2). (b) nonwood—50% LF—§ 180.207(b). (c) within 1 mile of shore—NONE—§ 180.207(e). (d) warm water—NONE—§ 180.207(c).
RIVERS <sup>7,8</sup> .....	(a) cold water.

TABLE 180.200(c)—Continued

Route	Survival craft requirements
	(i) w/o subdivision—50% LF—§ 180.208(a)(1). (ii) w/subdivision—NONE—§ 180.208(a)(2). (iii) within one mile of shore—NONE—§ 180.208(d). (b) warm water—NONE—§ 180.208(b)

Abbreviations used:  
 ILR = inflatable liferaft  
 IBA = Inflatable Buoyant Apparatus  
 LF = Life Float. As allowed by § 180.15(b) any buoyant apparatus in use on an existing vessel on March 11, 1996, may be used to meet the requirements for LF as long as the buoyant apparatus is in good and serviceable condition.

Footnotes:  
<sup>1</sup> Cold water means the cognizant OCMI has determined the monthly mean low temperature of the water is ≤15 °C (59 °F).  
<sup>2</sup> Vessels ≤65 ft carrying ≤49 passengers built before March 11, 2001, may meet the collision bulkhead standards in § 179.310 and one-compartment subdivision standards in §§ 179.220 and 179.320 at least in way of the engine room and lazarette in lieu of the subdivision requirements contained in this part.  
<sup>3</sup> Warm water means the cognizant OCMI has determined the monthly mean low temperature of the water is >15 °C (59 °F).  
<sup>4</sup> Vessels operating in warm water may substitute 100% LF in lieu of 67% IBA—§ 180.202(d).  
<sup>5</sup> OCMI may reduce primary lifesaving for seasonal or ferry type operations on the Great Lakes—§ 180.206(b).  
<sup>6</sup> Shallow water exception—§ 180.207(e).  
<sup>7</sup> OCMI may reduce survival craft requirements based upon the route, communications schedule and participation in VTS—§ 180.207(f) and § 180.208(e).  
<sup>8</sup> Shallow water exception—§ 180.208(e)C.

[CGD 85-080, 61 FR 975, Jan. 10, 1996, as amended at 62 FR 51357, Sept. 30, 1997; USCG-2012-0832, 77 FR 59789, Oct. 1, 2012]

#### § 180.202 Survival craft—vessels operating on oceans routes.

(a) Each vessel certificated to operate on an oceans route in cold water must either:

(1) Be provided with inflatable buoyant apparatus of an aggregate capacity that will accommodate at least 100% of the total number of persons permitted on board; or

(2) Meet either the standards for collision bulkheads in § 179.310 in this chapter or § 171.085 in subchapter S of this chapter, and the standards for subdivision in §§ 179.220 and 179.320 of this chapter, or the standards for subdivision and damaged stability in §§ 171.070 through 171.073 and 171.080 in subchapter S of this chapter, as appropriate, and be provided with life floats of an aggregate capacity that will accommodate at least 100% of the total number of persons permitted on board.

(b) Each vessel certificated to operate on an oceans route in warm water must either:

(1) Be provided with inflatable buoyant apparatus of an aggregate capacity that will accommodate at least 67% of the total number of persons permitted on board; or

(2) Be provided with life floats of an aggregate capacity that will accommodate at least 100% of the total number of persons permitted on board.

#### § 180.204 Survival craft—vessels operating on coastwise routes.

(a) Except as allowed by paragraph (c) of this section, each vessel constructed of wood certificated to operate on a coastwise route in cold water must either:

(1) Be provided with inflatable buoyant apparatus of an aggregate capacity that will accommodate at least 67% of the total number of persons permitted on board; or

(2) Meet either the standards for collision bulkheads in § 179.310 of this chapter or § 171.085 in subchapter S of this chapter and the standards for subdivision in §§ 179.220 and 179.320 of this chapter, or the standards for subdivision and damaged stability in §§ 171.070 through 171.073 and 171.080 in subchapter S of this chapter, as appropriate, and be provided with life floats of an aggregate capacity that will accommodate at least 100% of the total number of persons permitted on board.

(b) Each vessel constructed of a material other than wood certificated to operate on a coastwise route in cold water must be provided with life floats of an aggregate capacity that will accommodate at least 100% of the total number of persons permitted on board.

(c) Except as allowed by paragraph (d) of this section, each vessel certificated to operate on a coastwise route in warm water must be provided with

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life floats of an aggregate capacity that will accommodate at least 100% of the total number of persons permitted on board.

(d) Each vessel certificated to operate on a coastwise route within three miles of land must either:

(1) Be provided with life floats of an aggregate capacity that will accommodate at least 100% of the total number of persons permitted on board; or

(2) Meet either the standards for collision bulkheads in §179.310 of this subchapter or §171.085 in subchapter S of this chapter, and the standards for subdivision in §§179.220 and 179.320 of this chapter, or the standards for subdivision and damaged stability in §§171.070 through 171.073 and 171.080 in subchapter S of this chapter, as appropriate, and be provided with life floats of an aggregate capacity that will accommodate at least 50% of the total number of persons permitted on board.

(3) Have on board a FCC Type Accepted Category 1 406 MHz EPIRB, installed to automatically float free and activate, and be provided with life floats of an aggregate capacity that will accommodate at least 50% of the total number of persons permitted on board.

[CGD 85–080, 61 FR 975, Jan. 10, 1996; 61 FR 20557, May 7, 1996]

**§ 180.205 Survival craft—vessels operating on limited coastwise routes.**

(a) Except as allowed by paragraph (d) of this section, each vessel constructed of wood certificated to operate on a limited coastwise route in cold water must either:

(1) Be provided with inflatable buoyant apparatus of an aggregate capacity that will accommodate at least 67% of the total number of persons permitted on board; or

(2) Meet either the standards for collision bulkheads in §179.310 of this chapter or §171.085 in subchapter S of this chapter, and the standards for subdivision in §§179.220 and 179.320 of this chapter, or the standards for subdivision and damaged stability in §§171.070 through 171.073 and 171.080 in subchapter S of this chapter, as appropriate, and be provided with life floats of an aggregate capacity that will accommodate at least 100% of the total number of persons permitted on board.

(b) Except as allowed by paragraph (d) of this section, each vessel constructed of a material other than wood certificated to operate on a limited coastwise route in cold water must be provided with life floats of an aggregate capacity that will accommodate at least 100% of the total number of persons permitted on board.

(c) Except as allowed by paragraph (e) of this section, each vessel certificated to operate on a limited coastwise route in warm water must be provided with life floats of an aggregate capacity that will accommodate at least 50% of the total number of persons permitted on board.

(d) Each vessel certificated to operate on a limited coastwise route within three miles of land in cold water must be provided with the survival craft required by §180.204(d).

(e) Each vessel certificated to operate on a limited coastwise route within three miles of land in warm water must either:

(1) Be provided with life floats of an aggregate capacity that will accommodate at least 50% of the total number of persons permitted on board; or

(2) Meet either the standards for collision bulkheads in §179.310 of this chapter or §171.085 in subchapter S of this chapter, and the standards for subdivision in §§179.220 and 179.320 of this chapter, or the standards for subdivision and damaged stability in §§171.070 through 171.073 and 171.080 in subchapter S of this chapter, as appropriate, and not be required to carry survival craft; or

(3) Have on board a FCC Type Accepted Category 1 406 MHz EPIRB, installed to automatically float free and activate, and not be required to carry survival craft.

**§ 180.206 Survival craft—vessels operating on Great Lakes routes.**

(a) Except as allowed by paragraph (b) of this section, each vessel certificated to operate on a Great Lakes route must be provided with the survival craft required by §180.205 (a) through (e), as appropriate.

(b) Each vessel certificated to operate on a Great Lakes route within one mile of land is not required to carry survival craft if the OCMI determines

that it is safe to do so, taking into consideration the vessel's scope of operation, hazards of the route, and availability of assistance.

[CGD 85-080, 61 FR 975, Jan. 10, 1996, as amended at 62 FR 51357, Sept. 30, 1997]

**§ 180.207 Survival craft—vessels operating on lakes, bays, and sounds routes.**

(a) Except as allowed by paragraphs (d), (e) and (f) of this section, each vessel constructed of wood certificated to operate on a lakes, bays, and sounds route in cold water must either:

(1) Be provided with life floats of an aggregate capacity that will accommodate at least 100% of the total number of persons permitted on board; or

(2) Meet either the standards for collision bulkheads in §179.310 of this chapter or §171.085 in subchapter S of this chapter, and the standards for subdivision in §§179.220 and 179.320 of this chapter, or the standards for subdivision and damaged stability in §§171.070 through 171.073 and 171.080 in subchapter S of this chapter, as appropriate, and be provided with life floats of an aggregate capacity that will accommodate at least 50% of the total number of persons permitted on board.

(b) Except as allowed by paragraphs (e) and (f) of this section, each vessel constructed of a material other than wood certificated to operate on a lakes, bays, and sounds route in cold water must be provided with life floats of an aggregate capacity that will accommodate at least 50% of the total number of persons permitted on board.

(c) A vessel certificated to operate on a lakes, bays, and sounds route in warm water is not required to carry survival craft.

(d) A vessel certificated to operate on lakes, bays, and sounds route within one mile of land is not required to carry survival craft.

(e) For a vessel certificated to operate on a lakes, bays, and sounds route in shallow water where the vessel cannot sink deep enough to submerge the topmost passenger deck or where survivors can wade ashore, the cognizant OCMI may waive a requirement for life floats, if the OCMI determines that it is safe to do so, taking into consideration the vessel's scope of operation,

hazards of the route, and availability of assistance.

(f) Each vessel operating with a set schedule on a specific route that does not take it more than 20 nautical miles from a harbor of safe refuge, and that maintains a 15 minute radio communications schedule with an operations base, or participates in a Vessel Traffic Service (VTS), may be granted a reduction in the survival craft requirements of this section if the cognizant OCMI is satisfied that a sufficient level of safety exists.

[CGD 85-080, 61 FR 975, Jan. 10, 1996; 61 FR 24464, May 15, 1996, as amended by CGD 97-057, 62 FR 51050, Sept. 30, 1997; USCG-2014-0688, 79 FR 58288, Sept. 29, 2014]

**§ 180.208 Survival craft—vessels operating on rivers routes.**

(a) Except as allowed by paragraphs (c), (d) and (e) of this section, each vessel certificated to operate on a rivers route in cold water must either:

(1) Be provided with life floats of an aggregate capacity that will accommodate at least 50% of the total number of persons permitted on board; or

(2) Meet either the standards for collision bulkheads in §179.310 of this chapter or §171.085 in subchapter S of this chapter, and the standards for subdivision in §§179.220 and 179.320 of this chapter, or the standards for subdivision and damaged stability in §§171.070 through 171.073 and 171.080 in subchapter S of this chapter, as appropriate, and not be required to carry survival craft.

(b) A vessel certificated to operate on a rivers route in warm water is not required to carry survival craft.

(c) A vessel certificated to operate on a rivers route within one mile of land is not required to carry survival craft.

(d) For a vessel certificated to operate on a rivers route in shallow water where the vessel cannot sink deep enough to submerge the topmost passenger deck or where survivors can wade ashore, the cognizant OCMI may waive a requirement for life floats, if the OCMI determines that it is safe to do so, taking into consideration the vessel's scope of operation, hazards of the route, and availability of assistance.

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(e) Each vessel operating with a set schedule on a specific route that maintains a 15 minute radio communications schedule with an operations base, or participates in a Vessel Traffic Service (VTS), may be granted a reduction in the survival craft requirement of this section if the cognizant OCMI is satisfied that a sufficient level of safety exists.

[CGD 85-080, 61 FR 975, Jan. 10, 1996, as amended by CGD 97-057, 62 FR 51050, Sept. 30, 1997; USCG-2014-0688, 79 FR 58288, Sept. 29, 2014]

### § 180.210 Rescue boats.

(a) A vessel of more than 19.8 meters (65 feet) in length must carry at least one rescue boat unless the cognizant OCMI determines that:

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

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

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

(b) A vessel of not more than 19.8 meters (65 feet) in length is not required to carry a rescue boat unless:

(1) The vessel carries passengers on an open or partially enclosed deck; and

(2) The cognizant OCMI determines that the vessel is designed, arranged, or involved in operations so that the vessel itself cannot serve as an adequate rescue craft.

(c) 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.

(d) On a vessel of more than 19.8 meters (65 feet) in length operating on protected waters, a rescue boat approved under approval series 160.056 is acceptable in meeting the intent of this section. On a vessel of more than 19.8 meters operating on exposed or partially protected waters, a rescue boat approved under approval series 160.156 is acceptable in meeting the intent of this section. On a vessel of not more than 19.8 meters (65 feet) in

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length, a required rescue boat must be acceptable to the cognizant OCMI.

[CGD 85-080, 61 FR 975, Jan. 10, 1996, as amended at 62 FR 51357, Sept. 30, 1997; 62 FR 64306, Dec. 5, 1997]

## PART 181—FIRE PROTECTION EQUIPMENT

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AUTHORITY: 46 U.S.C. 2103, 3306; E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp., p. 277; Department of Homeland Security Delegation No. 0170.1.

SOURCE: CGD 85-080, 61 FR 982, Jan. 10, 1996, unless otherwise noted.

### Subpart A—General Provisions

#### § 181.115 Applicability; preemptive effect.

(a) Except as otherwise required by paragraphs (b) and (c) of this section, an existing vessel must comply with



the fire protection equipment regulations applicable to the vessel on March 10, 1996, or, as an alternative, the vessel may comply with the regulations in this part.

(b) An existing vessel with a hull, or a machinery space boundary bulkhead or deck, composed of wood or fiber reinforced plastic, or sheathed on the interior in fiber reinforced plastic, must comply with the requirements of § 181.400 of this part on or before March 11, 1999.

(c) New installations of fire protection equipment on an existing vessel, which are completed to the satisfaction of the cognizant Officer in Charge, Marine Inspection (OCMI) on or after March 11, 1996, must comply with the regulations of this part. Replacement of existing equipment installed on the vessel prior to March 11, 1996, need not comply with the regulations in this part.

(d) The regulations in this part have preemptive effect over State or local regulations in the same field.

[CGD 85-080, 61 FR 982, Jan. 10, 1996, as amended by USCG-2006-24797, 77 FR 33891, June 7, 2011]

#### § 181.120 Equipment installed but not required.

(a) Fire extinguishing equipment installed on a vessel in excess of the requirements of §§ 181.400 and 181.500 must be designed, constructed, installed, and maintained in accordance with a recognized industry standard acceptable to the Commandant (CG-ENG-4).

(b) Use of non-approved fire detection systems may be acceptable as excess equipment provided that—

(1) Components are listed by an independent, nationally recognized testing laboratory as set forth in 29 CFR 1910.7, and are designed, installed, tested, and maintained in accordance with an appropriate industry standard and the manufacturer's specific guidance;

(2) Installation conforms to the requirements of 46 CFR chapter I, subchapter J (Electrical Engineering), especially the hazardous location electrical installation regulations in 46 CFR 111.105; and

(3) Coast Guard plan review is completed for wiring plans.

[USCG-2012-0196, 81 FR 48299, July 22, 2016]

### Subpart B [Reserved]

### Subpart C—Fire Main System

#### § 181.300 Fire pumps.

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

(i) Of not more than 19.8 meters (65 feet) in length which is a ferry vessel;

(ii) Of not more than 19.8 meters (65 feet) in length that carries more than 49 passengers; or

(iii) Of more than 19.8 meters (65 feet) in length.

(b) On a vessel of not more than 19.8 meters (65 feet) in length carrying more than 49 passengers, and on a vessel of more than 19.8 meters (65 feet) in length, the minimum capacity of the fire pump must be 189 liters (50 gallons) per minute at a pressure of not less than 414 kPa (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 19.8 meters (65 feet) in length carrying not more than 49 passengers, the minimum capacity of the fire pump must be 38 liters (10 gallons) per minute. The fire pump must be capable of projecting a hose stream from the highest hydrant, through the hose and nozzle required by § 181.320 of this part, a distance of 7.6 meters (25 feet).

(d) A fire pump may be driven by a propulsion engine. A fire pump must be permanently connected to the fire main and may be connected to the bilge system to meet the requirements of § 182.520 of this chapter.

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

[CGD 85-080, 61 FR 982, Jan. 10, 1996, as amended at 62 FR 51358, Sept. 30, 1997]

#### § 181.310 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 firehose.

(b) Piping, valves, and fittings in a fire main system must comply with subpart G, part 182, of this chapter.

(c) Each fire hydrant must have a valve installed to allow the firehose to

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be removed while the fire main is under pressure.

(d) Spanner wrenches must be provided where a 40 millimeter (1.5 inch) diameter firehose is required by §181.320(b). Existing vessels as of July 22, 2016 have 180 days to comply with this requirement.

[CGD 85-080, 61 FR 982, Jan. 10, 1996, as amended at 62 FR 51358, Sept. 30, 1997; USCG-2012-0196, 81 FR 48299, July 22, 2016]

**§ 181.320 Fire hoses and nozzles.**

(a) A fire hose with a nozzle must be attached to each fire hydrant at all times. For fire hydrants located on open decks or cargo decks, where no protection is provided, hoses may be temporarily removed during heavy weather or cargo handling operations, respectively. Hoses so removed must be stored in nearby accessible locations.

(b) On a vessel of not more than 19.8 meters (65 feet) in length carrying more than 49 passengers, and on a vessel of more than 19.8 meters (65 feet) in length, each hose must:

(1) Be lined commercial fire hose that conforms to UL 19 (incorporated by reference, see 46 CFR 175.600) or hose that is listed and labeled by an independent laboratory recognized by the Commandant as being equivalent in performance;

(2) Be 15.25 meters (50 feet) in length and 40 millimeters (1.5 inches) in diameter; and

(3) Have fittings of brass or other suitable corrosion-resistant material that comply with NFPA 1963 (incorporated by reference, see 46 CFR 175.600) or other standard specified by the Commandant.

(c) Each fire hose on a vessel of not more than 19.8 meters (65 feet) in length carrying not more than 49 passengers must:

(1) Comply with paragraphs (b)(1) and (b)(3) of this section or be garden type hose of not less than 16 millimeters (0.625 inches) nominal inside diameter;

(2) Be of one piece not less than 7.6 meters (25 feet) and not more than 15.25 meters (50 feet) in length; and

(3) If of the garden type, be of a good commercial grade constructed of an inner rubber tube, plies of braided fabric reinforcement, and an outer cover of rubber or equivalent material, and of

sufficient strength to withstand the maximum pressure that can be produced by the fire pump. All fittings on the hose must be of suitable corrosion-resistant material.

(d) Each nozzle must be of corrosion-resistant material and be capable of being changed between a solid stream and a spray pattern. A nozzle on a vessel of not more than 19.8 meters (65 feet) in length carrying more than 49 passengers, and on a vessel of more than 19.8 meters (65 feet) in length, must:

(1) Be of a type approved in accordance with approval series 162.027; or

(2) Be of a type recognized by the Commandant as being equivalent in performance.

[CGD 85-080, 61 FR 982, Jan. 10, 1996; 61 FR 20557, May 7, 1996; 61 FR 24464, May 15, 1996, as amended at 62 FR 51358, Sept. 30, 1997; USCG-2003-16630, 73 FR 65206, Oct. 31, 2008]

**Subpart D—Fixed Fire Extinguishing and Detection Systems**

**§ 181.400 Spaces required to have fixed fire extinguishing systems.**

(a) The following spaces must be equipped with a fixed gas fire extinguishing system, in compliance with §181.410, or other fixed fire extinguishing system specifically approved by the Commandant, except as otherwise allowed by paragraph (b) of this section:

(1) A space containing propulsion machinery;

(2) A space containing an internal combustion engine of more than 37.3 kW (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 43.3 °C (110 °F) or lower;

(5) A space containing a fuel tank for gasoline or any other fuel having a flash point of 43.3 °C (110 °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, and 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 9.5 liters (2.5 gallons) capacity or greater).

(b) Alternative system types and exceptions to the requirements of paragraph (a) of this section are:

(1) A fixed gas fire extinguishing system, which is capable of automatic discharge upon heat detection, may only be installed in a normally unoccupied space with a gross volume of not more than 170 cubic meters (6,000 cubic feet);

(2) A pre-engineered fixed gas fire extinguishing system must be in compliance with §181.420 of this part and may only be installed in a normally unoccupied machinery space, a paint locker, or a storeroom containing flammable liquids (including liquors of 80 proof or higher where liquor is packaged in individual containers of 9.5 liters (2.5 gallons) capacity or greater), with a gross volume of not more than 57 cubic meters (2,000 cubic feet);

(3) A 40-B portable fire extinguisher installed outside the space may be substituted for a fixed gas fire extinguishing system in a storeroom containing flammable liquids (including liquors of 80 proof or higher where liquor is packaged in individual containers of 9.5 liters (2.5 gallons) capacity or greater) or a paint locker, with a volume of not more than 5.7 cubic meters (200 cubic feet);

(4) A space which is so open to the atmosphere that a fixed gas fire extinguishing system would be ineffective, as determined by the cognizant OCMI, is not required to have a fixed gas fire extinguishing system; and

(5) Where the amount of carbon dioxide gas required in a fixed fire extinguishing system can be supplied by one portable extinguisher or a semi-portable extinguisher, such an extinguisher may be used subject to the following:

(i) The cylinder must be installed in a fixed position outside the space protected;

(ii) The applicator must be installed in a fixed position so as to discharge into the space protected; and

(iii) Controls must be installed in an accessible location outside the space protected.

[CGD 85-080, 61 FR 982, Jan. 10, 1996, as amended at 62 FR 51358, Sept. 30, 1997; USCG-1999-6216, 64 FR 53228, Oct. 1, 1999; USCG-2012-0196, 81 FR 48299, July 22, 2016]

**§ 181.405 Spaces required to have fire detection systems.**

(a) The following spaces must be equipped with a fire detection and alarm system of an approved type installed in accordance with 46 CFR part 76, 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 43.3 °C (110 °F) or lower.

(5) A space containing a fuel tank for gasoline or any other fuel having a flash point of 43.3 °C (110 °F) or lower.

(b) All griddles, broilers, and deep fat fryers must be fitted with a grease extraction hood in compliance with §181.425.

(c) Each overnight accommodation space on a vessel with overnight accommodations for passengers must be fitted with an independent modular smoke detection and alarm unit in compliance with §181.450.

(d) An enclosed vehicle space must be fitted with an automatic sprinkler system that meets the requirements of 46 CFR part 76 and a fire detection and alarm system of an approved type that is installed in accordance with 46 CFR part 76.

(e) A partially enclosed vehicle space must be fitted with a manual sprinkler system that meets the requirements of 46 CFR part 76.

[USCG-2012-0196, 81 FR 48300, July 22, 2016]

**§ 181.410 Fixed gas fire extinguishing systems.**

(a) *General.* (1) A fixed gas fire extinguishing system aboard a vessel must

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be approved by the Commandant, and be custom engineered to meet the requirements of this section unless the system meets the requirements of § 181.420.

(2) System components must be listed and labeled by an independent laboratory. A component from a different system, even if from the same manufacturer, must not be used unless included in the approval of the installed system.

(3) System design and installation must be in accordance with the Marine Design, Installation, Operation, and Maintenance Manual approved for the system by the Commandant.

(4) A fixed gas fire extinguishing system may protect more than one space. The quantity of extinguishing agent must be at least sufficient for the space requiring the greatest quantity as determined by the requirements of paragraphs (f)(4) and (g)(2) of this section.

(b) *Controls.* (1) Controls and valves for operation of fixed gas fire extinguishing system must be:

(i) Located outside the space protected by the system; and

(ii) Not located in a space that might be inaccessible in the event of fire in the space protected by the system.

(2) Except for a normally unoccupied space of less than 170 cubic meters (6000 cubic feet), release of an extinguishing agent into a space must require two distinct operations.

(3) A system must have local manual controls at the storage cylinders capable of releasing the extinguishing agent. In addition, a normally manned space must have remote controls for releasing the extinguishing agent at the primary exit from the space.

(4) Remote controls must be located in a breakglass enclosure to preclude accidental discharge.

(5) Valves and controls must be of an approved type and protected from damage or accidental activation. A pull cable used to activate the system controls must be enclosed in conduit.

(6) A system protecting more than one space must have a manifold with a normally closed stop valve for each space protected.

(7) A gas actuated valve or device must be capable of manual override at the valve or device.

(8) A system, that has more than one storage cylinder for the extinguishing agent and that relies on pilot cylinders to activate the primary storage cylinders, must have at least two pilot cylinders. Local manual controls, in compliance with paragraph (b)(3) of this section, must be provided to operate the pilot cylinders but are not required for the primary storage cylinders.

(9) A system protecting a manned space must be fitted with an approved time delay and alarm arranged to require the alarm to sound for at least 20 seconds or the time necessary to escape from the space, whichever is greater, before the agent is released into the space. Alarms must be conspicuously and centrally located. The alarm must be powered by the extinguishing agent.

(10) A device must be provided to automatically shut down power ventilation serving the protected space and engines that draw intake air from the protected space prior to release of the extinguishing agent into the space.

(11) Controls and storage cylinders must not be in a locked space unless the key is in a breakglass type box conspicuously located adjacent to the space.

(c) *Storage space.* (1) Except as provided in paragraph (c)(2) of this section, a storage cylinder for a fixed gas extinguishing system must be:

(i) Located outside the space protected by the system; and

(ii) Not located in a space that might be inaccessible in the event of a fire in the space protected by the system.

(2) A normally unoccupied space of less than 170 cubic meters (6,000 cubic feet) may have the storage cylinders located within the space protected. When the storage cylinders are located in the space:

(i) The system must be capable of automatic operation by a heat actuator within the space; and

(ii) Have manual controls in compliance with paragraph (b) of this section except for paragraph (b)(3).

(3) A space containing a storage cylinder must be maintained at a temperature within the range from  $-30^{\circ}\text{C}$  ( $-20^{\circ}\text{F}$ ) to  $55^{\circ}\text{C}$  ( $130^{\circ}\text{F}$ ) or at another

temperature as listed by the independent laboratory and stated in the manufacturer's approved manual.

(4) A storage cylinder must be securely fastened, supported, and protected against damage.

(5) A storage cylinder must be accessible and capable of easy removal for recharging and inspection. Provisions must be available for weighing each storage cylinder in place.

(6) Where subject to moisture, a storage cylinder must be installed to provide a space of at least 51 millimeters (2 inches) between the deck and the bottom of the storage cylinder.

(7) A Halon 1301 storage cylinder must be stowed in an upright position unless otherwise listed by the independent laboratory. A carbon dioxide cylinder may not be inclined more than 30° from the vertical unless fitted with flexible or bent siphon tubes, in which case it may be inclined not more than 80° from the vertical. Cylinders for clean agent systems must be installed in an upright position unless otherwise specified in the system's instruction manual.

(8) Where a check valve is not fitted on an independent storage cylinder discharge, a plug or cap must be provided for closing the outlet resulting from storage cylinder removal.

(9) Each storage cylinder must meet the requirements of §147.60 in subchapter N of this chapter, or other standard specified by the Commandant.

(10) A storage cylinder space must have doors that open outwards or be fitted with kickout panels installed in each door.

(d) *Piping.* (1) A pipe, valve, or fitting of ferrous material must be protected inside and outside against corrosion unless otherwise approved by the Commandant. Aluminum or other low melting material must not be used for a component of a fixed gas fire extinguishing system except as specifically approved by the Commandant.

(2) A distribution line must extend at least 51 millimeters (2 inches) beyond the last orifice and be closed with a cap or plug.

(3) Piping, valves, and fittings must be securely supported, and where necessary, protected against damage.

(4) Drains and dirt traps must be fitted where necessary to prevent the accumulation of dirt or moisture and located in accessible locations.

(5) Piping must be used for no other purpose except that it may be incorporated with the fire detecting system.

(6) Piping passing through accommodation spaces must not be fitted with drains or other openings within such spaces.

(7) Installation test requirements for carbon dioxide systems. The distribution piping of a carbon dioxide fixed gas extinguishing system must be tested as required by this paragraph, upon completion of the piping installation, using only carbon dioxide, compressed air, or nitrogen gas.

(i) Piping between a storage cylinder and a stop valve in the manifold must be subjected to a pressure of 6,894 kPa (1,000 psi), except as permitted in paragraph (d)(7)(iii) of this section. Without additional gas being introduced to the system, the pressure drop must not exceed 2,068 kPa (300 psi) after two minutes.

(ii) A distribution line to a space protected by the system must be subjected to a test similar to that described in paragraph (d)(7)(i) of this section except the pressure used must be 4,136 kPa (600 psi). For the purpose of this test, the distribution piping must be capped within the space protected at the first joint between the nozzles and the storage cylinders.

(iii) A small independent system protecting a space such as a paint locker may be tested by blowing out the piping with air at a pressure of not less than 689 kPa (100 psi) instead of the tests prescribed in the paragraphs (d)(7)(i) and (d)(7)(ii) of this section.

(8) Installation test requirements for Halon 1301 systems. The distribution piping of a Halon 1301 fixed gas extinguishing system must be tested, as required by this paragraph, upon completion of the piping installation, using only carbon dioxide, compressed air, or nitrogen.

(i) When pressurizing the piping, pressure must be increased in small increments. Each joint must be subjected to a soap bubble leak test, and all joints must be leak free.

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(ii) Piping between the storage cylinders and the manifold stop valve must be subjected to a leak test conducted at a pressure of 4,136 kPa (600 psi). Without additional gas being added to the system, there must be no loss of pressure over a two minute period after thermal equilibrium is reached.

(iii) Distribution piping between the manifold stop valve and the first nozzle in the system must be capped and pneumatically tested for a period of 10 minutes at 1,034 kPa (150 psi). At the end of 10 minutes, the pressure drop must not exceed 10% of the test pressure.

(e) *Pressure relief.* When required by the cognizant OCMI, spaces that are protected by a fixed gas fire extinguishing system and that are relatively air tight, such as refrigeration spaces, paint lockers, etc., must be provided with suitable means for relieving excessive pressure within the space when the agent is released.

(f) *Specific requirements for carbon dioxide systems.* A custom engineered fixed gas fire extinguishing system, which uses carbon dioxide as the extinguishing agent, must meet the requirements of this paragraph.

(1) Piping, valves, and fittings must have a bursting pressure of not less than 41,360 kPa (6,000 psi). Piping, in nominal sizes of not more than 19 millimeters (0.75 inches), must be at least Schedule 40 (standard weight), and in nominal sizes of over 19 millimeters (0.75 inches), must be at least Schedule 80 (extra heavy).

(2) A pressure relief valve or equivalent set to relieve at between 16,550 and 19,300 kPa (2,400 and 2,800 psi) must be installed in the distribution manifold to protect the piping from over-pressurization.

(3) Nozzles must be approved by the Commandant.

(4) When installed in a machinery space, paint locker, a space containing flammable liquid stores, or a space with a fuel tank, a fixed carbon dioxide system must meet the following requirements.

(i) The quantity of carbon dioxide in kilograms (pounds) that the system must be capable of providing to a space must not be less than the gross volume

of the space divided by the appropriate factor given in Table 181.410(f)(4)(i). If fuel can drain from a space being protected to an adjacent space or if the spaces are not entirely separate, the volume of both spaces must be used to determine the quantity of carbon dioxide to be provided. The carbon dioxide must be arranged to discharge into both such spaces simultaneously.

TABLE 181.410(f)(4)(i)

Factor	Gross volume of space in cubic meters (feet)	
	Over	Not Over
0.94 (15)	.....	14 (500)
1.0 (16)	14 (500)	45 (1,600)
1.1 (18)	45 (1,600)	125 (4,500)
1.2 (20)	125 (4,500)	1400 (50,000)
1.4 (22)	1400 (50,000)	.....

(ii) The minimum size of a branch line to a space must be as noted in Table 181.410(f)(4)(ii).

TABLE 181.410(f)(4)(ii)

Maximum quantity of carbon dioxide required kg (lbs)	Minimum nominal pipe size mm (inches)
45.4 (100)	12.7 (0.5)
102 (225)	19 (0.75)
136 (300)	25 (1.0)
272 (600)	30 (1.25)
454 (1000)	40 (1.5)
1111 (2450)	50 (2.0)
1134 (2,500)	65 (2.5)
2018 (4,450)	75 (3.0)
3220 (7,100)	90 (3.5)
4739 (10,450)	100 (4.0)
6802 (15,000)	113 (4.5)

(iii) Distribution piping within a space must be proportioned from the distribution line to give proper supply to the outlets without throttling.

(iv) The number, type, and location of discharge outlets must provide uniform distribution of carbon dioxide throughout a space.

(v) The total area of all discharge outlets must not exceed 85 percent nor be less than 35 percent of the nominal cylinder outlet area or the area of the supply pipe, whichever is smaller. The nominal cylinder outlet area in square millimeters (inches) is determined by multiplying the factor 0.015 (0.0022 if using square inches) by the total capacity in kilograms (pounds) of all carbon dioxide cylinders in the system, except in no case must the outlet area be

of less than 71 square millimeters (0.110 square inches if using pounds).

(vi) The discharge of at least 85 percent of the required amount of carbon dioxide must be completed within two minutes.

(5) When installed in an enclosed ventilation system for rotating electrical propulsion equipment a fixed carbon dioxide extinguishing system must meet the following requirements.

(i) The quantity of carbon dioxide in kilograms (pounds) must be sufficient for initial and delayed discharges as required by this paragraph. The initial discharge must be equal to the gross volume of the system in cubic meters divided by 0.624 (10 if using pounds) for ventilation systems having a volume of less than 57 cubic meters (2,000 cubic feet), or divided by 0.749 (12 if using pounds) for ventilation systems having a volume of at least 57 cubic meters (2,000 cubic feet). In addition, there must be sufficient carbon dioxide available to permit delayed discharges to maintain at least a 25 percent concentration until the equipment can be stopped. If the initial discharge achieves this concentration, a delayed discharge is not required.

(ii) The piping sizes for the initial discharge must be in accordance with Table 181.410(f)(4)(ii) and the discharge of the required amount must be completed within two minutes.

(iii) Piping for the delayed discharge must not be less than 12.7 millimeters (0.5 inches) nominal pipe size, and need not meet specific requirement for discharge rate.

(iv) Piping for the delayed discharge may be incorporated with the initial discharge piping.

(6) When installed in a cargo space a fixed carbon dioxide extinguishing system must meet the following requirements.

(i) The number of kilograms (pounds) of carbon dioxide required for each space in cubic meters (feet) must be equal to the gross volume of the space in cubic meters (feet) divided by 1.88 (30 if using pounds).

(ii) System piping must be of at least 19 millimeters (0.75 inches).

(iii) No specific discharge rate is required.

(7) A lockout valve must be provided on any carbon dioxide extinguishing system protecting a space over 6,000 cubic feet in volume and installed or altered after [July 9, 2013. "Altered" means modified or refurbished beyond the maintenance required by the manufacturer's design, installation, operation and maintenance manual.

(i) The lockout valve must be a manually operated valve located in the discharge manifold prior to the stop valve or selector valves. When in the closed position, the lockout valve must provide complete isolation of the system from the protected space or spaces, making it impossible for carbon dioxide to discharge in the event of equipment failure during maintenance.

(ii) The lockout valve design or locking mechanism must make it obvious whether the valve is open or closed.

(iii) A valve is considered a lockout valve if it has a hasp or other means of attachment to which, or through which, a lock can be affixed, or it has a locking mechanism built into it.

(iv) The master or person-in-charge must ensure that the valve is locked open at all times, except while maintenance is being performed on the extinguishing system, when the valve must be locked in the closed position.

(v) Lockout valves added to existing systems must be approved by the Commandant as part of the installed system.

(8) Each carbon dioxide extinguishing system installed or altered after July 9, 2013, must have an approved odorizing unit to produce the scent of wintergreen, the detection of which will serve as an indication that carbon dioxide gas is present in a protected area and any other area into which the carbon dioxide may migrate. "Altered" means modified or refurbished beyond the maintenance required by the manufacturer's design, installation, operation and maintenance manual.

(g) *Specific requirements for Halon 1301 systems.* (1) A custom engineering fixed gas fire extinguishing system, which uses Halon 1301, must comply with the applicable sections of UL 1058 (incorporated by reference, see 46 CFR 175.600) and the requirements of this paragraph (g).

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(2) The Halon 1301 quantity and discharge requirements of UL 1058 apply, with the exception that the Halon 1301 design concentration must be 6 percent at the lowest ambient temperature expected in the space. If the lowest temperature is not known, a temperature of -18 °C (0 °F) must be assumed.

(3) Each storage cylinder in a system must have the same pressure and volume.

(4) Computer programs used in designing systems must have been approved by an independent laboratory.

NOTE TO §181.410(g): As of Jan. 1, 1994, the United States banned the production of Halon. The Environmental Protection Agency placed significant restrictions on the servicing and maintenance of systems containing Halon. Vessels operating on an international voyage, subject to SOLAS requirements, are prohibited from installing fixed gas fire extinguishing systems containing Halon.

[CGD 85-080, 61 FR 982, Jan. 10, 1996; 61 FR 20557, May 7, 1996, as amended at 62 FR 51358, Sept. 30, 1997; USCG-2000-7790, 65 FR 58465, Sept. 29, 2000; USCG-2003-16630, 73 FR 65206, Oct. 31, 2008; USCG-2006-24797, 77 FR 33891, June 7, 2012; USCG-2012-0196, 81 FR 48300, July 22, 2016]

**§ 181.420 Pre-engineered fixed gas fire extinguishing systems.**

(a) A pre-engineered fixed gas fire extinguishing system must:

- (1) Be approved by the Commandant;
- (2) Be capable of manual actuation from outside the space in addition to automatic actuation by a heat detector;
- (3) Automatically shut down all power ventilation systems and all engines that draw intake air from within the protected space; and
- (4) Be installed in accordance with the manufacturer's instructions.

(b) A vessel on which a pre-engineered fixed gas fire extinguishing system is installed must have the following equipment at the operating station:

- (1) A light to indicate discharge;
- (2) An audible alarm that sounds upon discharge; and
- (3) A means to reset devices used to automatically shut down ventilation systems and engines as required by paragraph (a)(3) of this section.

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(c) Only one pre-engineered fixed gas fire extinguishing system is allowed to be installed in each space protected by such a system.

**§ 181.425 Galley hood fire extinguishing systems.**

(a) A grease extraction hood required by 46 CFR 181.400 must meet UL 710 (incorporated by reference, see 46 CFR 175.600) or other standard specified by the Commandant.

(b) A grease extraction hood must be equipped with a dry or wet chemical fire extinguishing system meeting the applicable sections of NFPA 17 or NFPA 17A (both incorporated by reference, see 46 CFR 175.600), or other standard specified by the Commandant, and must be listed by an independent laboratory recognized by the Commandant.

[USCG-2003-16630, 73 FR 65206, Oct. 31, 2008]

**§ 181.450 Independent modular smoke detecting units.**

(a) An independent modular smoke detecting unit must:

- (1) Meet UL 217 (incorporated by reference, see 46 CFR 175.600) and be listed as a "Single Station Smoke detector—Also suitable for use in Recreational Vehicles," or other standard specified by the Commandant;
  - (2) Contain an independent power source; and
  - (3) Alarm on low power.
- (b) [Reserved]

[CGD 85-080, 61 FR 982, Jan. 10, 1996, as amended by USCG-2003-16630, 73 FR 65207, Oct. 31, 2008]

**Subpart E—Portable Fire Extinguishers**

**§ 181.500 Required number, type, and location.**

(a) Each portable fire extinguisher on a vessel must be of an approved type. The minimum number of portable fire extinguishers required on a vessel must be acceptable to the cognizant Officer in Charge, Marine Inspection, but must not be fewer than the minimum number required by Table 181.500(b) and other provisions of this section.



(b) Table 181.500(b) of this section indicates the minimum required classification for each space listed. Extinguishers with larger numerical ratings

or multiple letter designations may be used if the extinguishers meet the requirements of the table.

TABLE 181.500(b)—REQUIRED PORTABLE FIRE EXTINGUISHERS

Space	Portable fire extinguishers	
	Minimum required rating	Quantity and location
Operating Station .....	10-B:C .....	1.
Machinery Space .....	40-B:C .....	1 in the vicinity of the exit.
Open Vehicle Deck .....	40-B .....	1 for every 10 vehicles.
Accommodation Space .....	2-A .....	1 each for each 2,500 square feet (762 meters) or fraction thereof.
Galley .....	40-B:C .....	1.
Pantry, concession stand .....	2-A .....	1 in the vicinity of the exit.

(c) A vehicle deck without a fixed sprinkler system and exposed to weather must have one 40-B portable fire extinguisher for every five vehicles, located near an entrance to the space.

ET” must be stenciled in a contrasting color on each bucket.

[CGD 85-080, 61 FR 982, Jan. 10, 1996, as amended at 62 FR 51358, Sept. 30, 1997]

(d) The frame or support of each semi-portable fire extinguisher permitted by paragraph (a) of this section must be welded or otherwise permanently attached to a bulkhead or deck.

**PART 182—MACHINERY INSTALLATION**

**Subpart A—General Provisions**

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- 182.450 Vent pipes for fuel tanks.
- 182.455 Fuel piping.
- 182.458 Portable fuel systems.

[USCG-2012-0196, 81 FR 48300, July 22, 2016]

**§ 181.520 Installation and location.**

Portable fire extinguishers must be located so that they are clearly visible and readily accessible from the space being protected. The installation and location must be to the satisfaction of the Officer in Charge, Marine Inspection.

**Subpart F—Additional Equipment**

**§ 181.600 Fire axe.**

A vessel of more than 19.8 meters (65 feet) in length must have at least one fire axe located in or adjacent to the primary operating station.

**§ 181.610 Fire bucket.**

A vessel not required to have a power driven fire pump by §181.300 must have at least three 9.5 liter (2½ gallon) buckets, with an attached lanyard satisfactory to the cognizant OCMI, placed so as to be easily available during an emergency. The words “FIRE BUCK-

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- 182.460 Ventilation of spaces containing machinery powered by, or fuel tanks for, gasoline.
- 182.465 Ventilation of spaces containing diesel machinery.
- 182.470 Ventilation of spaces containing diesel fuel tanks.
- 182.480 Flammable vapor detection systems.

### Subpart E—Bilge and Ballast Systems

- 182.500 General.
- 182.510 Bilge piping system.
- 182.520 Bilge pumps.
- 182.530 Bilge high level alarms.
- 182.540 Ballast systems.

### Subpart F—Steering Systems

- 182.600 General.
- 182.610 Main steering gear.
- 182.620 Auxiliary means of steering.

### Subpart G—Piping Systems

- 182.700 General.
- 182.710 Piping for vital systems.
- 182.715 Piping subject to more than 1,034 kPa (150 psig) in non-vital systems.
- 182.720 Nonmetallic piping materials.
- 182.730 Nonferrous metallic piping materials.

AUTHORITY: 46 U.S.C. 3306; E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp., p. 277; Department of Homeland Security Delegation No. 0170.1.

SOURCE: CGD 85-080, 61 FR 986, Jan. 10, 1996, unless otherwise noted.

## Subpart A—General Provisions

### § 182.100 Intent.

This part contains requirements for the design, construction, installation, and operation of propulsion and auxiliary machinery, piping and pressure systems, steering apparatus, and associated safety systems. Machinery and equipment installed on each vessel must be suitable for the vessel and its operation and for the purpose intended. All machinery and equipment must be installed and maintained in such a manner as to afford adequate protection from causing fire, explosion, machinery failure, and personnel injury.

### § 182.115 Applicability; preemptive effect.

(a) Except as otherwise required by paragraphs (b), (c) and (d) of this section, an existing vessel must comply with the regulations on machinery, bilge and ballast system equipment,

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steering apparatus, and piping systems or components that were applicable to the vessel on March 10, 1996 or, as an alternative, the vessel may comply with the regulations in this part.

(b) New installations of machinery, bilge and ballast system equipment, steering equipment, and piping systems or components on an existing vessel, which are completed to the satisfaction of the cognizant Officer in Charge, Marine Inspection (OCMI) on or after March 11, 1996, must comply with the regulations of this part. Replacement of existing equipment installed on the vessel prior to March 11, 1996, need not comply with the regulations in this part.

(c) An existing vessel equipped with machinery powered by gasoline or other fuels having a flash point of 43.3 °C (110 °F) or lower must comply with the requirements of §182.410(c) on or before March 11, 1999.

(d) On or before March 11, 1999, an existing vessel must comply with the bilge high level alarm requirements in §182.530.

(e) The regulations in this part have preemptive effect over State or local regulations in the same field.

[CGD 85-080, 61 FR 986, Jan. 10, 1996, as amended by USCG-2006-24797, 77 FR 33892, June 7, 2012]

### § 182.130 Alternative standards.

As an alternative to complying with the provisions of this part, a vessel of not more than 19.8 meters (65 feet) in length, carrying not more than 12 passengers, and propelled by gasoline or diesel internal combustion engines, other than a High Speed Craft, may comply with ABYC H-2, ABYC H-22, ABYC H-24, ABYC H-25, ABYC H-32, ABYC H-33, ABYC P-1, and ABYC P-4 (all eight standards incorporated by reference, see 46 CFR 175.600) as specified in this part.

[USCG-2003-16630, 73 FR 65207, Oct. 31, 2008]

## Subpart B—Propulsion Machinery

### § 182.200 General.

(a) Propulsion machinery must be suitable in type and design for propulsion requirements of the hull in which it is installed and capable of operating

at constant marine load under such requirements without exceeding its designed limitations.

(b) All engines must have at least two means for stopping the engine(s) under any operating conditions. The fuel oil shutoff required at the engine by §182.455(b)(4) will satisfy one means of stopping the engine.

#### § 182.220 Installations.

(a) Except as otherwise provided in this section, propulsion machinery installations must comply with the provisions of this part.

(b) The requirements for machinery and boilers for steam and electrically propelled vessels are contained in applicable regulations in subchapter F (Marine Engineering) and subchapter J (Electrical Engineering) of this chapter.

(c) Propulsion machinery of an unusual type for small passenger vessels must be given separate consideration and is subject to such requirements as determined necessary by the cognizant OCMI. These unusual types of propulsion machinery include:

- (1) Gas turbine machinery installations;
- (2) Air screws;
- (3) Hydraulic jets; and
- (4) Machinery installations using lift devices.

### Subpart C—Auxiliary Machinery

#### § 182.310 Installations.

(a) Auxiliary machinery of the internal combustion piston type must comply with the provisions of this part.

(b) Auxiliary machinery of the steam or gas turbine type will be given separate consideration and must meet the applicable requirements of subchapter F (Marine Engineering) of this chapter as determined necessary by the cognizant OCMI.

(c) Auxiliary boilers and heating boilers and their associated piping and fittings will be given separate consideration and must meet the applicable requirements of subchapter F (Marine Engineering) of this chapter as determined necessary by the cognizant OCMI, except that heating boilers must be tested or examined every three years.

#### § 182.320 Water heaters.

(a) A water heater must meet the requirements of parts 53 and 63 of this chapter if rated at not more than 689 kPa (100 psig) and 121 °C (250 °F), except that an electric water heater is also acceptable if it:

- (1) Has a capacity of not more than 454 liters (120 gallons);
- (2) Has a heat input of not more than 58.6 kilowatts (200,000 Btu per hour);
- (3) Is listed under UL 174, UL 1453 (both incorporated by reference; see 46 CFR 175.600) or other standard specified by the Commandant; and
- (4) Is protected by a pressure-temperature relief device.

(b) A water heater must meet the requirements of parts 52 and 63 of this chapter if rated at more than 689 kPa (100 psig) or 121 °C (250 °F).

(c) A water heater must be installed and secured from rolling by straps or other devices to the satisfaction of the cognizant OCMI.

[CGD 85-080, 61 FR 986, Jan. 10, 1996; 61 FR 20557, May 7, 1996, as amended at 62 FR 51358, Sept. 30, 1997; USCG-2003-16630, 73 FR 65207, Oct. 31, 2008]

#### § 182.330 Pressure vessels.

All unfired pressure vessels must be installed to the satisfaction of the cognizant OCMI. The design, construction, and original testing of such unfired pressure vessels must meet the applicable requirements of subchapter F (Marine Engineering) of this chapter.

### Subpart D—Specific Machinery Requirements

#### § 182.400 Applicability.

(a) This subpart applies to all propulsion and auxiliary machinery installations of the internal combustion piston type.

(b) Requirements of this subpart that are only applicable to engines that use gasoline or other fuels having a flashpoint of 43.3 °C (110 °F) or lower are specifically designated in each section.

(c) Requirements of this subpart that are only applicable to engines that use diesel fuel or other fuels having a flashpoint of more than 43.3 °C (110 °F)

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are specifically designated in each section.

(d) Where no specific gasoline, diesel, or other fuel designation exists, the requirements of this subpart are applicable to all types of fuels and machinery.

### § 182.405 Fuel restrictions.

The use of alternative fuels, other than diesel fuel or gasoline, as fuel for an internal combustion engine will be reviewed on a case-by-case basis by the Commandant.

[CGD 85-080, 61 FR 986, Jan. 10, 1996, as amended by CGD 97-057, 62 FR 51050, Sept. 30, 1997]

### § 182.410 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 43.3 °C (110 °F) or lower must be explosion-proof, intrinsically safe, or ignition protected for use in a gasoline atmosphere as required by §183.530 of this chapter.

(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 43.3 °C (110 °F) or lower must be equipped with a flammable vapor detection device in compliance with §182.480.

(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.

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### § 182.415 Carburetors.

(a) All carburetors except the downdraft type must be equipped with integral or externally fitted drip collectors of adequate capacity and arranged so as to permit ready removal of fuel leakage. Externally fitted drip collectors, must be covered with flame screens. Drip collectors, where practicable, should automatically drain back to engine air intakes.

(b) All gasoline engines installed in a vessel, except outboard engines, must be equipped with an acceptable means of backfire flame control. Installation of backfire flame arresters bearing basic Approval Numbers 162.015 or 162.041 or engine air and fuel induction systems bearing basic Approval Numbers 162.042 or 162.043 may be continued in use as long as they are serviceable and in good condition. New installations or replacements must meet the applicable requirements of this section.

(c) The following are acceptable means of backfire flame control for gasoline engines:

(1) A backfire flame arrester complying with SAE J-1928 or UL 1111 (both incorporated by reference; see 46 CFR 175.600) and marked accordingly. The flame arrester must be suitably secured to the air intake with a flametight connection.

(2) An engine air and fuel induction system that provides adequate protection from propagation of backfire flame to the atmosphere equivalent to that provided by an acceptable backfire flame arrester. A gasoline engine utilizing an air and fuel induction system, and operated without an approved backfire flame arrester, must either include a reed valve assembly or be installed in accordance with SAE J-1928, or other standard specified by the Commandant.

(3) An arrangement of the carburetor or engine air induction system that will disperse any flames caused by engine backfire. The flames must be dispersed to the atmosphere outside the vessel in such a manner that the flames will not endanger the vessel, persons on board, or nearby vessels and structures. Flame dispersion may be achieved by attachments to the carburetor or location of the engine air induction system. All attachments must

be of metallic construction with flamtight connections and firmly secured to withstand vibration, shock, and engine backfire. Such installations do not require formal approval and labeling but must comply with this subpart.

(4) An engine air induction system on a vessel with an integrated engine-vessel design must be approved, marked, and tested under § 162.043 in subchapter Q of this chapter, or other standard specified by the Commandant.

[CGD 85-080, 61 FR 986, Jan. 10, 1996, as amended by USCG-2003-16630, 73 FR 65207, Oct. 31, 2008]

#### § 182.420 Engine cooling.

(a) Except as otherwise provided in paragraphs (b), (c), (d), and (e) of this section, all engines must be water cooled and meet the requirements of this paragraph.

(1) The engine head, block, and exhaust manifold must be water-jacketed and cooled by water from a pump that operates whenever the engine is operating.

(2) A suitable hull strainer must be installed in the circulating raw water intake line of an engine cooling water system.

(3) A closed fresh water system may be used to cool the engine.

(b) An engine water cooling system on a vessel of not more than 19.8 meters (65 feet) in length, carrying not more than 12 passengers, may comply with the requirements of ABYC P-4 (incorporated by reference; see 46 CFR 175.600) instead of the requirements of paragraph (a) of this section.

(c) On a vessel of not more than 19.8 meters (65 feet) in length carrying not more than 12 passengers, a propulsion gasoline engine may be air cooled when in compliance with the requirements of ABYC Project P-4.

(d) An auxiliary gasoline engine may be air cooled when:

(1) It has a self-contained fuel system and it is installed on an open deck; or

(2) On a vessel of not more than 19.8 meters (65 feet) in length carrying not more than 12 passengers, it is in compliance with the requirements of ABYC P-4.

(e) A propulsion or auxiliary diesel engine may be air cooled or employ an air cooled jacket water radiator when:

(1) Installed on an open deck and sufficient ventilation for machinery cooling is available;

(2) Installed in an enclosed or partially enclosed space for which ventilation for machinery cooling is provided, which complies with the requirement of § 182.465(b), and other necessary safeguards are taken so as not to endanger the vessel; or

(3) Installed on a vessel of not more than 19.8 meters (65 feet) in length carrying not more than 12 passengers, in compliance with the requirements of ABYC Project P-4.

[CGD 85-080, 61 FR 986, Jan. 10, 1996, as amended by USCG-2003-16630, 73 FR 65207, Oct. 31, 2008]

#### § 182.422 Integral and non-integral keel cooler installations.

(a) A keel cooler installation used for engine cooling must be designed to prevent flooding.

(b) Except as provided in paragraph (e), a shutoff valve must be located where the cooler piping penetrates the shell, as near the shell as practicable, except where the penetration is forward of the collision bulkhead.

(c) The thickness of the inlet and discharge connections, outboard of the shutoff valves required by paragraph (b) of this section, must be at least Schedule 80.

(d) Short lengths of approved non-metallic flexible hose, fixed by two hose clamps at each end of the hose, may be used at machinery connections for a keel cooler installation.

(e) Shutoff valves are not required for integral keel coolers. A keel cooler is considered integral to the hull if the following conditions are satisfied:

(1) The cooler structure is fabricated from material of the same thickness and quality as the hull;

(2) The flexible connections are located well above the deepest subdivision draft;

(3) The end of the structure is faired to the hull with a slope no greater than 4 to 1; and

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(4) Full penetration welds are employed in the fabrication of the structure and its attachment to the hull.

[CGD 85-080, 61 FR 986, Jan. 10, 1996, as amended by USCG-2000-7790, 65 FR 58465, Sept. 29, 2000]

**§ 182.425 Engine exhaust cooling.**

(a) Except as otherwise provided in this paragraph, all engine exhaust pipes must be water cooled.

(1) Vertical dry exhaust pipes are permissible if installed in compliance with §§ 177.405(b) and 177.970 of this chapter.

(2) Horizontal dry exhaust pipes are permitted only if:

(i) They do not pass through living or berthing spaces;

(ii) They terminate above the deepest load waterline;

(iii) They are so arranged as to prevent entry of cold water from rough or boarding seas;

(iv) They are constructed of corrosion resisting material at the hull penetration; and

(v) They are installed in compliance with §§ 177.405(b) and 177.970 of this chapter.

(b) The exhaust pipe cooling water system must comply with the requirements of this paragraph.

(1) Water for cooling the exhaust pipe must be obtained from the engine cooling water system or a separate engine driven pump.

(2) Water for cooling the exhaust pipe, other than a vertical exhaust, must be injected into the exhaust system as near to the engine manifold as practicable. The water must pass through the entire length of the exhaust pipe.

(3) The part of the exhaust system between the point of cooling water injection and the engine manifold must be water-jacketed or effectively insulated and protected in compliance with §§ 177.405(b) and 177.970 of this chapter.

(4) Vertical exhaust pipes must be water-jacketed or suitably insulated as required by § 182.430(g).

(5) When the exhaust cooling water system is separate from the engine cooling water system, a suitable warning device, visual or audible, must be installed at the operating station to indicate any reduction in normal water flow in the exhaust cooling system.

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(6) A suitable hull strainer must be installed in the circulating raw water intake line for the exhaust cooling system.

(c) Engine exhaust cooling system built in accordance with the requirements of ABYC P-1 (incorporated by reference; see 46 CFR 175.600) will be considered as meeting the requirements of this section.

[CGD 85-080, 61 FR 986, Jan. 10, 1996; 61 FR 20557, May 7, 1996, as amended by USCG-2003-16630, 73 FR 65207, Oct. 31, 2008]

**§ 182.430 Engine exhaust pipe installation.**

(a) The design of all exhaust systems must ensure minimum risk of injury to personnel. Protection must be provided in compliance with § 177.970 of this chapter at such locations where persons or equipment might come in contact with an exhaust pipe.

(b) Exhaust gas must not leak from the piping or any connections. The piping must be properly supported by non-combustible hangers or blocks.

(c) The exhaust piping must be so arranged as to prevent backflow of water from reaching engine exhaust ports under normal conditions.

(d) Pipes used for wet exhaust lines must be Schedule 80 or corrosion-resistant material and adequately protected from mechanical damage.

(e) Where flexibility is necessary, a section of flexible metallic hose may be used. Nonmetallic hose may be used for wet exhaust systems provided it is especially adapted to resist the action of oil, acid, and heat, has a wall thickness sufficient to prevent collapsing or panting, and is double clamped where practicable.

(f) Where an exhaust pipe passes through a watertight bulkhead, the watertight integrity of the bulkhead must be maintained. Noncombustible packing must be used in bulkhead penetration glands for dry exhaust systems. A wet exhaust pipe may be welded to a steel or equivalent bulkhead in way of a penetration and a fiberglass wet exhaust pipe may be fiberglassed to a fiberglass reinforced plastic bulkhead if suitable arrangements are provided to relieve the stresses resulting from the expansion of the exhaust piping.

(g) A dry exhaust pipe must:

(1) If it passes through a combustible bulkhead or partition, be kept clear of, and suitably insulated or shielded from, combustible material.

(2) Be provided with noncombustible hangers and blocks for support.

(h) An exhaust pipe discharge terminating in a transom must be located as far outboard as practicable so that exhaust gases cannot reenter the vessel.

(i) Arrangements must be made to provide access to allow complete inspection of the exhaust piping throughout its length.

(j) An exhaust installation subject to pressures in excess of 105 kPa (15 psig) gauge or having exhaust pipes passing through living or working spaces must meet the material requirements of part 56 of subchapter F (Marine Engineering) of this chapter.

(k) Engine exhaust pipe installations built in accordance with the requirements of ABYC P-1 (incorporated by reference; see 46 CFR 175.600), will be considered as meeting the requirements of this section.

[CGD 85-080, 61 FR 986, Jan. 10, 1996; 61 FR 20557, May 7, 1996; 61 FR 24464, May 15, 1996, as amended at 62 FR 51358, Sept. 30, 1997; USCG-2003-16630, 73 FR 65207, Oct. 31, 2008]

**§ 182.435 Integral fuel tanks.**

(a) Gasoline fuel tanks must be independent of the hull.

(b) Diesel fuel tanks may not be built integral with the hull of a vessel unless the hull is made of:

- (1) Steel;

(2) Aluminum; or

(3) Fiber reinforced plastic when:

(i) Sandwich construction is not used; or

(ii) Sandwich construction is used with only a core material of closed cell polyvinyl chloride or equivalent.

(c) During the initial inspection for certification of a vessel, integral fuel tanks must withstand a hydrostatic pressure test of 35 kPa (5 psig), or the maximum pressure head to which they may be subjected in service, whichever is greater. A standpipe of 3.5 meters (11.5 feet) in height attached to the tank may be filled with water to accomplish the 35 kPa (5 psig) test.

[CGD 85-080, 61 FR 986, Jan. 10, 1996, as amended at 62 FR 51358, Sept. 30, 1997]

**§ 182.440 Independent fuel tanks.**

(a) *Materials and construction.* Independent fuel tanks must be designed and constructed as described in this paragraph (a).

(1) The material used and the minimum thickness allowed must be as indicated in Table 1 to §182.440(a)(1), except that other materials that provide equivalent safety may be approved for use under paragraph (a)(3) of this section. Tanks having a capacity of more than 570 liters (150 gallons) must be designed to withstand the maximum head to which they may be subjected in service, but in no case may the thickness be less than that specified in Table 1 to §182.440(a)(1).

TABLE 1 TO § 182.440(a)(1)

Material	ASTM specification (all incorporated by reference; see 46 CFR 175.600)	Thickness in millimeters (inches) and [gauge number] <sup>1</sup> vs. tank capacities for:		
		4 to 300 liter (1 to 80 gal) tanks	More than 300 liter (80 gal) and not more than 570 liter (150 gal) tanks	Over 570 liter (150 gal) <sup>2</sup> tanks
Nickel-copper .....	B 127, hot rolled sheet or plate .....	0.94 (0.037) [USSG 20] <sup>3</sup> .	1.27 (0.050) [USSG 18].	2.72 (0.107) [USSG 12].
Copper-nickel <sup>4</sup> .....	B 122, UNS alloy C71500 .....	1.14 (0.045) [AWG 17].	1.45 (0.057) [AWG 15].	3.25 (0.128) [AWG 8].
Copper <sup>4</sup> .....	B 152, UNS alloy C11000 .....	1.45 (0.057) [AWG 15].	2.06 (0.081) [AWG 12].	4.62 (0.182) [AWG 5].
Copper-silicon <sup>4</sup> .....	B 96, alloys C65100 and C65500 .....	1.29 (0.051) [AWG 16].	1.63 (0.064) [AWG 14].	3.66 (0.144) [AWG 7].
Steel or iron <sup>5,6</sup> .....	1.90 (0.0747) [MSG 14] .....	2.66 (0.1046) [MSG 12].	4.55 (0.1793) [MSG 7].	
Aluminum <sup>7</sup> .....	B 209, alloy 5052, 5083, 5086 .....	6.35 (0.250) [USSG 3].	6.35 (0.250) [USSG 3].	6.35 (0.250) [USSG 3].

TABLE 1 TO § 182.440(a)(1)—Continued

Material	ASTM specification (all incorporated by reference; see 46 CFR 175.600)	Thickness in millimeters (inches) and [gauge number] <sup>1</sup> vs. tank capacities for:		
		4 to 300 liter (1 to 80 gal) tanks	More than 300 liter (80 gal) and not more than 570 liter (150 gal) tanks	Over 570 liter (150 gal) <sup>2</sup> tanks
Fiber reinforced plastic.	As required <sup>a</sup> .....	As required <sup>a</sup> .....	As required <sup>a</sup> ..	

<sup>1</sup>The gage numbers used in this table may be found in many standard engineering reference books. The letters “USSG” stand for “U.S. Standard Gage,” which was established by the act of March 3, 1892 (15 U.S.C. 206), for sheet and plate iron and steel. The letters “AWG” stand for “American Wire Gage” (or Brown and Sharpe Gage) for nonferrous sheet thicknesses. The letters “MSG” stand for “Manufacturer’s Standard Gage” for sheet steel thickness.

<sup>2</sup>Tanks over 1514 liters (400 gallons) must be designed with a factor of safety of four on the ultimate strength of the material used with a design head of not less than 1220 millimeters (4 feet) of liquid above the top of the tank.

<sup>3</sup>Nickel-copper not less than 0.79 millimeter (0.031 inch) [USSG 22] may be used for tanks up to 114-liter (30-gallon) capacity.

<sup>4</sup>Acceptable only for gasoline service.

<sup>5</sup>Gasoline fuel tanks constructed of iron or steel, which are less than 5 millimeter (0.1875 inch) thick, must be galvanized inside and outside by the hot dip process. Tanks intended for use with diesel oil must not be internally galvanized.

<sup>6</sup>Stainless steel tanks are not included in this category.

<sup>7</sup>Anodic to most common metals. Avoid dissimilar metal contact with tank body.

<sup>8</sup>The requirements of 46 CFR 182.440(a)(2) apply.

(2) Fiber reinforced plastic may be used for diesel fuel tanks under the following provisions:

(i) The materials must be fire retardant. Flammability of the material must be determined by the standard test methods in ASTM D 635 and ASTM D 2863 (both incorporated by reference; see 46 CFR 175.600), or other standard specified by the Commandant. The results of these tests must show that the average extent of burning is less than 10 millimeters (0.394 inches), the average time of burning is less than 50 seconds, and the limiting oxygen index is greater than 21.

(ii) Tanks must meet UL 1102 (incorporated by reference; see 46 CFR 175.600) or other standard specified by the Commandant. Testing may be accomplished by an independent laboratory or by the fabricator to the satisfaction of the OCMI.

(iii) Tanks must be designed to withstand the maximum heat to which they may be subjected to in service.

(iv) Installation of nozzles, flanges or other fittings for pipe connections to the tanks must be acceptable to the cognizant OCMI.

(v) Baffle plates, if installed, must be of the same material and not less than the minimum thickness of the tank walls. Limber holes at the bottom and air holes at the top of all baffles must be provided. Baffle plates must be installed at the time the tests required by UL 1102, or other standard specified by the Commandant, are conducted.

(3) Materials other than those listed in Table 182.440(a)(1) must be approved by the Commandant. An independent tank using material approved by the Commandant under this paragraph must meet the testing requirements of UL 1102, or other standard specified by the Commandant. Testing may be accomplished by an independent laboratory or by the fabricator to the satisfaction of the OCMI.

(4) Tanks with flanged-up top edges that may trap and hold moisture are prohibited.

(5) Openings for fill pipes, vent pipes, and machinery fuel supply pipes, and openings for fuel level gauges, where used, must be on the topmost surfaces of tanks. Tanks may not have any openings in bottoms, sides, or ends, except for:

(i) An opening fitted with a threaded plug or cap installed for tank cleaning purposes; and

(ii) In a diesel fuel tank, openings for supply piping and tubular gauge glasses.

(6) All tank joints must be welded or brazed. Lap joints may not be used.

(7) Nozzles, flanges, or other fittings for pipe connections to a metal tank must be welded or brazed to the tank. Tank openings in way of pipe connections must be properly reinforced where necessary. Where fuel level gauges are used on a metal tank, the flanges to which gauge fittings are attached must be welded or brazed to the tank. No tubular gauge glasses may be



fitted to gasoline fuel tanks. Tubular gauge glasses, if fitted to diesel fuel tanks, must be of heat resistant materials, adequately protected from mechanical damage, and provided at the tank connections with devices that will automatically close in the event of rupture of the gauge or gauge lines.

(8) A metal tank exceeding 760 millimeters (30 inches) in any horizontal dimension must:

(i) Be fitted with vertical baffle plates, which meet subparagraph (a)(9) of this section, at intervals not exceeding 760 millimeters (30 inches) to provide strength and to control the excessive surge of fuel; or

(ii) The owner must submit calculations to the cognizant OCMI demonstrating the structural adequacy of the tank in a fully loaded static condition and in a worst case dynamic (sloshing) condition.

(9) Baffle plates, where required in metal tanks, must be of the same material and not less than the minimum thickness required in the tank walls and must be connected to the tank walls by welding or brazing. Limber holes at the bottom and air holes at the top of all baffles must be provided.

(10) Iron or steel diesel fuel tanks must not be galvanized on the interior. Galvanizing, paint, or other suitable coating must be used to protect the outside of iron and steel diesel fuel tanks and the inside and outside of iron and steel gasoline fuel tanks.

(b) *Location and installation.* Independent fuel tanks must be located and installed as described in this paragraph (b).

(1) Fuel tanks must be located in, or as close as practicable to, machinery spaces.

(2) Fuel tanks and fittings must be so installed as to permit examination, testing, or removal for cleaning with minimum disturbance to the hull structure.

(3) Fuel tanks must be adequately supported and braced to prevent movement. The supports and braces must be insulated from contact with the tank surfaces with a nonabrasive and non-absorbent material.

(4) All fuel tanks must be electrically bonded to a common ground.

(c) *Tests.* Independent fuel tanks must be tested as described in this paragraph (c) prior to being used to carry fuel.

(1) Prior to installation, tanks vented to the atmosphere must be hydrostatically tested to, and must withstand, a pressure of 35 kPa (5 psig) or 1 1/2 times the maximum pressure head to which they may be subjected in service, whichever is greater. A stand-pipe of 3.5 meters (11.5 feet) in height attached to the tank may be filled with water to accomplish the 35 kPa (5 psig) test. Permanent deformation of the tank will not be cause for rejection unless accompanied by leakage.

(2) After installation of the fuel tank on a vessel, the complete installation must be tested in the presence of a marine inspector, or individual specified by the cognizant OCMI, to a heat not less than that to which the tank may be subjected in service. Fuel may be used as the testing medium.

(3) All tanks not vented to the atmosphere must be constructed and tested in accordance with 46 CFR 182.330.

(d) *Alternative procedures.* A vessel of not more than 19.8 meters (65 feet) in length carrying not more than 12 passengers, with independent gasoline fuel tanks built in accordance with ABYC H-24 (incorporated by reference, see 46 CFR 175.600), or 33 CFR 183, subpart J, or with independent diesel fuel tanks built in accordance with ABYC H-33 (incorporated by reference, see 46 CFR 175.600), will be considered as meeting the requirements of this section. However, tanks must not be fabricated from any material not listed in Table 182.440(a)(1) without approval by the Commandant under paragraph (a)(3) of this section.

[USCG-2003-16630, 73 FR 65207, Oct. 31, 2008, as amended by USCG-2016-0498, 82 FR 35093, July 28, 2017]

#### § 182.445 Fill and sounding pipes for fuel tanks.

(a) Fill pipes for fuel tanks must be not less than 40 millimeters (1.5 inches) nominal pipe size.

(b) There must be a means of accurately determining the amount of fuel in each fuel tank either by sounding, through a separate sounding pipe or a

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fill pipe, or by an installed marine type fuel gauge.

(c) Where sounding pipes are used, their openings must be at least as high as the opening of the fill pipe and they must be kept closed at all times except during sounding.

(d) Fill pipes and sounding pipes must be so arranged that overflow of liquid or vapor cannot escape to the inside of the vessel.

(e) Fill pipes and sounding pipes must run as directly as possible, preferably in a straight line, from the deck connection to the top of the tank. Such pipes must terminate on the weather deck and must be fitted with shutoff valves, watertight deck plates, or screw caps, suitably marked for identification. Gasoline fill pipes and sounding pipes must extend to within one-half of their diameter from the bottom of the tank. Diesel fill pipes and sounding pipes may terminate at the top of the tank.

(f) A vessel of not more than 19.8 meters (65 feet), carrying not more than 12 passengers, with a gasoline fuel system built in accordance with ABYC H-24 (incorporated by reference; see 46 CFR 175.600), or 33 CFR 183, subpart J, or with a diesel fuel system built in accordance with ABYC H-33 (incorporated by reference; see 46 CFR 175.600), will be considered as meeting the requirements of this section.

(g) Where a flexible fill pipe section is necessary, suitable flexible tubing or hose having high resistance to salt water, petroleum oils, heat and vibration, may be used. Such hose must overlap metallic pipe ends at the least 1½ times the pipe diameter and must be secured at each end by clamps. The flexible section must be accessible and as near the upper end of the fill pipe as practicable. When the flexible section is a nonconductor of electricity, the metallic sections of the fill pipe separated thereby must be joined by a conductor for protection against generation of a static charge when filling with fuel.

[CGD 85-080, 61 FR 986, Jan. 10, 1996, as amended by USCG-2003-16630, 73 FR 65208, Oct. 31, 2008]

**§ 182.450 Vent pipes for fuel tanks.**

(a) Each unpressurized fuel tank must be fitted with a vent pipe connected to the highest point of the tank.

(b) The net cross sectional area of the vent pipe for a gasoline fuel tank must not be less than that of 19 millimeters (0.75 inches) outer diameter (O.D.) tubing (0.9 millimeter (0.035 Inch) wall thickness, 20 gauge), except that, where the tank is filled under pressure, the net cross sectional area of the vent pipe must be not less than that of the fill pipe.

(c) The minimum net cross sectional area of the vent pipe for diesel fuel tanks must be as follows:

(1) Not less than the cross sectional area of 16 millimeters (0.625 inches) outer diameter (O.D.) tubing (0.9 millimeter (0.035-inch) wall thickness, 20 gauge), if the fill pipe terminates at the top of the tank;

(2) Not less than the cross sectional area of 19 millimeters (0.75 inches) O.D. tubing (0.9 millimeter (0.035-inch) wall thickness, 20 gauge), if the fill pipe extends into the tank; and

(3) Not less than the cross sectional area of the fill pipe if the tank is filled under pressure.

(d) The discharge ends of fuel tank vent pipes must terminate on the hull exterior as high above the waterline as practicable and remote from any hull openings, or they must terminate in U-bends as high above the weather deck as practicable and as far as practicable from openings into any enclosed spaces. Vent pipes terminating on the hull exterior must be installed or equipped to prevent the accidental contamination of the fuel by water under normal operating conditions.

(e) The discharge ends of fuel tank vent pipes must be fitted with removable flame screens or flame arresters. The flame screens must consist of a single screen of corrosion resistant wire of at least 30 × 30 mesh. The flame screens or flame arresters must be of such size and design as to prevent reduction in the net cross sectional area of the vent pipe and permit cleaning or renewal of the flame screens or arrester elements.

(f) A vessel of not more than 19.8 meters (65 feet) in length, carrying not

more than 12 passengers, with fuel gasoline tank vents built in accordance with ABYC H-24 (incorporated by reference; see 46 CFR 175.600), or 33 CFR 183, subpart J, or with diesel fuel tank vents built in accordance with ABYC H-33 (incorporated by reference; see 46 CFR 175.600), will be considered as meeting the requirements of this section.

(g) Where a flexible vent pipe section is necessary, suitable flexible tubing or hose having high resistance to salt water, petroleum oils, heat and vibration, may be used. Such hose must overlap metallic pipe ends at least 1½ times the pipe diameter and must be secured at each end by clamps. The flexible section must be accessible and as near the upper end of the vent pipe as practicable.

(h) Fuel tank vent pipes shall be installed to gradient upward to prevent fuel from being trapped in the line.

[CGD 85-080, 61 FR 986, Jan. 10, 1996, as amended by USCG-2003-16630, 73 FR 65209, Oct. 31, 2008]

#### § 182.455 Fuel piping.

(a) *Materials and workmanship.* The materials and construction of fuel lines, including pipe, tube, and hose, must comply with the requirements of this paragraph.

(1) Fuel lines must be annealed tubing of copper, nickel-copper, or copper-nickel having a minimum wall thickness of 0.9 millimeters (0.035 inch) except that:

(i) Diesel fuel piping of other materials, such as seamless steel pipe or tubing, which provide equivalent safety may be used;

(ii) Diesel fuel piping of aluminum is acceptable on aluminum hull vessels provided it is a minimum of Schedule 80 wall thickness; and

(iii) when used, flexible hose must meet the requirements of § 182.720(e) of this part.

(2) Tubing connections and fittings must be of nonferrous drawn or forged metal of the flared type except that flareless fittings of the non-bite type may be used when the tubing system is of nickel-copper or copper-nickel. When making tube connections, the tubing must be cut square and flared

by suitable tools. Tube ends must be annealed before flaring.

(3) Cocks are prohibited except for the solid bottom type with tapered plugs and union bonnets.

(4) Valves for gasoline fuel must be of a suitable nonferrous type.

(b) *Installation.* The installation of fuel lines, including pipe, tube, and hose, must comply with the requirements of this paragraph.

(1) Gasoline fuel lines must be connected at the top of the fuel tank and run at or above the level of the tank top to a point as close to the engine connection as practicable, except that lines below the level of the tank top are permitted if equipped with anti-siphon protection.

(2) Diesel fuel lines may be connected to the fuel tank at or near the bottom of the tank.

(3) Fuel lines must be accessible, protected from mechanical injury, and effectively secured against excessive movement and vibration by the use of soft nonferrous metal straps which have no sharp edges and are insulated to protect against corrosion. Where passing through bulkheads, fuel lines must be protected by close fitting ferrules or stuffing boxes. All fuel lines and fittings must be accessible for inspection.

(4) Shutoff valves, installed so as to close against the fuel flow, must be fitted in the fuel supply lines, one at the tank connection and one at the engine end of the fuel line to stop fuel flow when servicing accessories. The shutoff valve at the tank must be manually operable from outside the compartment in which the valve is located, preferably from an accessible position on the weather deck. If the handle to the shutoff valve at the tank is located inside the machinery space, it must be located so that the operator does not have to reach more than 300 millimeters (12 inches) into the machinery space and the valve handle must be shielded from flames by the same material the hull is constructed of, or some noncombustible material. Electric solenoid valves must not be used, unless used in addition to the manual valve.

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(5) A loop of copper tubing or a short length of flexible hose must be installed in the fuel supply line at or near the engines. The flexible hose must meet the requirements of § 182.720(e).

(6) A suitable metal marine type strainer, meeting the requirements of the engine manufacturer, must be fitted in the fuel supply line in the engine compartment. Strainers must be leak free. Strainers must be the type of opening on top for cleaning screens. A drip pan fitted with flame screen must be installed under gasoline strainers. Fuel filter and strainer bowls must be highly resistant to shattering due to mechanical impact and resistant to failure due to thermal shock. Fuel filters fitted with bowls of other than steel construction must be approved by the Commandant and be protected from mechanical damage. Approval of bowls of other than steel construction will specify if a flame shield is required.

(7) All accessories installed in the fuel line must be independently supported.

(8) Outlets in gasoline fuel lines that would permit drawing fuel below deck, for any purpose, are prohibited.

(9) Valves for removing water or impurities from diesel fuel in water traps or strainers are permitted. These valves must be provided with caps or plugs to prevent fuel leakage.

(c) *Alternative procedures.* A vessel of not more than 19.8 meters (65 feet), carrying no more than 12 passengers, with machinery powered by gasoline and a fuel system built in accordance with ABYC H-24 (incorporated by reference; see 46 CFR 175.600), or 33 CFR 183, subpart J, or with machinery powered by diesel fuel and a fuel system built in accordance with ABYC H-33 (incorporated by reference; see 46 CFR 175.600), will be considered as meeting the requirements of this section.

[CGD 85-080, 61 FR 986, Jan. 10, 1996, as amended by USCG-2001-10224, 66 FR 48621, Sept. 21, 2001; USCG-2004-18884, 69 FR 58351, Sept. 30, 2004; USCG-2003-16630, 73 FR 65209, Oct. 31, 2008; USCG-2014-0688, 79 FR 58288, Sept. 29, 2014]

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### § 182.458 Portable fuel systems.

(a) Portable fuel systems, including portable tanks and related fuel lines and accessories, are prohibited except where used for portable dewatering pumps or outboard motor installations.

(b) The design, construction, and stowage of portable tanks and related fuel lines and accessories must meet the requirements of ABYC H-25 (incorporated by reference; see 46 CFR 175.600) or other standard specified by the Commandant.

[CGD 85-080, 61 FR 986, Jan. 10, 1996, as amended by CGD 97-057, 62 FR 51050, Sept. 30, 1997; 62 FR 51358, Sept. 30, 1997; USCG-2003-16630, 73 FR 65209, Oct. 31, 2008]

### § 182.460 Ventilation of spaces containing machinery powered by, or fuel tanks for, gasoline.

(a) A space containing machinery powered by, or fuel tanks for, gasoline must have a ventilation system that complies with this section and consists of:

(1) For an enclosed space:

(i) At least two natural ventilation supply ducts located at one end of the space and that extend to the lowest part of the space or to the bilge on each side of the space; and

(ii) A mechanical exhaust system consisting of at least two ventilation exhaust ducts located at the end of the space opposite from where the supply ducts are fitted, which extend to the lowest part of the bilge of the space on each side of the space, and which are led to one or more powered exhaust blowers; and

(2) For a partially enclosed space, at least one ventilation duct installed in the forward part of the space and one ventilation duct installed in the after part of the space, or as otherwise required by the cognizant OCMI. Ducts for partially enclosed spaces must have cowls or scoops as required by paragraph (i) of this section.

(b) A mechanical exhaust system required by paragraph (a)(1)(ii) of this section must be such as to assure the air changes as noted in Table 182.460(b) depending upon the size of the space.

TABLE 182.460(b)

Size of space in cubic meters (feet)		Minutes per air change
Over	Not over	
0	14 (500)	2
14 (500)	28.50 (1000)	3
28.50 (1000)	43 (1500)	4
43 (1500)	.....	5

(c) An exhaust blower motor may not be installed in a duct, and if mounted in any space required to be ventilated by this section, must be located as high above the bilge as practicable. Blower blades must be nonsparking with reference to their housings.

(d) Where a fixed gas fire extinguishing system is installed in a space, all powered exhaust blowers for the space must automatically shut down upon release of the extinguishing agent.

(e) Exhaust blower switches must be located outside of any space required to be ventilated by this section, and must be of the type interlocked with the starting switch and the ignition switch so that the blowers are started before the engine starter motor circuit or the engine ignition is energized. A red warning sign at the switch must state that the blowers must be operated prior to starting the engines for the time sufficient to insure at least one complete change of air in the space served.

(f) The area of the ventilation ducts must be sufficient to limit the air velocity to a maximum of 10 meters per second (2,000 feet per minute). A duct may be of any shape, provided that in no case will one cross sectional dimension exceed twice the other.

(g) A duct must be so installed that ordinary collection of water in the bilge will not block vapor flow.

(h) A duct must be of rigid permanent construction, which does not allow any appreciable vapor flow except through normal openings, and made of the same material as the hull or of noncombustible material. The duct must lead as directly as possible from its intake opening to its terminus and be securely fastened and supported.

(i) A supply duct must be provided at its intake opening with a cowl or scoop having a free area not less than twice the required duct area. When the cowl or scoop is screened, the mouth area

must be increased to compensate for the area of the screen wire. A cowl or scoop must be kept open at all times except when the weather is such as to endanger the vessel if the openings are not temporarily closed.

(j) Dampers may not be fitted in a supply duct.

(k) A duct opening may not be located where the natural flow of air is unduly obstructed, adjacent to possible sources of vapor ignition, or where exhaust air may be taken into a supply duct.

(l) Provision must be made for closing all supply duct cowls or scoops and exhaust duct discharge openings for a space protected by a fixed gas extinguishing system. All closure devices must be readily available and mounted in the vicinity of the vent.

(m) A vessel of not more than 19.8 meters (65 feet) in length, carrying not more than 12 passengers, with ventilation installations in accordance with ABYC H-2 (incorporated by reference; see 46 CFR 175.600) or 33 CFR 183, subpart K, "Ventilation," will be considered as meeting the requirements of this section.

[CGD 85-080, 61 FR 986, Jan. 10, 1996, as amended by CGD 97-057, 62 FR 51050, Sept. 30, 1997; USCG-2003-16630, 73 FR 65209, Oct. 31, 2008]

**§ 182.465 Ventilation of spaces containing diesel machinery.**

(a) A space containing diesel machinery must be fitted with adequate means such as dripproof ventilators, ducts, or louvers, to provide sufficient air for proper operation of main engines and auxiliary engines.

(b) Air-cooled propulsion and auxiliary diesel engines installed below deck, as permitted by §182.420, must be fitted with air supply ducts or piping from the weather deck. The ducts or piping must be so arranged and supported to be capable of safely sustaining stresses induced by weight and engine vibration and to minimize transfer of vibration to the supporting structure. Prior to installation of ventilation system for such engines, plans or sketches showing machinery arrangement including air supplies, exhaust stack, method of attachment of

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ventilation ducts to the engine, location of spark arresting mufflers and capacity of ventilation blowers must be submitted to the cognizant OCMI for approval.

(c) A space containing diesel machinery must be fitted with at least two ducts to furnish natural or powered supply and exhaust ventilation. The total inlet area and the total outlet area of each ventilation duct may not be less than one square inch for each foot of beam of the vessel. These minimum areas must be increased as necessary when the ducts are considered as part of the air supply to the engines.

(d) A duct must be of rigid permanent construction, which does not allow any appreciable vapor flow except through normal openings, and made of the same material as the hull or of noncombustible material. The duct must lead as directly as possible from its intake opening to its terminus and be securely fastened and supported.

(e) A supply duct must be provided with a cowl or scoop having a free area not less than twice the required duct area. When the cowl or scoop is screened, the mouth area must be increased to compensate for the area of the screen wire. A cowl or scoop must be kept open at all times except when the weather is such as to endanger the vessel if the openings are not temporarily closed.

(f) Dampers may not be fitted in a supply duct.

(g) A duct opening may not be located where the natural flow of air is unduly obstructed, adjacent to possible sources of vapor ignition, or where exhaust air may be taken into a supply duct.

(h) provision must be made for closing all supply duct cowls or scoops and exhaust duct discharge openings for a space protected by a fixed gas extinguishing system. All closure devices must be readily available and mounted in the vicinity of the vent.

(i) A vessel of not more than 19.8 meters (65 feet) in length, carrying not more than 12 passengers, with ventilation installations in accordance with ABYC H-32 (incorporated by reference; see 46 CFR 175.600) will be considered as

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meeting the requirements of this section.

[CGD 85-080, 61 FR 986, Jan. 10, 1996, as amended by USCG-2003-16630, 73 FR 65209, Oct. 31, 2008]

### § 182.470 Ventilation of spaces containing diesel fuel tanks.

(a) Unless provided with ventilation that complies with § 182.465, a space containing a diesel fuel tank and no machinery must meet the requirements of this section.

(1) A space of 14 cubic meters (500 cubic feet) or more in volume must have a gooseneck vent of not less than 65 millimeters (2.5 inches) in diameter.

(2) A space of less than 14 cubic meters (500 cubic feet) in volume must have a gooseneck vent of not less than 40 millimeters (1.5 inches) in diameter.

(b) Vent openings may not be located adjacent to possible sources of vapor ignition.

(c) A vessel of not more than 19.8 meters (65 feet) in length, carrying not more than 12 passengers, with ventilation installations in accordance with ABYC H-32 (incorporated by reference; see 46 CFR 175.600) will be considered as meeting the requirements of this section.

[CGD 85-080, 61 FR 986, Jan. 10, 1996, as amended by USCG-2003-16630, 73 FR 65209, Oct. 31, 2008]

### § 182.480 Flammable vapor detection systems.

(a) A flammable vapor detection system required by § 182.410(c) must meet UL 1110 (incorporated by reference; see 46 CFR 175.600) or be approved by an independent laboratory.

(b) Procedures for checking the proper operation of a flammable vapor detection system must be posted at the primary operating station. The system must be self-monitoring and include a ground fault indication alarm.

(c) A flammable vapor detection system must be operational for 30 seconds prior to engine startup and continue sensing the entire time the engine is running.

(d) A flammable vapor detection system must provide a visual and audible alarm at the operating station.

(e) A sensor must be located above the expected bilge water level in the following locations:

(1) The lowest part of a machinery space;

(2) The lowest part of a space containing a fuel tank when separate from the machinery space; and

(3) Any other location when required by the cognizant OCMI.

(f) A flammable vapor detection system must be installed so as to permit calibration in a vapor free atmosphere.

(g) Electrical connections, wiring, and components for a flammable vapor detection system must comply with part 183 of this chapter.

(h) An operation and maintenance manual for the flammable vapor detection system must be kept onboard.

[CGD 85-080, 61 FR 986, Jan. 10, 1996, as amended by USCG-2003-16630, 73 FR 65209, Oct. 31, 2008]

### Subpart E—Bilge and Ballast Systems

#### § 182.500 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 19.8 meters (65 feet) in length, carrying not more than 12 passengers, may meet the requirements of ABYC H-22 or the requirements in ISO 8846 and ISO 8849 (all three standards incorporated by reference; see 46 CFR 175.600), instead of those of this subpart, provided that each watertight 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, submitted to the cognizant

OCMI, that the safety of the vessel will not be impaired.

[CGD 85-080, 61 FR 986, Jan. 10, 1996, as amended by USCG-2003-16630, 73 FR 65209, Oct. 31, 2008]

#### § 182.510 Bilge piping system.

(a) A vessel of at least 7.9 meters (26 feet) in length must be provided with individual bilge lines and bilge suction 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 19.8 meters (65 feet) in length must be not less than 25 millimeters (1 inch) nominal pipe size. A bilge pipe in a vessel of more than 19.8 meters (65 feet) in length must be not less than 40 millimeters (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.

#### § 182.520 Bilge pumps.

(a) A vessel must be provided with bilge pumps in accordance with Table 182.520(a). 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

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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 182.520(a)

Number of passengers	Length of vessel	Bilge pumps required	Min. capacity required per pump ltrs/min (gal/min)
Any number .....	More than 19.8 m (65 ft) ..	2 fixed power pumps .....	190 LPM (50 GPM). 95 LPM (25 GPM).
More than 49 passengers and all ferry vessels.	Not more than 19.8 m (65 ft).	1 fixed power pump and ...	
Not more than 49 passengers (Other than ferry vessels).	7.9 m, 26 feet up to 19.8 m (65 ft).	1 portable hand pump .....	38 LPM (10 GPM).
		1 fixed power pump and 1 portable hand pump or.	38 LPM (10 GPM).
		1 fixed hand pump and ....	38 LPM (10 GPM).
Less than 7.9 m (26 ft) .....	Less than 7.9 m (26 ft) .....	1 portable hand pump .....	19 LPM (5 GPM).
		1 portable hand pump .....	19 LPM (5 GPM).

(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 Table 182.520(a) only on a vessel of not more than 19.8 meters (65 feet) in length carrying not more than 49 passengers, other than a ferry, provided that:

(1) The pump is listed by an independent laboratory as meeting the requirements in UL 1113 (incorporated by reference; see 46 CFR 175.600);

(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 Table 182.520(a), it must be permanently connected to the bilge system.

(h) On a vessel of not more than 19.8 meters (65 feet) in length, a power driven fire pump required by §181.300 of this chapter may serve as a fixed power bilge pump required by this subpart, provided it has the minimum flow rate required by Table 182.520(a).

(i) On a vessel of more than 19.8 meters (65 feet) in length, a power driven



fire pump required by §181.300 of this subchapter may serve as one of the two fixed power bilge pumps required by this subpart, 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 Table 182.520(a), 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.

[CGD 85-080, 61 FR 986, Jan. 10, 1996; 61 FR 20557, May 7, 1996, as amended by CGD 97-057, 62 FR 51050, Sept. 30, 1997; 62 FR 51358, Sept. 30, 1997; USCG-2003-16630, 73 FR 65209, Oct. 31, 2008]

#### § 182.530 Bilge high level alarms.

(a) On a vessel of at least 7.9 meters (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.

#### § 182.540 Ballast systems.

(a) Ballast piping must not be installed in any compartment integral with the hull of a wooden vessel. Where the carriage of liquid ballast in such a vessel is necessary, suitable ballast tanks, structurally independent of the hull, must be provided.

(b) Solid and water ballast must comply with the requirements of part 178 of this subchapter.

### Subpart F—Steering Systems

#### § 182.600 General.

A self-propelled vessel must comply with the provisions of this subpart.

#### § 182.610 Main steering gear.

(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 35 degrees on one side to 30 degrees on the other side in not more than 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 main steering gear must be designed so that transfer from the main steering gear or control to the auxiliary means of steering required by §182.620 can be achieved rapidly. Any tools or equipment necessary to make the transfer must be readily available.

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

(e) 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.

(f) In addition to meeting the requirements of paragraphs (a) through (e) of this section, a vessel with a power driven main steering gear must be provided with the following:

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(1) A disconnect switch located in the steering compartment, and instantaneous short circuit protection for electrical power and control circuits sized and located in accordance with § 58.25-55(d) of this chapter. 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 paragraph (e) of this section.

(g) In addition to meeting the requirements of paragraphs (a) through (f) of this section, a vessel more than 19.8 meters (65 feet) in length with a power driven main steering gear must be provided with the following:

(1) A visual means, located at the operating station, to indicate operation of the power units; and

(2) Instructions for transfer procedures from the main steering gear or control to the auxiliary means of steering required by § 182.620, posted at the location where the transfer is carried out.

[CGD 85-080, 61 FR 986, Jan. 10, 1996, as amended at 62 FR 51358, Sept. 30, 1997; USCG-2014-0688, 79 FR 58288, Sept. 29, 2014]

### § 182.620 Auxiliary means of steering.

(a) Except as provided in paragraph (c) of this section, a vessel must be provided with an auxiliary means of steering that is:

(1) Of adequate strength;

(2) Capable of moving the rudder from 15 degrees on one side to 15 degrees on the other side in not more than 60 seconds with the vessel at one-half its maximum service speed ahead, or 7 knots, whichever is greater; and

(3) Controlled from a location that permits safe maneuvering of the vessel and does not expose the person operating the auxiliary means of steering to personnel hazards during normal or heavy weather operation.

(b) A suitable hand tiller may be acceptable as the auxiliary means of

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steering where satisfactory to the cognizant OCMI.

(c) An auxiliary means of steering need not be provided if:

(1) The main steering gear and its controls are provided in duplicate;

(2) Multiple screw propulsion, with independent pilothouse control for each screw, is provided, and the vessel is capable of being steered using pilothouse control;

(3) No regular rudder is fitted and steering action is obtained by a change of setting of the propelling unit; or

(4) Where a rudder and hand tiller are the main steering gear.

[CGD 85-080, 61 FR 986, Jan. 10, 1996, as amended by CGD 97-057, 62 FR 51050, Sept. 30, 1997]

## Subpart G—Piping Systems

### § 182.700 General.

Materials used in piping systems must meet the requirements of this subpart and be otherwise acceptable to the cognizant OCMI.

### § 182.710 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) Carbon dioxide, Halon 1301, and clean agent 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 cognizant OCMI 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:

(1) Be composed of ferrous materials except when:

(i) Nonmetallic piping materials are permitted by § 182.720; or

(ii) Nonferrous metallic piping materials are permitted by § 182.730; and

(2) If subject to a pressure of more than 1,034 kPa (150 psig), be designed, fabricated, and inspected in accordance with the principles of ANSI B 31.1 (incorporated by reference; see 46 CFR 175.600) or other standard specified by the Commandant.

[CGD 85-080, 61 FR 986, Jan. 10, 1996, as amended by USCG-2003-16630, 73 FR 65209, Oct. 31, 2008; USCG-2006-24797, 77 FR 33892, June 7, 2012]

**§ 182.715 Piping subject to more than 1,034 kPa (150 psig) in non-vital systems.**

Piping subject to more than 1,034 kPa (150 psig) in a non-vital system must be designed, fabricated, and inspected in accordance with the principles of ANSI B 31.1, or other industry standard acceptable to the Commandant.

**§ 182.720 Nonmetallic piping materials.**

(a) Rigid nonmetallic materials (plastic) may be used only non-vital systems and in accordance with paragraphs (c) and (d) of this section. Alternatively, piping systems meeting the requirements of § 56.60-25(a) of this chapter may be used, provided that the installation requirements of paragraphs (c) and (d) of this section are met.

(b) Flexible nonmetallic materials (hose) may be used in vital and non-vital systems where permitted by paragraph (e) of this section.

(c) Nonmetallic piping must not be used in gasoline or diesel fuel systems. Flexible nonmetallic materials (hose) may be used where permitted by paragraph (e) of this section.

(d) Where rigid nonmetallic material (plastic) is permitted for use in piping systems by this section, the following restrictions apply:

(1) Penetrations of required watertight decks and bulkheads by any rigid plastic pipe are prohibited unless the following requirements are met:

(i) Each penetration must be accomplished using an acceptable metallic through deck or through bulkhead fitting that is welded or otherwise attached to the bulkhead or deck by an accepted method; and

(ii) One or more metallic shutoff valves must be installed adjacent to the fitting in one of the following ways:

(A) Only one metallic shutoff valve must be installed if it is operable from above the bulkhead deck;

(B) If two metallic shutoff valves are installed, one on either side of the bulkhead, they need not be operable from above the bulkhead deck provided immediate access to both is possible; or

(C) Where both plastic and metallic materials are used in piping that penetrates a bulkhead, and the two materials exist entirely on opposite sides of the bulkhead, a metallic shutoff valve must be installed at the bulkhead in the metallic part of the system, with the valve being capable of operation from above the bulkhead deck, or locally if immediate access is possible;

(2) Protection from mechanical damage must be specifically considered and all protective covering or shields must be installed to the satisfaction of the cognizant OCMI;

(3) Through hull fittings and shutoff valves must be metallic. In the case of nonmetallic hulls, materials that will afford an equal degree of safety and heat resistivity as that afforded by the hull may be approved; and

(4) The material specification must show that the rigid nonmetallic material possesses characteristics adequate for its intended service and environment and must be approved for use by the cognizant OCMI.

(e) Where flexible nonmetallic hose is permitted for use in piping systems by this section, it must meet SAE J-1942 (incorporated by reference; see 46 CFR 175.600) or be specifically approved by the Commandant. The following restrictions apply:

(1) Flexible nonmetallic hose must be complete with factory-assembled end fittings requiring no further adjustment of the fittings on the hose, or field attachable type fittings may be used. Hose end fittings must comply

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with SAE J-1475 (incorporated by reference; see 46 CFR 175.600). Field attachable fittings must be installed following the manufacturer's recommended practice. If special equipment is required, such as crimping machines, it must be of the type and design specified by the manufacturer. If field attachable type fittings are used, each hose assembly must be individually hydrostatically tested to twice the maximum operating pressure of the system;

(2) Flexible nonmetallic hose may be used in non-vital water and pneumatic systems, subject to the limitations of paragraph (d)(1) through (d)(4) of this section. Unreinforced hoses are limited to a maximum service pressure of 349 kPa (50 psig), reinforced hoses are limited to a maximum service pressure of 1,034 kPa (150 psig); and

(3) Flexible nonmetallic hose may be used in lube oil, fuel oil and fluid power systems, subject to the following requirements:

(i) Flexible hose may only be used at a pressure not to exceed the manufacturer's rating and must have a high resistance to saltwater, petroleum oils, and vibration;

(ii) Flexible hose runs must be visible, easily accessible, protected from mechanical damage, and must not penetrate watertight decks or bulkheads;

(iii) Flexible hose must be fabricated with an inner tube and a cover of synthetic rubber or other suitable material reinforced with wire braid;

(iv) Flexible hose used for alcohol-gasoline blend fuels must meet the permeability requirements specified in 33 CFR part 183, subpart J; and

(v) For the purpose of flexibility only, flexible hose installed in lengths of not more than 760 millimeters (30 inches) and subject to pressures of not more than 35 kPa (5 psig), may meet the following requirements:

(A) Suitable compression type connection fittings may be accepted;

(B) Flexible hose designed for use with hose clamps may be installed with two clamps, at both ends of the hose, which:

(1) Do not rely on the spring tension of the clamp for compressive force; and

(2) Are installed beyond the bead or flare or over the serrations of the mating spud, pipe, or hose fitting; and

(C) USCG Type A1, A2, B1, or B2 flexible hose may be accepted in accordance with 33 CFR part 183, subpart J.

[CGD 85-080, 61 FR 986, Jan. 10, 1996, as amended at 62 FR 51358, Sept. 30, 1997; USCG-2003-16630, 73 FR 65209, Oct. 31, 2008; USCG-2012-0196, 81 FR 48300, July 22, 2016]

## § 182.730 Nonferrous metallic piping materials.

(a) Nonferrous metallic piping materials are acceptable for use in the following:

(1) Non-vital systems;

(2) Aluminum fuel piping, if of a minimum of Schedule 80 wall thickness on an aluminum hulled vessel;

(3) Aluminum bilge, ballast, and firemain piping on an aluminum hulled vessel;

(4) If acceptable to the cognizant OCMI, nonferrous metallic piping with a melting temperature above 927 °C (1,700 °F) may be used in vital systems that are deemed to be galvanically compatible; and

(5) Other uses specifically accepted by the cognizant OCMI.

(b) Where nonferrous metallic material is permitted for use in piping systems by this subpart, the restrictions in this paragraph apply:

(1) Provisions must be made to protect piping systems using aluminum alloys in high risk fire areas due to the low melting point of aluminum alloys;

(2) Provisions must be made to prevent or mitigate the effect of galvanic corrosion due to the relative solution potentials of copper, aluminum, and alloys of copper and aluminum, which are used in conjunction with each other, steel, or other metals and their alloys;

(3) A suitable thread compound must be used in making up threaded joints in aluminum pipe to prevent seizing. Pipe in the annealed temper must not be threaded;

(4) The use of aluminum alloys with a copper content exceeding 0.6 percent is prohibited; and

(5) The use of cast aluminum alloys in hydraulic fluid power systems must be in accordance with the requirements

of § 58.30-15(f) in subchapter F of this chapter.

## PART 183—ELECTRICAL INSTALLATION

### Subpart A—General Provisions

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- 183.520 Lifeboat winches.
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- 183.550 General alarm systems.

AUTHORITY: 46 U.S.C. 2103, 3306; E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp., p. 277; Department of Homeland Security Delegation No. 0170.1.

SOURCE: CGD 85-080, 61 FR 997, Jan. 10, 1996, unless otherwise noted.

## Subpart A—General Provisions

### § 183.100 Intent.

This part contains requirements for the design, construction, installation, and operation of electrical equipment and systems including power sources, lighting, motors, miscellaneous equipment, and safety systems.

### § 183.115 Applicability to existing vessels.

(a) Except as otherwise required by paragraphs (b) and (c) of this section, an existing vessel must comply with the regulations on electrical installations, equipment, and material that were applicable to the vessel on March 10, 1996, or, as an alternative, the vessel may comply with the regulations in this part.

(b) An existing vessel must comply with the requirements of §§ 183.420 and 183.430.

(c) New installations of electrical equipment and material, and the repair or replacement of wire and cable, on an existing vessel, which are completed to the satisfaction of the cognizant Officer in Charge, Marine Inspection (OCMI) on or after March 11, 1996, must comply with this part. Replacement of existing equipment, not including wire or cable, installed on the vessel prior to March 11, 1996 need not comply with the regulations in this part.

### § 183.130 Alternative standards.

(a) A vessel, other than a high speed craft, of not more than 19.8 meters (65 feet) in length carrying not more than 12 passengers, may comply with the following requirements instead of complying with the requirements of this part in their entirety:

(1) Section 183.420; and

(2) The following American Boat and Yacht Council (ABYC) Projects where applicable:

(i) E-8, “Alternating Current (AC) Electrical Systems on Boats;”

(ii) E-9, “Direct Current (DC) Electrical Systems on Boats;” and

(iii) A-16, “Electrical Navigation Lights.”

(b) A vessel with an electrical installation operating at less than 50 volts may meet the requirements in 33 CFR

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183.430 instead of those in §183.340 of this part.

[CGD 85-080, 61 FR 997, Jan. 10, 1996; 61 FR 20557, May 7, 1996, as amended by CGD 97-057, 62 FR 51050, Sept. 30, 1997]

### Subpart B—General Requirements

#### § 183.200 General design, installation, and maintenance requirements.

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.

#### § 183.210 Protection from wet and corrosive environments.

- (a) Electrical equipment used in the following locations must be dripproof:
  - (1) A machinery space;
  - (2) A location normally exposed to splashing, water washdown, or other wet conditions within a galley, a laundry, or a public washroom or toilet room that has a bath or shower; or
  - (3) Another space with a similar moisture level.
- (b) Electrical equipment exposed to the weather must be watertight.
- (c) Electrical equipment exposed to corrosive environments must be of suitable construction and corrosion-resistant.

#### § 183.220 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, lampholders, 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.

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(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.

#### § 183.230 Temperature ratings.

Temperature ratings of electrical equipment must meet the requirements of 46 CFR 111.01-15.

[USCG-2003-16630, 73 FR 65209, Oct. 31, 2008]

### Subpart C—Power Sources and Distribution Systems

#### § 183.310 Power sources.

- (a)(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:
  - (i) The vital systems listed in §182.710 of this chapter;
  - (ii) Interior lighting except for decorative lights;
  - (iii) Communication systems including a public address system required under §184.610 of this chapter; and
  - (iv) Navigation equipment and lights.
- (2) A vessel with batteries of adequate capacity to supply the loads specified in paragraph (a)(1) of this section for three hours, and a generator or alternator driven by a propulsion engine, complies with the requirement in paragraph (a)(1) of this section.
- (b) 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 paragraph (a)(1) of this section.

#### § 183.320 Generators and motors.

- (a) Each generator and motor must be:
  - (1) In a location that is accessible, adequately ventilated, and as dry as practicable; and
  - (2) Mounted above the bilges to avoid damage by splash and to avoid contact with low lying vapors.

(b) Each generator and motor must be designed for an ambient temperature of 50 °C (122 °F) except that:

(1) If the ambient temperature in the space where a generator or motor will be located will not exceed 40 °C (104 °F) under normal operating conditions, the generator or motor may be designed for an ambient temperature of 40 °C (104 °F); and

(2) A generator or motor designed for 40 °C (104 °F) may be used in 50 °C (122 °F) ambient locations provided the generator or motor is derated to 80 percent of the full load rating, and the rating or setting of the overcurrent devices is reduced accordingly.

(c) 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.

(d) Each generator must have a nameplate attached to it containing the information required by Article 445 of NFPA 70 (incorporated by reference; see 46 CFR 175.600), and for a generator derated in accordance with paragraph (b)(2) of this section, the derated capacity.

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

(f) Each generator must be protected by an overcurrent device set value not exceeding 115 percent of the generator full load rating.

[CGD 85-080, 61 FR 997, Jan. 10, 1996, as amended by USCG-2003-16630, 73 FR 65209, Oct. 31, 2008]

#### § 183.322 Multiple generators.

When a vessel is equipped with two or more generators to supply ship's service power, the following requirements must be met:

(a) Each generator must have an independent prime mover; and

(b) The generator circuit breakers must be interlocked to prevent the generators from being simultaneously connected to the switchboard, except for the circuit breakers of a generator

operated in parallel with another generator when the installation meets §§111.12-11(f) and 111.30-25(d) in subchapter J of this chapter.

#### § 183.324 Dual voltage generators.

(a) A dual voltage generator installed on a vessel shall be of the grounded type, where:

(1) The neutral of a dual voltage system must be solidly connected at the switchboard's neutral bus; and

(2) The neutral bus shall be connected to ground.

(b) The neutral of a dual voltage system must be accessible for checking the insulation resistance of the generator to ground before the generator is connected to the bus.

(c) Ground detection must be provided that:

(1) For an alternating current system, meets §111.05-27 in subchapter J of this chapter; and

(2) For a direct current system, meets §111.05-29 in subchapter J of this chapter.

#### § 183.330 Distribution panels and switchboards.

(a) 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.

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

(c) Each switchboard must be fitted with a dripshield.

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

(e) Working space must be provided around all main distribution panels and switchboards of at least 610 millimeters (24 inches) in front of the switchboard, and at least 455 millimeters (18 inches) behind the switchboard. Rear access is prohibited when the working space behind the switchboard is less than 455 millimeters (18 inches).

(f) Nonconducting mats or grating must be provided on the deck in front of each switchboard and, if accessible from the rear, on the deck in the rear of the switchboard.

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(g) All uninsulated current carrying parts must be mounted on noncombustible, nonabsorbent, high dielectric insulating material.

(h) Equipment mounted on a hinged door of an enclosure must be constructed or shielded so that a person will not accidentally contact energized parts of the door mounted equipment when the door is open and the circuit energized.

(i) In the design of a control, interlock, or indicator circuit, the disconnect device and its connections, including each terminal block for terminating the vessel's wiring, must not have any electrically unshielded or uninsulated surfaces.

(j) Switchboards and distribution panels must be sized in accordance with § 111.30–19(a) in subchapter J of this chapter.

[CGD 85–080, 61 FR 997, Jan. 10, 1996, as amended by CGD 97–057, 62 FR 51050, Sept. 30, 1997]

### § 183.340 Cable and wiring requirements.

(a) If individual wires, rather than cable, are used in systems greater than 50 volts, the wire must be in conduit.

(b) All cable and wire must:

(1) Have stranded copper conductors with sufficient current carrying capacity for the circuit in which they are used;

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

(3) Be protected from the weather;

(4) Be installed with metal supports spaced not more than 610 millimeters (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 19.8 meters (65 feet) in length, installations in accordance with paragraph 14.h of ABYC E-8 and paragraph 15.h of ABYC E-9 (both incorporated by reference; see 46 CFR 175.600) are acceptable as meeting the requirements of this section;

(5) Not be installed with sharp bends;

(6) Be protected by metal coverings or other suitable means if in areas subject to mechanical abuse. Horizontal

pipes used for protection shall have 6 millimeter (.25 inch) holes for drainage every 1,520 millimeters (5 feet);

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

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

(9) Have sheathing or wire insulation compatible with the fluid in a tank when installed as allowed by paragraph (b)(8) of this section.

(c) 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.

(d) Cable and wire for power and lighting circuits must:

(1) Meet Section 310–13 of NFPA 70 (incorporated by reference; see 46 CFR 175.600) except that asbestos insulated cable and dry location cables may not be used;

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

(3) Meet § 111.60–1 in subchapter J of this chapter for cable, and § 111.60–11 in subchapter J of this chapter for wire.

(e) Cable or wire serving vital systems listed in § 182.710 of this chapter or emergency loads must be routed as far as practicable from high risk fire areas, such as galleys, laundries, and machinery spaces.

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

(g) Each connection to a conductor or terminal part of a conductor must be made within an enclosure and have either:

(1) A pressure type connector on each conductor;

(2) A solder lug on each conductor;

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

(4) A splice that is soldered, brazed, or welded to a flexible lead or conductor.

(h) 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.

(i) Each pressure type wire connector and lug must meet UL 486A (incorporated by reference; see 46 CFR 175.600) or other standard specified by the Commandant. The use of twist-on type wire nuts is permitted under the following conditions:

(1) 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

(2) Twist-on type connectors may not be used for making joints in cables, facilitating a conductor splice, or extending the length of a circuit.

(j) Each terminal block must have 6–32 terminal screws or larger.

(k) 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.

(l) A cable must not be spliced in a hazardous location.

(m) A cable may be spliced in a location, other than a hazardous location, under the following conditions:

(1) A cable installed in a subassembly may be spliced to a cable installed in another subassembly;

(2) For a vessel receiving alterations, a cable may be spliced to extend a circuit;

(3) A cable having a large size or exceptional length may be spliced to facilitate its installation; and

(4) 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.

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

(o) Ampacities of wires must meet Section 310–15 of NFPA 70 or other standard specified by the Commandant. Ampacities of cable must meet table A6 of IEEE 45–1977 (incorporated by reference; see 46 CFR 175.600) or other standard specified by the Commandant.

(p) Conductors for direct current systems must be sized so that the voltage drop at the load terminals does not exceed 10 percent. Table 183.340(p) indicates the size of conductor required for corresponding lengths and steady state (stable) values to obtain not more than this voltage drop at the load terminals of a two conductor circuit.

TABLE 183.340(p)—CONDUCTOR SIZES FOR AMPERES—LENGTHS

Total current on circuit, amperes	Length of conductor in meters (feet) from source of current to most distant fixture										
	3.1(10)	4.5(15)	6.1(20)	7.6(25)	9.2(30)	10.7(35)	12.2(40)	13.7(45)	15.2(50)	16.8(55)	18.3(60)
	12-volts, 2 wire—10 percent drop wire sizes (A.W.G.)										
5 .....	14	14	14	14	14	14	14	14	12	12	12
10 .....	14	14	14	12	12	12	10	10	10	10	8
15 .....	14	14	12	10	10	10	8	8	8	8	8
20 .....	12	12	10	10	8	8	8	8	6	6	6
25 .....	10	10	10	8	8	8	6	6	6	6	4

Other values can be computed by means of the following formula:

$$cm = \frac{K \times I \times L (\times 2 \text{ for two-wire circuit})}{E}$$

Where:

- cm = Circular-mil area of conductor
- K = 3.28 ohms/mil-meter (metric)  
= 10.75 ohm/mil-foot (english)  
(a constant representing the resistance of copper).
- I = Load current, in amperes.
- L = length of conductor from center of distribution, in meters (feet).

E = Voltage drop at load, in volts.

(q) If used, each armored cable metallic covering must:

- (1) Be electrically continuous; and
- (2) Be grounded at each end of the run to:

- (i) The metallic hull; or
- (ii) The common ground plate on nonmetallic vessels; and
- (3) Have final sub-circuits grounded at the supply end only.

(r) A portable or temporary electric cord or cable must be constructed and

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used in compliance with the requirements of §111.60-13 in subchapter J of this chapter for a flexible electric cord or cable.

[CGD 85-080, 61 FR 997, Jan. 10, 1996; 61 FR 20557, May 7, 1996, as amended by CGD 97-057, 62 FR 51050, Sept. 30, 1997; 62 FR 51358, Sept. 30, 1997; USCG-2003-16630, 73 FR 65210, Oct. 31, 2008]

#### § 183.350 Batteries—general.

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

(b) 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.

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

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

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

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

(g) 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.

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

[CGD 85-080, 61 FR 997, Jan. 10, 1996; 61 FR 20557, May 7, 1996]

#### § 183.352 Battery categories.

This section applies to batteries installed to meet the requirements of §183.310 for secondary sources of power to vital loads, or sources of power to final emergency loads.

(a) *Large.* A large battery installation is one connected to a battery charger having an output of more than 2 kilowatts (kw), computed from the highest possible charging current and the rated voltage of the battery installation.

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(b) *Small.* A small battery installation is one connected to a battery charger having an output of 2 kw or less, computed as above.

[CGD 85-080, 61 FR 997, Jan. 10, 1996, as amended by CGD 97-057, 62 FR 51050, Sept. 30, 1997]

#### § 183.354 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 in accordance with §111.15-10 in subchapter J of this chapter. Electrical equipment located within the battery enclosure must be approved by an independent laboratory for Class I, Division 1, Group B hazardous locations and meet §111.105 in subchapter J of this chapter.

(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.

#### § 183.360 Semiconductor rectifier systems.

(a) Each semiconductor rectifier system must have an adequate heat removal system that prevents overheating.

(b) Where a semiconductor rectifier system is used in a propulsion system or in other vital systems it must:

- (1) Have a current limiting circuit;
- (2) Have external overcurrent protection; and

(3) Meet Sections 35.84.2 and 35.84.4 of the ABS Steel Vessel Rules (incorporated by reference; see 46 CFR 175.600) or other standard specified by the Commandant.

[CGD 85-080, 61 FR 997, Jan. 10, 1996, as amended by USCG-2003-16630, 73 FR 65210, Oct. 31, 2008]

#### § 183.370 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 100 volts or more, must have a grounding pole and a grounding conductor in the portable cord.

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

**§ 183.372 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 250-96 of NFPA 70 (incorporated by reference; see 46 CFR 175.600), or other standard specified by the Commandant.

(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.

[CGD 85-080, 61 FR 997, Jan. 10, 1996, as amended by USCG-2003-16630, 73 FR 65210, Oct. 31, 2008]

**§ 183.376 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.

**§ 183.378 Ungrounded systems.**

Each ungrounded system must be provided with a suitably sensitive ground detection system located at the respective switchboard that provides continuous indication of circuit status to ground with a provision to momentarily remove the indicating device from the reference ground.

[CGD 85-080, 62 FR 51358, Sept. 30, 1997]

**§ 183.380 Overcurrent protection.**

(a) 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.

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

(c) A conductor of a control, interlock, or indicator circuit, such as a conductor for an instrument, pilot

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light, ground detector light, or potential transformer, must be protected by an overcurrent device.

(d) 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 150 percent of the conductor current carrying capacity.

(e) Steering gear control system circuits must be protected against short circuit.

(f) Each steering gear feeder circuit must be protected by a circuit breaker that meets the requirements of § 58.25-55 in subchapter F of this chapter.

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

(h) Overcurrent devices capable of carrying the starting current of the motor must be installed to protect motors, motor conductors, and control apparatus against:

(1) Overcurrent due to short circuits or ground faults; and

(2) Overload due to motor running overcurrent, in accordance with § 111.70-1 in subchapter J of this chapter. A protective device integral with the motor, which is responsive to both motor current and temperature, may be used.

(i) 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.

(j) 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.

(k) 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.

(l) Fuses must be of the cartridge type only and be listed by Underwriters Laboratories or another independent laboratory recognized by the Commandant.

(m) Each circuit breaker must meet UL 489 (incorporated by reference; see

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46 CFR 175.600) or other standard specified by the Commandant, and be of the manually reset type designed for:

(1) Inverse time delay;

(2) Instantaneous short circuit protection; and

(3) Switching duty if the breaker is used as a switch.

(n) Each circuit breaker must indicate whether it is in the open or closed position.

[CGD 85-080, 61 FR 997, Jan. 10, 1996, as amended by CGD 97-057, 62 FR 51050, Sept. 30, 1997; USCG-2002-13058, 67 FR 61279, Sept. 30, 2002; USCG-2003-16630, 73 FR 65210, Oct. 31, 2008]

### § 183.390 Shore power.

A vessel with an electrical system operating at more than 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.

### § 183.392 Radiotelephone installations.

A separate circuit, with overcurrent protection at the main distribution panel, must be provided for each radiotelephone installation.

## Subpart D—Lighting Systems

### § 183.410 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 fixture must comply with §183.200.

(2) Each lighting fixture and lampholder must be fixed. A fixture must not be supported by the screw shell of a lampholder.

(3) Each pendant type lighting fixture must be suspended by and supplied through a threaded, rigid conduit stem.

(4) 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 (incorporated by reference; see 46 CFR 175.600) or other standard specified by the Commandant. A lighting fixture in an accommodation space, radio room, galley or similar interior space may comply with UL 1570, UL 1571, UL 1572, UL 1573, or UL 1574 (all five standards incorporated by reference; see 46 CFR 175.600) as long as the general marine requirements of UL 595 are satisfied.

[CGD 85-080, 61 FR 997, Jan. 10, 1996, as amended by USCG-2003-16630, 73 FR 65210, Oct. 31, 2008]

#### § 183.420 Navigation lights.

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 19.8 meters (65 feet) in length must also have navigation lights that meet UL 1104, "Standards for Marine Navigation Lights," or other standard specified by the Commandant.

#### § 183.430 Portable lights

Each vessel must be equipped with at least two operable portable battery lights. One of these lights must be located at the operating station and the other at the access to the propulsion machinery space.

#### § 183.432 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 paragraph (a) of this section 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.

[CGD 85-080, 61 FR 997, Jan. 10, 1996, as amended at 62 FR 51358, Sept. 30, 1997]

### Subpart E—Miscellaneous Systems and Requirements

#### § 183.520 Lifeboat winches.

Each electric power operated lifeboat winch must meet, 111.95 in subchapter J and §160.015 in subchapter Q of this chapter, or other standard specified by the Commandant.

#### § 183.530 Hazardous areas.

(a) Electrical equipment in spaces containing machinery powered by, or fuel tanks for, gasoline or other fuels having a flashpoint of 43.3 °C (110 °F) or lower must be explosion-proof or ignition-protected, or be part of an intrinsically safe system.

(b) Electrical equipment in lockers used to store paint, oil, turpentine, or other flammable liquids must be explosion-proof or be part of an intrinsically safe system.

(c) Explosion-proof equipment and intrinsically safe systems must meet the requirements of §111.105 in subchapter J of this chapter.

[CGD 85-080, 61 FR 997, Jan. 10, 1996; 61 FR 24465, May 15, 1996]

#### § 183.540 Elevators.

Each elevator on a vessel must meet the requirements of ANSI A 17.1 (incorporated by reference; see 46 CFR 175.600) or other standard specified by the Commandant.

[USCG-2003-16630, 73 FR 65210, Oct. 31, 2008]

**§ 183.550 General alarm systems.**

All vessels with overnight accommodations must be equipped with a general alarm system. The public address system required by §184.610 of this chapter may be used to sound the general alarm signal.

**PART 184—VESSEL CONTROL AND MISCELLANEOUS SYSTEMS AND EQUIPMENT**

**Subpart A—General Provisions**

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**Subpart G—Miscellaneous**

- 184.702 Pollution prevention equipment and procedures.
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- 184.710 First-aid kits.

AUTHORITY: 46 U.S.C. 2103, 3306; E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp., p. 277; Department of Homeland Security Delegation No. 0170.1.

SOURCE: CGD 85-080, 61 FR 1002, Jan. 10, 1996, unless otherwise noted.

**Subpart A—General Provisions**

**§ 184.100 General requirement.**

(a) Vessel control systems and other miscellaneous systems and equipment required by this part must be suitable for the purposes intended.

(b) The cognizant Officer in Charge, Marine Inspection (OCMI) may require navigation, control, or communications equipment, in excess of the equipment specifically required by this part, on a vessel that is of a novel design, operates at high speeds in restricted or high traffic areas, operates in a dynamically supported mode, or operates on extended routes or in remote locations.

**§ 184.115 Applicability to existing vessels.**

(a) An existing vessel need not comply with §§184.402(c), 184.404, 184.410, and 184.602 unless the cognizant OCMI specifically requires compliance due to the route or service of the vessel.

(b) An existing vessel need not comply with the requirements of §184.610 until March 11, 2001, or 10 years after its keel was laid or the vessel was at a similar stage of construction, whichever is later.

(c) An existing vessel need not comply with the requirements of §184.710 until March 11, 1997.

**Subpart B—Cooking and Heating**

**§ 184.200 General.**

Cooking and heating equipment must be suitable for marine use. Equipment designed and installed in accordance with American Boat and Yacht Council (ABYC) A-3, “Galley Stoves,” and A-7, “Boat Heating Systems,” or with National Fire Protection Association (NFPA) 302, “Pleasure and Commercial Motor Craft,” complies with this requirement, except as restricted by §184.202 of this part.

**§ 184.202 Restrictions.**

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

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

(c) Vessels permitted to use liquefied and non-liquefied gases as cooking fuels by 46 CFR part 147 must meet the requirements in §184.240 of this part. The use of these fuels for cooking, heating, and lighting on ferry vessels is prohibited by part 147 in subchapter N of this chapter.

**§ 184.210 Heating equipment.**

(a) Each heater must be so constructed and installed as to prevent contact with combustible materials such as towels and clothing.

(b) Each electric space heater must be provided with a thermal cutout to prevent overheating.

(c) Each heater element of an electric space heater must be of an enclosed type, and the element case or jacket must be made of a corrosion resistant material.

**§ 184.220 Cooking equipment.**

(a) Doors on a cooking appliance must be provided with hinges and locking devices to prevent accidental opening in heavy seas.

(b) A cooking appliance must be installed to prevent movement in heavy seas.

(c) For a grill or similar type of cooking appliance, means must be provided to collect grease or fat and to prevent its spillage on wiring or the deck.

(d) Grab rails must be installed on a cooking appliance when determined by the cognizant OCMI to be necessary for safety.

(e) Sea rails, with suitable barriers to prevent accidental movement of cooking pots, must be installed on a cooking range.

(f) Electric connections for a cooking appliance must be dripproof.

[CGD 85-080, 61 FR 1002, Jan. 10, 1996, as amended at 62 FR 51358, Sept. 30, 1997]

**§ 184.240 Gas systems.**

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

(a) The design, installation and testing of each LPG system must meet ABYC A-1, "Marine Liquefied Petroleum Gas (LPG) Systems," Chapter 6 of

NFPA 302, or other standard specified by the Commandant.

(b) 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, or other standard specified by the Commandant.

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

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

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

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

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

(d) 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.

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

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

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

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

(f) 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.

(g) The following variances from ABYC A-1 section 1.12 are allowed for CNG:

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(1) The storage locker or housing access opening need not be in the top.

(2) The locker or housing need not be above the waterline.

(h) The following variances from NFPA 302 are allowed:

(1) 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);

(2) Ignition protection need not be provided as required by paragraph 6-5.4.

NOTE TO §184.240: The ABYC and NFPA standards referenced in this section require the posting of placards containing safety precautions for gas cooking systems.

[CGD 85-080, 61 FR 1002, Jan. 10, 1996, as amended by USCG-2000-7790, 65 FR 58465, Sept. 29, 2000]

### Subpart C—Mooring and Towing Equipment

#### § 184.300 Ground tackle and mooring lines.

A vessel must be fitted with ground tackle and mooring lines necessary for the vessel to be safely anchored or moored. The ground tackle and mooring lines provided must be satisfactory for the size of the vessel, the waters on which the vessel operates, subject to the approval of the cognizant OCMI.

### Subpart D—Navigation Equipment

#### § 184.402 Compasses.

(a) Except as otherwise provided in this section every vessel must be fitted with a suitable magnetic compass designed for marine use, to be mounted at the primary operating station.

(b) The following vessels need not be fitted with a compass:

(1) A vessel on a rivers route;

(2) A non-self propelled vessel; and

(3) A vessel operating on short restricted routes on lakes, bays, and sounds.

(c) Except on a vessel limited to day-time operations, the compass must be illuminated.

#### § 184.404 Radars.

(a) A vessel must be fitted with a Federal Communications Commission (FCC) type accepted general marine

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radar system for surface navigation with a radar screen mounted at the primary operating station if:

(1) The vessel is self-propelled;

(2) The vessel has an oceans, coastwise, limited coastwise, or Great Lakes route; and

(3) The vessel carries more than 49 passengers.

(b) A ferry that carries more than 49 passengers on a rivers route not within one mile of land must be fitted with a FCC Type Accepted general marine radar system for surface navigation with a radar screen mounted at the primary operating station.

(c) The radar and its installation must be suitable for the intended speed and route of the vessel.

(d) A vessel operated on a short restricted route need not be fitted with a radar if the cognizant OCMI determines that a radar is not necessary due to the vessel's route and local weather conditions.

#### § 184.410 Electronic position fixing devices.

A vessel on an oceans route must be equipped with an electronic position fixing device, capable of providing accurate fixes for the area in which the vessel operates, to the satisfaction of the cognizant OCMI.

[CGD 85-080, 61 FR 1002, Jan. 10, 1996, as amended at 62 FR 51358, Sept. 30, 1997]

#### § 184.420 Charts and nautical publications.

(a) As appropriate for the intended voyage, a vessel must carry adequate and up-to-date:

(1) Charts of large enough scale to make safe navigation possible;

(2) U.S. Coast Pilot or similar publication;

(3) Coast Guard Light List;

(4) Tide tables; and

(5) Current tables, or a river current publication issued by the U.S. Army Corps of Engineers or a river authority.

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

[CGD 85-080, 61 FR 1002, Jan. 10, 1996, as amended at 62 FR 51358, Sept. 30, 1997]



**Subpart E—Radio****§ 184.502 Requirements of the Federal Communications Commission.**

A vessel must comply with the applicable requirements for any radio and Electronic Position Indicating Radio-beacon (EPIRB) installations, including the requirements for a station license and installation certificates to be issued by the Federal Communications Commission, as set forth in 47 CFR part 80.

**§ 184.506 Emergency broadcast placard.**

A durable placard must be posted next to all radiotelephone installations with the emergency broadcast instructions and information, specific to the individual vessel.

[CGD 85-080, 61 FR 1002, Jan. 10, 1996, as amended at 62 FR 51358, Sept. 30, 1997]

**§ 184.510 Recommended emergency broadcast instructions.**

The following emergency broadcast instructions, when placed on a placard, will satisfy the requirement contained in § 184.506 for an emergency broadcast placard:

(a) Emergency Broadcast Instructions.

(1) Make sure your radiotelephone is on.

(2) Select 156.8 MHz (channel 16 VHF) or 2182 kHz. (Channel 16 VHF and 2182 kHz on SSB are for emergency and calling purposes only.)

(3) Press microphone button and, speaking slowly—clearly—calmly, say:

(i) “MAYDAY—MAYDAY—MAYDAY” for situations involving Immediate Danger to Life and Property; or

(ii) “PAN—PAN—PAN” for urgent situations where there is No Immediate Danger to Life or Property.

(4) Say: “THIS IS (INSERT VESSEL’S NAME), (INSERT VESSEL’S NAME), (INSERT VESSEL’S NAME), (INSERT VESSEL’S CALL SIGN), OVER.”

(5) Release the microphone button briefly and listen for acknowledgment. If no one answers, repeat steps 3 & 4.

(6) If there is no acknowledgment, or if the Coast Guard or another vessel responds, say: “MAYDAY” OR “PAN”, (INSERT VESSEL’S NAME).”

(7) DESCRIBE YOUR POSITION using latitude and longitude coordinates, or range and bearing from a known point.

(8) STATE THE NATURE OF THE DISTRESS.

(9) GIVE NUMBER OF PERSONS ABOARD AND THE NATURE OF ANY INJURIES.

(10) ESTIMATE THE PRESENT SEAWORTHINESS OF YOUR VESSEL.

(11) BRIEFLY DESCRIBE YOUR VESSEL: (INSERT LENGTH, COLOR, HULL TYPE, TRIM, MASTS, POWER, ANY ADDITIONAL DISTINGUISHING FEATURES).

(12) Say: “I WILL BE LISTENING ON CHANNEL 16/2182.”

(13) End message by saying: “THIS IS (INSERT VESSEL’S NAME & CALL SIGN).”

(14) If your situation permits, stand by the radio to await further communications with the Coast Guard or another vessel. If no answer, repeat, then try another channel.

(b) [Reserved]

[CGD 85-080, 61 FR 1002, Jan. 10, 1996, as amended by USCG-2010-0759, 75 FR 60004, Sept. 29, 2010]

**Subpart F—Control and Internal Communications Systems****§ 184.602 Internal communications systems.**

(a) A vessel equipped with pilothouse control must have a fixed means of two-way communications from the operating station to the location where the means of controlling the propulsion machinery, required by § 184.620(a) of this part, is located. Twin screw vessels with pilothouse control for both engines are not required to have a fixed communications system.

(b) A vessel equipped with auxiliary means of steering, required by § 182.620 of this subchapter, must have a fixed means of two-way communications from the operating station to the location where the auxiliary means of steering is controlled.

(c) When the propulsion machinery of a vessel cannot be controlled from the operating station, an efficient communications system must be provided between the operating station and the propulsion machinery space.

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(d) When the locations addressed in paragraphs (a), (b), and (c) of this section are sufficiently close together, direct voice communications satisfactory to the cognizant OCMI is acceptable instead of the required fixed means of communications.

(e) The OCMI may accept hand held portable radios as satisfying the communications system requirement of this section.

### § 184.610 Public address systems.

(a) Except as noted in paragraphs (d) and (e) below, each vessel must be equipped with a public address system.

(b) On a vessel of more than 19.8 meters (65 feet) in length, the public address system must be a fixed installation and be audible during normal operating conditions throughout the accommodation spaces and all other spaces normally manned by crew members.

(c) A vessel with more than one passenger deck and a vessel with overnight accommodations must have the public address system operable from the operating station.

(d) On a vessel of not more than 19.8 meters (65 feet) in length, a battery powered bullhorn may serve as the public address system if audible throughout the accommodation spaces of the vessel during normal operating conditions. The bullhorn's batteries are to be continually maintained at a fully charged level by use of a battery charger or other means acceptable to the cognizant OCMI.

(e) On a vessel of not more than 19.8 meters (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 cognizant OCMI.

### § 184.620 Propulsion engine control systems.

(a) A vessel must have two independent means of controlling each propulsion engine. Control must be provided for the engine speed, direction of shaft rotation, and engine shutdown.

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(1) One of the means may be the ability to readily disconnect the remote engine control linkage to permit local operation.

(2) A multiple engine vessel with independent remote propulsion control for each engine need not have a second means of controlling each engine.

(b) In addition to the requirements of paragraph (a), a vessel must have a reliable means for shutting down a propulsion engine, at the main pilothouse control station, which is independent of the engine's speed control.

(c) A propulsion engine control system, including pilothouse control, must be designed so that a loss of power to the control system does not result in an increase in shaft speed or propeller pitch.

## Subpart G—Miscellaneous

### § 184.702 Pollution prevention equipment and procedures.

A vessel must comply with the applicable design, equipment, personnel, procedures, and record requirements of 33 CFR parts 151, 155, and 156.

### § 184.704 Marine sanitation devices.

A vessel with installed toilet facilities must have a marine sanitation device that complies with 33 CFR part 159.

### § 184.710 First-aid kits.

A vessel must carry either a first-aid kit approved under approval series 160.041 or a kit with equivalent contents and instructions. For equivalent kits, the contents must be stowed in a suitable, watertight container that is marked "First-Aid Kit". A first-aid kit must be easily visible and readily available to the crew.

[CGD 85-080, 62 FR 51359, Sept. 30, 1997]

## PART 185—OPERATIONS

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AUTHORITY: 46 U.S.C. 2103, 3306, 6101; E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp., p. 277; Department of Homeland Security Delegation No. 0170.1.

SOURCE: CGD 85-080, 61 FR 1005, Jan. 10, 1996, unless otherwise noted.

### Subpart A—General Provisions

#### § 185.100 General requirement.

A vessel must be operated in accordance with applicable laws and regulations and in such a manner as to afford adequate precaution against hazards that might endanger the vessel and the persons being transported.

#### § 185.115 Applicability; preemptive effect.

(a) An existing vessel need not comply with the hull marking requirements in § 185.602(c) until completion of a vessel's first drydock required by § 176.600 of this subchapter, which occurs after March 11, 1996.

(b) An existing vessel need not comply with the marking requirement in §§ 185.604 and 185.610, where the size and contents of the markings required by these sections vary from the size and

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contents of required markings on life-saving equipment, watertight doors, and watertight hatches on the vessel prior to March 11, 1996, until the existing markings are no longer legible as determined by the cognizant Officer in Charge, Marine Inspection (OCMI).

(c) An existing vessel need not comply with the requirements of §§ 185.514, 185.516, and 185.604(i) until completion of the first inspection for certification that occurs after March 11, 1996.

(d) The regulations in this part have preemptive effect over State or local regulations in the same field.

[CGD 85-080, 61 FR 1005, Jan. 10, 1996; 61 FR 24465, May 15, 1996, as amended by USCG-2006-24797, 77 FR 33892, June 7, 2012]

### Subpart B—Marine Casualties and Voyage Records

#### § 185.202 Notice of casualty.

(a) 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 notify the nearest Sector Office, Marine Inspection Office, or Coast Guard Group Office whenever a vessel is involved in a marine casualty consisting of:

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

(2) 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 paragraphs (a)(3) through (a)(7) of this section;

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

(4) 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;

(5) Loss of life;

(6) 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 indi-

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vidual unfit to perform his or her routine duties; or

(7) An occurrence not meeting any of the above criteria but causing property damage in excess of \$25,000. 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.

(b) A vessel is excluded from the requirements of paragraphs (a)(5) and (a)(6) of this section with respect to the death or injury of shipyard or harbor workers when such accidents are not the result of either a vessel casualty (e.g., collision) or a vessel equipment casualty (e.g., cargo boom failure) and are subject to the reporting requirements of the Occupational Safety and Health Administration (OSHA) in 29 Code of Federal Regulations (CFR) part 1904.

(c) Notice given as required by § 185.203 satisfies the requirement of this section if the marine casualty involves a hazardous condition.

[CGD 85-080, 61 FR 1005, Jan. 10, 1996, as amended by USCG-2006-25556, 72 FR 36331, July 2, 2007]

#### § 185.203 Notice of hazardous conditions.

Whenever there is a hazardous condition, as defined by § 175.400 of this subchapter, on board the vessel, the owner, master, agent, or person in charge shall immediately notify the Captain of the Port of the port of place of destination and the Captain of the Port of the port or place in which the vessel is located of the hazardous condition.

#### § 185.206 Written report of marine casualty.

(a) The owner, master, agent, or person in charge shall, within five days, file a written report of any marine casualty. This written report is in addition to the immediate notice required by 185.202. This written report must be delivered to a Coast Guard Sector Office, or Marine Inspection Office. It must be provided on Form CG-2692 (Report of Marine Accident, Injury, or Death), Supplemented as necessary by

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appended Forms CG-2692A (Barge Addendum) and CG-2692B (Report of Required Chemical Drug and Alcohol Testing Following a Serious Marine Incident).

(b) If filed without delay after the occurrence of the marine casualty, the notice required by paragraph (a) of this section suffices as the notice required by §185.202.

[CGD 85-080, 61 FR 1005, Jan. 10, 1996, as amended by USCG-2006-25556, 72 FR 36331, July 2, 2007]

### § 185.208 Accidents to machinery.

The owner, managing operator, or master shall report damage to a boiler, unfired pressure vessel, or machinery that renders further use of the item unsafe until repairs are made, to the OCMI at the port in which the casualty occurred or nearest the port of first arrival, as soon as practicable after the damage occurs.

### § 185.210 Alcohol or drug use by individuals directly involved in casualties.

(a) For each marine casualty required to be reported by §185.202, the owner, agent, 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 casualty.

(b) The owner, agent, master, or person in charge of the vessel shall include in the written report, Form CG 2692, submitted for the casualty information that:

(1) Identifies those individuals for whom evidence of drug or alcohol use, or evidence of intoxication, has been obtained; and

(2) Specifies the method used to obtain such evidence, such as personal observation of the individual, or by chemical testing of the individual.

(c) An entry must be made in the Official Logbook if carried, pertaining to those individuals for whom evidence of intoxication is obtained. The individual shall be informed of this entry and the entry shall be witnessed by a second person.

(d) If an individual directly involved in a casualty refuses to submit to, or cooperate in, the administration of a timely chemical test, when directed by

a Coast Guard commissioned, warrant, or petty officer, or any other law enforcement officer authorized to obtain a chemical test under Federal, state, or local law, or by the owner, agent, master, or person in charge, this fact must be noted in the Official Logbook, if carried, and in the written report (Form CG 2692), and will be admissible as evidence in any administrative proceeding.

[CGD 85-080, 61 FR 1005, Jan. 10, 1996, as amended by CGD 97-057, 62 FR 51050, Sept. 30, 1997]

### § 185.212 Mandatory chemical testing following serious marine incidents.

A marine employer whose vessel is involved in a casualty or incident that is, or is likely to become, a serious marine incident as defined in §4.03-2 of subchapter A of this chapter shall comply with the requirements of §4.06 in subchapter A of this chapter.

### § 185.220 Records of a voyage resulting in a marine casualty.

The owner, agent, master, or person in charge of any vessel involved in a marine casualty for which a report is required under §185.202 of this part shall retain all voyage records maintained by the vessel, including rough and smooth deck and engine room logs, bell books, navigation charts, navigation work books, compass deviation cards, gyrocompass records, stowage plans, records of draft, aids to mariners, night order books, radiograms sent and received, radio logs, crew and passenger lists and counts, articles of shipment, official logs, and other material that might be of assistance in investigating and determining the cause of the casualty. The owner, agent, master, other officer, or person responsible for the custody thereof, shall make these records available upon request, to a duly authorized investigating officer, administrative law judge, officer or employee of the Coast Guard.

[CGD 85-080, 61 FR 1005, Jan. 10, 1996, as amended by CGD 97-057, 62 FR 51050, Sept. 30, 1997]

### § 185.230 Report of accident to aid to navigation.

Whenever a vessel collides with a buoy, or other aid to navigation under

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the jurisdiction of the Coast Guard, or is connected with any such collision, the person in charge of such vessel shall report the accident to the nearest OCMI. No report on Form CG 2692 is required unless otherwise required under 185.202.

### § 185.260 Reports of potential vessel casualty.

(a) An owner, charterer, managing operator, or agent of a vessel shall immediately notify either of the following Coast Guard offices if there is reason to believe the vessel is lost or imperiled:

(1) The Coast Guard district rescue coordination center (RCC) cognizant over the area in which the vessel was last operating; or

(2) The Coast Guard search and rescue authority nearest to where the vessel was last operating.

(b) Reasons for belief that a vessel is in distress include, but are not limited to, lack of communication with or non-appearance of the vessel.

(c) The owner, charterer, managing operator, or agent notifying the Coast Guard under paragraph (a) of this section, shall provide the name and identification number of the vessel, a description of the vessel, the names or number of individuals on board, and other information that may be requested by the Coast Guard.

### § 185.280 Official Logbook for foreign voyages.

(a) Every vessel on a voyage from a port in the United States to a foreign port except to a port in Canada, or vice versa, must have an Official Logbook.

(b) The master shall make or have made in the Official Logbook the following entries:

(1) Each legal conviction of a seaman of the vessel and the punishment inflicted;

(2) Each offense committed by a seaman of the vessel for which it is intended to prosecute or to enforce under a forfeiture, together with statements about reading the entry and the reply made to the charge as required by 46 U.S.C. 11502;

(3) A statement of the conduct, character, and qualifications of each seaman of the vessel or a statement that

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the master declines to give an opinion about that conduct, character, and qualifications;

(4) Each illness of or injury to a seaman of the vessel, the nature of the illness or injury, and the medical treatment;

(5) Each death on board, with the cause of death, and if a seaman, the information required by 46 U.S.C. 10702:

(i) The wages due to a seaman who dies during the voyage and the gross amount of all deductions to be made from the wages;

(ii) The sale of the property of a seaman who dies during the voyage, including a statement of each article sold and the amount received for the property;

(6) Each birth on board, with the sex of the infant and the name of the parents;

(7) Each marriage on board, with the names and ages of the parties;

(8) The name of each seaman who ceases to be a crew member (except by death), with the place, time, manner, and the cause why the seaman ceased to be a crew member;

(9) When a marine casualty occurs, a statement about the casualty and the circumstances under which it occurred, made immediately after the casualty when practicable to do so.

## Subpart C—Miscellaneous Operating Requirements

### § 185.304 Navigation underway.

(a) The movement of vessel shall be under the direction and control of the master or a licensed mate at all times. The master shall operate the vessel keeping the safety of the passengers and crew foremost in mind by directing the vessel in order to prevent a casualty. Special attention should be paid to:

(1) The current(s) velocity and direction of the transiting area;

(2) Tidal state;

(3) Prevailing and forecasted visibility and environmental conditions, including wind and waves;

(4) Density of marine traffic;

(5) Potential damage caused by own wake;

(6) The danger of each closing visual or radar contact;

(7) Vessel's handling characteristics; and

(8) Magnetic variation and deviation errors of the compass.

(b) Masters of vessels not greater than 65 ft (19.8 m) in length must have means available, satisfactory to the Officer in Charge, Marine Inspection (OCMI), to obtain or monitor the latest marine broadcast in order to comply with the requirements of paragraph (a) of this section.

[CGD 85-080, 61 FR 1005, Jan. 10, 1996, as amended at 62 FR 51359, Sept. 30, 1997; USCG-2007-0030, 75 FR 78092, Dec. 14, 2010]

**§ 185.315 Verification of vessel compliance with applicable stability requirements.**

(a) After loading and prior to departure and at all other times necessary to assure the safety of the vessel, the master shall determine that the vessel complies with all applicable stability requirements in the vessel's trim and stability book, stability letter, Certificate of Inspection, and Load Line Certificate, as the case may be. The vessel may not depart until it is in compliance with these requirements.

(b) In order to fulfill the requirements of paragraph (a) of this section and avoid overloading the vessel, the master must take into account the total weight of passengers, crew, and variable loads.

[CGD 85-080, 61 FR 1005, Jan. 10, 1996, as amended by USCG-2007-0030, 75 FR 78092, Dec. 14, 2010]

**§ 185.320 Steering gear, controls, and communication system tests.**

The master of a vessel shall have examined and tested the steering gear, signaling whistle, propulsion controls, and communication systems of the vessel prior to getting underway for a voyage, except that such examination and testing need not be conducted more than once in any 24 hour period.

**§ 185.330 Hatches and other openings.**

(a) Except when operating on lakes, bays, and sounds, or rivers routes in calm weather, all hatches and openings in the hull, except loading doors, of a vessel must be kept tightly closed except when being used.

(b) All watertight doors in subdivision bulkheads must be kept tightly closed during the navigation of the vessel except when being used for transit between compartments.

**§ 185.335 Loading doors.**

(a) Except as allowed by paragraph (b) of this section, the master of a vessel fitted with loading doors shall assure that all loading doors are closed and secured during the entire voyage.

(b) Loading doors, other than bow visors, may be opened when operating in protected or partially protected waters, provided the master of the vessel determines that the safety of the vessel is not impaired.

(c) For the purpose of this section, "loading doors" include all weather-tight ramps, bow visors, and openings used to load personnel, equipment, and stores, in the collision bulkhead, the side shell, and the boundaries of enclosed superstructures that are continuous with the shell of the vessel.

[CGD 85-080, 61 FR 1005, Jan. 10, 1996, as amended at 62 FR 51359, Sept. 30, 1997]

**§ 185.340 Vessels carrying vehicles.**

(a) Automobiles or other vehicles must be stowed in such a manner as to permit both passengers and crew to get out and away from the vehicles freely in the event of fire or other disaster. The decks, where necessary, must be distinctly marked with painted lines to indicate the vehicle runways and the aisle spaces.

(b) The master shall take any necessary precautions to see that automobiles or other vehicles have their motors turned off and their emergency brakes set when the vessel is underway, and that the motors are not started until the vessel is secured to the landing. In addition, a vehicle at each end of a line of vehicles or next to a loading ramp must have its wheels securely blocked, while the vessel is being navigated.

(c) The master shall have appropriate "NO SMOKING" signs posted and shall take all necessary precautions to prevent smoking or carrying of lighted or smoldering pipes, cigars, cigarettes, or similar items in the deck area assigned to automobiles or other vehicles.

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(d) The master shall, prior to getting underway, ensure that vehicles are properly distributed consistent with the guidance in the vessel's stability letter and Certificate of Inspection, if applicable.

### § 185.350 Fueling of vessels using fuel having a flash point of 43.3 °C (110 °F) or lower (such as gasoline).

A vessel must not take on fuel having a flash point of 43.3 °C (110 °F) or lower when passengers are on board.

### § 185.352 Ventilation of gasoline machinery spaces.

The mechanical exhaust for the ventilation of a gasoline machinery space, required by §182.460(a)(1)(ii) of this chapter, must be operated prior to starting gasoline engines for the time sufficient to insure at least one complete change of air in the space served.

### § 185.356 Carriage of hazardous materials.

A vessel that transports a hazardous material, listed in 49 CFR 172.101, in commerce shall ensure the material is handled and transported in accordance with 49 CFR parts 171 and 176.

[CGD 85-080, 61 FR 1005, Jan. 10, 1996, as amended at 62 FR 51359, Sept. 30, 1997]

### § 185.360 Use of auto pilot.

Whenever an automatic pilot is used the master shall ensure that:

(a) It is possible to immediately establish manual control of the vessel's steering;

(b) A competent person is ready at all times to take over steering control; and

(c) The changeover from automatic to manual steering and vice versa is made by, or under the supervision of, the master or the mate on watch.

## Subpart D—Crew Requirements

### § 185.402 Officers.

Each officer employed on any vessel subject to this subchapter must have his or her license or merchant mariner credential onboard and available for examination at all times when the vessel is operating.

[USCG-2006-24371, 74 FR 11267, Mar. 16, 2009]

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### § 185.410 Watchmen.

The owner, charterer, master, or managing operator of a vessel carrying overnight passengers shall have a suitable number of watchmen patrol throughout the vessel during the nighttime, whether or not the vessel is underway, to guard against, and give alarm in case of, a fire, man overboard, or other dangerous situation.

[CGD 85-080, 61 FR 1005, Jan. 10, 1996, as amended at 62 FR 51359, Sept. 30, 1997]

### § 185.420 Crew training.

(a) The owner, charterer, master or managing operator shall instruct each crew member, upon first being employed and prior to getting underway for the first time on a particular vessel and at least once every three months, as to the duties that the crew member is expected to perform in an emergency including, but not limited to, the emergency instructions listed on the emergency instruction placard required by §185.510 of this part and, when applicable, the duties listed in the station bill required by §185.514 of this part.

(b) Training conducted on a sister vessel may be considered equivalent to the initial and quarterly training requirements contained in paragraph (a) of this section.

(c) Crew training shall be logged or otherwise documented for review by the Coast Guard upon request. The training entry shall include the following information.

(1) Date of the training; and

(2) General description of the training topics.

[CGD 85-080, 61 FR 1005, Jan. 10, 1996, as amended at 62 FR 51359, Sept. 30, 1997]

## Subpart E—Preparations for Emergencies

### § 185.502 Crew and passenger list.

(a) The owner, charterer, managing operator, or master of the following vessels must keep a correct list of the names of all persons that embark on and disembark from the vessel:

(1) A vessel making a coastwise or oceans voyage where:

(i) Passengers embark or disembark from the vessel to another vessel or port other than at the port of origin; or



(ii) Passengers are carried overnight;  
 (2) A vessel making a voyage of more than 300 miles on the Great Lakes, except from a Canadian to a United States port; and

(3) A vessel arriving from a foreign port, except at a United States Great Lakes port from a Canadian Great Lakes port.

(b) The master of a vessel required to prepare a crew and passenger list by paragraph (a) of this section shall see that the list is prepared prior to departing on a voyage. The list must be communicated verbally or in writing ashore at the vessel's normal berthing location or with a representative of the owner or managing operator of the vessel. The crew and passenger list shall be available to the Coast Guard upon request.

#### § 185.503 Voyage plan.

(a) The master of the following vessels shall prepare a voyage plan:

(1) A vessel making an oceans or coastwise voyage;

(2) A vessel making a voyage of more than 300 miles on the Great Lakes, except from a Canadian to a United States port;

(3) A vessel, with overnight accommodations for passengers, making an overnight voyage; and

(4) A vessel arriving from a foreign port, except at a United States Great Lakes port from a Canadian Great Lakes port.

(b) The voyage plan required by paragraph (a) of this section must be prepared prior to departing on a voyage and communicated verbally or in writing, ashore at the vessel's normal berthing location or with a representative of the owner or managing operator of the vessel. The voyage plan shall be available to the Coast Guard upon request.

#### § 185.504 Passenger count.

The master of a vessel, except a vessel listed in §185.502(a) of this part, 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 to the Coast Guard upon request.

#### § 185.506 Passenger safety orientation.

(a) Except as allowed by paragraphs (b) and (c) of this section, 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:

(1) The location of emergency exits, survival craft embarkation areas, and ring life buoys;

(2) The stowage location(s) of life jackets;

(3) Either:

(i) 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, or

(ii) That passengers may contact a crew member for a demonstration as appropriate, prior to beginning an oceans or coastwise voyage;

(4) The location of the instruction placards for life jackets and other life-saving devices;

(5) That all passengers will be required to don life jackets when possible hazardous conditions exist, as directed by the master; and

(6) If the vessel is operating with reduced manning or equipment requirements in §176.114 of this chapter.

(b) As an alternative to an announcement that complies with paragraph (a) of this section, the master or other designated person may—

(1) 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 paragraphs (a)(1) through (a)(6) of this section; and

(2) 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

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emergency evacuation procedures are located on the card or pamphlet that was given to each passenger or is located near each seat.

(c) Ferries operating on short runs of less than 15 minutes may substitute bulkhead placards or signs for the announcement required in paragraphs (a) and (b) of this section if the OCMI determines that the announcements are not practical due to the vessel's unique operation.

(d) 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 paragraphs (a) or (b) of this section, is also informed of the required safety information.

(e) On a vessel on a voyage of more than 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 paragraphs (a) or (b) of this section if another muster is not held.

[CGD 85-080, 61 FR 1005, Jan. 10, 1996; 61 FR 20557, May 7, 1996, as amended by CGD 97-057, 62 FR 51050, Sept. 30, 1997; 62 FR 51359, Sept. 30, 1997]

### § 185.508 Wearing of life jackets.

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

(1) When transiting hazardous bars and inlets;

(2) During severe weather;

(3) In event of flooding, fire, or other events that may possibly call for evacuation; and

(4) When the vessel is being towed, except a non-self-propelled vessel under normal operating conditions.

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

### § 185.510 Emergency instructions.

(a) 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

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actions to be taken in the event of fire, heavy weather, or man overboard conditions.

(b) Except when in the judgment of the cognizant OCMI the operation of a vessel does not present one of the hazards listed, the emergency instruction placard should contain at least the applicable portions of the "Emergency Instructions" listed in § 185.512. The emergency instructions must be designed to address the particular equipment, arrangement, and operation of each individual vessel.

(c) If the cognizant OCMI determines that 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.

### § 185.512 Recommended emergency instructions format.

An emergency instruction placard containing the following information will satisfy the requirements of § 185.510.

(a) *Emergency instructions*—(1) *Rough weather at sea, crossing hazardous bars, or flooding.* (i) Close all watertight and weathertight doors, hatches, and air-ports to prevent taking water aboard or further flooding in the vessel.

(ii) Keep bilges dry to prevent loss of stability due to water in bilges. Use power driven bilge pump, hand pump, and buckets to dewater.

(iii) Align fire pumps to use as bilge pump if possible.

(iv) Check all intake and discharge lines, which penetrate the hull, for leakage.

(v) Passengers must remain seated and evenly distributed.

(vi) 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.

(vii) Never abandon the vessel unless actually forced to do so.

(viii) If assistance is needed follow the procedures on the emergency broadcast placard posted by the radio-telephone.

(ix) Prepare survival craft (life floats, (inflatable) rafts, (inflatable) buoyant apparatus, boats) for launching.

(2) *Man overboard.* (i) Throw a ring buoy overboard as close to the person as possible.

(ii) Post a lookout to keep the person overboard in sight.

(iii) Launch rescue boat and maneuver to pick up person in the water, or maneuver the vessel to pick up the person in the water.

(iv) Have crew member 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.

(v) If person is not immediately located, notify Coast Guard and other vessels in vicinity by radiotelephone.

(vi) Continue search until released by Coast Guard.

(3) *Fire.* (i) Cut off air supply to fire—close items such as hatches, ports, doors, ventilators, and louvers, and shut off ventilation system.

(ii) Cut off electrical system supplying affected compartment if possible.

(iii) 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.

(iv) If fire is in machinery spaces, shut off fuel supply and ventilation and activate fixed extinguishing system if installed.

(v) Maneuver vessel to minimize effect of wind on fire.

(vi) If unable to control fire, immediately notify the Coast Guard and other craft in the vicinity by radiotelephone.

(vii) Move passengers away from fire, have them put on life jackets, and if necessary, prepare to abandon the vessel.

(b) [Reserved]

#### § 185.514 Station bill.

(a) A station bill must be posted by the master on a vessel of more than 19.8 meters (65 feet) in length having a Certificate of Inspection requiring more than four crew members at any one time, including the master.

(b) 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 emer-

gencies. 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:

(1) 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;

(2) The preparing and launching of survival craft and rescue boats;

(3) The extinguishing of fire; and

(4) The mustering of passengers including the following:

(i) Warning the passengers;

(ii) Assembling the passengers and directing them to their appointed stations; and

(iii) Keeping order in the passageways and stairways and generally controlling the movement of the passengers.

(c) The station bill must be posted at the operating station and in a conspicuous location in each crew accommodation space.

#### § 185.516 Life jacket placards.

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

(b) If the cognizant OCMI determines that there is no suitable mounting surface aboard the vessel, the life jacket placards need not be posted but must be carried aboard the vessel and be available to the crew and passengers for familiarization.

#### § 185.518 Inflatable survival craft placards.

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

(b) Under the requirement in § 160.051-6(c)(1) of this chapter, the manufacturer of approved inflatable

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liferrafts is required to provide approved placards containing such instructions with each liferaft. Similar placards must be used for other inflatable survival craft.

[CGD 85-080, 61 FR 1005, Jan. 10, 1996, as amended by CGD 97-057, 62 FR 51050, Sept. 30, 1997; 62 FR 51359, Sept. 30, 1997]

### § 185.520 Abandon ship and man overboard drills and training.

(a) The master shall conduct sufficient drills and give sufficient instructions to make sure that all crew members 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 liferafts; 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 §180.210 of this chapter 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 3 month period before the vessel gets underway with passengers.

(e) Onboard training in the use of davit launched liferafts must take place at intervals of not more than 3 months on a vessel with a davit launched liferaft.

(f) Abandon ship and man overboard drills and training shall be logged or otherwise documented for review by the Coast Guard upon request. The

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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.

### § 185.524 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:

(1) Summoning passengers on a vessel on an overnight voyage to muster or embarkation stations;

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

(3) 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 by the Coast Guard 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.

[CGD 85-080, 61 FR 1005, Jan. 10, 1996, as amended at 62 FR 51359, Sept. 30, 1997]

### § 185.530 Responsibilities of licensed individuals.

Nothing in the emergency instructions or a station bill required by this subpart exempts any licensed individual from the exercise of good judgment in an emergency situation.

## Subpart F—Markings Required

### § 185.602 Hull markings.

(a) Each vessel must be marked as required by part 67, subpart I, of this chapter.

(b) Paragraphs (c) through (g) of this section apply to each vessel that does not demonstrate compliance in accordance with §178.310(c) of this chapter.

(c) Each vessel must—

(1) Have permanent draft marks at each end of the vessel; or

(2) Have permanent loading marks placed on each side of the vessel forward and aft to indicate the maximum allowable trim and amidships to indicate the maximum allowable draft.

(d) A loading mark required by paragraph (c)(2) of this section must be a horizontal line of at least 205 millimeters (8 inches) in length and 25 millimeters (1 inch) in height, with its upper edge passing through the point of maximum draft. The loading mark must be painted in a contrasting color to the sideshell paint.

(e) On a vessel that has a load line, the amidships marks required by paragraph (c)(2) of this section must be those required by the International Convention on Load Lines, 1966.

(f) In cases where draft marks are obscured due to operational constraints or by protrusions, the vessel must be fitted with a reliable draft indicating system from which the bow and stern drafts can be determined.

(g) On a vessel on which the number of passengers permitted on upper decks is limited by stability criteria, as indicated by the vessel's stability letter, the maximum number of passengers allowed on an upper deck must be indicated by a durable marking of at least 25 millimeters (1 inch) numbers and letters at the entranceway to that deck.

[CGD 85-080, 62 FR 51359, Sept. 30, 1997, as amended by USCG-2007-0030, 75 FR 78092, Dec. 14, 2010]

**§ 185.604 Lifesaving equipment markings.**

(a) The name of a vessel must be marked or painted in clearly legible letters and numbers:

(1) On each side of the bow of each rescue boat; and

(2) On each life float and buoyant apparatus.

(b) Each life jacket, immersion suit, and ring life buoy must be marked in clearly legible block capital letters with the vessel's name. The marking is not required on a life jacket carried to meet a temporary need for additional life jackets, if the life jacket has the name of another vessel or company marked on it. For an immersion suit, the name of the person to whom the immersion suit is assigned is an ac-

ceptable alternative to the name of the vessel.

(c) The name of the vessel must be marked or painted in clearly legible letters on each Emergency Position Indicating Radiobeacon (EPIRB), except on an EPIRB in an inflatable liferaft.

(d) The number of persons capacity must be marked or painted in clearly legible letters and numbers on each side of the bow of each rescue boat.

(e) The number of persons capacity must be marked or painted in clearly legible letters and numbers on each life float and buoyant apparatus. This number must:

(1) Be the number of persons the device is equipped for; and

(2) Not be greater than the number of persons the device is approved for as shown on its nameplate.

(f) The number and identification of the items stowed inside, and their sizes, must be marked in clearly legible letters and numbers on each container for life jackets and immersion suits. Identification of the items may be in words, or the appropriate symbols in IMO Resolution A.760(18) (incorporated by reference; see 46 CFR 175.600). Letters and numbers must be at least 50 millimeters (2 inches) high. Symbols must be at least 100 mm (4 inches) square.

(g) The name of the vessel must be marked or painted in clearly legible letters on each life float paddle.

(h) Each life jacket must be marked with Type I retroreflective material approved in 46 CFR 164.018 or other standard specified by the Commandant. The arrangement of the retroreflective material applied after March 11, 1996, must be as specified by IMO Resolution A.658(16) (incorporated by reference; see 46 CFR 175.600).

(i) Each rescue boat and ring life buoy must be marked with Type II retroreflective material approved in accordance with 46 CFR 164.018 or other standard specified by the Commandant. The arrangement of the retroreflective material applied after March 11, 1996, must be as specified by IMO Resolution A.658(16).

[CGD 85-080, 61 FR 1005, Jan. 10, 1996, as amended at 62 FR 51359, Sept. 30, 1997; 62 FR 64306, Dec. 5, 1997; USCG-2003-16630, 73 FR 65210, Oct. 31, 2008]

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**§ 185.606 Escape hatches and emergency exits.**

All escape hatches and other emergency exits used as means of escape must be marked on both sides in clearly legible letters at least 50 millimeters (2 inches) high: "EMERGENCY EXIT, KEEP CLEAR", unless such markings are deemed unnecessary by the cognizant OCMI.

**§ 185.608 Fuel shutoff valves.**

Remote fuel shutoff stations must be marked in clearly legible letters at least 25 millimeters (1 inch) high indicating purpose of the valve and direction of operation.

**§ 185.610 Watertight doors and watertight hatches.**

Watertight doors and watertight hatches must be marked on both sides in clearly legible letters at least 25 millimeters (1 inch) high: "WATERTIGHT DOOR—KEEP CLOSED" or "WATERTIGHT HATCH—KEEP CLOSED", unless such markings are deemed unnecessary by the cognizant OCMI.

**§ 185.612 Fire protection equipment.**

(a) Complete but simple instructions for the operation of a fixed gas fire extinguishing system must be located in a conspicuous place at or near each pull box and stop valve control and in the space where the extinguishing agent cylinders are stored. If the storage cylinders are separate from the protected space, the instructions must also include a schematic diagram of the system and instructions detailing alternate methods of releasing the extinguishing agent should the local manual release or stop valve controls fail to operate. Each control valve to a distribution line must be marked to indicate the space served.

(b) An alarm for a fixed gas fire extinguishing system must be clearly and conspicuously marked "WHEN ALARM SOUNDS-VACATE AT ONCE, CARBON DIOXIDE BEING RELEASED". Where a different extinguishing agent is installed, that agent shall be marked in place of "carbon dioxide."

(c) Each distribution line valve of a fixed gas fire extinguishing system and the fire main, must be plainly, con-

spicuously, and permanently marked indicating the space served.

(d) An indicator for an automatic sprinkler system must be conspicuously marked in clearly legible letters "SPRINKLER ALARM".

(e) An indicator for a fire detection and alarm system must be conspicuously marked in clearly legible letters "FIRE ALARM".

(f) The control cabinets or spaces containing valves, manifolds or controls for the various fire extinguishing systems must be marked in conspicuous red letters at least 2 inches high: "[STEAM/CARBON DIOXIDE/CLEAN AGENT/FOAM/WATER SPRAY—as appropriate] FIRE APPARATUS."

(g) Each entrance to a space storing carbon dioxide cylinders, a space protected by carbon dioxide systems, or any space into which carbon dioxide might migrate must be conspicuously marked as follows:

(1) Spaces storing carbon dioxide—"CARBON DIOXIDE GAS CAN CAUSE INJURY OR DEATH. VENTILATE THE AREA BEFORE ENTERING. A HIGH CONCENTRATION CAN OCCUR IN THIS AREA AND CAN CAUSE SUFFOCATION."

(2) Spaces protected by carbon dioxide—"CARBON DIOXIDE GAS CAN CAUSE INJURY OR DEATH. WHEN ALARM OPERATES OR WINTERGREEN SCENT IS DETECTED, DO NOT ENTER UNTIL VENTILATED. LOCK OUT SYSTEM WHEN SERVICING." The reference to wintergreen scent may be omitted for carbon dioxide systems not required to have odorizing units and not equipped with such units.

(3) Spaces into which carbon dioxide might migrate—"CARBON DIOXIDE GAS CAN CAUSE INJURY OR DEATH. DISCHARGE INTO NEARBY SPACE CAN COLLECT HERE. WHEN ALARM OPERATES OR WINTERGREEN SCENT IS DETECTED VACATE IMMEDIATELY." The reference to wintergreen scent may be omitted for carbon dioxide systems not required to

have odorizing units and not equipped with such units.

[CGD 85-080, 61 FR 1005, Jan. 10, 1996, as amended by USCG-2006-24797, 77 FR 33892, June 7, 2012; USCG-2012-0196, 81 FR 48300, July 22, 2016]

**§ 185.614 Portable watertight containers for distress flares and smoke signals.**

Portable watertight containers for distress flares and smoke signals shall be of a bright color, and containers shall be clearly marked in legible contrasting letters at least 12.7 millimeters (0.5 inches) high: "DISTRESS SIGNALS".

[CGD 85-080, 61 FR 1005, Jan. 10, 1996; 61 FR 24465, May 15, 1996]

**Subpart G—Operational Readiness, Maintenance, and Inspection of Lifesaving Equipment**

**§ 185.700 Operational readiness.**

(a) Each launching appliance and each survival craft and rescue boat on a vessel must be in good working order and ready for immediate use before the vessel leaves port and at all times when the vessel is underway.

(b) Each deck where survival craft or rescue boats are stowed or boarded must be kept clear of obstructions that would interfere with the boarding and launching of the survival craft or rescue boat.

**§ 185.702 Maintenance.**

(a) The manufacturer's instructions for onboard maintenance of survival craft, rescue boats, and launching appliances, manufactured on or after March 11, 1996, must be onboard a vessel of more than 19.8 meters (65 feet) in length and readily available for a vessel of not more than 19.8 meters (65 feet) in length. The instructions must also be readily available at each inspection for certification and reinspection.

(b) The owner or managing operator shall make sure that maintenance is carried out in accordance with the instructions required under paragraph (a) of this section.

(c) The cognizant OCMI may accept, instead of the instructions required under paragraph (a) of this section, a shipboard planned maintenance program that includes the items listed in that paragraph.

(d) The inspection and maintenance of the equipment listed in paragraph (a) of this section shall be logged or otherwise documented for review by the Coast Guard upon request.

**§ 185.704 Maintenance of falls.**

(a) Each fall used in a launching appliance on a vessel must be turned end for end at intervals of not more than 30 months.

(b) Each fall must be renewed when necessary due to deterioration or at intervals of not more than 5 years, whichever is earlier.

(c) Each fall must have a corrosion resistant tag with the following permanently marked on it:

(1) The date the new fall was installed; and

(2) If the fall has been turned end for end, the date it was turned.

**§ 185.720 Weekly maintenance and inspections.**

The following tests and inspections must be carried out weekly on a vessel:

(a) Each survival craft, rescue boat, and launching appliance must be visually inspected to ensure its readiness for use;

(b) Each rescue boat engine must be run ahead and astern for not less than 3 minutes, unless the ambient temperature is below the minimum temperature required for starting the engine; and

(c) Each battery for rescue boat engine starting must be brought up to full charge at least once each week if:

(1) The battery is of a type that requires recharging; and

(2) The battery is not connected to a device that keeps it continuously charged.

**§ 185.722 Monthly inspections.**

Each survival craft, rescue boat, and launching appliance on a vessel must

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be inspected monthly, using the manufacturer's instructions to make sure it is complete and in good order.

[CGD 85-080, 61 FR 1005, Jan. 10, 1996, as amended by USCG-2014-0688, 79 FR 58288, Sept. 29, 2014]

**§ 185.724 Quarterly inspections.**

(a) Each winch control apparatus of a launching appliance on a vessel, including motor controllers, emergency switches, master switches, and limit switches, must be examined once in each 3 months.

(b) The examination required by paragraph (a) of this section must include the removal of drain plugs and the opening of drain valves to make sure that enclosures are free of water.

**§ 185.726 Annual inspections.**

(a) Each rescue boat must be stripped, cleaned, and thoroughly inspected, and any necessary repairs made at least once each year, including emptying and cleaning of each fuel tank, and refilling it with fresh fuel.

(b) Each davit, winch, fall and other launching appliance must be thoroughly inspected, and any necessary repairs made, at least once each year.

(c) Each item of lifesaving equipment with an expiration date must be replaced during the annual inspection and repair if the expiration date has passed.

(d) Each battery used in an item of lifesaving equipment, except inflatable survival craft equipment, must be replaced during the annual inspection if the expiration date of the battery has passed. The expiration date of the battery may be marked on the battery or the owner or managing operator may have a record of the expiration date from the manufacturer of a battery marked with a serial number.

(e) Except for a storage battery used in a rescue boat, each battery without an expiration date indicated on it or for which the owner or managing operator does not have a record of the expiration date, used in an item of lifesaving equipment, must be replaced during the annual inspection.

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**§ 185.728 Testing and servicing of Emergency Position Indicating Radiobeacons (EPIRB).**

The master of the vessel shall ensure that:

(a) Each EPIRB, other than an EPIRB in an inflatable liferaft, must be tested monthly, using the integrated test circuit and output indicator, to determine that it is operative;

(b) The EPIRB's battery is replaced after it is used, or before the date required by FCC regulations in 47 CFR part 80, whichever comes sooner; and

(c) The EPIRB test required by paragraph (a) shall be logged or otherwise documented, as applicable.

[CGD 85-080, 61 FR 1005, Jan. 10, 1996, as amended by CGD 97-057, 62 FR 51050, Sept. 30, 1997]

**§ 185.730 Servicing of inflatable life-rafts, inflatable buoyant apparatus, inflatable life jackets, and inflated rescue boats.**

(a) An inflatable liferaft or inflatable buoyant apparatus must be serviced at a facility specifically approved by the Commandant for the particular brand, and in accordance with servicing procedures meeting the requirements of part 160, subpart 160.151, of this chapter—

(1) No later than the month and year on its servicing sticker affixed under 46 CFR 160.151-57(n), except that servicing may be delayed until the next scheduled inspection of the vessel, provided that the delay does not exceed 5 months; and

(2) Whenever the container is damaged or the container straps or seals are broken.

(b) Each inflatable lifejacket and hybrid inflatable lifejacket or work vest must be serviced:

(1) Within 12 months of its initial packing; and

(2) Within 12 months of each subsequent servicing, except that servicing may be delayed until the next scheduled inspection of the vessel, provided that the delay does not exceed 5 months.

(c) Each inflatable life jacket must be serviced in accordance with the servicing procedure under §160.176 in subchapter Q of this chapter, or other standard specified by the Commandant.



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(d) Each hybrid inflatable life jacket or work vest must be serviced in accordance with the servicing procedure under §160.077 in subchapter Q of this chapter, or other standard specified by the Commandant.

(e) Repair and maintenance of inflated rescue boats must be in accordance with the manufacturer's instructions. All repairs must be made at a servicing facility approved by the Commandant, except for emergency repairs carried out on board the vessel.

[CGD 85-080, 61 FR 1005, Jan. 10, 1996, as amended at 62 FR 51359, Sept. 30, 1997; USCG-2001-11118, 67 FR 58542, Sept. 17, 2002]

**§ 185.740 Periodic servicing of hydrostatic release units.**

(a) Each hydrostatic release unit, other than a disposable unit, must be serviced:

(1) Within 12 months of its manufacture and within 12 months of each subsequent servicing, except when servicing is delayed until the next scheduled inspection of the vessel, provided that the delay does not exceed 5 months; and

(2) In accordance with the repair and testing procedures under §160.062 in subchapter Q of this chapter, or other standard specified by the Commandant.

(b) Each disposable hydrostatic release unit must be marked with an ex-

piration date of two years after the date on which the unit is installed.

**Subpart H—Penalties**

**§ 185.900 Penalty for violations.**

Violation of the provisions of this subchapter will subject the violator to the applicable penalty provisions of Subtitle II of Title 46, United States Code.

**§ 185.910 Suspension and revocation.**

An individual holding a merchant mariner credential, license, certificate of registry, or merchant mariner's document who commits an act of misconduct, negligence, or incompetence, or who violates or fails to comply with this subchapter or any other law or regulation intending to promote marine safety, is subject to proceedings under the provisions of 46 U.S.C. 7703 and part 5 of this chapter with respect to suspension or revocation of a merchant mariner credential, license, certificate, or document.

[CGD 85-080, 61 FR 1005, Jan. 10, 1996, as amended by USCG-2006-24371, 74 FR 11267, Mar. 16, 2009]

**PARTS 186-187 [RESERVED]**