

open at all times, except while maintenance is being performed on the extinguishing system, when the valve must be locked in the closed position.

(f) Lockout valves added to existing systems must be approved by the Commandant as part of the installed system.

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

#### § 169.571 Odorizing units.

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.

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

### Subpart 169.600—Machinery and Electrical

#### § 169.601 General.

(a) The regulations in this subpart contain requirements for the design, construction and installation of machinery on sailing school vessels.

(b) Machinery must be suitable in type and design for the purpose intended. Installations of an unusual type and those not addressed by this subpart are subject to the applicable regulations in Subchapter F (Marine Engineering) and Subchapter J (Electrical Engineering) of this chapter.

(c) The use of liquefied inflammable gases, such as propane, methane, butane, etc., as fuel, except for cooking purposes, is prohibited.

#### INTERNAL COMBUSTION ENGINE INSTALLATIONS

#### § 169.605 General.

(a) Generators, starting motors, and other spark producing devices must be mounted as high above the bilges as practicable.

(b) Gages to indicate engine cooling water temperature, exhaust cooling water temperature and engine lubri-

cating oil pressure must be provided and located in plain view.

(c) All electrical components of the engine must be protected in accordance with § 183.410 of Title 33, Code of Federal Regulations to prevent ignition of flammable vapors.

#### § 169.607 Keel cooler installations.

(a) Except as provided in this section, keel cooler installations must meet the requirements of § 56.50-96 of this chapter.

(b) Approved metallic flexible connections may be located below the deepest load waterline if the system is a closed loop below the waterline and its vent is located above the waterline.

(c) Fillet welds may be used in the attachment of channels and half round pipe sections to the bottom of the vessel.

(d) Short lengths of approved non-metallic flexible hose may be used at machinery connections fixed by hose clamps provided that—

(1) The clamps are of a corrosion resistant material;

(2) The clamps do not depend on spring tension for their holding power; and

(3) Two clamps are used on each end of the hose or one hose clamp is used and the pipe ends are expanded or beaded to provide a positive stop against hose slippage.

#### § 169.608 Non-integral keel cooler installations

(a) Hull penetrations for non-integral keel cooler installations must be made through a cofferdam or at a sea chest.

(b) Non-integral keel coolers must be suitably protected against damage from debris and grounding by recessing the unit into the hull or by the placement of protective guards.

(c) Each non-integral keel cooler hull penetration must be equipped with a shutoff valve.

[CGD 83-005, 51 FR 896, Jan. 9, 1986, as amended by USCG-2000-7790, 65 FR 58464, Sept. 29, 2000]

#### § 169.609 Exhaust systems.

Engine exhaust installations and associated cooling systems must be built in accordance with the requirements of American Boat and Yacht Council, Inc.

## § 169.611

Standard P-1, "Safe Installation of Exhaust Systems for Propulsion and Auxiliary Machinery" and the following additional requirements:

(a) All exhaust installations with pressures in excess of 15 pounds per square inch gage or employing runs passing through living or working spaces must meet the material specifications of part 56 of Title 46, Code of Federal Regulations.

(b) Horizontal dry exhaust pipes are permitted if they do not pass through living or berthing spaces, terminate above the deepest load waterline, are arranged to prevent entry of cold water from rough seas, and are constructed of corrosion resistant material at the hull penetration.

(c) When the exhaust cooling system is separate from the engine cooling system, a suitable warning device must be provided to indicate a failure of water flow in the exhaust cooling system.

### § 169.611 Carburetors.

(a) This section applies to all vessels having gasoline engines.

(b) Each carburetor other than a down-draft 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.

(c) All gasoline engines must be equipped with an acceptable means of backfire flame control. Installations of backfire flame arresters bearing basic Approval Nos. 162.015 or 162.041 or engine air and fuel induction systems bearing basic Approval Nos. 162.015 or 165.042 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 part 58, subpart 58.10 (Internal Combustion Engine Installations) of this chapter.

[CGD 83-005, 51 FR 896, Jan. 9, 1986, as amended by CGD 88-032, 56 FR 35827, July 29, 1991]

## FUEL SYSTEMS

### § 169.613 Gasoline fuel systems.

(a) Except as provided in paragraph (b) each gasoline fuel system must

## 46 CFR Ch. I (10-1-13 Edition)

meet the requirements of § 56.50-70 of this chapter

(b) Each vessel of 65 feet and under must meet the requirements of §§ 182.15-25, 182.15-30, 182.15-35 and 182.15-40 of this chapter.

### § 169.615 Diesel fuel systems.

(a) Except as provided in paragraph (b) each diesel fuel system must meet the requirements of § 56.50-75 of this chapter.

(b) Each vessel of 65 feet and under must meet the requirements of §§ 182.20-22, 182.20-25, 182.20-30, 182.20-35 and 182.20-40 of this chapter.

## STEERING SYSTEMS

### § 169.618 General.

(a) Each vessel must have an effective steering system.

(b) The steering system must be designed to withstand all anticipated loading while under sail, including shocks to the rudder. Additionally, the steering system on vessels with an auxiliary means of propulsion must not be susceptible to damage or jamming at the vessel's maximum astern speed.

(c) The main steering gear must be capable of moving the rudder from hard-over to hard-over at an average rate of not less than  $2\frac{1}{2}^\circ$  per second with the vessel at design service speed (ahead).

### § 169.619 Reliability.

(a) Except where the OCMI judges it impracticable, the steering system must—

(1) Provide continued or restored steering capability in the event of a failure or malfunction of any single steering system component other than the rudder or rudder stock;

(2) Be independent of other systems, including auxiliary propulsion machinery; and

(3) Be operable in the event of localized fire or flooding.

(b) A main and independent auxiliary steering gear must be provided, except when—

(1) A small vessel uses a tiller or direct mechanical linkage as the primary means of controlling the rudder; or

(2) Installation of an auxiliary steering gear is not possible.