

## § 107.415

(SOLAS 74) by writing to the appropriate OCMI.

(b) The Commandant (G-MOC) may exempt a self-propelled unit of at least 500 gross tons on an international voyage from any of the requirements in the International Convention for Safety of Life at Sea, 1974 (SOLAS 74) if the unit meets the conditions of Regulation 4 of Part A, Chapter I, of SOLAS 74 which states the following:

a. A ship which is not normally engaged on international voyages but which, in exceptional circumstances, is required to undertake a single international voyage may be exempted by the Administration from any of the requirements of the present Regulations provided that it complies with safety requirements which are adequate in the opinion of the Administration for the voyage which is to be undertaken by the ship.

b. The Administration may exempt any ship which embodies features of a novel kind from any of the provisions of Chapters II-1, II-2, III and IV of these Regulations the application of which might seriously impede research into the development of such features and their incorporation in ships engaged on international voyages. Any such ship shall, however, comply with safety requirements which, in the opinion of that Administration, are adequate for the service for which it is intended and are such as to ensure the overall safety of the ship and which are acceptable to the Governments of the States to be visited by the ship. The Administration which allows any such exemption shall communicate to the Organization particulars of same and the reasons therefor which the Organization shall circulate to the Contracting Governments for their information.

(c) The Commandant (G-MOC) may exempt a self-propelled unit of at least 500 gross tons on an international voyage from the requirements of Chapter III (Lifesaving Appliances, &C.) of SOLAS 74 if the unit meets the conditions of Regulation 2 of chapter III which states in part:

The Administration may, if it considers that the sheltered nature and conditions of the voyage are such as to render the application of any specific requirements of this chapter unreasonable or unnecessary, exempt from those requirements individual ships or classes of ships which, in the course of their voyage, do not proceed more than 20 miles from the nearest land.

(d) The Commandant (G-MOC) may exempt a unit from the requirements of Chapters II-1 (Construction—Subdivi-

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sion and stability, machinery and electrical installations) or II-2 (Construction—Fire protection, fire detection and fire extinction) of SOLAS 74 if the unit meets the conditions of Regulation 1-4 of Part A Chapter II-1 or Regulation 1-4.1 of Part A Chapter II-2, respectively, of SOLAS 74 which state the following: The Administration of a State may, if it considers that the sheltered nature and conditions of the voyage are such as to render the application of any specific requirements of this chapter unreasonable or unnecessary, exempt from those requirements individual ships or classes of ships entitled to fly the flag of the State which, in the course of their voyage, do not proceed more than 20 miles from the nearest land.

(e) An Exemption Certificate is in force for the period of validity of the certificate to which it refers.

[CGD 73-251, 43 FR 56802, Dec. 4, 1978, as amended by CGD 90-008, 55 FR 30662, July 26, 1990; CGD 95-072, 60 FR 50464, Sept. 29, 1995; CGD 96-041, 61 FR 50730, Sept. 27, 1996]

### § 107.415 Safety Management Certificate.

(a) All self-propelled mobile offshore drilling units of 500 gross tons or over to which 33 CFR part 96 applies, 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) A Safety Management Certificate is issued for a period of not more than 60 months.

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

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AUTHORITY: 43 U.S.C. 1333; 46 U.S.C. 3102, 3306; Department of Homeland Security Delegation No. 0170.1.

SOURCE: CGD 73-251, 43 FR 56808, Dec. 4, 1978, unless otherwise noted.

**Subpart A—General**

**§ 108.101 Incorporation by reference.**

(a) Certain material is incorporated by reference into this part with the approval of the Director of the Federal Register in accordance with 5 U.S.C. 552(a). To enforce any edition other

than that specified in paragraph (b) of this section, the Coast Guard must publish notice of change in the FEDERAL REGISTER and make the material available to the public. All approved material is on file at the U.S. Coast Guard, Office of Design and Engineering Standards (G-MSE), 2100 Second Street SW., Washington, DC 20593-0001 or 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). All material is available from the sources indicated in paragraph (b) of this section.

(b) The material approved for incorporation by reference in this part and the sections affected are:

*American Society for Testing and Materials (ASTM)*

- 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959.
- ASTM D 93-97, Standard Test Methods for Flash Point by Pensky-Martens Closed Cup Tester. 108.500
- ASTM F 1014-92, Standard Specification for Flashlights on Vessels ..... 108.497
- ASTM F 1121-87 (1993), Standard Specification for International Shore Connections for Marine Fire Applications. 108.427

*International Maritime Organization (IMO)*

- Publications Section, 4 Albert Embankment, London, SE1 7SR, United Kingdom
- Resolution A.520(13), Code of Practice for the Evaluation, Testing and Acceptance of Prototype Novel Life-saving Appliances and Arrangements, 17 November 1983. 108.105.
- Resolution A.649(16), Code for the Construction and Equipment of Mobile Offshore Drilling Units (MODU Code), 19 October 1989 with amendments of June 1991. 108.503.
- Resolution A.658(16), Use and Fitting of Retro-reflective Materials on Life-saving Appliances, 20 November 1989. 108.645; 108.649.
- Resolution A.760(18), Symbols Related to Life-saving Appliances and Arrangements, 17 November 1993. 108.646; 108.647; 108.649; 108.655.

*National Fire Protection Association (NFPA)*

- 1 Batterymarch Park, Quincy, MA 02269-9101.
- NFPA 13-1996, Standard for the Installation of Sprinkler Systems ..... 108.430

[88-032, 56 FR 35826, July 29, 1991, as amended by CGD 95-072, 60 FR 50464, Sept. 29, 1995; CGD 84-069, 61 FR 25290, May 20, 1996; CGD 96-041, 61 FR 50730, Sept. 27, 1996; CGD 97-057, 62 FR 51046, Sept. 30, 1997; CGD 95-028, 62 FR 51208, Sept. 30, 1997; USCG 1999-5151, 64 FR 67182, Dec. 1, 1999]

**§ 108.103 Equipment not required on a unit.**

Each item of lifesaving and fire-fighting equipment carried on board the unit in addition to equipment of the type required under this subchapter, must—

- (a) Be approved; or
- (b) Be acceptable to the cognizant OCFI, for use on the unit.

[CGD 84-069, 61 FR 25291, May 20, 1996]

## § 108.105

### § 108.105 Substitutes for required fittings, material, apparatus, equipment, arrangements, calculations, and tests.

(a) Where this subchapter requires a particular fitting, material, apparatus, equipment, arrangement, calculation or test, the Commandant (G-MSE) may accept any substitution that is at least as effective as that specified. If necessary, the Commandant (G-MSE) may require engineering evaluations and tests to demonstrate the equivalence of the substitution.

(b) In any case where it is shown to the satisfaction of the Commandant that the use of any particular equipment, apparatus, arrangement, or test is unreasonable or impracticable, the Commandant may permit the use of alternate equipment, apparatus, arrangement, or test to such an extent and upon such condition as will insure, to his satisfaction, a degree of safety consistent with the minimum standards set forth in this subchapter.

(c) The Commandant (G-MSE) may accept a novel lifesaving appliance or arrangement, if it provides a level of safety equivalent to the requirements of this part and the appliance or arrangement—

(1) Is evaluated and tested in accordance with IMO Resolution A.520(13), Code of Practice for the Evaluation, Testing and Acceptance of Prototype Novel Life-saving Appliances and Arrangements; or

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

(d) During a unit's construction and when any modification to the lifesaving arrangement is done after construction, the owner must obtain acceptance of lifesaving arrangements from the Commandant (G-MSC).

(e) The OCMI may accept substitute lifesaving appliances other than those required by this part, except for—

(1) Survival craft and rescue boats; and

(2) Survival craft and rescue boat launching and embarkation appliances.

(f) Acceptance of lifesaving appliances and arrangements will remain in effect unless—

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(1) The OCMI deems their condition to be unsatisfactory or unfit for the service intended; or

(2) The OCMI deems the crew's ability to use and assist others in the use of the lifesaving appliances or arrangements to be inadequate.

[CGD 73-251, 43 FR 56808, Dec. 4, 1978, as amended by CGD 95-072, 60 FR 50465, Sept. 29, 1995; CGD 84-069, 61 FR 25291, May 20, 1996]

### § 108.109 Classification society standards.

(a) Any person who desires to use the rules of a classification society, other than the American Bureau of Shipping, to meet requirements in this Subchapter must request recognition of that society from the Commanding Officer, Marine Safety Center. The relevant rules must be submitted with the request.

[CGD 73-251, 43 FR 56808, Dec. 4, 1978, as amended by CGD 95-072, 60 FR 50465, Sept. 29, 1995]

## Subpart B—Construction and Arrangement

### HULL STRUCTURE

#### § 108.113 Structural standards.

Except as provided in § 108.109, each unit must meet the structural standards of the American Bureau of Shipping's *Rules for Building and Classing Offshore Mobile Drilling Units, 1978*.

#### § 108.114 Appliances for watertight and weathertight integrity.

(a) Appliances to ensure watertight integrity include watertight doors, hatches, scuttles, bolted manhole covers, or other watertight closures for openings in watertight decks and bulkheads.

(b) Appliances to ensure weathertight integrity include weathertight doors and hatches, closures for air pipes, ventilators, ventilation intakes and outlets, and closures for other openings in deckhouses and superstructures.

(c) Each internal opening fixed with appliances to ensure watertight integrity which are used intermittently during operation of the unit while afloat must meet the following:

(1) Each door, hatch, and scuttle must—

(i) Be remotely controlled from a normally manned control station, and be operable locally from both sides of the bulkhead; or

(ii) If there is no means of remote control there must be an alarm system which signals whether the appliance is open or closed both locally at each appliance and in a normally manned control station.

(2) Each closing appliance must remain watertight under the design water pressure of the watertight boundary of which it is a part.

(d) Each external opening fitted with an appliance to ensure weathertight integrity must be located so that it would not be submerged below the final equilibrium waterline if the unit is subjected simultaneously to—

(1) Damage causing flooding described in §174.075 through §174.085 of this chapter; and

(2) A wind heeling moment calculated in accordance with §174.055 of this chapter using a wind velocity of 50 knots (25.8 meters per second).

[CGD 73-251, 43 FR 56808, Dec. 4, 1978, as amended by CGD 79-023, 48 FR 51008, Nov. 4, 1983]

#### FIRE PROTECTION: GENERAL

##### § 108.123 Isolation of combustible material.

Each internal combustion engine exhaust, boiler and galley uptake, and similar heat source must be separated or insulated from combustible materials.

##### § 108.127 Storage lockers for combustibles.

Each oil and paint locker must be made of steel or an equivalent material or be completely lined with steel or an equivalent material as described in §108.131(c) of this subpart.

#### STRUCTURAL FIRE PROTECTION

##### § 108.131 Definitions.

(a) *Standard Fire Test* means the test in which specimens of the relevant bulkheads or decks, having a surface of approximately 4.65 square meters (50 square feet) and a height of 2.44 meters (8 feet) resembling as closely as possible the intended construction and in-

cluding, where appropriate, at least one joint, are exposed in a test furnace to a series of temperature relationships approximately as follows:

(1) At the end of 5 minutes—538°C. (1,000°F.)

(2) At the end of 10 minutes—704°C. (1,300°F.)

(3) At the end of 30 minutes—843°C. (1,550°F.)

(4) At the end of 60 minutes—927°C. (1,700°F.).

(b) Bulkheads and decks are defined and classed as follows:

(1) *A class bulkhead or deck* means a bulkhead or deck that—

(i) Is made of steel or other equivalent material; and

(ii) Prevents the passage of flame and smoke for 60 minutes if subjected to the standard fire test.

(2) *A 60 bulkhead or deck* means an A class bulkhead or deck that—

(i) Is insulated with approved insulation, bulkhead panels, or deck covering;

(ii) If subjected to the standard fire test for 60 minutes, has an average temperature rise on the unexposed side of the insulated bulkhead or deck of less than 139°C. (250°F.) above the temperature before the standard fire test and has a temperature rise at any point on the unexposed surface, including any joint, of less than 180°C. (325°F.) above the temperature before the standard fire test.

(3) *B class bulkhead or deck* means a bulkhead or deck that—

(i) Is made of approved noncombustible material;

(ii) Prevents flame from passing through it for 30 minutes if subjected to the standard fire test.

(4) *C class bulkhead or deck* means a bulkhead or deck made of approved noncombustible material.

(c) *Equivalent material* means a material that by itself or with insulation has smoke and fire retardant properties equal to that of the steel required for "A" or "B" class bulkheads or decks and has structural qualities equivalent to steel at the end of the applicable fire exposure.

(d) *Approved material* means a material approved under one of the following subparts of Subchapter Q of this chapter:

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- (1) Deck coverings, Subpart 164.006.
  - (2) Structural insulation, Subpart 164.007.
  - (3) Bulkhead panel, Subpart 164.008.
  - (4) Noncombustible materials, Subpart 164.009;
  - (5) Interior finishes, Subpart 164.012.
- (e) *Stairtower* means a stairway that penetrates more than one deck within the same enclosure, or two or more stairways that—

- (1) Are arranged vertically one above the other; or
- (2) Penetrate both the deck and the overhead within the same enclosure.

(f) *Accommodation space* includes, sleeping, mess, hospital, recreational, toilet, washing and shower spaces, and corridors.

### § 108.133 Hull superstructure, structural bulkheads, decks, and deckhouses.

Each hull superstructure, structural bulkhead, deck, and deckhouse must be made of steel or an equivalent material.

### § 108.135 Boundary bulkheads, decks of galleys, and combustible material lockers.

Each boundary bulkhead and deck of each galley, each combination galley and messroom, and each combustible material storage locker must be an A class bulkhead and A class deck respectively.

### § 108.137 Bulkhead and deck separations of accommodation spaces.

Each boundary bulkhead and deck that separates an accommodation space or control station from the following must be an A class bulkhead and A class deck respectively—

- (a) Machinery space;
- (b) Galley or combination galley and messroom;
- (c) Main pantry;
- (d) Classified space;
- (e) Store room.

### § 108.139 Boundary bulkheads and decks of a space containing emergency power.

Each boundary bulkhead and deck of a space containing an emergency electric power source or components of an emergency electric power source must be an A class bulkhead and A class

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deck respectively. When separate but adjoining spaces are provided for such equipment, boundary bulkhead type construction is not required for the separating partitions common to each space.

### § 108.141 Boundary bulkheads and decks between the emergency power source and service generators.

Each boundary bulkhead and deck of a space containing an emergency electric power source or components of an emergency electric power source that adjoins a space containing a ship's service generator, the components of a ship's service generator, or a classified space must be an A-60 bulkhead and A-60 deck.

### § 108.143 Accommodation space.

(a) Each corridor bulkhead in an accommodation space must be an A class or B class bulkhead except if an A class bulkhead is specifically required by this part.

(b) No door in a corridor bulkhead in an accommodation space may have a louver, except that a stateroom, lounge, or recreation room door may have louvers in its lower half.

(c) Each stairtower, elevator, and dumbwaiter, and other trunk must be enclosed by A class bulkheads.

(d) Each bulkhead not described under paragraph (a) of this section must be either A class, B class, or C class bulkheads.

(e) At least one opening to each stairway must be enclosed by either A class or B class bulkheads and doors.

(f) Each stairtower must have doors at all levels and each must be an A class door.

(g) Each door required by paragraphs (e) and (f) of this section—

- (1) Must be self-closing;
- (2) May not have any means to permanently hold the door open, except for magnetic holdbacks that are operated from the bridge or other remote location.

(h) Interior stairs, including stringers and treads, must be made of steel or an equivalent material.

(i) Except in washrooms and toilet spaces, each deck covering in an accommodation space must be made of an

approved material, except an overlay on a deck for leveling or finishing that is not more than 9.375 millimeters ( $\frac{3}{8}$  inch) thick.

(j) Except as provided in paragraph (l), each ceiling, lining, insulation, and pipe and duct lagging in an accommodation space must be made of an approved material that is noncombustible.

(k) Each sheathing, furring, or holding piece used to secure a bulkhead, ceiling, lining, or insulation in an accommodation space must be made of an approved material that is non-combustible.

(l) No bulkhead, lining, or ceiling in an accommodation space may have a combustible veneer greater than 2 millimeters ( $\frac{1}{12}$  inch) in thickness.

(m) Each corridor or hidden space in an accommodation space may be covered by an approved interior finish or a reasonable number of coats of paint. However, no corridor or hidden space may have combustible veneer, trim, or decoration except material approved under Subpart 164.012 of this chapter.

#### § 108.145 Hatches and tonnage openings.

Each hatch, except a hatch between storage spaces and each tonnage opening closure, must be made of steel or an equivalent material of the same class as the bulkhead or deck where the opening occurs.

#### § 108.147 Certain paints prohibited.

No nitrocellulose or other highly flammable or noxious fume-producing paint or lacquer may be used on a unit.

#### MEANS OF ESCAPE

#### § 108.151 Two means required.

(a) Each of the following must have at least 2 means of escape:

(1) Each accommodation space with a deck area of at least 27 sq. meters (300 sq. ft.).

(2) Each space, other than an accommodation space, that is continuously manned or used on a regular working basis except for routine security checks.

(3) Weather deck areas where personnel may be normally employed.

(b) When two means of escape are required from a space below the main deck, one the means of escape must provide for a rapid escape through openings that are not required to be watertight by damage stability considerations.

(c) When two means of escape are required from a space above the main deck, one of the means of escape must provide for a rapid escape to a weather deck.

#### § 108.153 Location of means of escape.

The required two means of escape must be through exits that minimize the possibility of having both exits blocked if a fire or other casualty occurs in the area.

#### § 108.155 Restrictions on means of escape utilized.

A required means of escape may not be a vertical ladder or deck scuttle, except that one of the means of escape may be a vertical ladder or deck scuttle if a stairway would be impracticable.

#### § 108.157 Locked doors.

No door to the required means of escape may be designed to lock except—

(a) A crash door or a door that has a locking device that can be easily forced, if on both sides of the door a permanent and easily seen instruction is placed; or

(b) An outside door to a deckhouse if the door can be locked by key only and if the master or person in charge has control of the key to the door's lock.

#### § 108.159 Stairways and exterior inclined ladders.

Each stairway, except a stairway in a machinery or storage space, and each exterior inclined ladder must be at least 70 centimeters (28 inches) wide with an angle of inclination from the horizontal of not more than 50 degrees, except that special consideration may be given to the installation if a 70 centimeters (28 inch) width is impracticable.

#### § 108.160 Vertical ladders.

(a) Each vertical ladder must have rungs that are—

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(1) At least 41 centimeters (16 inches) in length;

(2) Not more than 30 centimeters (12 inches) apart, uniform for the length of the ladder; and

(3) At least 18 centimeters (7 inches) from the nearest permanent object in back of the ladder.

(b) Except when unavoidable obstructions are encountered, there must be at least 11.5 centimeters (4½ inches) clearance above each rung.

(c) Except as provided in §108.540(h)(3)(ii), each exterior vertical ladder more than 6 meters (20 ft.) in length must be fitted with a cage or ladder safety device meeting ANSI Standard 14.3 (1974) for fixed ladders.

(d) No vertical fixed ladders may be made of wood.

[CGD 73-251, 43 FR 56808, Dec. 4, 1978, as amended by USCG-2002-13058, 67 FR 61279, Sept. 30, 2002]

### § 108.161 Dead end corridors.

No dead end corridor may be more than 13 meters (43 feet) long.

### § 108.165 Access to lifeboats and life-rafts.

Each unit must be designed to provide direct access to the lifeboat and liferaft embarkation areas.

### § 108.167 Weather deck ladders.

Each unit must have at least one permanent, inclined ladder between each weather deck.

#### CLASSIFIED LOCATIONS

### § 108.170 Definitions.

(a) Classified locations are those in which flammable hydrocarbon gas or vapors, resulting from the drilling operations, may be present in quantities sufficient to produce an explosive or ignitable mixture. Location of these areas affect the design of the units' machinery, electrical, and ventilation systems. (See Notes 1 and 2).

(b) For the purpose of this subpart "semi-enclosed location" means a location where natural conditions of ventilation are notably different from those on open decks due to the presence of structures such as roofs, windbreaks, or bulkheads.

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NOTES: 1. Further requirements with respect to hazardous locations are contained in part 111, subpart 111.105, of this chapter.

2. For specific requirements for machinery and electrical installations on mobile offshore drilling units see Subchapters "F" and "J" of this chapter.

[CGD 73-251, 43 FR 56808, Dec. 4, 1978, as amended by CGD 94-108, 61 FR 28270, June 4, 1996]

### § 108.171 Class I, Division 1 locations.

The following are Class I, Division 1 locations:

(a) An enclosed space that contains any part of the mud circulating system that has an opening into the space and is between the well and final degassing discharge.

(b) An enclosed or semi-enclosed location that is below the drill floor, and contains a possible source of gas release.

(c) An enclosed space that is on the drill floor, and is not separated by a solid, gas-light floor from the spaces specified in paragraph (b) of this section.

(d) A space that would normally be considered a Division 2 location under §108.173 but where combustible or flammable gases might accumulate.

(e) A location in the weather, or a semi-enclosed location, except as provided in paragraph (b) of this section that is within 1.5 m (5 ft.) of the boundary of any—

(1) Equipment or opening specified in paragraph (a) of this section;

(2) Ventilation outlet, access, or other opening to a Class I, Division 1 space; or

(3) Gas vent outlet.

(f) Except as provided in §108.175, an enclosed space that has an opening into a Class I, Division 1 location.

### § 108.173 Class I, Division 2 locations.

The following are Class I, Division 2 locations:

(a) An enclosed space that has any open portion of the mud circulating system from the final degassing discharge to the mud suction connection at the mud pit.

(b) A location in the weather that is—

(1) Within the boundaries of the drilling derrick up to a height of 3 m (10 ft.) above the drill floor;

(2) Below the drill floor and within a radius of 3 m (10 ft.) of a possible source of gas release; or

(3) Within 1.5 m (5 ft.) of the boundaries of any ventilation outlet, access, or other opening to a Class I, Division 2 space.

(c) A location that is—

(1) Within 1.5 m (5 ft.) of a semi-enclosed Class I, Division 1 location indicated in §108.171(b); or

(2) Within 1.5 m (5 ft.) of a Class I, Division 1 space indicated in §108.171(e).

(d) A semi-enclosed area that is below and contiguous with the drill floor to the boundaries of the derrick or to the extent of any enclosure which is liable to trap gasses.

(e) A semi-enclosed derrick to the extent of its enclosure above the drill floor or to a height of 3 m (10 ft.) above the drill floor, whichever is greater.

(f) Except as provided in §108.175 an enclosed space that has an opening into a Class I, Division 2 location.

#### § 108.175 Contiguous locations.

An enclosed space that has direct access to a Division 1 or Division 2 location is the same division as that location, except—

(a) An enclosed space that has direct access to a Division 1 location is not a hazardous location if—

(1) The access has self-closing gas-tight doors that form an air lock;

(2) The ventilation causes greater pressure in the space than in the Division 1 location; and

(3) Loss of ventilation overpressure activates an alarm at a manned station;

(b) An enclosed space that has direct access to a Division 1 location can be considered as a Division 2 location if—

(1) The access has a self-closing, gas-tight door that opens into the space and that has no hold-back device;

(2) Ventilation causes the air to flow with the door open from the space into the Division 1 location; and

(3) Loss of ventilation activates an alarm at a manned control station; and

(c) An enclosed space that has direct access to a Division 2 location is not a hazardous location if—

(1) The access has a self-closing, gas-tight door that opens into the space and that has no hold-back device;

(2) Ventilation causes the air to flow with the door open from the space into the Division 2 location; and

(3) Loss of ventilation activates an alarm at a manned control station.

#### § 108.177 Electrical equipment in classified locations.

Electrical equipment and devices installed in spaces made non-hazardous by the methods indicated in §108.175 must only be essential equipment.

#### VENTILATION

#### § 108.181 Ventilation for enclosed spaces.

(a) Each enclosed space must be vented or ventilated.

(b) There must be a means to close each vent or ventilating system.

(c) Each fan in a ventilating system must have remote controls installed in accordance with part 111, subpart 111.103, of this chapter.

(d) There must be a means to close each doorway, ventilator, and annular space around each funnel or other opening to machinery, stowage, or working spaces. The means must be located outside the space.

(e) Each intake in a ventilating system must be located so as to prevent, as far as practicable, the intake of noxious fumes.

[CGD 73-251, 43 FR 56808, Dec. 4, 1978, as amended by CGD 94-108, 61 FR 28270, June 4, 1996]

#### § 108.185 Ventilation for enclosed classified locations.

(a) The ventilation system for each enclosed classified location must be designed to maintain a pressure differential between the enclosed classified location and each non-classified location adjacent to the enclosed classified location, so as to prevent the discharge of ignitable gases into the non-classified adjacent locations.

(b) Each air intake must be outside of enclosed classified locations.

(c) Each unit must have alarms that are powered independently of the ventilation motor power and control circuitry and sound at a continuously manned station when—

(1) Gas is present in an enclosed classified location; or

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(2) The ventilation system for the space is not working.

(d) Each ventilation system for enclosed classified locations must provide a complete change of air every five minutes.

[CGD 73-251, 43 FR 56808, Dec. 4, 1978, as amended by CGD 94-108, 61 FR 28270, June 4, 1996]

### § 108.187 Ventilation for brush type electric motors in classified spaces.

Ventilation for brush type electric motors in classified locations must meet N.F.P.A. 496-1974 "Standard for Purged and Pressurized Enclosures for Electrical Equipment in Hazardous Locations", except audible and visual alarms may be used if shutting down the motors may cause unsafe conditions.

## ACCOMMODATION SPACES

### § 108.193 Restrictions.

(a) There must be no direct communication between the accommodation spaces and any chainlocker, stowage, or machinery space, except through solid, close-fitted doors or hatches.

(b) No access, vent, or sounding tube from a fuel or oil tank may open into any accommodation space, except that accesses and sounding tubes may open into corridors.

### § 108.195 Location of accommodation spaces.

(a) On surface type units, accommodation spaces must not be located forward of a vertical plane located at 5 percent of the unit's length aft of the stem, at the designed summer load line.

(b) On all units, the deckhead of each accommodation space must be above the deepest load line.

### § 108.197 Construction of accommodation spaces.

(a) Each sleeping, mess, recreational, or hospital space that is adjacent to or immediately above a stowage or machinery space, paint locker, drying room, washroom, toilet space, or other odor source must be made odorproof.

(b) Each accommodation space that is adjacent to or immediately above a galley, machinery space, machinery

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casing, boiler room, or other noise or heat source, must be protected from the heat and noise.

(c) Where the shell or an unsheathed weather deck forms a boundary of an accommodation space, the shell of deck must have a covering that prevents the formation of moisture.

(d) The deckheads of each accommodation space must be a light color.

(e) Each accommodation space in which water may accumulate must have a drain scupper located in the lowest part of the space, considering the average trim of the unit.

(f) Each public toilet space must be constructed and located so that its odors do not readily enter any sleeping, mess, recreational, or hospital space.

### § 108.199 Arrangement of sleeping spaces.

To the extent practicable, each occupation group must be berthed together in sleeping spaces arranged to minimize disturbance created by personnel leaving for or arriving from a working period.

### § 108.201 Size of sleeping spaces.

(a) No sleeping space may berth more than four persons, except that a sleeping space for personnel not regularly employed on a unit may berth up to six persons if the space meets § 108.199 and berthing of six persons in that space is authorized by the Commandant (G-MSO).

(b) Without deducting any equipment used by the occupants, each sleeping space must have for each occupant—

(1) 2.8 square meters (approximately 30 square feet) of deck area; and

(2) 6 cubic meters (approximately 210 cubic feet) of volume.

(c) Each sleeping space must have at least 191 centimeters (approximately 6 feet 3 inches) of headroom over clear deck areas.

[CGD 73-251, 43 FR 56808, Dec. 4, 1978, as amended by CGD 82-063b, 48 FR 4781, Feb. 3, 1983; CGD 95-072, 60 FR 50465, Sept. 29, 1995; CGD 96-041, 61 FR 50730, Sept. 27, 1996]

### § 108.203 Berths and lockers.

(a) Each sleeping space must have a separate berth for each occupant.

(b) No more than one berth may be placed over another.

(c) Each berth must have a framework of hard, smooth material that is not likely to corrode or harbor vermin.

(d) Each berth must be arranged to provide ample room for easy occupancy.

(e) Each berth must be at least 76 centimeters (approximately 30 inches) wide by 193 centimeters (approximately 76 inches) long.

(f) Adjacent berths must be separated by a partition that extends at least 46 centimeters (approximately 18 inches) above the sleeping surface.

(g) The bottom of a lower berth must be at least 30 centimeters (approximately 12 inches) above the deck.

(h) The bottom of an upper berth must be at least 76 centimeters (approximately 2 feet 6 inches) from the bottom of the berth below it and from the deck or any pipe, ventilating duct, or other overhead installation.

(i) Each berth must have a berth light.

(j) Each occupant of a sleeping space must have a readily accessible locker of hard, smooth material.

(k) Each locker must be at least .194 square meters (approximately 300 square inches) in cross section and 1.53 meters (approximately 60 inches) high.

**§ 108.205 Wash spaces; toilet spaces; and shower spaces.**

(a) For the purposes of this section—  
(1) “Private facility” means a toilet, washing, or shower space that is accessible only from one single or double occupancy sleeping space;

(2) “Semi-private facility” means a toilet, washing or shower space that is accessible from either of two one-to-four person occupancy sleeping spaces; and

(3) “Public facility” means a toilet, washing, or shower space that is not private or semi-private.

(b) Each private facility must have one toilet, one shower, and one washbasin, all of which may be in a single space.

(c) Each semi-private facility must have at least one toilet and one shower, which may be in a single space.

(d) Each room adjoining a semi-private facility must have a washbasin if a washbasin is not installed in a semi-private facility.

(e) Each unit must have enough public facilities to provide at least one toilet, one shower, and one washbasin for each eight persons who occupy sleeping spaces that do not have private or semi-private facilities.

(f) Urinals may be installed in toilet rooms, but no toilet required in this section may be replaced by a urinal.

(g) Each public toilet space and washing space must be convenient to the sleeping space that it serves.

(h) No public facility may open into any sleeping space.

(i) Each washbasin, shower, and bathtub must have hot and cold running water.

(j) Adjacent toilets must be separated by a partition that is open at the top and bottom for ventilation and cleaning.

(k) Public toilet facilities and shower facilities must be separated.

(l) Each public facility that is a toilet space must have at least one washbasin unless the only access to the toilet space is through a washing space.

(m) Each toilet must have an open front seat.

(n) Each washing space and toilet space must be so constructed and arranged that it can be kept in a clean and sanitary condition and the plumbing and mechanical appliances kept in good working order.

(o) Washbasins may be located in sleeping spaces.

**§ 108.207 Messrooms.**

(a) Each messroom that is not adjacent to the galley that serves it must be equipped with a steamtable.

(b) Each messroom must seat the number of persons expected to eat in the messroom at one time.

**§ 108.209 Hospital spaces.**

(a) Each unit carrying twelve or more persons on a voyage of more than three days must have a hospital space.

(b) Each hospital space must be suitably separated from other spaces.

(c) No hospital space may be used for any other purpose, when used for care of the sick.

(d) An entrance to each hospital space must be wide enough and arranged to readily admit a person on a stretcher.

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(e) Each berth in a hospital space must be made of metal.

(f) Each upper berth must be hinged and arranged so that it can be secured clear of the lower berth.

(g) Each hospital space must have at least one berth that is accessible from both sides.

(h) Each hospital space must have one berth for every 12 persons or portion thereof on board, who are not berthed in single occupancy rooms, but the number of berths need not exceed six.

(i) Each hospital space must have a toilet, washbasin, and bathtub or shower accessible from the hospital space.

(j) Each hospital space must have clothes lockers, a table, and seats.

**§ 108.210 Hospital space not required.**

(a) The hospital space required under §108.209 is not required on a unit if one single or double occupancy sleeping space, designated and equipped as a treatment or isolation room or both is available for immediate medical use, and has—

(1) An entrance that is wide enough and arranged to readily admit a person on a stretcher;

(2) A single berth or examination table that is accessible from both sides; and

(3) A washbasin in or immediately adjacent to it.

**§ 108.211 Miscellaneous accommodation spaces.**

(a) Each unit must have enough facilities for personnel to wash their own clothes, including at least one tub or sink that has hot and cold running water.

(b) Each unit must have enough equipment or space for the personnel to dry their own clothes.

(c) Each unit must have an accommodation space that can be used for recreation.

**§ 108.213 Heating requirements.**

(a) Each accommodation space must be heated by a heating system that can maintain at least 20°C. (68°F.).

(b) Radiators and other heating apparatuses must be constructed, located or shielded so as to avoid risk of—

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- (1) Fire;
- (2) Danger; and
- (3) Discomfort

to the occupants of each accommodation space.

(c) Each exposed pipe in an accommodation space, leading to a radiator or other heating apparatus must be insulated.

**§ 108.215 Insect screens.**

(a) Accommodation spaces must be protected against the admission of insects.

(b) Insect screens must be installed when natural ventilation is provided.

**RAILS**

**§ 108.217 Guardrails and bulwarks.**

(a) Each unit must have guardrails or bulwarks along the edge of the bridge, of each deck, and of each deck opening.

(b) Each guardrail and bulwark must extend at least one meter (39.37 inches) above the deck except where this height may interfere with the normal operation of the unit, a lesser height may be approved.

(c) Removable guardrails may be installed where operating conditions warrant their use.

**§ 108.219 Guardrails.**

(a) Except for exposed peripheries of a freeboard or superstructure deck, each guardrail must have at least two evenly spaced courses.

(b) At exposed peripheries of a freeboard or superstructure deck, each guardrail must have at least three courses not more than 38 centimeters (15 in.) apart with the lowest course not more than 23 centimeters (9 in.) above the deck.

(c) For a rounded gunwale, the guardrail must be at the edge of the flat of the deck.

**§ 108.221 Storm rails.**

Each unit must have a storm rail in the following locations:

(a) On each deckhouse side that is normally accessible.

(b) On each side of each passageway that is wider than 1.83 meters (6 feet).

(c) On at least one side of each passageway that is less than 1.83 meters (6 feet) wide.

**§ 108.223 Guards on exposed equipment.**

Each unit must have hand covers, guards, or rails installed on all belts, gears, shafts, pulleys, sprockets, spindles, flywheels or other reciprocating, rotating or moving parts of machinery or equipment normally exposed to contact by personnel.

## HELICOPTER FACILITIES

**§ 108.231 Application.**

Sections 108.231 through 108.241 apply to each unit with a helicopter landing facility.

**§ 108.233 Location and size.**

(a) Each helicopter deck must be—

(1) At least the size of the rotor diameter of the largest single main rotor helicopter that will be used on the facility; or

(2) If tandem main rotor helicopters use the facility, at least of a size to provide a longitudinal axis of  $\frac{1}{10}$  the overall length of the helicopter, and a width of  $\frac{3}{4}$  of the overall length of the helicopter.

NOTE: For the purpose of paragraph (a)(2) the overall length is measured across both main rotors in the fore and aft line.

(b) Each helicopter deck must be located so as to provide clear approach/ departure paths to enable the largest helicopter using the facility to operate in all weather conditions which allow helicopter operations.

**§ 108.235 Construction.**

(a) Each helicopter deck must be designed to accommodate the loadings (static and dynamic) imposed by operation and stowage of helicopters intended to use the facility as well as environmental loadings (wind, wave, water, snow, etc.) anticipated for the unit.

(b) The adequacy of each helicopter deck for the loadings required in paragraph (a) of this section must be shown by design calculations. Where the placement of a load affects the suitability of a structural member, the load must be evaluated in the most unfavorable position for each member.

(c) The analysis required in paragraph (b) of this section must be based on the dead load of the structure, exist-

ing stresses in the deck when it is an integral part of a unit's structure, and each of the following loading conditions:

(1) *Uniform distributed loading.* A loading of  $2\text{kg/m}^2$  ( $42\text{ lb/ft}^2$ ) applied to the helicopter deck area.

(2) *Helicopter landing impact loading.* The limit load established by the limit drop test in 14 CFR 29.725, or a load of not less than 75 percent of the helicopter maximum weight taken on a square area of  $0.3 \times 0.3\text{ m}$  ( $1\text{ ft.} \times 1\text{ ft.}$ ) under each main landing gear unit applied anywhere on the helicopter deck area.

(3) *Stowed helicopter loading.* The helicopter maximum weight plus inertial forces from the helicopter due to anticipated unit motions, and applicable environmental loadings including wind loads.

(d) The landing area of each helicopter facility must—

(1) Have a non-skid surface;

(2) Have drainage facilities that prevent the collection of liquids and prevent liquids from spreading to or falling on other parts of the unit;

(3) Have recessed tie-down points; and

(4) Be free of projections, except that landing lights or other projections may be installed around the periphery of the landing deck provided they do not interfere with landing and take-off operations.

(e) The unprotected perimeter of each helicopter facility must have a safety net at least 1.5 meters (4.92 ft.) wide. The outer edge of the net must not extend more than 15 centimeters (6 in.) above the surface of the deck.

(f) Each helicopter facility must have both a main and an emergency access/ egress route located as far apart from each other as practicable.

**§ 108.237 Fuel storage facilities.**

(a) Helicopter fuel storage tanks must be installed as far as practicable from—

(1) The landing area; and

(2) Each source of vapor ignition.

(b) Independent tanks must meet Subpart 58.50 of this Chapter.

(c) Marine portable fuel stowage tanks must meet Part 64 of this chapter.

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(d) Each marine portable fuel stowage tank must have a means to contain fuel spills or leaks.

[CGD 73-251, 43 FR 56808, Dec. 4, 1978, as amended by USCG-1999-6216, 64 FR 53226, Oct. 1, 1999]

### § 108.239 Fuel transfer equipment.

(a) Each nozzle must be a "deadman" type.

(b) Each hose must have a storage reel.

(c) Each hose must have a static grounding device.

(d) Each electric fuel transfer pump must have a control with a fuel transfer pump operation indicator light at the pump.

(e) There must be a fuel pump shut off at each of the access routes required by § 108.235(f).

(f) Each fuel transfer pump and each hose reel must have a means to contain fuel spills or leaks.

(g) Each hose must meet chapter 3 "Aircraft Fueling Hose" of National Fire Protection Association Standard for Aircraft Fuel Servicing (N.F.P.A. No. 407-1975).

### § 108.241 Visual aids.

(a) Each helicopter deck must—

(1) Have a wind direction indicator located in an unobstructed area readily visible to helicopter pilots approaching the deck;

(2) Be fitted around the perimeter with yellow and blue lights in alternate order, not more than 3 meters (10 ft.) apart; and

(3) Be marked with—

(i) The unit's identification;

(ii) A continuous line 40 centimeters (16 in.) wide on the perimeter; and

(iii) Aiming circles as may be appropriate considering deck configuration, helicopter type, and operational requirements.

(b) All markings must be in a contrasting color to the surface of the deck.

## Subpart C—Stability

### § 108.301 Stability.

Each unit must meet the requirements in Subchapter S of this chapter

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that apply to Mobile Offshore Drilling Units.

[CGD 79-023, 48 FR 51008, Nov. 4, 1983]

## Subpart D—Fire Extinguishing Systems

### § 108.401 Fire main system.

Each unit must have a fire main system.

### § 108.403 Fire extinguishing systems: General.

(a) Each of the following on a unit must have an approved fixed gaseous type extinguishing system:

(1) Each paint locker, oil room, and similar space.

(2) Each enclosed space containing internal combustion or gas turbine main propulsion machinery.

(3) Each enclosed space containing internal combustion machinery with an aggregate power of at least 1000 B.H.P.

(4) Each enclosed space containing a fuel oil unit, including purifiers, valves, or manifolds for main propulsion machinery or internal combustion machinery with an aggregate power of at least 1000 B.H.P.

(5) Each enclosed ventilation system for electric motors or generators used for vital services including bilge pumps, fire pumps, or propulsion.

(b) Each space containing an oil fired boiler, the fuel oil unit or valves for the boiler, or manifolds in the line between the fuel settling tanks and the boiler on a unit must have a fixed gas type, foam, or other approved fire extinguishing system.

[CGD 73-251, 43 FR 56808, Dec. 4, 1978, as amended by CGD 95-027, 61 FR 26008, May 23, 1996]

### § 108.403a Fire extinguishing systems: Non-vital services.

Each enclosed ventilating system for electric motors or generators not used for vital services must have an access into the system for firefighting or be protected by a fixed fire protection system.

**§ 108.404 Selection of fire detection system.**

(a) If a fire detector is in a space, it must provide effective detection of fires most likely to occur in the space.

(b) The fire detection system must be designed to minimize false alarms.

**§ 108.405 Fire detection system.**

(a) Each fire detection system and each smoke detection system on a unit must—

(1) Be approved by the Commandant; and

(2) Have a visual alarm and an audible alarm in the pilothouse or at a normally manned control station for the system.

(b) Each fire detection system must be divided into zones to limit the area covered by any particular alarm signal.

(c) Each visual alarm must—

(1) Have a chart or diagram next to the alarm that shows the location of the zones in the system and that contains the instructions for operating, and testing the system;

(2) When activated show the zone in the system where fire has been detected; and

(3) Be in a noticeable location in the pilothouse or control station.

**§ 108.407 Detectors for electric fire detection system.**

(a) Each detector in an electric fire detection system must be located where—

(1) No portion of the overhead of a space protected is more than 3 meters (10 feet) from a detector;

(2) Beams and girders extending below the ceiling of the space protected and any other obstructions do not detract from the effectiveness of the detector; and

(3) Damage to the detector is unlikely to occur if it is not protected.

(b) Each detector must be set to activate at not less than 57° C (135° F) and at not more than 73° C (165° F), except that if a space normally has a high ambient temperature each detector may be set to activate at not less than 80° C (175° F) and not more than 107° C (225° F).

**§ 108.409 Location and spacing of tubing in pneumatic fire detection system.**

(a) All tubing in a pneumatic fire detection system must be on the overhead or within 300 millimeters (12 inches) of the overhead on a bulkhead in a location where—

(1) No portion of the overhead is more than 3.6 meters (12 feet) from the nearest point of tubing;

(2) Beams or girders extending below the ceiling or other obstructions do not detract from the effectiveness of the tubing; and

(3) Damage to the tubing, is unlikely to occur if it is not protected.

(b) If tubing in a tubing circuit is installed in an enclosed space, at least 5% of the tubing in the circuit must be exposed in the space, except that at least 7.6 meters (25 feet) of tubing must always be exposed in the space.

(c) A pneumatic fire detection system must be set to activate after approximately a 22°C. (40°F.) per minute increase in temperature at the center of the circuit in the system.

**§ 108.411 Smoke detection system.**

Each smoke accumulator in a smoke detection system must be located on the overhead of the compartment protected by the system in a location—

(a) Where no portion of the overhead of the compartment is more than 12 meters (40 feet) from an accumulator;

(b) That is no closer to the opening of a ventilator than 3 times the diameter or equivalent size of the opening.

(c) Where damage to the accumulator is unlikely to occur if it is not protected.

**§ 108.413 Fusible element fire detection system.**

(a) A fusible element fire detection system may be installed.

(b) The arrangements for the system must be acceptable to the Commandant.

**FIRE MAIN SYSTEM****§ 108.415 Fire pump: General.**

A fire main system must have at least two independently driven fire pumps that can each deliver water at a continuous pitot tube pressure of at

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least 3.5 kilograms per square centimeter (approximately 50 pounds per square inch) at least two fire hose nozzles that are connected to the highest two fire hydrants on the unit. Alternative designs that meet the pressure requirement of this paragraph will be considered for column stabilized and self elevating units.

### § 108.417 Fire pump components and associated equipment.

(a) Each fire pump in a fire main system must have a relief valve on its discharge side that is set to relieve at 1.75 kilograms per square centimeter (approximately 25 pounds per square inch) in excess of the pump discharge pressure necessary to meet the pressure required in § 108.415 for the pump or 8.6 kilograms per square centimeters (approximately 125 pounds per square inch), whichever is greater. A relief valve may be omitted if the pump operating under shut off condition is not capable of developing the pressure described in § 108.415 plus 1.75 kilograms per square centimeter (25 pounds per square inch).

(b) Each fire pump in a fire main system must have a pressure gauge on its discharge side.

(c) Fire pumps may be used for other purposes. One of the required pumps must be kept available for use on the fire system at all times. If a fire pump is used in a system other than the fire main system, except for branch lines connected to the fire main for deck washing, each pipe connecting the other system must be connected to the pump discharge through a shut off valve at a manifold near the pump. If the fire pump exceeds the pressure in § 108.417(a), the pipe leading from the discharge manifold to other portions of the fire main system must have a reducing station and a pressure gauge in addition to the pressure gauge required by paragraph (b) of this section.

(d) If a fire pump has a reducing station, the relief valve required by paragraph (a) of this section for the pump and the additional pressure gauge required in paragraph (c) of this section must not be located on the discharge side of the reducing station.

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(e) An oil line must not be connected to a fire pump.

[CGD 73-251, 43 FR 56808, Dec. 4, 1978, as amended by CGD 95-028, 62 FR 51208, Sept. 30, 1997]

### § 108.419 Fire main capacity.

The diameter of the fire main must be sufficient for the effective distribution of the maximum required discharge from two fire pumps operating simultaneously.

### § 108.421 Location of fire pumps and associated equipment.

Each fire pump required by § 108.415, and the source of power, controls, sea connections for the fire pump, and booster pumps, if installed, must be installed in locations where, if a fire occurs in an enclosed space, all of the fire pumps on the unit are not made inoperative, except that if compliance with this requirement is impracticable, a gas type extinguishing system may be installed to protect at least one of the fire pumps, its source of power, and controls.

### § 108.423 Fire hydrants and associated equipment.

(a) A fire main system must have enough fire hydrants so that each accessible space may be sprayed with at least two spray patterns of water.

(b) In a main machinery space, except a shaft alley with no assigned space for stowage of combustibles, each spray pattern of water must be from one length of fire hose and each must be from a separate outlet. In all other spaces at least one spray pattern of water must be from one length of fire hose.

(c) No outlet on a fire hydrant may point above the horizontal.

(d) Each fire hydrant must have at least one spanner and at least one fire hose rack or reel.

### § 108.425 Fire hoses and associated equipment.

(a) Each length of fire hose in a fire main system must be—

- (1) Of 1½ or 2½ inch nominal hose size diameter;
- (2) Of 50 foot nominal hose size length; and

(3) Lined commercial fire hose that meets Standard 19 of the Underwriters' Laboratories, Inc., (1971 edition) or Federal Specification ZZ-H-451f.

(b) Fire station hydrant connections shall be brass, bronze, or other equivalent metal. Couplings shall either:

(1) Use National Standard fire hose coupling threads for the 1½ inch (38 millimeter) and 2½ inch (64 millimeter) hose sizes, i.e., 9 threads per inch for 1½ inch hose, and 7½ threads per inch for 2½ inch hose; or

(2) Be a uniform design for each hose diameter throughout the vessel.

(c) Each nozzle for a firehose in a fire main system must be a combination solid stream and water spray firehose nozzle that is approve under subpart 162.027. Combination solid stream and water spray nozzles previously approved under subpart 162.027 of this chapter may be retained so long as they are maintained in good condition to the satisfaction of the Officer in Charge, Marine Inspection.

(d) A combination solid stream and water spray firehose nozzle previously approved under subpart 162.027 of this chapter, must have a low-velocity water spray applicator also previously approved under subpart 162.027 of this chapter when installed in—

(1) Machinery spaces containing oil fired boilers, internal combustion machinery or oil fuel units; and

(2) Helicopter decks.

[CGD 73-251, 43 FR 56808, Dec. 4, 1978, as amended by CGD 95-027, 61 FR 26008, May 23, 1996; CGD 95-028, 62 FR 51208, Sept. 30, 1997]

**§ 108.427 International shore connection.**

A fire main system on a unit in international service must have—

(a) At least one international shore connection that meets ASTM F 1121 (incorporated by reference, see § 105.01-3).

(b) A cutoff valve and check valve for each connection; and

(c) Facilities available enabling the connection to be used on either side of the unit.

[CGD 73-251, 43 FR 56808, Dec. 4, 1978, as amended by CGD 88-032, 56 FR 35826, July 29, 1991; USCG-2000-7790, 65 FR 58462, Sept. 29, 2000]

**§ 108.429 Fire main system protection.**

(a) Each pipe and fire hydrant in a fire main system must be installed to the extent practicable in locations that are not exposed to damage by materials that are moved on or onto the deck.

(b) Each part of the fire main system located on an exposed deck must either be protected against freezing or be fitted with cutout valves and drain valves to shut off and drain the entire exposed system in freezing weather.

**AUTOMATIC SPRINKLING SYSTEMS**

**§ 108.430 General.**

Automatic Sprinkler Systems shall comply with NFPA 13-1996.

[CGD 95-028, 62 FR 51208, Sept. 30, 1997]

**FIXED CARBON DIOXIDE FIRE EXTINGUISHING SYSTEMS**

**§ 108.431 Carbon dioxide systems: General.**

(a) Sections 108.431 through 108.457 apply to high pressure carbon dioxide fire extinguishing systems.

(b) Low pressure systems, that is, those in which the carbon dioxide is stored in liquid form at low temperature, must be approved by the Commandant.

(c) Each carbon dioxide system cylinder must be fabricated, tested, and marked in accordance with §§ 147.60 and 147.65 of this chapter.

[CGD 73-251, 43 FR 56808, Dec. 4, 1978, as amended by CGD 84-044, 53 FR 7749, Mar. 10, 1988]

**§ 108.433 Quantity of CO<sub>2</sub>: General.**

Each CO<sub>2</sub> system must have enough gas to meet the quantity requirements of § 108.439 for the space requiring the greatest amount of CO<sub>2</sub>.

**§ 108.437 Pipe sizes and discharge rates for enclosed ventilation systems for rotating electrical equipment.**

(a) The minimum pipe size for the initial charge must meet table 108.441 and the discharge of the required amount of CO<sub>2</sub> must be completed within 2 minutes.

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(b) The minimum pipe size for the delayed discharge must be at least 1.25 centimeters (1/2 inch) standard pipe.

(c) The pipe used for the initial discharge must not be used for the delayed discharge, except systems having a volume of less than 57 cubic meters (2,000 cubic feet).

**§ 108.439 Quantity of CO<sub>2</sub> for protection of spaces.**

(a) The number of pounds of CO<sub>2</sub> required to protect a space must be equal to the gross volume of the space divided by the appropriate factor from Table 108.439.

(b) If a machinery space includes a casing, the gross volume of the space may be calculated using the reductions allowed in 46 CFR 95.10-5(e).

(c) If fuel can drain from a space to an adjacent space or if two spaces are not entirely separate, the requirements for both spaces must be used to determine the amount of CO<sub>2</sub> to be provided and the CO<sub>2</sub> system must be arranged to discharge into both spaces simultaneously.

TABLE 108.439—CO<sub>2</sub> Supply Factors  
[Gross volume of space in cubic feet]

| Over         | Not over | Factor |
|--------------|----------|--------|
| 0 .....      | 500      | 15     |
| 500 .....    | 1,600    | 16     |
| 1,600 .....  | 4,500    | 18     |
| 4,500 .....  | 50,000   | 20     |
| 50,000 ..... | .....    | 22     |

**§ 108.441 Piping and discharge rates for CO<sub>2</sub> systems.**

(a) The size of branch lines to spaces protected by a CO<sub>2</sub> system must meet Table 108.441.

(b) Distribution piping within a space must be proportioned from the supply line to give proper distribution to the outlets without throttling.

(c) The number, type, and location of discharge outlets must distribute the CO<sub>2</sub> uniformly throughout the space.

TABLE 108.441—CO<sub>2</sub> System Pipe Size

| CO <sub>2</sub> supply in system, kilograms (pounds) | Minimum pipe size (inches), millimeters (inches) |
|--|--|
| 45 (100) .....                                       | 12.7 (1/2).                                      |
| 104 (225) .....                                      | 19.05 (3/4).                                     |
| 136 (300) .....                                      | 25.4 (1).  |
| 272 (600) .....                                      | 31.75 (1 1/4).                                   |
| 450 (1,000) .....                                    | 38.10 (1 1/2).                                   |

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TABLE 108.441—CO<sub>2</sub> System Pipe Size—Continued

| CO <sub>2</sub> supply in system, kilograms (pounds) | Minimum pipe size (inches), millimeters (inches) |
|--|--|
| 1,110 (2,450) .....                                  | 50.80 (2).                                       |
| 1,130 (2,500) .....                                  | 63.5 (2 1/2).                                    |
| 2,023 (4,450) .....                                  | 76.2 (3).  |
| 3,229 (7,100) .....                                  | 88.9 (3 1/2).                                    |
| 4,750 (10,000) .....                                 | 101.6 (4).                                       |
| 6,818 (15,000) .....                                 | 114.3 (4 1/2).                                   |

(d) The total area of all discharge outlets must be more than 35 percent and less than 85 percent of the nominal cylinder outlet area or the area of the supply pipe, whichever is smaller. The nominal cylinder outlet area in square centimeters is determined by multiplying the factor 0.0313 by the number of kilograms of CO<sub>2</sub> required. (The nominal cylinder outlet area in square inches is determined by multiplying the factor 0.0022 by the number of pounds of CO<sub>2</sub> required). The nominal cylinder outlet area must not be less than 71 square millimeters (0.110 square inches).

(e) A CO<sub>2</sub> system must discharge at least 85 percent of the required amount within 2 minutes.

**§ 108.443 Controls and valves.**

(a) At least one control for operating a CO<sub>2</sub> system must be outside the space or spaces that the system protects and in a location that would be accessible if a fire occurred in any space that the system protects. Control valves must not be located in a protected space unless the CO<sub>2</sub> cylinders are also in the protected space.

(b) A CO<sub>2</sub> system that protects more than one space must have a manifold with a stop valve, the normal position of which is closed, that directs the flow of CO<sub>2</sub> to each protected space.

(c) A CO<sub>2</sub> system that protects only one space must have a stop valve installed between the cylinders and the discharge outlets in the system, except on a system that has a CO<sub>2</sub> supply of 136 kilograms (300 pounds) or less.

(d) At least one of the control stations in a CO<sub>2</sub> system that protects a machinery space must be as near as practicable to one of the main escapes from that space.

(e) All distribution valves and controls must be of an approved type.

(f) Each CO<sub>2</sub> system that has a stop valve must have a remote control that operates only the stop valve and must have a separate remote control for releasing the required amount of CO<sub>2</sub> into the space protected by the system.

(g) Each CO<sub>2</sub> system that does not have a stop valve must be operated by a remote control that releases the required amount of CO<sub>2</sub> into the space protected by the system.

(h) Remote controls to each space must be in an enclosure.

(i) Each system must have a manual control at its cylinders for releasing CO<sub>2</sub> from the cylinders, except that if the system has pilot cylinders, a manual control is not required for other than pilot cylinders.

(j) If gas pressure is used to release CO<sub>2</sub> from a system having more than 2 cylinders, the system must have at least 2 pilot cylinders to release the CO<sub>2</sub> from the remaining cylinders.

(k) If the entrance to a space containing the CO<sub>2</sub> supply or controls of a CO<sub>2</sub> system has a lock, the space must have a key to the lock in a break-glass type box that is next to and visible from the entrance.

#### § 108.445 Alarm and means of escape.

(a) Each CO<sub>2</sub> system that has a supply of more than 136 kilograms (300 pounds) of CO<sub>2</sub>, except a system that protects a tank, must have an alarm that sounds for at least 20 seconds before the CO<sub>2</sub> is released into the space.

(b) Each audible alarm for a CO<sub>2</sub> system must have the CO<sub>2</sub> supply for the system as its source of power and must be in a visible location in the spaces protected.

#### § 108.447 Piping.

(a) Each pipe, valve, and fitting in a CO<sub>2</sub> system must have a bursting pressure of at least 420 kilograms per square centimeter (6,000 pounds per square inch).

(b) All piping for a CO<sub>2</sub> system of nominal size of 19.05 millimeters ( $\frac{3}{4}$  inch) inside diameter or less must be at least Schedule 40 (standard weight) and all piping of nominal size over 19.05 millimeters ( $\frac{3}{4}$  inch) inside diameter must be at least Schedule 80 (extra heavy).

(c) Each pipe, valve, and fitting made of ferrous materials in a CO<sub>2</sub> system must be protected inside and outside from corrosion.

(d) Each CO<sub>2</sub> system must have a pressure relief valve set to relieve between 168 and 196 kilograms per square centimeter (2,400 and 2,800 pounds per square inch) in the distribution manifold or other location that protects the piping when all branch line shut off valves are closed.

(e) The end of each branch line in a CO<sub>2</sub> system must extend at least 50 millimeters (2 inches) beyond the last discharge outlet and be closed with a cap or plug.

(f) Piping, valves, and fittings in a CO<sub>2</sub> system must be securely supported and protected from damage.

(g) Each CO<sub>2</sub> system must have drains and dirt traps located where dirt or moisture can accumulate in the system.

(h) Discharge piping in a CO<sub>2</sub> system may not be used for any other purpose except as part of a fire detection system.

(i) Piping in a CO<sub>2</sub> system that passes through accommodation spaces must not have drains or other openings within these spaces.

#### § 108.449 Piping tests.

(a) Each test prescribed in (b), (c), and (d) of this section must be performed upon completion of the piping installation.

(b) When tested with CO<sub>2</sub> or other inert gas under a pressure of 70 kilograms per square centimeter (1000 pounds per square inch), with no additional gas introduced into the system, the leakage in the piping from the cylinders to the stop valves in the manifold must not allow a pressure drop of more than 10.5 kilograms per square centimeter (150 pounds per square inch) per minute for a 2 minute period.

(c) When tested with CO<sub>2</sub> or other inert gas under a pressure of 42 kilograms per square centimeter (600 pounds per square inch), with no additional gas introduced into the system, the leakage in each branch line must not allow a pressure drop of more than 10.5 kilograms per square centimeter (150 pounds per square inch) per minute for a 2-minute period. The distribution

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pipng must be capped within the protected space.

(d) Small independent systems protecting emergency generator rooms, lamp lockers and similar small spaces need not meet the tests prescribed in paragraphs (a) and (b) of this section if they are tested by blowing out the piping with air at a pressure of at least 7 kilograms per square centimeter (100 pounds per square inch).

**§ 108.451 CO<sub>2</sub> storage.**

(a) Except as provided in paragraph (b) of this section, each cylinder of a CO<sub>2</sub> system must be outside each space protected by the system and in a location that would be accessible if a fire occurred in any space protected by the system.

(b) A CO<sub>2</sub> system that has a CO<sub>2</sub> supply of 136 kilograms (300 pounds) or less may have one or more cylinders in the space protected by the system if the space has a heat detection system to activate the system automatically in addition to the remote and manual controls required by this subpart.

(c) Each space that contains cylinders of a CO<sub>2</sub> system must be ventilated and designed to prevent an ambient temperature of more than 54° C. (130° F.)

(d) Each cylinder in a CO<sub>2</sub> system must be securely fastened, supported, protected from damage, in an accessible location, and capable of removal from that location.

(e) Each unit must have a means for weighing cylinders of a CO<sub>2</sub> system.

(f) A cylinder in a CO<sub>2</sub> system may not be mounted in a position that is inclined more than 30° from a vertical position, except that a cylinder having flexible or bent siphon tubes may be mounted in a position that is inclined up to 80° from the vertical. The bottom of each cylinder when mounted must be at least 5 centimeters (2 inches) from the deck.

(g) If a cylinder does not have a check valve on its independent cylinder discharge, it must have a plug or cap to close the outlet when the cylinder is moved.

[CGD 73-251, 43 FR 56808, Dec. 4, 1978, as amended by CGD 84-044, 53 FR 7749, Mar. 10, 1988]

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**§ 108.453 Discharge outlets.**

Each discharge outlet must be of an approved type.

**§ 108.455 Enclosure openings.**

(a) Mechanical ventilation for spaces protected by a CO<sub>2</sub> system must be designed to shut down automatically when the system is activated.

(b) Each space that is protected by a CO<sub>2</sub> system and that has natural ventilation must have a means for closing that ventilation.

(c) Each space protected by a CO<sub>2</sub> system must have the following means for closing the openings to the space from outside the space:

(1) Doors, shutters, or dampers for closing each opening in the lower portion of the space.

(2) Doors, shutters, dampers or temporary means such as canvas or other material normally on board a unit may be used for closing each opening in the upper portion of the space.

**§ 108.457 Pressure release.**

Each air tight or vapor tight space, such as a paint locker, that is protected by a CO<sub>2</sub> system must have a means for releasing pressure that accumulates within the space if CO<sub>2</sub> is discharged into the space.

**HALOGENATED GAS EXTINGUISHING SYSTEMS**

**§ 108.458 General.**

Halogenated gas extinguishing systems may be installed if approved by the Commandant.

**FOAM EXTINGUISHING SYSTEMS**

**§ 108.459 Number and location of outlets.**

(a) A foam extinguishing system in a space must have enough outlets to spread a layer of foam of uniform thickness over the deck or bilge areas of the space.

(b) A foam extinguishing system in a space that has a boiler on a flat that is open to or can drain into a lower portion of the space must have enough outlets to spread a layer of foam of uniform thickness over the—

- (1) Flat; and
- (2) Deck or bilge areas of the space.

(c) A foam extinguishing system for a tank must have enough outlets to spread a layer of foam of uniform thickness over the surface of the liquid in the tank.

**§ 108.461 Coamings.**

Each machinery flat in a space that has a foam extinguishing system must have coamings that are high enough to retain spilled oil and foam on the flat on all openings except deck drains.

**§ 108.463 Foam rate: Protein.**

(a) If the outlets of a protein foam extinguishing system are in a space, the foam rate at each outlet must be at least 6.52 liters per minute for each square meter (.16 gallons per minute for each square foot) of area covered by the systems.

(b) If the outlets of a protein foam extinguishing system are in a tank, the foam rate at each outlet must be at least 4.07 liters per minute for each square meter (.1 gallon per minute for each square foot) of liquid surface in the tank.

**§ 108.467 Water supply.**

The water supply of a foam extinguishing system must not be the water supply of the fire main system on the unit unless when both systems are operated simultaneously—

(a) The water supply rate to the foam production equipment meets the requirements of this section; and

(b) Water supply rate to the fire hydrants required by § 108.415 of this subpart allows compliance with the pressure requirement in that section.

**§ 108.469 Quantity of foam producing materials.**

(a) Except as provided in paragraph (b) of this section, each foam extinguishing system with outlets—

(1) In a tank must have enough foam producing material to discharge foam for at least 5 minutes at each outlet; and

(2) In a space must have enough foam producing material to discharge foam for at least 3 minutes at each outlet.

(b) If a foam system has outlets in more than one tank or space, the system need have only enough foam producing material to cover the largest

space that the system covers or, if the liquid surface of a tank covered by the system is larger, the tank with the largest liquid surface.

**§ 108.471 Water pump.**

Each water pump in a foam extinguishing system must be outside each machinery space in which the system has outlets and must not receive power from any of those spaces.

**§ 108.473 Foam system components.**

(a) Each foam agent, each tank for a foam agent, each discharge outlet, each control, and each valve for the operation of a foam extinguishing system must be approved by the Commandant.

(b) Each foam agent tank and each control and valve for the operation of a foam extinguishing system with outlets in a space must be outside the space and must not be in a space that may become inaccessible if a fire occurs in the space.

(c) Each control for a foam extinguishing system with outlets in a space must be near a main escape from the space.

**§ 108.474 Aqueous film forming foam systems.**

Aqueous film forming foam systems may be installed if approved by the Commandant.

**§ 108.475 Piping.**

(a) Each pipe, valve, and fitting in a foam extinguishing system must meet the applicable requirements in Subchapter F of this chapter.

(b) Each pipe, valve, and fitting made of ferrous material must be protected inside and outside from corrosion.

(c) Each pipe, valve, and fitting must have support and protection from damage.

(d) Each foam extinguishing system must have enough—

(1) Dirt traps to prevent the accumulation of dirt in its pipes; and

(2) Drains to remove liquid from the system.

(e) Piping in a foam extinguishing system must be used only for discharging foam.

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**§ 108.477 Fire hydrants.**

(a) If a fixed foam extinguishing system has outlets in a main machinery space, at least 2 fire hydrants, in addition to the fire hydrants required by §108.423 of this subpart, must be installed outside the entrances to the space with each at a separate entrance.

(b) Each hydrant must have enough hose to spray any part of the space.

(c) Each hydrant must have a combination nozzle and applicator.

**FIRE PROTECTION FOR HELICOPTER FACILITIES**

**§ 108.486 Helicopter decks.**

At least two of the accesses to the helicopter landing deck must each have a fire hydrant on the unit's fire main system located next to them.

**§ 108.487 Helicopter deck fueling operations.**

(a) Each helicopter landing deck on which fueling operations are conducted must have a fire protection system that discharges protein foam or aqueous film forming foam.

(b) a system that only discharges foam must—

(1) Have enough foam agent to discharge foam continuously for at least 5 minutes at maximum discharge rate;

(2) Have at least the amount of foam agent needed to cover an area equivalent to the swept rotor area of the largest helicopter for which the deck is designed with foam at—

(i) If protein foam is used, 6.52 liters per minute for each square meter (.16 gallons per minute for each square foot) of area covered for five minutes;

(ii) If aqueous film forming foam is used, 4.07 liters per minute for each square meter (.1 gallons per minute for each square foot) of area covered for five minutes; and

(3) Be capable of discharging from each hose at 7 kilograms per square centimeter (100 pounds per square inch) pressure—

(i) A single foam stream at a rate of at least 340 liters (90 gallons) per minute; and

(ii) A foam spray at a rate of at least 190 liters (50 gallons) per minute.

(c) Each system must have operating controls at each of its hose locations,

be protected from icing and freezing, and be capable of operation within 10 seconds after activation of its controls.

(d) Each system must have at least one hose at each of the two access routes required by §108.235(f) of this part. Each hose must be reel mounted and long enough to cover any point on the helicopter deck. Each hose that discharges foam must have a nozzle that has foam stream, foam spray, and off positions.

**§ 108.489 Helicopter fueling facilities.**

(a) Each helicopter fueling facility must have a fire protection system that discharges one of the following agents in the amounts prescribed for the agents over the area of the fuel containment systems around marine portable tanks, fuel transfer pumps and fuel hose reels:

(1) Protein foam at the rate of 6.52 liters per minute for each square meter (.16 gallons per minute for each square foot) of area covered for five minutes.

(2) Aqueous film forming foam at the rate of 4.07 liters per minute for each square meter (.1 gallon per minute for each square foot) of area covered for five minutes.

(3) 22.5 kilograms (50 pounds) of dry chemical (B-V semi-portable) for each fueling facility of up to 27.87 square meters (300 square feet).

(b) If the fire protection system required by §108.487 of this subpart is arranged so that it covers both a helicopter fueling facility and a landing deck, the system must have the quantity of agents required by this section in addition to the quantity required by §108.487.

**HAND PORTABLE AND SEMI-PORTABLE FIRE EXTINGUISHING SYSTEMS**

**§ 108.491 General.**

Each hand portable and semiportable fire extinguisher on a unit must be approved under Subpart 162.028 or 162.039 of this chapter.

**§ 108.493 Location.**

(a) Each unit must have the hand portable and semiportable fire extinguishers prescribed in Table 108.495(a) of this subpart and installed in the locations prescribed in the table.

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(b) Each portable and semi-portable fire extinguisher must be visible and readily accessible.

(c) The location, size, and number of each portable and semiportable fire extinguisher on a unit must be acceptable to the appropriate OCMI. The OCMI may require extinguishers in addition to those prescribed in Table 108.495(a) if he considers them necessary for fire protection on the unit.

(d) Each hand portable and semiportable fire extinguisher that has a nameplate which states that it is to be protected from freezing, must be lo-

cated where freezing temperatures do not occur.

**§ 108.495 Spare charges.**

(a) Each unit must have enough spare charges for 50 percent of the hand portable fire extinguishers required under Table 108.495(a) of this subpart that are rechargeable by personnel on the unit.

(b) If a unit has extinguishers that cannot be recharged by personnel on unit, it must also have at least one spare extinguisher for each classification and variety of those extinguishers.

**TABLE 108.495(a)—HAND PORTABLE FIRE EXTINGUISHERS AND SEMI-PORTABLE FIRE-EXTINGUISHING SYSTEMS**

| Space   | Classification (see table 108.495(b)) | Quantity and location   |
|---|---------------------------------------|---|
| <b>SAFETY AREAS</b>   |                                       |   |
| Wheelhouse and control room .....   | C-I .....                             | 2 in vicinity of exit.  |
| Stairway and elevator enclosure .....   | .....                                 | None required.  |
| Corridors .....   | A-II .....                            | 1 in each corridor not more than 150 ft (45 m) apart. (May be located in stairways.)  |
| Lifeboat embarkation and lowering stations .....  | .....                                 | None required.  |
| Radio room .....  | C-I .....                             | 2 in vicinity of exit.  |
| <b>ACCOMMODATIONS</b>   |                                       |   |
| Staterooms, toilet spaces, public spaces, offices, lockers, small storerooms, and pantries, open decks, and similar spaces. | .....                                 | None required.  |
| <b>SERVICE SPACES</b>   |                                       |   |
| Galleys .....   | B-II or C-II .....                    | 1 for each 2,500 ft <sup>2</sup> (232 m <sup>2</sup> ) or fraction thereof suitable for hazards involved.                                     |
| Paint and lamp rooms .....  | B-II .....                            | 1 outside each room in vicinity of exit.  |
| Storerooms .....  | A-II .....                            | 1 for each 2,500 ft <sup>2</sup> (232 m <sup>2</sup> ) or fraction thereof located in vicinity of exits, either inside or outside the spaces. |
| Work shop and similar spaces .....  | C-II .....                            | 1 outside each space in vicinity of an exit.  |
| <b>MACHINERY SPACES</b>   |                                       |   |
| Oil-fired boilers: Spaces containing oil-fired boilers, either main or auxiliary, or their fuel oil units.                  | B-II .....                            | 2 required in each space.   |
| Internal combustion or gas turbine propelling machinery spaces.   | B-V .....                             | 1 required in each space.   |
|   | B-II .....                            | 1 for each 1,000 brake horsepower but not less than 2 nor more than 6 in each space.  |
|   | B-III .....                           | 1 required in each space. See note 1.   |
|   | C-II .....                            | 1 for each motor or generator.  |
| Motors or generators of electric propelling machinery that do not have an enclosed ventilating system.                      | .....                                 | None required.  |
| Motors and generators of electric propelling machinery that have enclosed ventilating systems.                              | .....                                 | None required.  |
| <b>AUXILIARY SPACES</b>   |                                       |   |
| Internal combustion engines or gas turbine .....  | B-II .....                            | Outside the space containing engines or turbines in vicinity of exit.   |
| Electric emergency motors or generators .....   | C-II .....                            | 1 outside the space containing motors or generators in vicinity of exit.  |
| Steam driven auxiliary machinery .....  | .....                                 | None required.  |
| Trunks to machinery spaces .....  | .....                                 | Do.   |
| Fuel tanks .....  | .....                                 | Do.   |
| <b>MISCELLANEOUS AREAS</b>  |                                       |   |
| Helicopter landing decks .....  | B-V .....                             | 1 at each access route.   |
| Helicopter fueling facilities .....   | B-IV .....                            | 1 at each fuel transfer facility. See note 2.   |

TABLE 108.495(a)—HAND PORTABLE FIRE EXTINGUISHERS AND SEMI-PORTABLE FIRE-EXTINGUISHING SYSTEMS—Continued

| Space   | Classification (see table 108.495(b)) | Quantity and location |
|---|---------------------------------------|-----------------------|
| Drill floor .....                             | C-II .....                            | 2 required.           |
| Cranes with internal combustion engines ..... | B-II .....                            | 1 required.           |

Notes: 1. Not required where a fixed gas extinguishing system is installed.  
 2. Not required where a fixed foam system is installed in accordance with § 108.489 of this subpart.

TABLE 108.495(b)

|         | Classification: Type and size | Water liters (gallons) | Foam liters (gallons) | Carbon dioxide kilograms (pounds) | Dry chemical kilograms (pounds) | Halon 1211 kilograms (pounds) |
|---------|-------------------------------|------------------------|-----------------------|-----------------------------------|---------------------------------|-------------------------------|
| A ..... | II .....                      | 9.5 (2½) .....         | 9.5 (2½) .....        | .....                             | 2.25 (5) <sup>3</sup> .         |                               |
| B ..... | I .....                       | 4.7 (1¼) .....         | 4.7 (1¼) .....        | 1.8 (4) .....                     | 0.9 (2) .....                   | 1.1 (2½)                      |
| B ..... | II .....                      | .....                  | 9.5 (2½) .....        | 6.7 (15) .....                    | 4.5 (10) .....                  | 4.5 (10) <sup>5</sup>         |
| B ..... | III .....                     | .....                  | 45.5 (12) .....       | 15.8 (35) .....                   | 9.0 (20).                       |                               |
| B ..... | IV .....                      | .....                  | 7.6 (20) .....        | 22.5 (50) .....                   | 13.5 (30).                      |                               |
| B ..... | V .....                       | .....                  | 152 (40) .....        | 45 (100) <sup>4</sup> .....       | 22.5 (50) <sup>4</sup> .        |                               |
| C ..... | I .....                       | .....                  | .....                 | 1.8 (4) .....                     | 0.9 (2).                        |                               |
| C ..... | II .....                      | .....                  | .....                 | 6.7 (15) .....                    | 4.5 (10).                       |                               |
| C ..... | III .....                     | .....                  | .....                 | 15.8 (35) .....                   | 9.0 (20).                       |                               |
| C ..... | IV .....                      | .....                  | .....                 | 22.5 (50) .....                   | 13.5 (30).                      |                               |

NOTE: 1. Fire extinguishers are designed by type as follows: (a) "A" for fires in combustible materials such as wood. (b) "B" for fires in flammable liquids and greases. (c) "C" for fires in electrical equipment.  
 2. Fire extinguishers are designated by size where size "I" is the smallest and size "V" is the largest. Sizes "I" and "II" are hand-portable extinguishers and sizes "III", "IV", and "V" are semi-portable extinguishers.  
 3. Must be specifically approved as a type A, B, or C extinguisher.  
 4. For outside use, double the quantity of agent that must be carried.  
 5. For outside use only.

**§ 108.496 Semiportable fire extinguishers.**

(a) The frame or support of each size III, IV, and V fire extinguisher required by Table 108.495(a), except a wheeled size V extinguisher provided for a helicopter landing deck, must be welded or otherwise permanently attached to a bulkhead or deck.

(b) If the following semiportable fire extinguishers have wheels, they must be securely stowed when not in use to prevent them from rolling out of control under heavy sea conditions:

(1) Each size V extinguisher required for a helicopter landing deck.

(2) Each size III, IV, and V extinguisher that is not required by Table 108.495(a).

[CGD 77–039, 44 FR 34133, June 14, 1979]

MISCELLANEOUS FIREFIGHTING EQUIPMENT

**§ 108.497 Fireman's outfits.**

Each unit must have at least 2 fireman's outfits. Each fireman's outfit on a unit must consist of—

(a) A pressure-demand, open-circuit, self-contained breathing apparatus, approved by the Mine Safety and Health Administration (MSHA) and by the National Institute for Occupational Safety and Health (NIOSH) and having at a minimum a 30-minute air supply, a full facepiece, and a spare charge; but a self-contained compressed-air breathing apparatus previously approved by MSHA and NIOSH under part 160, subpart 160.011, of this chapter may continue in use as required equipment if it was part of the vessel's equipment on November 23, 1992, and as long as it is maintained in good condition to the satisfaction of the Officer in Charge, Marine Inspection;

(b) A Type II or Type III flashlight constructed and marked in accordance with ASTM F 1014 (incorporated by reference, see § 108.101).

(c) An oxygen and explosive meter with the Underwriter's Laboratories, Inc. label or the Factory Mutual label;

(d) A lifeline that—

(1) Is attached to a belt or a suitable harness;

(2) Is made of bronze wire rope, inherently corrosion resistant steel wire

rope, or galvanized or tinned steel wire rope;

(3) Is made up of enough 15.2 meters (50 foot) or greater lengths of wire rope to permit use of the outfit in any location on the unit;

(4) Has each end fitted with a hook with a 16 millimeters ( $\frac{5}{8}$  inch) throat opening for the keeper; and

(5) Has a minimum breaking strength of 680 kilograms (1,500 pounds).

(e) Boots and gloves that are made of rubber or other electrically non-conductive material;

(f) A helmet that meets the requirements in ANSI standard Z-89.1-1969; and

(g) Clothing that protects the skin from scalding steam and the heat of fire and that has a water resistant outer surface.

[CGD 73-251, 43 FR 56808, Dec. 4, 1978, as amended by CGD 82-042, 53 FR 17705, May 18, 1988; CGD 86-036, 57 FR 48326, Oct. 23, 1992; USCG 1999-5151, 64 FR 67182, Dec. 1, 1999]

#### § 108.499 Fire axes.

Each unit must have at least two fire axes.

### Subpart E—Lifesaving Equipment

SOURCE: CGD 84-069, 61 FR 25291, May 20, 1996, unless otherwise noted.

#### § 108.500 General.

(a) Each unit, other than a drillship, must meet the requirements in this subpart.

(b) Each drillship must meet the lifesaving system requirements in subchapter W of this chapter for a tank vessel certificated to carry cargoes that have a flash point less than 60° C as determined under ASTM D 93 (incorporated by reference, see § 108.101).

(c) The OCMI may require a unit to carry specialized or additional lifesaving equipment other than as required by this part, if the OCMI determines the conditions of the unit's service present uniquely hazardous circumstances which are not adequately addressed by existing requirements.

[CGD 84-069, 61 FR 25291, May 20, 1996, as amended at 63 FR 52814, Oct. 1, 1998; USCG 1999-5151, 64 FR 67182, Dec. 1, 1999]

#### § 108.503 Relationship to international standards.

For the purposes of this part, any unit carrying a valid IMO MODU Safety Certificate, including a listing of lifesaving equipment as required by the 1989 IMO MODU Code, is considered to have met the requirements of this subpart if, in addition to the requirements of the 1989 IMO MODU Code, it meets the following requirements:

(a) Each new lifeboat and launching appliance may be of aluminum construction only if its stowage location is protected with a water spray system in accordance with § 108.550(d) of this chapter.

(b) Each lifejacket, immersion suit, and emergency position indicating radiobeacon (EPIRB) must be marked with the unit's name in accordance with §§ 108.649 and 108.650.

(c) Inflatable lifejackets, if carried, must be of the same or similar design as required by § 108.580(b).

(d) Containers for lifejackets, immersion suits, and anti-exposure suits must be marked as specified in § 108.649(g).

(e) Each liferaft must be arranged to permit it to drop into the water from the deck on which it is stowed as required in § 108.530(c)(3).

(f) Survival craft must be arranged to allow safe disembarkation onto the unit after a drill in accordance with § 108.540(f).

(g) The requirements for guarding of falls in §§ 108.553 (d) and (f) must be met.

(h) The winch drum requirements described in § 108.553(e) must be met for all survival craft winches, not just multiple drum winches.

(i) The maximum lowering speed requirements from §§ 108.553 (h) and (i) must be met.

(j) An auxiliary line must be kept with each line-throwing appliance in accordance with § 108.597(c)(2).

(k) Immersion suits are required on all units, except those operating between the 32 degrees north and 32 degrees south latitude in accordance with § 108.580(c).

(l) All abandonment drills conducted on units carrying immersion suits must include immersion suits.

**§ 108.510 Application.**

(a) For the purposes of this subpart—  
 (1) *Similar stage of construction* means the stage at which—

- (i) Construction identifiable with a specific unit begins; and
- (ii) Assembly of that unit comprising at least 50 metric tons (55.1 U.S. tons) or 1 percent of the estimated mass of all structural material, whichever is less, has been achieved.

(2) *Unit constructed* means a unit, the keel of which is laid or which is at a similar stage of construction.

(b) Subject to §108.515, each unit constructed before October 1, 1996, must meet the requirements of this subpart, except for the number, type, and arrangement of lifeboats (including survival capsules), lifeboat davits, winches, inflatable liferafts, liferaft launching equipment, and rescue boats.

(c)(1) If a District Commander determines that the overall safety of the persons on board a unit will not be significantly reduced, the District Commander may grant an exemption from compliance with a provision of this part to a specific unit for a specified geographic area within the boundaries of the Coast Guard District. This exemption may be limited to certain periods of the year.

(2) Requests for exemption under this paragraph must be in writing to the OCMI for transmission to the District Commander in the area in which the unit is in service or will be in service.

(3) If the exemption is granted by the District Commander, the OCMI will endorse the unit's Certificate of Inspection with a statement describing the exemption.

**§ 108.515 Requirements for units built before October 1, 1996.**

(a) Units which were constructed prior to October 1, 1996, must—

- (1) By October 1, 1997, have either—
  - (i) Lifeboats and liferafts that meet §108.525; or
  - (ii) Totally enclosed fire-protected lifeboats of sufficient capacity to accommodate 100 percent of the persons permitted on board, plus additional totally enclosed lifeboats or davit-launched liferafts of sufficient capacity to accommodate 100 percent of the per-

sons permitted on board the unit. The following exceptions apply:

(A) An open lifeboat may be used instead of davit-launched liferafts as long as it is in good working order. An open lifeboat requiring extensive repairs must be replaced with either a totally enclosed fire-protected lifeboat, or davit-launched liferafts.

(B) A submersible unit constructed before January 3, 1979, may continue to use the lifesaving arrangements described on the units Certificate of Inspection in effect on October 1, 1996.

(2) By October 1, 1997, fit retro-reflective material on all floating appliances, lifejackets, and immersion suits.

(3) Except for the requirements in paragraphs (a)(1) and (a)(2) of this section, units may retain the arrangement of lifesaving appliances previously required and approved for the unit, as long as the arrangement or appliance is maintained in good condition to the satisfaction of the OCMI.

(b) When any lifesaving appliance or arrangement on a unit subject to this part is replaced, or when the unit undergoes repairs, alterations or modifications of a major character involving replacement of, or any addition to, the existing lifesaving appliances or arrangements, each new lifesaving appliance and arrangement must meet the requirements of this part, unless the OCMI determines that the unit cannot accommodate the new appliance or arrangement, except that—

(1) A survival craft is not required to meet the requirements of this part if it is replaced without replacing its davit and winch; and

(2) A davit and its winch are not required to meet the requirements of this part if one or both are replaced without replacing the survival craft.

**§ 108.520 Type of survival craft.**

(a) Each lifeboat must be a fire-protected lifeboat approved under approval series 160.035. A lifeboat of aluminum construction in the hull or canopy must be protected in its stowage position by a water spray system meeting the requirements of part 34, subpart 34.25 of this chapter.

(b) Each inflatable liferaft must be approved under approval series 160.151. Each rigid liferaft must be approved

under approval series 160.118. Each life-raft must have a capacity of six persons or more.

[CGD 84-069, 61 FR 25291, May 20, 1996, as amended by USCG-2006-25697, 71 FR 55746, Sept. 25, 2006]

**§ 108.525 Survival craft number and arrangement.**

(a) Each unit must carry the following:

(1) Lifeboats installed in at least two widely separated locations on different sides or ends of the unit. The arrangement of the lifeboats must provide sufficient capacity to accommodate the total number of persons permitted on board if—

(i) All the lifeboats in any one location are lost or rendered unusable; or

(ii) All the lifeboats on any one side or end of the unit are lost or rendered unusable.

(2) Liferrafts arranged for float-free launching and having an aggregate capacity that will accommodate the total number of persons permitted on board.

(b) In the case of a self-elevating unit where, due to its size or configuration, lifeboats can not be located in the widely separated locations required under paragraph (a)(1) of this section, the OCMI may accept the following number and arrangement of survival craft:

(1) Lifeboats with an aggregate capacity to accommodate the total number of persons permitted on board.

(2) Liferrafts served by launching appliances or marine evacuation systems of an aggregate capacity to accommodate the total number of persons permitted on board. These liferafts may be the float-free liferafts under paragraph (a)(2) of this section, or liferafts in addition to the float-free liferafts.

**§ 108.530 Stowage of survival craft.**

(a) *General.* Each survival craft required to be served by a launching appliance or marine evacuation system must be stowed as follows:

(1) Each survival craft must be stowed as close to the accommodation and service spaces as possible.

(2) Each survival craft must be stowed in a way that neither the survival craft nor its stowage arrangements will interfere with the embar-

kation and operation of any other survival craft or rescue boat at any other launching station.

(3) Each survival craft must be stowed as near the water surface as is safe and practicable.

(4) Each survival craft must be stowed where the survival craft, in the embarkation position, is above the waterline with the unit—

(i) In the fully loaded condition; and

(ii) Listed up to 20 degrees either way, or to the angle where the unit's weatherdeck edge becomes submerged, whichever is less.

(5) Each survival craft must be sufficiently ready for use so that two crew members can complete preparations for embarkation and launching in less than 5 minutes.

(6) Each survival craft must be fully equipped as required under this subpart.

(7) Each survival craft must be in a secure and sheltered position and protected from damage by fire and explosion, as far as practicable.

(8) Each survival craft must not require lifting from its stowed position in order to launch, except that a davit-launched liferaft may be lifted by a manually powered winch from its stowed position to its embarkation position.

(b) *Additional lifeboat-specific stowage requirements.* In addition to meeting the requirements of paragraph (a) of this section, each lifeboat must be stowed as follows:

(1) The unit must be arranged so each lifeboat, in its stowed position, is protected from damage by heavy seas.

(2) Each lifeboat must be stowed attached to its launching appliance.

(3) Each lifeboat must be provided a means for recharging the lifeboat batteries from the unit's power supply at a supply voltage not exceeding 50 volts.

(c) *Additional liferaft-specific stowage requirements.* In addition to meeting the requirements of paragraph (a) of this section, each liferaft must be stowed as follows:

(1) Each liferaft must be stowed to permit manual release from its securing arrangements.

(2) Each liferaft must be stowed at a height above the waterline in the lightest seagoing condition, not greater

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than the maximum stowage height indicated on the liferaft. Each liferaft without an indicated maximum stowage height must be stowed not more than 18 meters (59 feet) above the waterline in the unit's lightest seagoing condition.

(3) Each liferaft must be arranged to permit it to drop into the water from the deck on which it is stowed. A liferaft stowage arrangement meets this requirement if it—

- (i) Is outboard of the rail or bulwark;
- (ii) Is on stanchions or on a platform adjacent to the rail or bulwark; or
- (iii) Has a gate or other suitable opening to allow the liferaft to be pushed directly overboard.

(4) Each davit-launched liferaft must be stowed within reach of its lifting hook, unless some means of transfer is provided that is not rendered inoperable—

- (i) Within the list limits specified in paragraph (a)(4)(ii) of this section;
- (ii) By unit motion; or
- (iii) By power failure.

(5) Each rigid container for an inflatable liferaft to be launched by a launching appliance must be secured in a way that the container or parts of it are prevented from falling into the water during and after inflation and launching of the contained liferaft.

(6) Each liferaft must have a painter system providing a connection between the unit and the liferaft.

(7) Each liferaft or group of liferafts must be arranged for float-free launching. The arrangement must ensure that the liferaft or liferafts when released and inflated, are not dragged under by the sinking unit. A hydrostatic release unit used in a float-free arrangement must be approved under approval series 160.162.

**§ 108.540 Survival craft muster and embarkation arrangements.**

(a) Each muster station must have sufficient space to accommodate all persons assigned to muster at that station. One or more muster stations must be close to each embarkation station.

(b) Each muster station and embarkation station must be readily accessible from accommodation and work areas.

(c) Each lifeboat must be arranged to be boarded and launched directly from the stowed position.

(d) Each lifeboat must be arranged to be boarded by its full complement of persons within 3 minutes from the time the instruction to board is given.

(e) Each davit-launched and free-fall survival craft muster station and embarkation station for a survival craft which is boarded before it is launched must be arranged to enable stretcher cases to be placed in the survival craft.

(f) Means must be provided for bringing each davit-launched survival craft against the side of the unit and holding it alongside to allow persons to be—

(1) Safely embarked in the case of a survival craft intended to be boarded over the edge of the deck; and

(2) Safely disembarked after a drill in the case of a survival craft not intended to be moved to the stowed position with a full complement of persons on board.

(g) Each davit-launched liferaft launching arrangement must have a means to hold the liferaft in the embarkation position that—

(1) Will hold the liferaft securely in high winds;

(2) Can be rapidly engaged in the proper position for boarding; and

(3) Can be rapidly released for launching by one person from within the loaded liferaft.

(h) Each launching station or each two adjacent launching stations must have an embarkation ladder as follows:

(1) Each embarkation ladder must be approved under approval series 160.117 or be a rope ladder approved under approval series 160.017, and must be installed in a way that—

(i) Each embarkation ladder must extend in a single length, from the deck to the waterline in the lightest seagoing condition with the unit listed not less than up to 15 degrees either way; or

(ii) Each embarkation ladder may be replaced by a device approved to provide safe and rapid access to survival craft in the water, if the OCMI permits the device, provided that there is at least one embarkation ladder on each side of the unit.

(2) An embarkation ladder is not required if—

(i) The distance from the embarkation deck to the unit's lightest operating waterline is less than 3 meters (10 feet); and

(ii) The unit is not in international service.

(3) If the embarkation ladders cannot be supported against a vertical flat surface, the unit must instead be provided with at least two widely-separated fixed metal ladders or stairways extending from the deck to the surface of the water and meet the following:

(i) Each inclined fixed ladder must meet the requirements under § 108.159.

(ii) Each vertical fixed ladder must meet the requirements under § 108.160 for fixed ladders, except that the vertical bars in cages must be open at least 500 millimeters (20 inches) on one side throughout the length of the ladder, and cages are not required in the area subject to wave action or on ladders inside the legs of a self-elevating unit.

(iii) If a fixed ladder cannot be installed, the OCMI may accept an alternate means of embarkation with sufficient capacity for all persons permitted on board to safely descend to the waterline.

(4) Alternate means of embarkation under paragraphs (h)(1)(ii) and (h)(3) of this section, such as portable slides, safety booms, moveable ladders, elevators, and controlled descent devices, must be acceptable to the OCMI. An alternate means of embarkation must have sufficient capacity to permit persons to safely descend to the waterline at a rate comparable to the device which the alternate means of embarkation replaces.

[CGD 84-069, 61 FR 25291, May 20, 1996, as amended at 63 FR 52814, Oct. 1, 1998]

**§ 108.545 Marine evacuation system launching arrangements.**

(a) *Arrangements.* Each marine evacuation system must have the following arrangements:

(1) Each marine evacuation system must be capable of being deployed by one person.

(2) Each marine evacuation system must enable the total number of persons for which it is designed, to be transferred from the unit into the inflated liferafts within a period of 10

minutes from the time the signal to abandon the unit is given.

(3) Each marine evacuation system must be arranged so that liferafts may be securely attached to the platform and released from the platform by a person either in the liferaft or on the platform.

(4) Each marine evacuation system must be capable of being deployed from the unit under unfavorable conditions of list of up to 20 degrees.

(5) If the marine evacuation system has an inclined slide, the angle of the slide from horizontal must be within a range of 30 to 35 degrees when the unit is upright and in the lightest seagoing condition.

(6) Each marine evacuation system platform must be capable of being restrained by a bousing line or other positioning system that is designed to deploy automatically, and if necessary, be capable of being adjusted to the position required for evacuation.

(b) *Stowage.* Each marine evacuation system must be stowed as follows:

(1) There must not be any openings between the marine evacuation system's embarkation station and the unit's side at the unit's waterline in the lightest seagoing condition.

(2) The marine evacuation system must be protected from any projections of the unit's structure or equipment.

(3) The marine evacuation system's passage and platform, when deployed, its stowage container, and its operational arrangement must not interfere with the operation of any other lifesaving appliance at any other launching station.

(4) Where appropriate, the marine evacuation system's stowage area must be protected from damage by heavy seas.

(c) *Stowage of associated liferafts.* Inflatable liferafts used in conjunction with the marine evacuation system must be stowed as follows:

(1) Each inflatable liferaft used in conjunction with the marine evacuation system must be close to the system container, but capable of dropping clear of the deployed chute and boarding platform.

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(2) Each inflatable liferaft used in conjunction with the marine evacuation system must be capable of individual release from its stowage rack.

(3) Each inflatable liferaft used in conjunction with the marine evacuation system must be stowed in accordance with §108.530.

(4) Each inflatable liferaft used in conjunction with the marine evacuation system must be provided with pre-connected or easily connected retrieving lines to the platform.

**§ 108.550 Survival craft launching and recovery arrangements: General.**

(a) Each launching appliance for a lifeboat must be a davit approved under approval series 160.132, with a winch approved under approval series 160.115. Each launching appliance for a davit-launched liferaft must be approved under approval series 160.163, with an automatic disengaging apparatus approved under approval series 160.170.

(b) All lifeboats required for abandonment by the total number of persons permitted on board must be capable of being launched with their full complement of persons and equipment within 10 minutes from the time the signal to abandon the unit is given.

(c) Each survival craft must be arranged to clear each leg, column, footing, brace, mat, and each similar structure below the hull of a self-elevating unit and clear the upper hull, the columns, and the pontoons of a column stabilized unit, with the unit in an intact condition.

(1) The survival craft must be arranged to be launched down the straight side of the unit or be mounted on a structure intended to provide clearance from lower structures of the unit.

(2) The OCMI may allow a reduction in the total number of survival craft meeting this requirement when the unit is in the transit mode and the number of personnel on board is reduced. In such cases, sufficient survival craft must be available for use by the total number of personnel remaining on board.

(d) Each lifeboat of aluminum construction in the hull or canopy, and each aluminum launching appliance

must be protected in its stowage position by a water spray system meeting the requirements of part 34, subpart 34.25 of this chapter.

(e) With the exception of the secondary means of launching for free-fall lifeboats, each launching appliance together with all its lowering and recovery gear must be arranged in a way that the fully equipped survival craft it serves can be safely lowered when loaded with its full complement of persons, and also without persons, against—

(1) A list of up to 20 degrees on the high side; and

(2) A list of up to 20 degrees or the degree of list where the survival craft becomes waterborne, whichever, is the greater, on the low side.

(f) When the unit is under any unfavorable condition such as maximum airgap, lightest transit or operational condition, or any damaged condition under part 174, subpart C of this chapter,—

(1) Notwithstanding the requirements under §108.550(e), survival craft launching appliances and marine evacuation systems must be capable of operation;

(2) Falls, where used, must be long enough for survival craft to reach the water; and

(3) Lifeboats with an aggregate capacity that will accommodate the total number of persons permitted on board must be capable of being launched safely, and clear of any obstruction. The location and orientation of each lifeboat must be such that the lifeboat is either headed away from the unit upon launching, or can be turned to a heading away from the unit immediately upon launching.

(g) A launching appliance must not depend on any means other than gravity or stored mechanical power independent of the unit's power supplies to launch the survival craft it serves, in the fully loaded and equipped conditions, and also in the light condition.

(h) Each launching appliance's structural attachment to the vessel must be designed, based on the ultimate strength of the construction material, to be at least 4.5 times the load imparted on the attachment by the

launching appliance and its fully loaded survival craft under the most adverse combination of list and trim under paragraph (b) of this section.

(i) Each launching appliance must be arranged so that—

(1) All parts requiring regular maintenance by the crew are readily accessible and easily maintained;

(2) The launching appliance remains effective under conditions of icing;

(3) The same type of release mechanism is used for each similar survival craft carried on board the unit; and

(4) The preparation and handling of survival craft at any one launching station does not interfere with the prompt preparation and handling of any other survival craft at any other station.

(j) Each launching mechanism must be arranged so it may be actuated by one person from a position on the unit's deck, and also from a position within the survival craft. Each launching and recovery arrangement must allow the operator on the deck to observe the survival craft at all times during launching.

(k) Means must be provided outside the machinery space to prevent any discharge of water onto survival craft during abandonment.

**§ 108.553 Survival craft launching and recovery arrangements using falls and a winch.**

Survival craft launching and recovery arrangements, in addition to meeting the requirements in § 108.550, must meet the following requirements:

(a) Each fall wire must be of rotation-resistant and corrosion-resistant steel wire rope.

(b) The breaking strength of each fall wire and each attachment used on the fall must be at least six times the load imparted on the fall by the fully-loaded survival craft.

(c) Each fall must be long enough for the survival craft to reach the water with the unit in its lightest seagoing condition, under unfavorable conditions of trim and with the unit listed not less than 20 degrees either way.

(d) Each unguarded fall must not pass near any operating position of the winch, such as hand cranks, payout wheels, and brake levers.

(e) Each winch drum must be arranged so the fall wire winds onto the drum in a level wrap, and a multiple drum winch must be arranged so that the falls wind off at the same rate when lowering, and onto the drums at the same rate when hoisting.

(f) Each fall, where exposed to damage or fouling, must have guards or equivalent protection. Each fall that leads along a deck must be covered with a guard that is not more than 300 millimeters (1 foot) above the deck.

(g) The lowering speed for a fully loaded survival craft must be not less than that obtained from the following formula:

(1)  $S=0.4+(0.02 H)$ , where S is the speed of lowering in meters per second, and H is the height in meters from the davit head to the waterline at the lightest seagoing condition, with H not greater than 30, regardless of the lowering height.

(2)  $S=79+(1.2 H)$ , where S is the speed of lowering in feet per minute, and H is the height in feet, with H not greater than 99.

(h) The lowering speed for a survival craft loaded with all of its equipment must be not less than 70 percent of the speed required under paragraph (g) of this section.

(i) The lowering speed for a fully loaded survival craft must be not more than 1.3 meters per second (256 feet per minute).

(j) If a survival craft is recovered by electric power, the electrical installation, including the electric power-operated boat winch, must meet the requirements in subchapter J of this chapter. If a survival craft is recovered by any means of power, including a portable power source, safety devices must be provided which automatically cut off the power before the davit arms or falls reach the stops in order to avoid overstressing the falls or davits, unless the motor is designed to prevent such overstressing.

(k) Each launching appliance must be fitted with brakes that meet the following requirements:

(1) The brakes must be capable of stopping the descent of the survival craft or rescue boat and holding it securely when loaded with its complement of persons and equipment.

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(2) The brake pads must, where necessary, be protected from water and oil.

(3) Manual brakes must be arranged so that the brake is always applied unless the operator, or a mechanism activated by the operator, holds the brake control in the off position.

**§ 108.555 Lifeboat launching and recovery arrangements.**

Lifeboat launching and recovery arrangements, in addition to meeting the requirements in §§108.550 and 108.553, must meet the following requirements:

(a) Each lifeboat must be capable of being launched with the unit making headway of 5 knots in calm water, or with the unit anchored or bearing on the bottom in a current of up to 5 knots. A painter may be used to meet this requirement.

(b) Each lifeboat must be provided with a launching appliance. The launching appliance must be capable of launching and recovering the lifeboat with its crew.

(c) Each launching appliance arrangement must allow the operator on the unit to observe the lifeboat at all times during recovery.

(d) Each launching appliance arrangement must be designed to ensure persons can safely disembark from the survival craft prior its stowage.

[CGD 84-069, 61 FR 25291, May 20, 1996; 61 FR 40281, Aug. 1, 1996]

**§ 108.557 Free-fall lifeboat launching and recovery arrangements.**

(a) The launching appliance for a free-fall lifeboat must be designed and installed so that the launching appliance and the lifeboat it serves operate as a system to protect the occupants from harmful acceleration forces and to effectively clear the unit.

(b) The launching appliance must be designed and arranged so that in its ready to launch position, the distance from the lowest point on the lifeboat it serves to the water surface with the unit in its lightest seagoing condition does not exceed the lifeboat's certified free-fall height.

(c) The launching appliance must be arranged so as to preclude accidental release of the lifeboat in its unattended stowed position. If the means provided

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to secure the lifeboat cannot be released from inside the lifeboat, the means to secure the lifeboat must be arranged as to preclude boarding the lifeboat without first releasing it.

(d) Each free-fall launching arrangement must be provided with a secondary means to launch the lifeboat by falls. Such means must comply with the requirements of §§108.550, 108.553, and 108.555. Notwithstanding §108.550(e), the launching appliance must be capable of launching the lifeboat against unfavorable conditions of list of 5 degrees in any direction and it need not comply with the speed requirements of §§108.553 (g), (h), and (i).

If the secondary launching appliance is not dependent on gravity, stored mechanical power or other manual means, the launching arrangement must be connected both to the unit's main and emergency power supplies.

**§ 108.560 Rescue boats.**

Each unit must carry at least one rescue boat. Each rescue boat must be approved under approval series 160.156. A lifeboat is accepted as a rescue boat if it also meets the requirements for a rescue boat.

**§ 108.565 Stowage of rescue boats.**

(a) Rescue boats must be stowed as follows:

(1) Each rescue boat must be ready for launching in not more than 5 minutes.

(2) Each rescue boat must be in a position suitable for launching and recovery.

(3) Each rescue boat must be stowed in a way that neither the rescue boat nor its stowage arrangements will interfere with the operation of any survival craft at any other launching station.

(4) Each rescue boat that is also a lifeboat, must be in compliance with §108.530.

(b) Each rescue boat must be provided a means for recharging the rescue boat batteries from the unit's power supply at a supply voltage not exceeding 50 volts.

(c) Each inflated rescue boat must be kept fully inflated at all times.

[CGD 84-069, 61 FR 25291, May 20, 1996, as amended at 63 FR 52814, Oct. 1, 1998]

**§108.570 Rescue boat embarkation, launching and recovery arrangements.**

(a) Each rescue boat must be capable of being launched with the unit making headway of 5 knots in calm water, or with the unit anchored or bearing on the bottom in a current of up to 5 knots. A painter may be used to meet this requirement.

(b) Each rescue boat embarkation and launching arrangement must permit the rescue boat to be boarded and launched in the shortest possible time.

(c) If the rescue boat is one of the unit's survival craft, the rescue boat must also be as follows:

(1) The rescue boat must meet the embarkation arrangement and launching station requirements of §108.540.

(2) The rescue boat must meet the launching arrangement requirements of §§108.550 and 108.557, and if the launching arrangement uses falls and a winch, §108.553.

(3) If the launching arrangement uses a single fall, the rescue boat must have an automatic disengaging apparatus approved under approval series 160.170, instead of a lifeboat release mechanism.

(d) Rapid recovery of the rescue boat must be possible when loaded with its full complement of persons and equipment. If the rescue boat is also a lifeboat, rapid recovery must be possible when loaded with its lifeboat equipment and an approved rescue boat complement of at least six persons.

(e) Each rescue boat launching appliance must be fitted with a powered winch motor.

(f) Each rescue boat launching appliance must be capable of hoisting the

rescue boat when loaded with its full rescue boat complement of persons and equipment at a rate of not less than 0.3 meters per second (59 feet per minute).

[CGD 84-069, 61 FR 25291, May 20, 1996, as amended at 63 FR 52814, Oct. 1, 1998]

**§ 108.575 Survival craft and rescue boat equipment.**

(a) All lifeboat and rescue boat equipment must be as follows:

(1) The equipment must be secured within the boat by lashings, storage in lockers, or compartments, storage in brackets or similar mounting arrangements or other suitable means.

(2) The equipment must be secured in such a manner as not to interfere with any abandonment procedures or reduce seating capacity.

(3) The equipment must be as small and of as little mass as possible.

(4) The equipment must be packed in a suitable and compact form.

(5) The equipment should be stowed so the items do not—

- (i) Reduce the seating capacity;
- (ii) Adversely affect the seaworthiness of the survival craft or rescue boat; or
- (iii) Overload the launching appliance.

(b) Each lifeboat, rigid liferaft, and rescue boat, unless otherwise stated in this paragraph, must carry the equipment specified for it in table §108.575(b) of this section. A lifeboat that is also a rescue boat must carry the equipment in the table column marked for a lifeboat. Each item in the table has the same description as in §199.175 of this chapter.

TABLE 108.575(b)—SURVIVAL CRAFT EQUIPMENT

| Item No. | Item                          | International service |                |             | Other than international service |                |             |
|----------|-------------------------------|-----------------------|----------------|-------------|----------------------------------|----------------|-------------|
|          |                               | Lifeboat              | Rigid liferaft | Rescue boat | Lifeboat                         | Rigid liferaft | Rescue boat |
| 1        | Bailer <sup>1</sup> .....     | 1                     | 1              | 1           | 1                                | 1              | 1           |
| 2        | Bilge pump <sup>2</sup> ..... | 1                     |                |             | 1                                |                |             |
| 3        | Boathook .....                | 2                     |                | 1           | 2                                |                | 1           |
| 4        | Bucket <sup>3</sup> .....     | 2                     |                | 1           | 2                                |                | 1           |
| 5        | Can opener .....              | 3                     | 3              |             |                                  |                |             |
| 6        | Compass .....                 | 1                     |                | 1           | 1                                |                | 1           |
| 7        | Dipper .....                  | 1                     |                |             | 1                                |                |             |
| 8        | Drinking cup .....            | 1                     | 1              |             |                                  |                |             |
| 9        | Fire extinguisher .....       | 1                     |                | 1           | 1                                |                | 1           |
| 10       | First-aid kit .....           | 1                     | 1              | 1           | 1                                | 1              | 1           |
| 11       | Fishing kit .....             | 1                     | 1              |             |                                  |                |             |
| 12       | Flashlight .....              | 1                     | 1              | 1           | 1                                | 1              | 1           |

TABLE 108.575(b)—SURVIVAL CRAFT EQUIPMENT—Continued

| Item No. | Item   | International service |                |             | Other than international service |                |             |
|----------|--|-----------------------|----------------|-------------|----------------------------------|----------------|-------------|
|          |  | Lifeboat              | Rigid liferaft | Rescue boat | Lifeboat                         | Rigid liferaft | Rescue boat |
| 13       | Hatchet .....  | 2                     |                |             | 2                                |                |             |
| 14       | Heaving line .....   | 2                     | 1              | 2           | 2                                | 1              | 2           |
| 15       | Instruction card .....   |                       | 1              |             |                                  | 1              |             |
| 16       | Jackknife .....  | 1                     |                |             | 1                                |                |             |
| 17       | Knife <sup>1,4</sup> .....                                     |                       | 1              | 1           |                                  | 1              | 1           |
| 18       | Ladder .....   | 1                     |                | 1           | 1                                |                | 1           |
| 19       | Mirror, signaling .....  | 1                     | 1              |             | 1                                | 1              |             |
| 20       | Oars (units) <sup>5,6</sup> .....                              | 1                     |                | 1           |                                  |                |             |
|          | Paddles .....  |                       | 2              |             |                                  | 2              |             |
| 21       | Painter .....  | 2                     | 1              | 1           | 2                                | 1              | 1           |
| 22       | Provisions (units per person) .....                            | 1                     | 1              |             |                                  |                |             |
| 23       | Pump <sup>7</sup> .....  |                       |                | 1           |                                  |                |             |
| 24       | Radar reflector .....  | 1                     | 1              | 1           |                                  |                |             |
| 25       | Rainwater collection device .....                              | 1                     |                |             |                                  |                |             |
| 26       | Repair kit <sup>7</sup> .....                                  |                       |                | 1           |                                  |                | 1           |
| 27       | Sea anchor .....   | 1                     | 2              | 1           | 1                                | 2              | 1           |
| 28       | Searchlight .....  | 1                     |                | 1           | 1                                |                | 1           |
| 29       | Seasickness kit (kits/person) .....                            | 1                     | 1              |             | 1                                | 1              |             |
| 30       | Signal, smoke .....  | 2                     | 2              |             | 2                                | 1              |             |
| 31       | Signal, hand flare .....                                       | 6                     | 6              |             | 6                                | 6              |             |
| 32       | Signal, parachute flare .....                                  | 4                     | 4              |             | 4                                | 4              |             |
| 33       | Skates and fenders <sup>8</sup> .....                          | 1                     |                |             | 1                                |                |             |
| 34       | Sponge <sup>7</sup> .....                                      |                       | 2              | 2           |                                  | 2              | 2           |
| 35       | Survival instructions .....                                    | 1                     | 1              |             | 1                                | 1              |             |
| 36       | Table of lifesaving signals .....                              | 1                     | 1              |             | 1                                | 1              |             |
| 37       | Thermal protective aid (percent of persons) <sup>9</sup> ..... | 10%                   | 10%            | 10%         | 10%                              | 10%            | 10%         |
| 38       | Tool kit .....   | 1                     |                |             | 1                                |                |             |
| 39       | Towline <sup>10</sup> .....                                    | 1                     |                | 1           | 1                                |                | 1           |
| 40       | Water (liters per person) .....                                | 3                     | 1.5            |             | 3                                | 1              |             |
| 41       | Whistle .....  | 1                     | 1              | 1           | 1                                | 1              | 1           |

Notes:

- <sup>1</sup> Each liferaft approved for 13 persons or more must carry two of these items.
- <sup>2</sup> Bilge pumps are not required for boats of self-bailing design.
- <sup>3</sup> Not required for inflated or rigid/inflated rescue boats.
- <sup>4</sup> A hatchet counts toward this requirement in rigid rescue boats.
- <sup>5</sup> Oars not required on a free-fall lifeboat; a unit of oars means the number of oars specified by the manufacturer.
- <sup>6</sup> Rescue boats may substitute buoyant oars for paddles, as specified by the manufacturer.
- <sup>7</sup> Not required for a rigid rescue boat.
- <sup>8</sup> Required if specified by the boat manufacturer.
- <sup>9</sup> Sufficient thermal protective aids are required for at least 10% of the persons the survival craft is equipped to carry, but not less than two.
- <sup>10</sup> Required only if the lifeboat is also the rescue boat.

[CGD 84-069, 61 FR 25291, May 20, 1996, as amended at 63 FR 52814, Oct. 1, 1998]

**§ 108.580 Personal lifesaving appliances.**

(a) *Lifebuoys.* Each unit must carry at least eight lifebuoys approved under approval series 160.150 as follows:

(1) *Stowage.* Lifebuoys must be stowed as follows:

- (i) Each lifebuoy must be capable of being rapidly cast loose.
- (ii) Each lifebuoy must not be permanently secured to the unit in anyway.
- (iii) Lifebuoys must be so distributed as to be readily available on each side of the unit and, as far as practicable, on each open deck extending to the side of the unit. The lifebuoys with attached self-igniting lights must be

evenly distributed on all sides of the unit.

(iv) At least two lifebuoys, each with attached self-activating smoke signals, must be stowed where they can be quickly released from the navigating bridge or main control station, or a location readily available to personnel on board. These lifebuoys should, when released, fall directly into the water without striking any part of the unit.

(2) *Attachments and fittings.* Lifebuoys must have the following attachments and fittings:

- (i) At least one lifebuoy on each side of the unit fitted with a buoyant lifeline that is—

(A) At least as long as twice the height where it is stowed above the waterline in the lightest seagoing condition, or 30 meters (100 feet), whichever is the greater;

(B) Non-kinking;

(C) Not less than 8 millimeters ( $\frac{5}{16}$  inch) in diameter;

(D) Of a breaking strength which is not less than 5 kiloNewtons (1,124 pounds-force); and

(E) Is, if synthetic, a dark color or certified by the manufacturer to be resistant to deterioration from ultraviolet light.

(ii) At least one-half the total number of lifebuoys on the unit must each be fitted with a self-igniting light approved under approval series 161.010. A self-igniting light must not be attached to the lifebuoys required by this section to be fitted with lifelines.

(iii) At least two lifebuoys on the unit each must be fitted with a self-activating smoke signal approved under approval series 160.157. Lifebuoys fitted with smoke signals must also be fitted with lights.

(b) *Lifejackets.* Each unit must carry lifejackets approved under approval series 160.155, 160.176, or 160.177. If the unit carries inflatable lifejackets, they must be of the same or similar design and have the same method of operation.

(1) *General.* Each unit must carry a lifejacket for each person on board and in addition, a sufficient number of lifejackets must be carried for persons at each work station and industrial work site.

(2) *Stowage.* Lifejackets must be stowed as follows:

(i) The lifejackets must be readily accessible.

(ii) The additional lifejackets required by paragraph (b)(1) of this section must be stowed in places readily accessible to the work stations and industrial work sites.

(iii) Where, due to the particular arrangements of the unit, the lifejackets under paragraph (b)(1) of this section could become inaccessible, the OCMI may require an increase in the number of lifejackets to be carried, or suitable alternative arrangements.

(3) *Attachments and fittings.* Lifejackets must have the following attachments and fittings:

(i) Each lifejacket must have a lifejacket light approved under approval series 161.112 securely attached to the front shoulder area of the lifejacket. On a unit not in international service, a light approved under approval series 161.012 may be used. However, lifejacket lights bearing Coast Guard approval number 161.012/2/1 are not permitted unless the unit is certificated to operate only on waters between 32° N and 32° S latitude.

(ii) Each lifejacket must have a whistle firmly secured by a cord to the lifejacket.

(c) *Immersion suits or anti-exposure suits.* Each unit must carry immersion suits approved under approval series 160.171 or anti-exposure suits approved under approval series 160.153.

(1) *General.* Each unit, except units operating between 32 degrees north latitude and 32 degrees south latitude, must carry—

(i) Immersion suits or anti-exposure suits of suitable size for each person assigned to the rescue boat crew;

(ii) Immersion suits approved under approval series 160.171 of the appropriate size for each person on board, which count toward meeting the requirements of paragraph (c)(1)(i) of this section; and

(iii) In addition to the immersion suits required under paragraph (c)(1)(ii) of this section, each watch station, work station, and industrial work site must have enough immersion suits to equal the number of persons normally on watch in, or assigned to, the station or site at one time. However, an immersion suit is not required at a station or site for a person whose cabin or berthing area (and the immersion suits stowed in that location) is readily accessible to the station or site.

(2) *Attachments and fittings.* Immersion suits or anti-exposure suits must have the following attachments and fittings:

(i) Each immersion suit or anti-exposure suit must have a lifejacket light approved under approval series 161.112 securely attached to the front shoulder

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area of the immersion suit or anti-exposure suit. On a unit not in international service, a light approved under approval series 161.012 may be used. However, lifejacket lights bearing Coast Guard approval number 161.012/2/1 are not permitted on units certificated to operate on waters where water temperature may drop below 10° C (50° F).

(ii) Each immersion suit or anti-exposure suit must have a whistle firmly secured by a cord to the immersion suit or anti-exposure suit.

[CGD 84-069, 61 FR 25291, May 20, 1996, as amended at 63 FR 52814, Oct. 1, 1998]

## § 108.595 Communications.

(a) *Radio lifesaving appliances.* Radio lifesaving appliance installations and arrangements must meet the requirements of 47 CFR part 80.

(b) *Distress flares.* Each unit must—

(1) Carry not less than 12 rocket parachute flares approved under approval series 160.136; and

(2) Stow the flares in a portable watertight container carried on the navigating bridge, or if the unit does not have a bridge, in the control room.

## § 108.597 Line-throwing appliance.

(a) *General.* Each unit in international service must have a line-throwing appliance that is approved under approval series 160.040. Each unit not in international service must carry a line-throwing appliance approved under either approval series 160.040 or 160.031.

(b) *Stowage.* The line-throwing appliance and its equipment must be readily accessible for use.

(c) *Additional equipment.* Each unit must carry the following equipment for the line-throwing appliance:

(1) The equipment on the list provided by the manufacturer with the approved appliance; and

(2) An auxiliary line that—

(i) Has a breaking strength of at least 40 kiloNewtons (9,000 pounds-force);

(ii) Is, if synthetic, a dark color or certified by the manufacturer to be resistant to deterioration from ultraviolet light; and

(iii) Is—

(A) At least 450 meters (1,500 feet) long, if the line-throwing appliance is

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approved under approval series 160.040; or

(B) At least 150 meters (500 feet) long, if the line-throwing appliance is approved under approval series 160.031.

## Subpart F—Cranes

### CRANES

## § 108.601 Crane design.

(a) Each crane and crane foundation on a unit must be designed in accordance with the American Petroleum Institute Specification for Offshore Cranes, API Spec. 2C, Second Edition, February, 1972 (with supplement 2).

(b) In addition to the design requirements of paragraph (a), each crane must have the following:

(1) Each control marked to show its function.

(2) Instruments with built-in lighting.

(3) Fuel tank fills and overflows that do not run onto the engine exhaust.

(4) No gasoline engines.

(5) Spark arrestors fitted on engine exhaust pipes.

## Subpart G—Equipment Markings and Instructions

## § 108.621 Equipment markings: General.

Unless otherwise provided, each marking required in this subpart must be—

(a) Printed in English;

(b) In red letters with a contrasting background;

(c) Permanent;

(d) Easy to be seen;

(e) At least 1.3 centimeters (½ inch) in height.

## § 108.623 General alarm bell switch.

Each general alarm bell switch must be marked “GENERAL ALARM” on a plate or other firm noncorrosive backing.

## § 108.625 General alarm bell.

Each general alarm bell must be identified by marking “GENERAL ALARM—WHEN BELL RINGS GO TO YOUR STATION” next to the bell.

**§ 108.627 Carbon dioxide alarm.**

Each carbon dioxide alarm must be identified by marking: "WHEN ALARM SOUNDS VACATE AT ONCE. CARBON DIOXIDE BEING RELEASED" next to the alarm.

**§ 108.629 Fire extinguishing system branch line valve.**

Each branch line valve of each fire extinguishing system must be marked with the name of the space or spaces it serves.

**§ 108.631 Fixed fire extinguishing system controls.**

(a) Each cabinet or space that contains a valve, control, or manifold of a fixed fire extinguishing system must be marked by one of the following: "CARBON DIOXIDE FIRE APPARATUS", "FOAM FIRE APPARATUS", or "WATER SPRAY FIRE APPARATUS" in letters at least 5 centimeters (2 inches) high.

(b) Instructions for the operation of a fixed fire extinguishing system must be posted next to a fire apparatus described in paragraph (a) of this section.

**§ 108.633 Fire stations.**

Each fire station must be identified by marking: "FIRE STATION NO. \_\_\_;" next to the station in letters and numbers at least 5 centimeters (2 inches) high.

**§ 108.635 Self-contained breathing apparatus.**

Each locker or space containing self-contained breathing apparatus must be marked: "SELF CONTAINED BREATHING APPARATUS".

**§ 108.636 Work vests.**

Each space containing a work vest must be marked: "WORK VEST".

**§ 108.637 Hand portable fire extinguishers.**

(a) Each hand portable fire extinguisher must be marked with a number that identifies it in relation to all other hand portable fire extinguishers.

(b) The location of each hand portable fire extinguisher must be marked with the same number that is marked on the extinguisher.

**§ 108.639 Emergency lights.**

Each emergency light must be marked: "E".

**§ 108.641 Instructions for changing steering gear.**

Instructions stating, in order, the different steps to be taken for changing to emergency and secondary steering gear must be posted in the steering gear room and at each secondary steering station in 1.3 centimeters (½ inch) letters and numerals of contrasting color to the background.

**§ 108.643 Rudder orders.**

At each steering station, the direction which the wheel or steering device must be moved for right rudder or left rudder must be marked in letters of contrasting color to the background on the wheel or steering device or in a place that is directly in the helmsman's line of vision to indicate "RIGHT RUDDER" and "LEFT RUDDER".

**§ 108.645 Markings on lifesaving appliances.**

(a) *Lifeboats and rescue boats.* Each lifeboat and rescue boat must be plainly marked as follows:

(1) Each side of each lifeboat and rescue boat bow must be marked in block capital letters and numbers with—

(i) The name of the unit; and

(ii) The name of the port required to be marked on the unit to meet the requirements of subpart 67.123 of this chapter.

(2) The number of persons the boat is equipped for, which may not exceed the number shown on its nameplate, must be clearly marked in permanent characters.

(3) The number of the boat and the unit's name, must be plainly marked or painted so that the markings are visible from above the boat.

(4) Type II retro-reflective material approved under approval series 164.018 must be placed on the boat and meet the arrangement requirements in IMO Resolution A.658(16).

(b) *Rigid liferafts.* Each rigid liferaft must be marked as follows:

(1) The name of the unit must be marked on each rigid liferaft.

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(2) The name of the port required to be marked on the unit to meet the requirements of subpart 67.123 of this chapter.

(3) The length of the painter must be marked on each rigid liferaft.

(4) At each entrance of each rigid liferaft, the number of persons the rigid liferaft is equipped for, not exceeding the number shown on its nameplate, must be marked in letters and numbers at least 100 millimeters (4 inches) high, in a color contrasting to that of the liferaft.

[CGD 84-069, 61 FR 25298, May 20, 1996, as amended at 63 FR 52815, Oct. 1, 1998]

**§ 108.646 Marking of stowage locations.**

(a) Containers, brackets, racks, and other similar stowage locations for lifesaving equipment, must be marked with symbols in accordance with IMO Resolution A.760(18), indicating the devices stowed in that location for that purpose.

(b) If more than one device is stowed in that location, the number of devices must also be indicated.

(c) Survival craft should be numbered.

[CGD 84-069, 61 FR 25298, May 20, 1996, as amended at 63 FR 52815, Oct. 1, 1998]

**§ 108.647 Inflatable liferafts.**

The number of the liferaft and the number of persons it is permitted to accommodate must be marked or painted in a conspicuous place in the immediate vicinity of each inflatable liferaft in block capital letters and numbers. The word "liferaft" or the appropriate symbol from IMO Resolution A.760(18) shall be used to identify the stowage location. Liferafts stowed on the sides of the unit should be numbered in the same manner as the lifeboats. This marking must not be on the inflatable liferaft container.

[CGD 84-069, 61 FR 25298, May 20, 1996]

**§ 108.649 Lifejackets, immersion suits, and lifebuoys.**

(a) Each lifejacket must be marked—

(1) In block capital letters with the name of the unit; and

(2) With type I retro-reflective material approved under approval series

164.018. The arrangement of the retro-reflective material must meet IMO Resolution A.658(16).

(b) The stowage positions for lifejackets, other than lifejackets stowed in staterooms, must be marked with either the word "LIFEJACKET" or with the appropriate symbol from IMO Resolution A.760(18).

(c) Each immersion suit or anti-exposure suit must be marked to identify the person or unit to which it belongs.

(d) Immersion suits or anti-exposure suits must be stowed so they are readily accessible, and the stowage positions must be marked with either the words "IMMERSION SUITS" or "ANTI-EXPOSURE SUITS", or with the appropriate symbol from IMO Resolution A.760(18).

(e) Each lifebuoy must be marked—

(1) In block capital letters with the unit's name and with the name of the port required to be marked on the unit under subpart 67.123 of this chapter; and

(2) With type II retro-reflective material approved under part 164, subpart 164.018 of this chapter. The arrangement of the retro-reflective material must meet IMO Resolution A.658(16).

(f) Each lifebuoy stowage position must be marked with either the words "LIFEBUOY" or "LIFE BUOY", or with the appropriate symbol from IMO Resolution A.760(18).

(g) Each lifejacket, immersion suit, and anti-exposure suit container must be marked in block capital letters and numbers with the minimum quantity, identity, and if sizes other than adult or universal sizes are used on the unit, the size of the equipment stowed inside the container. The equipment may be identified in words or with the appropriate symbol from IMO Resolution A.760(18).

[CGD 84-069, 61 FR 25298, May 20, 1996, as amended at 63 FR 52815, Oct. 1, 1998]

**§ 108.650 EPIRBs and SARTs.**

Emergency position indicating radiobeacons and search and rescue transponders. Each EPIRB and SART

should have the name of the unit plainly marked or painted on its label, except for EPIRBs or SARTs in an inflatable liferaft or permanently installed in a survival craft.

[CGD 84-069, 61 FR 25299, May 20, 1996]

**§ 108.651 Portable magazine chests.**

Each portable magazine chest must be marked: “PORTABLE MAGAZINE CHEST—FLAMMABLE—KEEP LIGHTS AND FIRE AWAY” in letters at least 7.5 centimeters (3 inches) high.

**§ 108.653 Helicopter facilities.**

(a) Each helicopter fueling facility must be marked adjacent to the fueling hose storage: “WARNING—HELICOPTER FUELING STATION—KEEP LIGHTS AND FIRE AWAY”.

(b) Each storage tank for helicopter fuel must be marked: “DANGER—FLAMMABLE LIQUID”.

(c) Each access to a helicopter landing area must be marked: “BEWARE OF TAIL ROTOR”.

(d) Each marking required by this section must be in letters at least 7.5 centimeters (3 inches) high.

**§ 108.655 Operating instructions.**

Each unit must have posters or signs displayed in the vicinity of each survival craft and the survival craft’s launching controls that—

(a) Illustrate the purpose of controls;

(b) Illustrate the procedures for operating the launching device;

(c) Give relevant instructions or warnings;

(d) Can be easily seen under emergency lighting conditions; and

(e) Display symbols in accordance with IMO Resolution A.760(18).

[CGD 84-069, 61 FR 25299, May 20, 1996]

**§ 108.657 Unit markings.**

The hull of each unit must be marked in accordance with Parts 67 and 69 of this chapter.

**§ 108.659 Lifesaving signal instructions.**

On all vessels to which this subpart applies, there must be readily available to the offshore installation manager, master, or person in charge a placard containing instructions for the use of

the lifesaving signals set forth in regulation 16, chapter V, of the International Convention for Safety of Life at Sea, 1974. These signals must be used by vessels or persons in distress when communicating with lifesaving stations and maritime rescue units.

[CGD 95-027, 61 FR 26008, May 23, 1996]

**§ 108.661 Unit markings: Draft marks.**

(a) Each unit must have draft marks for each foot of immersion—

(1) If the unit is a surface unit, on both the port and starboard sides of the stem and the stern-post or rudderpost or at any other place at the stern of the unit as may be necessary for easy observance;

(2) If the unit is a self-elevating unit, near each corner of the hull but not more than 4 required; and

(3) If the unit is a column-stabilized unit, on each corner column, continuing to the footing or lower displacement hull.

(b) The bottom of each mark must be at the draft indicated by that mark.

(c) Each mark must be—

(1) In numerals 15 centimeters (6 inches) high; and

(2) In contrasting color to the background.

(d) For the purposes of this section, “draft” means the distance from the bottom of the keel or the lowest shell plate on the outer surface of the unit to the surface of the water, except that where a unit has a permanent appendage extending below the bottom of the keel, “draft” means the distance from the lowest part of the appendage to the surface of the water.

(e) 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 draft can be determined.

[CGD 73-251, 43 FR 56808, Dec. 4, 1978, as amended by CGD 89-037, 57 FR 41823, Sept. 11, 1992]

**§ 108.663 Unit markings: Load line.**

Each unit that is assigned a load line must have the load line marked in accordance with Part 42 of this chapter.

**§ 108.665**

**§ 108.665 Appliances for watertight integrity.**

Each watertight door, scuttle, and hatch required for watertight integrity, which may be opened during normal operations must be marked in letters of contrasting color to the background "KEEP CLOSED".

**Subpart H—Miscellaneous Equipment**

**§ 108.697 Buoyant work vests.**

(a) Each buoyant work vest on a unit must be approved under Subpart 160.053 or Subpart 160.077 of this chapter.

(b) Commercial hybrid PFD's carried as work vests must be—

(1) Used, stowed, and maintained in accordance with the procedures set out in the manual required for these devices by §160.077-29 of this chapter and any limitation(s) market 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.

[CGD 78-174A, 51 FR 4351, Feb. 4, 1986]

**§ 108.699 Substitution of life preservers.**

A work vest may not be substituted for a required life preserver—

(a) For the life saving equipment requirements of this part; or

(b) For use during drills and emergencies.

**§ 108.701 Sounding equipment.**

Each self-propelled unit must have a mechanical or electronic sounding apparatus.

**§ 108.703 Self-contained breathing apparatus.**

(a) Each unit must be equipped with a self-contained breathing apparatus described in §108.497(a) to use as protection against gas leaking from a refrigeration unit if it is equipped with any refrigeration unit using—

(1) Ammonia to refrigerate any space with a volume of more than 20 cubic feet; or

(2) Fluorocarbons to refrigerate any space with a volume of more than 1000 cubic feet.

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(b) The self-contained breathing apparatus required in §108.497 may be used for this purpose.

[CGD 73-251, 43 FR 56808, Dec. 4, 1978, as amended by CGD 86-036, 57 FR 48326, Oct. 23, 1992]

**§ 108.705 Anchors, chains, wire rope, and hawsers.**

(a) Each unit must be fitted with anchors, chains, wire rope, and hawsers in agreement with the standards established by the American Bureau of Shipping.

(b) Units which are equipped with anchors used as operational equipment are not required to have additional anchors if the operational anchors meet the requirements of paragraph (a) of this section.

[CGD 73-251, 43 FR 56808, Dec. 4, 1978, as amended by USCG-1999-6216, 64 FR 53226, Oct. 1, 1999]

**§ 108.707 First aid kit.**

Each unit must have a first-aid kit approved by the Mine Safety and Health Administration (Formerly Mining Enforcement and Safety Administration) of a size suitable for the number of persons allowed on board the unit that is stowed in a location that is accessible to persons on board.

**§ 108.709 Litter.**

Each unit must have a litter that is—

(a) Stowed in a location that is accessible to the persons on board; and

(b) Capable of being used on the type of helicopters serving the unit.

**§ 108.713 International Code of Signals.**

Each vessel on an international voyage which is required to carry a radiotelegraph or radiotelephone installation in accordance with Chapter IV of the Safety of Life at Sea Convention, 1960, must carry the International Code of Signals.

**§ 108.715 Magnetic compass and gyrocompass.**

(a) Each self-propelled unit in ocean or coastwise service must have a magnetic compass.

(b) Each self-propelled unit of 1,600 gross tons and over in ocean or coastwise service must have a gyrocompass

in addition to the magnetic compass required in paragraph (a) of this section.

(c) Each unit that is required to have a gyrocompass must have an illuminated repeater for the gyrocompass that is at the main steering stand unless the gyrocompass is illuminated and is at the main steering stand.

#### § 108.717 Radar.

Each self-propelled unit of 1,600 gross tons and over in ocean or coastwise service must have—

(a) A marine radar system for surface navigation; and

(b) Facilities on the bridge for plotting radar readings.

#### § 108.719 Pilot boarding equipment.

(a) This section applies to each vessel that normally embarks or disembarks a pilot from a pilot boat or other vessel.

(b) Each vessel must have suitable pilot boarding equipment available for use on each side of the vessel. If a vessel has only one set of equipment, the equipment must be capable of being easily transferred to and rigged for use on either side of the vessel.

(c) Pilot boarding equipment must be capable of resting firmly against the vessel's side and be secured so that it is clear from overboard discharges.

(d) Each vessel must have lighting positioned to provide adequate illumination for the pilot boarding equipment and each point of access.

(e) Each vessel must have a point of access that has—

(1) A gateway in the rails or bulwark with adequate handholds; or

(2) Two handhold stanchions and a bulwark ladder that is securely attached to the bulwark rail and deck.

(f) The pilot boarding equipment required by paragraph (b) of this section must include at least one pilot ladder approved under subpart 163.003 of this chapter. Each pilot ladder must be of a single length and capable of extending from the point of access to the water's edge during each condition of loading and trim, with an adverse list of 15°.

(g) Whenever the distance from the water's edge to the point of access is more than 30 feet, access from a pilot ladder to the vessel must be by way of

an accommodation ladder or equally safe and convenient means.

(h) Pilot hoists, if used, must be approved under subpart 163.002 of this chapter.

[CGD 79-032, 49 FR 25455, June 21, 1984]

### Subpart I—Navigation Bridge Visibility

#### § 108.801 Navigation bridge visibility.

Each mobile offshore drilling unit which is 100 meters (328 feet) or more in length and contracted for on or after September 7, 1990, must meet the following requirements:

(a) The field of vision from the navigation bridge, whether the vessel is in a laden or unladen condition, must be such that:

(1) From the conning position, the view of the sea surface is not obscured forward of the bow by more than the lesser of two ship lengths or 500 meters (1,640 feet) from dead ahead to 10 degrees on either side of the vessel. Within this arc of visibility any blind sector caused by cargo, cargo gear, or other permanent obstruction must not exceed 5 degrees.

(2) From the conning position, the horizontal field of vision extends over an arc from at least 22.5 degrees abaft the beam on one side of the vessel, through dead ahead, to at least 22.5 degrees abaft the beam on the other side of the vessel. Blind sectors forward of the beam caused by cargo, cargo gear, or other permanent obstruction must not exceed 10 degrees each, nor total more than 20 degrees, including any blind sector within the arc of visibility described in paragraph (a)(1) of this section.

(3) From each bridge wing, the field of vision extends over an arc from at least 45 degrees on the opposite bow, through dead ahead, to at least dead astern.

(4) From the main steering position, the field of vision extends over an arc from dead ahead to at least 60 degrees on either side of the vessel.

(5) From each bridge wing, the respective side of the vessel is visible forward and aft.

(b) Windows fitted on the navigation bridge must be arranged so that:

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(1) Framing between windows is kept to a minimum and is not installed immediately in front of any work station.

(2) Front windows are inclined from the vertical plane, top out, at an angle of not less than 10 degrees and not more than 25 degrees.

(3) The height of the lower edge of the front windows is limited to prevent any obstruction of the forward view previously described in this section.

(4) The height of the upper edge of the front windows allows a forward view of the horizon at the conning position, for a person with a height of eye of 1.8 meters (71 inches), when the vessel is at a forward pitch angle of 20 degrees.

(c) Polarized or tinted windows must not be fitted.

[CGD 85–099, 55 FR 32248, Aug. 8, 1990]

**Subpart J—Muster List**

**§ 108.901 Muster list and emergency instructions.**

(a) *General.* Copies of clear instructions must be provided on the unit, detailing the actions that each person on board should follow in the event of an emergency.

(b) *Muster list.* Copies of the muster list must be posted in conspicuous places throughout the unit including on the navigating bridge, in the control room, and in accommodation spaces. The muster list must be posted at all times while the unit is in service. After the muster list has been prepared, if any change takes place that necessitates an alteration in the muster list, the person in charge must either revise the muster list or prepare a new one. Muster lists must provide the following information:

(1) Each muster list must specify instructions for operating the general emergency alarm system.

(2) Each muster list must specify the emergency signals.

(3) Each muster list must specify the actions to be taken by the crew and industrial personnel when each signal is sounded.

(4) Each muster list must specify how the order to abandon the unit will be given.

(5) Each muster list must specify the persons that are assigned to make sure

that lifesaving and firefighting appliances are maintained in good condition and ready for immediate use.

(6) The muster list must specify the duties assigned to the different industrial personnel and members of the crew that include—

(i) Closing the watertight doors, fire doors, valves, scuppers, sidescuttles, skylights, portholes, and other similar openings in the unit's hull;

(ii) Equipping the survival craft and other lifesaving appliances;

(iii) Preparing and launching the survival craft;

(iv) Preparing other lifesaving appliances;

(v) Mustering the visitors and other persons in addition to the crew and industrial personnel;

(vi) Using communication equipment;

(vii) Manning the emergency squad assigned to deal with fires and other emergencies;

(viii) Special duties assigned with respect to the use of firefighting equipment and installations;

(ix) Cover the duties of the crew and industrial personnel in case of collisions or other serious casualties; and

(x) Cover the duties of the crew and industrial personnel in case of severe storms.

(7) Each muster list must specify the duties assigned to industrial personnel and members of the crew in relation to visitors and other persons on board in case of an emergency that include—

(i) Warning visitors and other persons on board;

(ii) Seeing that visitors and other persons on board are suitably dressed and have donned their lifejackets or immersion suits correctly;

(iii) Assembling visitors and other persons on board at muster stations; and

(iv) Keeping order in the passageways and on the stairways and generally controlling the movements of the visitors and other persons on board;

(8) Each muster list must specify substitutes for key persons if they are disabled, taking into account that different emergencies require different actions.

(c) *Emergency instructions.* Illustrations and instructions in English and

any other appropriate language, as determined by the OCMI, must be posted in each cabin used for persons who are not members of the crew or industrial personnel. They must be conspicuously displayed at each muster station and in other accommodation spaces to inform personnel of—

- (1) The fire and emergency signal;
- (2) Their muster station;
- (3) The essential actions they must take in an emergency;
- (4) The location of lifejackets, including child-size lifejackets;
- (5) The method of donning lifejackets;
- (6) If immersion suits are provided, the location of the immersion suits; and
- (7) Fully illustrated instructions on the method of donning immersion suits.

[CGD 84-069, 61 FR 25299, May 20, 1996, as amended at 63 FR 52815, Oct. 1, 1998]

## PART 109—OPERATIONS

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APPENDIX A TO PART 109—NAVIGATION AND VESSEL INSPECTION CIRCULAR NO. 4-78—INSPECTION AND CERTIFICATION OF EXISTING MOBILE OFFSHORE DRILLING UNITS

AUTHORITY: 43 U.S.C. 1333; 46 U.S.C. 3306, 6101, 10104; Department of Homeland Security Delegation No. 0170.1.

SOURCE: CGD 73-251, 43 FR 56828, Dec. 4, 1978, unless otherwise noted.