

statements as noted on the approval certificate:

(1) ADULT—For persons weighing more than 40 kg (90 lb).

(2) YOUTH—For persons weighing 23–40 kg (50–90 lb).

(3) CHILD SMALL—For persons weighing 14–23 kg (30–50 lb).

(4) “[*Other text noted on approval certificate*].”

[CGD 78-174, 50 FR 33928, Aug. 22, 1985, as amended by CGD 78-174A, 51 FR 4351, Feb. 4, 1986; CGD 78-174, 60 FR 2491, Jan. 9, 1995; 60 FR 7131, Feb. 7, 1995]

Subpart 160.151—Inflatable Liferrafts (SOLAS)

SOURCE: CGD 85-205, 62 FR 25547, May 9, 1997, unless otherwise noted.

§ 160.151-1 Scope.

This subpart prescribes standards, tests, and procedures for approval by the Coast Guard of SOLAS A and SOLAS B inflatable liferafts, and for their periodic inspection and repair at approved facilities (“servicing”). Certain provisions of this subpart also apply to inflatable buoyant apparatus as specified in § 160.010-3 and to inflatable liferafts for domestic service as specified in subpart 160.051.

§ 160.151-3 Definitions.

In this subpart, the term:

Commandant means the Commandant (CG-521), United States Coast Guard, 2100 2nd St., SW., Stop 7126, Washington, DC 20593-7126.

Servicing means periodic inspection, necessary repair, and repacking by a servicing facility approved by the Coast Guard. Requirements for periodic inspection and repair of inflatable liferafts approved by the Coast Guard are described in §§ 160.151-35 through 160.151-57.

SOLAS means the International Convention for the Safety of Life at Sea, 1974, as amended by the International Maritime Organization through the 1988 (GMDSS) amendments, dated 9 November 1988.

SOLAS A Liferaft means a liferaft that meets the requirements of this subpart for an inflatable liferaft com-

plying with SOLAS and equipped with a SOLAS A equipment pack.

SOLAS B Liferaft means a liferaft that meets the requirements of this subpart for an inflatable liferaft complying with SOLAS and equipped with a SOLAS B equipment pack.

[CGD 85-205, 62 FR 25547, May 9, 1997, as amended by USCG-2009-0702, 74 FR 49237, Sept. 25, 2009]

§ 160.151-5 Incorporation by reference.

(a) Certain material is incorporated by reference into this subpart with the approval of the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. 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 National Archives and Records Administration (NARA), and at the U.S. Coast Guard, Office of Design and Engineering Standards (CG-521), 2100 2nd St., SW., Stop 7126, Washington, DC 20593-7126, and is available from the sources indicated in paragraph (b) of this section. 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.

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

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)
100 Barr Harbor Drive, West Conshohocken, PA 19428-2959.

ASTM F 1014-92, Standard Specification for Flashlights on Vessels—160.151-21

INTERNATIONAL MARITIME ORGANIZATION (IMO)

Publications Section, 4 Albert Embankment, London SE1 7SR, England

Resolution A.689(17)—Recommendation on Testing of Life-saving Appliances, 27 November 1991, including amendments through Resolution MSC.54(66), adopted 30 May 1996—160.151-21; 160.151-27; 160.151-31; 160.151-57

Resolution A.657(16)—Instructions for Action in Survival Craft, 19 November 1989—160.151-21

Resolution A.658(16)—Use and Fitting of Retro-reflective Materials on Life-saving

§ 160.151-7

Appliances, 20 November 1989—160.151-15; 160.151-57.

NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY (FORMERLY NATIONAL BUREAU OF STANDARDS)

c/o National Technical Information Service, Springfield, VA 22161

NBS Special Publication 440 (Order No. PB265225) Color: Universal Language and Dictionary of Names, 1976—160.151-15

NAVAL FORMS AND PUBLICATIONS CENTER
Customer Service, Code 1052, 5801 Tabor Ave., Philadelphia, PA 19120

MIL-C-17415E—(Ships)—Cloth, Coated, and Webbing, Inflatable Boat and Miscellaneous Use—160.151-15

[CGD 85-205, 62 FR 25547, May 9, 1997, as amended at USCG-1999-5151, 64 FR 67184, Dec. 1, 1999; 69 FR 18803, Apr. 9, 2004; USCG-2009-0702, 74 FR 49237, Sept. 25, 2009]

§ 160.151-7 Construction of inflatable liferafts.

Except as specified in this subpart, each SOLAS A and SOLAS B inflatable liferaft must meet the requirements of Chapter III of SOLAS. To be approved under this subpart, inflatable liferafts must be constructed in accordance with the following provisions of SOLAS:

(a) Chapter III, Regulation 30, paragraph 2 (III/30.2), General requirements for life-saving appliances.

(b) Chapter III, Regulation 38 (III/38) General requirements for liferafts.

(c) Chapter III, Regulation 39 (III/39) Inflatable liferafts.

(d) Chapter III, Regulation 51 (III/51) Training manual.

(e) Chapter III, Regulation 52 (III/52) Instructions for on-board maintenance.

§ 160.151-9 Independent laboratory.

Tests and inspections that this subpart requires to be conducted by an independent laboratory must be conducted by an independent laboratory accepted by the Coast Guard under subpart 159.010 of part 159 of this chapter to perform such tests and inspections. A list of accepted laboratories is available from the Commandant.

§ 160.151-11 Approval procedure.

(a) A manufacturer seeking approval of an inflatable liferaft must comply with the procedures in part 159, subpart 159.005, of this chapter and in this section.

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

(b) A manufacturer seeking approval of an inflatable liferaft must submit an application meeting the requirements of § 159.005-5 of this chapter for preapproval review. To meet the requirements of § 159.005-5(a)(2) of this chapter, the manufacturer shall submit—

(1) General-arrangement drawing including principal dimensions;

(2) Seating-arrangement plan;

(3) Plans for subassemblies;

(4) Plans for carriage and, in detail, stowage of equipment;

(5) Plans for the inflation system;

(6) Plans for the outer container;

(7) Plans for any lifting shackle or ring, including diameter in cross-section, used for connecting the suspension tackle of a davit-launched inflatable liferaft to the automatic disengaging device used for its hoisting and lowering;

(8) Other drawing(s) necessary to show that the inflatable liferaft complies with the requirements of this subpart;

(9) Description of methods of seam and joint construction;

(10) Samples and identification of each material used in the buoyancy chambers, floor, and canopy, including the identity of their manufacturers, and segments of each type of seam made from such materials; and

(11) Complete data pertinent to the installation and use of the proposed inflatable liferaft, including the maximum proposed height of its installation above the water, and the maximum length of the sea painter installed in the inflatable liferaft.

§ 160.151-13 Fabrication of prototype inflatable liferafts for approval.

If the manufacturer is notified that the information submitted in accordance with § 160.151-11 is satisfactory to the Commandant, fabrication of a prototype inflatable liferaft must proceed in the following sequence:

(a) The manufacturer shall arrange for an independent laboratory to inspect the liferaft during its fabrication and prepare an inspection report meeting the requirements of § 159.005-11 of this chapter. The independent laboratory shall conduct at least one inspection during layup of the buoyancy

tubes of the liferaft, at least one inspection of the finished liferaft when fully inflated, and as many other inspections as are necessary to determine that the liferaft—

(1) Is constructed by the methods and with the materials specified in the plans;

(2) Passes the applicable inspections and tests required by §160.151-31; and

(3) Conforms with the manufacturer's plans.

(b) The manufacturer shall submit the independent laboratory's inspection report to the Commandant for review.

(c) If, after review of the inspection report of the independent laboratory, the Commandant notifies the manufacturer that the liferaft is in compliance with the requirements of this subpart, the manufacturer may proceed with the approval tests required under §§160.151-27 and 160.151-29.

(d) The manufacturer shall notify the cognizant OCMI of where the approval tests required under §§160.151-27 and 160.151-29 will take place and arrange with the OCMI a testing schedule that allows for a Coast Guard inspector to travel to the site where the testing is to be performed.

(e) The manufacturer shall admit the Coast Guard inspector to any place where work or testing is performed on inflatable liferafts or their component parts and materials for the purpose of—

(1) Assuring that the quality-assurance program of the manufacturer is satisfactory;

(2) Witnessing tests; and

(3) Taking samples of parts or materials for additional inspections or tests.

(f) The manufacturer shall make available to the Coast Guard inspector the affidavits or invoices from the suppliers of all essential materials used in the production of inflatable liferafts, together with records identifying the lot numbers of the liferafts in which such materials were used.

(g) On conclusion of the approval testing, the manufacturer shall comply with the requirements of §159.005-9(a)(5) of this chapter by submitting the following to the Commandant:

(1) The report of the prototype testing prepared by the manufacturer. The

report must include a signed statement by the Coast Guard inspector who witnessed the testing, indicating that the report accurately describes the testing and its results.

(2) The final plans of the liferaft as built. The plans must include—

(i) The servicing manual described in §160.151-37;

(ii) The instructions for training and maintenance described in §§160.151-59 and 160.151-61, respectively;

(iii) The final version of the plans required under §160.151-11(b), including—

(A) Each correction, change, or addition made during the construction and approval testing of prototypes;

(B) Sufficient detail to determine that each requirement of this subpart is met;

(C) Fabrication details for the inflatable liferaft, including details of the method of making seams and joints; and

(D) Full details of the inflation system.

(3) A description of the quality-control procedures that will apply to the production of the inflatable liferaft. These must include—

(i) The system for checking material certifications received from suppliers;

(ii) The method for controlling the inventory of materials;

(iii) The method for checking quality of seams and joints; and

(iv) The inspection checklists used during various stages of fabrication to assure that the approved liferaft complies with the approved plans and the requirements of this subpart.

[CGD 85-205, 62 FR 25547, May 9, 1997; 62 FR 35392, July 1, 1997]

§ 160.151-15 Design and performance of inflatable liferafts.

To satisfy the requirements of the regulations of SOLAS indicated in §160.151-7, each inflatable liferaft must meet the following requirements of this section:

(a) *Workmanship and materials (Regulation III/30.2.1)*. Each liferaft must be constructed of the following types of materials meeting MIL-C-17415E, or materials accepted by the Commandant as equivalent or superior—

(1) Type 2, Class B, for the canopy;

(2) Type 8 for seam tape;

(3) Type 11 for the inflatable floor; and

(4) Type 16, Class AA, for all other inflatable compartments and structural components.

(b) *Seams (Regulation III/30.2.1)*. Each seam must be at least as strong as the weakest of the materials joined by the seam. Each seam must be covered with tape where necessary to prevent lifting of and damage to fabric edges.

(c) *Protection from cold inflation-gas (Regulation III/30.2.1)*. Each inflatable compartment must be provided with a protective liner or baffling arrangement at the inflation-gas inlet, or other equally effective means to prevent damage from exposure to cold inflation-gas.

(d) *Compatibility of dissimilar materials (Regulation III/30.2.4)*. Where dissimilar materials are combined in the construction of a liferaft, provisions must be made to prevent loosening or tightening due to differences in thermal expansion, freezing, buckling, galvanic corrosion, or other incompatibilities.

(e) *Color (Regulation III/30.2.6)*. The primary color of the exterior of the canopy must be vivid reddish orange (color number 34 of NBS Special Publication 440), or a fluorescent color of a similar hue.

(f) *Retroreflective material (Regulation III/30.2.7)*. Each inflatable liferaft must be marked with Type I retroreflective material approved under part 164, subpart 164.018, of this chapter as complying with SOLAS. The arrangement of the retroreflective material must comply with IMO Resolution A.658(16).

(g) *Towing attachments (Regulation III/38.1.4)*. Each towing attachment must be reinforced strongly enough to withstand the towing strain, and marked to indicate its function.

(h) *Weight (Regulation III/38.2.2)*. The weight of the liferaft including its container and equipment may not exceed 185 kg (407.8 lb), unless the liferaft is intended for launching into the water directly from its stowed position using an inclined or hand-tilted rack, or is served by a launching appliance approved by the Commandant under approval series 160.163.

(i) *Lifelines (Regulation III/38.3.1)*. Each lifeline must be made of nylon tubular webbing with a minimum diame-

ter of 14 mm (9/16-inch), rope with a minimum diameter of 10 mm (3/8-inch), or equivalent. Each lifeline-attachment patch must have a minimum breaking strength of 1.5 kN (350 lb) pull exerted perpendicular to the base of the patch. Each bight of an exterior lifeline must be long enough to allow the lifeline to reach to the waterline of the liferaft when it is afloat.

(j) *Painter length (Regulation III/38.3.2)*. The length of the liferaft painter shall be not less than 10 meters (33 feet) plus the liferaft's maximum stowage height, or 15 meters (49 feet), whichever is greater.

(k) *Painter system (Regulation III/38.6.1)*. The painter protruding from the liferaft container must be inherently resistant, or treated to be resistant, to deterioration from sunlight and salt spray, and resistant to absorption and wicking of water.

(l) *Inflation cylinders (Regulation III/39.2.3)*. Each compressed-gas inflation cylinder within the liferaft must meet the requirements of §147.60 of this chapter, and be installed so that—

(1) Slings and reinforcements of sufficient strength retain the inflation cylinders in place when the liferaft is dropped into the water from its stowage height and during inflation; and

(2) The painter and the inflation cylinders of the liferaft are linked to start inflation when the painter is pulled by one person exerting a force not exceeding 150 N (34 lb).

(m) *Boarding ladders (Regulation III/39.4.2)*. The steps of each boarding ladder must provide a suitable foothold.

(n) *Canopy lamps (Regulation III/39.6.2)*. The exterior liferaft canopy lamp must be approved by the Commandant under approval series 161.101.

(o) *Containers (Regulation III/39.7.1)*. Each container for packing liferafts—

(1) Must include a telltale made with a seal-and-wire, or equivalent, method for indicating whether the liferaft has been tampered with or used since packing;

(2) Must be designed so that the liferaft breaks free of the container when inflation is initiated, without the need to manually open or remove any closing arrangement;

(3) Must have an interior surface smooth and free from splinters, barbs, or rough projections;

(4) Must be of rigid construction where the liferaft is intended for float-free launching or for exposed stowage on deck;

(5) If rigid, must be designed to facilitate securing the inflatable liferaft to a vessel to permit quick release for manual launching;

(6) If constructed of fibrous-glass-reinforced plastic, must be provided with a means to prevent abrasion of the liferaft fabric, such as by using a gel-coated interior finish of the container, enclosing the liferaft in an envelope of plastic film, or equivalent means; and

(7) Except as provided in paragraph (o)(4) of this section, may be of fabric construction. Each container of fabric construction must be made of coated cloth, include carrying handles and drain holes, and be adaptable to stowage and expeditious removal from lockers and deck-mounted enclosures adjacent to liferaft-launching stations. The weight of a liferaft in a fabric container including its container and equipment may not exceed 100 kg (220 lb).

[CGD 85-205, 62 FR 25547, May 9, 1997, as amended by USCG-1998-4442, 63 FR 52192, Sept. 30, 1998]

§ 160.151-17 Additional requirements for design and performance of SOLAS A and SOLAS B inflatable liferafts.

To satisfy the requirements of the indicated regulations of SOLAS, each SOLAS A and SOLAS B inflatable liferaft must be manufactured in accordance with §§ 160.151-7 and 160.151-15, and must comply with the following additional requirements:

(a) *Stability (Regulation III/39.5.1)*. (1) Each liferaft with a capacity of more than 8 persons must have a waterplane of circular or elliptical shape. A hexagonal, octagonal, or similar outline approximating a circular or elliptical shape is acceptable.

(2) Each liferaft manufactured under this subpart must have water-containing stability appendages on its underside to resist capsizing from wind and waves. These appendages must meet the following requirements:

(i) The total volume of the appendages must not be less than 220 liters (7.77 ft³) for liferafts approved to accommodate up to 10 persons. The volume of an appendage is calculated using the bottom of the lowest opening in an appendage as the height of the appendage, and by deducting the volume of any objects inside the appendage. No opening designed to close as water is forced out of an appendage is an opening for the purpose of this calculation.

(ii) The total volume of the appendages for liferafts approved to accommodate more than 10 persons must be not less than $20 \times N$ liters ($0.706 \times N$ ft³), where N = the number of persons for which the liferaft is approved.

(iii) The appendages must be securely attached and evenly distributed around the periphery of the exterior bottom of the liferaft. They may be omitted at the locations of inflation cylinders.

(iv) The appendages must consist of at least two separate parts so that damage to one part will permit at least half of the required total volume to remain intact.

(v) Openings in or between the appendages must be provided to limit the formation of air pockets under the inflatable liferaft.

(vi) The appendages must be designed to deploy underwater when the liferaft inflates, and to fill to at least 60 percent of their capacity within 25 seconds of deployment. If weights are used for this purpose, they must be of corrosion-resistant material.

(vii) The primary color of the appendages must be vivid reddish orange (color number 34 of NBS Special Publication 440), or a fluorescent color of a similar hue.

(b) *Boarding ramp (Regulation III/39.4.1)*. The boarding ramp must have sufficient size and buoyancy to support one person weighing 100 kg (220 lb), sitting or kneeling and not holding onto any other part of the liferaft.

(c) *Marking (Regulation III/39.8)*. Means must be provided for identifying the liferaft with the name and port of registry of the ship to which it is to be fitted, so that the identification can be

§ 160.151-21

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

changed without opening the liferaft container.

[CGD 85-205, 62 FR 25547, May 9, 1997, as amended by USCG-1998-4442, 63 FR 52192, Sept. 30, 1998]

§ 160.151-21 Equipment required for SOLAS A and SOLAS B inflatable liferafts.

To obtain Coast Guard approval, the equipment in each SOLAS A and SOLAS B inflatable liferaft must meet the following specific requirements when complying with the indicated regulations of SOLAS:

(a) *Heaving line (Regulation III/38.5.1.1)*. The buoyant heaving line described by Regulation III/38.5.1.1 must have a breaking strength of not less than 1.1 kN (250 lb), and must be attached to the inflatable liferaft near the entrance furthest from the painter attachment.

(b) *Jackknife (Regulation III/38.5.1.2)*. Each folding knife carried as permitted by Regulation III/38.5.1.2 must be a jackknife approved by the Commandant under approval series 160.043.

(c) *Bailer (Regulation III/38.5.1.3)*. Each bailer described by Regulation III/38.5.1.3 must have a volume of at least 2 L (125 in³).

(d) *Sponge (Regulation III/38.5.1.4)*. Each sponge described by Regulation III/38.5.1.4 must have a volume of at least 750 cm³ (48 in³) when saturated with water.

(e) *Sea anchors (Regulation III/38.5.1.5)*. Sea anchors without the swivels described by Regulation III/38.5.1.5 may be used if, during the towing test, a sea anchor of their design does not rotate when streamed. The sea anchors need not have the tripping lines described by Regulation III/38.5.1.5 if, during the towing test, a sea anchor of their design can be hauled in by one person.

(f) *Paddles (Regulation III/38.5.1.6)*. The paddles must be at least 1.2 m (4 ft) long and must be of the same size and type as used to pass the maneuverability test in paragraph 1/5.10 of IMO Resolution A.689(17).

(g) *Tin-opener (Regulation III/38.5.1.7)*. Each sharp part of a tin-opener described by Regulation III/38.5.1.7 must have a guard.

(h) *First-aid kit (Regulation III/38.5.1.8)*. Each first-aid kit described by

Regulation III/38.5.1.8 must be approved by the Commandant under approval series 160.054.

(i) *Whistle (Regulation III/38.5.1.9)*. The whistle described by Regulation III/38.5.1.9 must be a ball-type or multi-tone whistle of corrosion-resistant construction.

(j) *Rocket parachute flare (Regulation III/38.5.1.10)*. Each rocket parachute flare described by Regulation III/38.5.1.10 must be approved by the Commandant under approval series 160.136.

(k) *Hand flare (Regulation III/38.5.1.11)*. Each hand flare described by Regulation III/38.5.1.11 must be approved by the Commandant under approval series 160.121.

(l) *Buoyant smoke signal (Regulation III/38.5.1.12)*. Each buoyant smoke signal described by Regulation III/38.5.1.12 must be of the floating type approved by the Commandant under approval series 160.122.

(m) *Electric torch (Regulation III/38.5.1.13)*. The waterproof electric torch described by Regulation III/38.5.1.13 must be a Type I or Type III flashlight constructed and marked in accordance with ASTM F 1014 (incorporated by reference, see §160.151-5. Three-cell-size flashlights bearing Coast Guard approval numbers in the 161.008 series may continue to be used as long as they are serviceable.

(n) *Radar reflector (Regulation III/38.5.1.14)*. The radar reflector may be omitted if the outside of the container of the inflatable liferaft includes a notice near the "SOLAS A" or "SOLAS B" marking indicating that no radar reflector is included.

(o) *Signalling mirror (Regulation III/38.5.1.15)*. Each signalling mirror described by Regulation III/38.5.1.15 must be approved by the Commandant under approval series 160.020.

(p) *Lifesaving signals (Regulation III/38.5.1.16)*. If not provided on a waterproof card or sealed in a transparent waterproof container as described in Regulation III/38.5.1.16, the table of lifesaving signals may be provided as part of the instruction manual.

(q) *Fishing tackle (Regulation III/38.5.1.17)*. The fishing tackle must be in a kit approved by the Commandant under approval series 160.061.

(r) *Food rations* (Regulation III/38.5.1.18.) The food rations must be approved by the Commandant under approval series 160.046.

(s) *Drinking water* (Regulation III/38.5.1.19). The fresh water required by Regulation III/38.5.1.19 must be “emergency drinking water” approved by the Commandant under approval series 160.026. The desalting apparatus described in Regulation III/38.5.1.19 must be approved by the Commandant under approval series 160.058. 1.0 liter/person of the required water may be replaced by an approved manually powered reverse osmosis desalinators capable of producing an equal amount of water in two days.

(t) *Drinking cup* (Regulation III/38.5.1.20). The drinking cup described in Regulation III/38.5.1.20 must be graduated in ounces or milliliters or both.

(u) *Anti-seasickness medicine* (Regulation III/38.5.1.21). The anti-seasickness medicine required by Regulation III/38.5.1.21 must include instructions for use and be marked with an expiration date.

(v) *Survival instructions* (Regulation III/38.5.1.22). The instructions required by Regulation III/38.5.1.22 on how to survive in a liferaft must—

- (1) Be waterproof;
- (2) Whatever other language or languages they may be in, be in English;
- (3) Meet the guidelines in IMO Resolution A.657(16); and
- (4) Be suspended in a clear film envelope from one of the arch tubes of the canopy.

(w) *Instructions for immediate action* (Regulation III/38.5.1.23). The instructions for immediate action must—

- (1) Be waterproof;
- (2) Whatever other language or languages they may be in, be in English;
- (3) Meet the guidelines in IMO Resolution A.657(16);
- (4) Explain both the noise accompanying the operation of any provided pressure-relief valves, and the need to render them inoperable after they complete venting; and
- (5) Be suspended from the inside canopy, so they are immediately visible by survivors on entering the inflatable liferaft. They may be contained in the same envelope with the instructions on how to survive if the instructions for

immediate action are visible through both faces of the envelope.

(x) *Thermal protective aid* (Regulation III/38.5.1.24). Each thermal protective aid described by Regulation III/38.5.1.24 must be approved by the Commandant under approval series 160.174.

(y) *Repair outfit* (Regulation III/39.10.1.1). The repair outfit required by Regulation III/39.10.1.1 must include—

- (1) Six or more sealing clamps or serrated conical plugs, or a combination of the two;
- (2) Five or more tube patches at least 50 mm (2 in) in diameter;
- (3) A roughing tool, if necessary to apply the patches; and
- (4) If the patches are not self-adhesive, a container of cement compatible with the liferaft fabric and the patches, marked with instructions for use and an expiration date.

(z) *Pump or bellows* (Regulation III/39.10.1.2). The pump or bellows required by Regulation III/39.10.1.2 must be manually operable and arranged to be capable of inflating any part of the inflatable structure of the liferaft.

(aa) *Plugs for pressure-relief valves*. Plugs for rendering pressure-relief valves inoperable must be provided in any liferaft fitted with such valves, unless the valves are of a type that can be rendered inoperable without separate plugs. If provided, plugs for pressure-relief valves must be usable with hands gloved in an immersion suit, and must either float or be secured to the liferaft by a lanyard.

[CGD 85-205, 62 FR 25547, May 9, 1997, as amended by USCG-1998-4442, 63 FR 52192, Sept. 30, 1998; USCG-2000-7790, 65 FR 58464, Sept. 29, 2000]

§ 160.151-25 Additional equipment for inflatable liferafts.

The manufacturer may specify additional equipment to be carried in inflatable liferafts if the equipment is identified in the manufacturer's approved drawings and if the packing and inspection of the equipment is covered in the servicing manual. Any such additional equipment for which performance or approval standards are prescribed in this part or in 47 CFR part 80 must comply with those standards.

§ 160.151-27 Approval inspections and tests for inflatable liferafts.

(a) Except as provided in paragraph (b) of this section, to satisfy the testing requirements of: IMO Resolution A.689(17), part 1, paragraphs 5.1 through 5.15 inclusive; paragraph 5.16 for a davit-launched inflatable liferaft; and paragraph 5.17, a prototype inflatable liferaft of each design submitted for Coast Guard approval must meet the additional specific requirements and tests specified in paragraphs (c) and (d) of this section.

(b) The Commandant may waive certain tests for a liferaft identical in construction to a liferaft that has successfully completed the tests, if the liferafts differ only in size and are of essentially the same design.

(c) Tests must be conducted in accordance with the indicated paragraphs of IMO Resolution A.689(17), except:

(1) *Jump test (Paragraph 1/5.2)*. One-half of the jumps must be with the canopy erect, and the remainder with the canopy furled or deflated. If a “suitable and equivalent mass” is used, it must be equipped with the shoes described in paragraph 1/5.2.1 of Resolution A.689(17), and arranged so the shoes strike the liferaft first.

(2) *Mooring-out test (Paragraph 1/5.5)*. Initial inflation may be with compressed air.

(3) *Loading and seating test (Paragraph 1/5.7)*. For a liferaft not intended for use with a launching or embarkation appliance, the persons used to determine seating capacity shall wear insulated buoyant immersion suits rather than lifejackets.

(4) *Boarding test (Paragraph 1/5.8)*. This test must be performed using each boarding ramp or boarding ladder which is installed on the liferaft.

(5) *Canopy-closure test (Paragraph 1/5.12)*. This test is required only for SOLAS A and SOLAS B inflatable liferafts. For a davit-launched liferaft, any opening near the lifting eye should be sealed during the test to prevent the ingress of water. The water accumulated within the liferaft at the end of the test must not exceed 4 liters (1 gallon).

(6) *Detailed inspection (Paragraph 1/5.14)*. The independent laboratory’s inspection of the prototype liferaft under

§ 160.151-13(a) satisfies the requirements of paragraph 1/5.14.

(7) *Davit-launched liferafts—strength test (Paragraph 1/5.16.1)*. The calculation of combined strength of the lifting components must be based on the lesser of—

(i) The lowest breaking strength obtained for each item; or

(ii) The component manufacturer’s ultimate strength rating.

(d) The boarding ramp on each liferaft equipped with one must be demonstrated capable of supporting one person weighing 100 kg (220 lb), sitting or kneeling and not holding onto any other part of the liferaft.

§ 160.151-29 Additional approval tests for SOLAS A and SOLAS B inflatable liferafts.

To verify compliance with the requirements of Regulation III/39.5.1, the following test must be conducted for SOLAS A and SOLAS B inflatable liferafts in addition to those required by § 160.151-27 and IMO Resolution A.689(17):

(a) *Test of filling time for stability appendages*. A representative sample of each type and size of stability appendage to be fitted to a liferaft must be tested as follows:

(1) The appendage must be attached to a testing jig similar in material and construction to the appendage’s intended location on a liferaft. The method of attachment must be the same as used on a liferaft. The appendage and jig must be attached to a scale capable of recording peak readings, and suspended over a pool of calm water. The dry weight must be recorded.

(2) The appendage and jig must then be quickly lowered into the water until the appendage is completely submerged. When the appendage has been in the water for 25 seconds, it must be smoothly lifted completely out of the water, and the peak weight after the appendage is removed from the water recorded.

(3) The difference in weights measured according to paragraphs (a) (1) and (2) of this section must be at least 60 percent of the appendage’s volume, calculated in accordance with § 160.151-17(a)(2)(i).

(b) [Reserved]

[CGD 85-205, 62 FR 25547, May 9, 1997, as amended by USCG-1998-4442, 63 FR 52192, Sept. 30, 1998]

§ 160.151-31 Production inspections and tests of inflatable liferafts.

(a) Production inspections and tests of inflatable liferafts must be carried out in accordance with the procedures for independent laboratory inspection in part 159, subpart 159.007, of this chapter and with those of this section.

(b) Each liferaft approved by the Coast Guard must be identified with unique lot and serial numbers as follows:

(1) Each lot must consist of not more than 50 liferafts of the same design and carrying capacity.

(2) A new lot must begin whenever the liferafts undergo changes of design, material, production method, or source of supply for any essential component.

(3) The manufacturer may use a running-lot system, whereby the fabrication of the individual liferafts of a lot occurs over an extended interval under an irregular schedule. Each running lot must comprise not more than 10 liferafts of the same design and carrying capacity. Each running-lot system must be in accordance with a procedure proposed by the manufacturer and approved by the Commandant.

(4) Unless a lot is a running lot, each lot must consist of liferafts produced under a process of continuous production.

(c) Among the records required to be retained by the manufacturer under §159.007-13 of this chapter, are affidavits or invoices from the suppliers identifying all essential materials used in the production of approved liferafts, together with the lot numbers of the liferafts constructed with those materials.

(d) Each approved liferaft must pass each of the inspections and tests described in IMO Resolution A.689(17), part 2, paragraphs 5.1.3 through 5.1.6 inclusive, and prescribed by paragraphs (e) through (g) of this section. For a davit-launched liferaft, these tests must be preceded by the test described in IMO Resolution A.689(17), part 2, paragraph 5.2.

(e) The test described in IMO Resolution A.689(17), Paragraph 2/5.1.5, must be conducted under the following conditions:

(1) The test must last 1 hour, with a maximum allowable pressure drop of 5 percent after compensation for changes in ambient temperature and barometric pressure.

(2) For each degree Celsius of rise in temperature, 0.385 kPa must be subtracted from the final pressure reading (0.031 psig per degree Fahrenheit). For each degree Celsius of drop in temperature, 0.385 kPa must be added to the final pressure reading (again, 0.031 psig per degree Fahrenheit).

(3) For each mm of mercury of rise in barometric pressure, 0.133 kPa must be added to the final temperature-corrected pressure reading (0.049 psig per 0.1 inch of mercury). For each mm of mercury of drop in barometric pressure, 0.133 kPa must be subtracted from the final temperature-corrected pressure reading (again, 0.049 psig per 0.1 inch of mercury). Corrections for changes in ambient barometric pressure are necessary only if a measuring instrument open to the atmosphere, such as a manometer, is used.

(f) One liferaft from each lot of fewer than 30 liferafts, and two from each lot of 30 to 50 liferafts, must pass the test described in IMO Resolution A.689(17), part 2, paragraphs 5.1.1 and 5.1.2. If any liferaft fails this test—

(1) The reason for the failure must be determined;

(2) Each liferaft in the lot must be examined for the defect and repaired if repairable, or scrapped if irreparable; and

(3) The lot test must be repeated, including random selection of the liferaft or liferafts to be tested. If any liferafts from the lot have left the place of manufacture, they must be recalled for examination, repair, and testing as necessary; or else the required actions must take place at an approved servicing facility.

(g) The manufacturer shall arrange for inspections by an accepted independent laboratory at least once in each calendar quarter in which production of liferafts approved by the Coast Guard takes place. The time and date of each inspection must be selected by

§ 160.151-33

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

the independent laboratory, to occur when completed liferafts are in the manufacturing facility and others are under construction. The manufacturer shall ensure that the inspector from the independent laboratory—

(1) Conducts the inspection and witnesses the tests required by paragraph (f) of this section, and further conducts a visual inspection to verify that the liferafts are being made in accordance with the approved plans and the requirements of this subpart;

(2) Examines the records of production inspections and tests for liferafts produced since the last inspection by an independent laboratory to verify that each required inspection and test has been carried out satisfactorily;

(3) Conducts a design audit on at least one liferaft approved by the Coast Guard each year. If possible, different models of liferafts must be examined in the design audit from year to year. To retain Coast Guard approval, the manufacturer shall demonstrate to the inspector during each design audit that—

(i) Each part used in the liferaft matches the part called for by the approved plans;

(ii) Each part and subassembly are of the materials and components indicated on the approved plans or their bills of materials; and

(iii) Each critical dimension is correct as shown either by measurement or by proper fit and function in the next-higher assembly.

[CGD 85-205, 62 FR 25547, May 9, 1997, as amended by USCG-1998-4442, 63 FR 52192, Sept. 30, 1998]

§ 160.151-33 Marking and labeling.

(a) Whatever other languages they may be in, markings required on each inflatable liferaft and its container must be in English.

(b) The markings required on the liferaft container under Regulation III/39.7.3 of SOLAS must be on a plate or label sufficiently durable to withstand continuous exposure to environmental conditions at sea for the life of the liferaft. In addition, the container must be marked with the—

(1) Manufacturer's model identification; and

(2) U.S. Coast Guard approval number.

(c) In addition to the markings required on the inflatable liferaft under Regulation III/39.8 of SOLAS, the liferaft must be marked with the—

(1) Manufacturer's model identification;

(2) Lot number; and

(3) U.S. Coast Guard approval number.

§ 160.151-35 Servicing.

(a) *Inspection and repair.* Inflatable liferafts carried under the regulations in this chapter, and in chapter I of title 33 CFR, must be inspected periodically by a servicing facility approved by the Coast Guard, repaired as necessary, and repacked. Requirements for periodic inspection and repair of liferafts approved by the Coast Guard appear in §§ 160.151-37 through 160.151-57.

(b) *Manufacturer's requirements.* To retain Coast Guard approval of liferafts, the manufacturer must:

(1) Prepare a servicing manual or manuals complying with § 160.151-37 to cover each model and size of liferaft that the manufacturer produces. The manual or manuals must be submitted to the Commandant for approval.

(2) At least once each year, issue a list of revisions to the manual or manuals, and issue a list of bulletins affecting the manual or manuals, that are in effect.

(3) Make available to each servicing facility approved by the Coast Guard the manual or manuals, the revisions, the bulletins, the plans, and any unique parts and tools that may be necessary to service the liferaft. The plans may be either the manufacturing drawings, or special plans prepared especially for use by servicing technicians. They may be incorporated into the manual or manuals.

(4) Have a training program complying with § 160.151-39 for the certification of servicing technicians.

(5) Notify the OCMI for the zone in which the servicing facility is located whenever the manufacturer becomes aware of servicing at approved facilities that is not in accordance with the requirements of this subpart, or aware of falsification by an approved facility of records required by this subpart.

Coast Guard, DHS

§ 160.151-39

(c) A manufacturer of liferafts not approved by the Coast Guard may establish servicing facilities approved by the Coast Guard for such liferafts in the United States if the manufacturer meets the requirements of paragraph (b) of this section.

§ 160.151-37 Servicing manual.

(a) The servicing manual must provide instructions on performing the following tasks:

(1) Removing the inflatable liferaft from the container for testing without damaging the liferaft or its contents.

(2) Examining the liferaft and its container for damage and wear including deteriorated structural joints and seams.

(3) Determining the need for repairs.

(4) Performing each repair which can be made by a servicing facility.

(5) Identifying repairs that the manufacturer must perform.

(6) Determining when liferaft equipment must be replaced.

(7) Conducting tests required by § 160.151-57.

(8) Repacking the liferaft.

(9) Changing the maximum height of stowage of the liferaft by changing the length of the painter.

(10) Special equipment limitations or packing instructions, if any, necessary to qualify the liferaft for a particular height of stowage.

(11) Changing the service of the liferaft by changing the contents of the equipment pack.

(12) Proper marking of the liferaft container, including approval number, persons' capacity, maximum height of stowage, service (equipment pack), and expiration date of servicing.

(13) A list of parts for—

- (i) Survival equipment;
- (ii) Compressed-gas cylinders;
- (iii) Inflation valves;
- (iv) Relief valves; and
- (v) Repair equipment.

(14) The necessary pressures for each size of approved liferaft for conducting the "Necessary Additional Pressure" test required by § 160.151-57(k).

(b) Each revision to a servicing manual, and each bulletin, that authorizes the modification of a liferaft, or that affects the compliance of a liferaft with any requirement under this sub-

part, must be submitted to and approved by the Commandant. Other revisions and bulletins need not be approved, but a copy of each must be submitted to the Commandant when issued.

(c) Each manual provided under this section must bear the original signature of a representative of the manufacturer attesting that it is a true copy of the manual approved by the Commandant.

§ 160.151-39 Training of servicing technicians.

(a) The training program for certification of servicing technicians must include—

(1) Training and practice in packing an inflatable liferaft, repairing buoyancy tubes, repairing inflation-system valves, and other inspections and operations described in the approved servicing manual;

(2) An evaluation at the end of the training to determine whether each trainee has successfully completed the training; and

(3) Issuance of a certificate of competence to each technician who successfully completes the training.

(b) The manufacturer shall maintain refresher training for recertification of previously trained servicing technicians. This training must include—

(1) Checking the performance of the technicians in the inspections and operations described in the manual;

(2) Retraining of the technicians in inspections and operations for which they are deficient;

(3) Training and practice in new inspections and operations;

(4) An evaluation at the end of the training to determine whether or not each trainee has successfully completed the training; and

(5) Issuance of a certificate of competence to each technician who successfully completes the training.

(c) Each time the manufacturer holds a course for servicing technicians who will perform servicing on liferafts approved by the Coast Guard, the manufacturer shall notify the cognizant OCMI sufficiently in advance to allow, at the option of the OCMI, for a Coast Guard inspector or inspectors to travel

§ 160.151-41

to the site where the training is to occur.

§ 160.151-41 Approval of servicing facilities.

(a) To obtain and maintain Coast Guard approval as an “approved servicing facility” for a particular manufacturer’s inflatable liferafts, a facility must meet the requirements, and follow the procedures, of this section.

(b) The owner or operator of a servicing facility desiring Coast Guard approval shall apply to the cognizant OCMI. The application must include—

(1) The name and address of the facility;

(2) The name(s) of its competent servicing technician(s);

(3) Identification of the manufacturer(s) of the liferafts the facility will service; and

(4) Any limits or special conditions that should apply to the approval of the facility.

(c) The owner or operator of the servicing facility shall arrange for an inspection with the OCMI to whom the owner or operator applied under paragraph (b) of this section. A currently trained servicing technician shall successfully demonstrate the complete service to each make and type of liferaft for which approval as a servicing facility is sought, in the presence of a Coast Guard inspector or of a third-party inspector accepted by the OCMI, or such technician shall present evidence of having performed such service at the time of initial or refresher training. The service must include:

(1) Removing the liferaft from the container for testing without damaging the liferaft or its contents;

(2) Examining the liferaft and its container for damage and wear;

(3) Determining the need for repairs;

(4) Determining whether equipment must be replaced;

(5) Conducting the tests required by § 160.151-57;

(6) Repacking the liferaft;

(7) Inflating the fully packed liferaft using its inflation mechanism; and

(8) Repairing a leak in a main buoyancy chamber, and subjecting the repaired chamber to the Necessary Additional Pressure test described in § 160.151-57(k). This repair may be done

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

on a liferaft that actually needs it, on one condemned, or on an inflatable chamber fabricated of liferaft material specifically for this purpose. (An otherwise serviceable liferaft should not be damaged for this purpose.)

(d) Whenever servicing of liferafts takes place, each servicing facility must allow Coast Guard inspectors or third-party inspectors accepted by the OCMI access to the place where the servicing occurs.

(e) Each servicing facility must employ at least one servicing technician who has successfully completed the manufacturer’s training described in § 160.151-39 (a) or (b), including training in the servicing of davit-launched liferafts if the facility will service these. The training must have been completed within the preceding—

(1) 12 months for the facility to obtain its approval to service the liferafts of a particular manufacturer; or

(2) 36 months for the facility to retain approval to service the liferafts of a particular manufacturer.

§ 160.151-43 Conditions at servicing facilities.

(a) Each facility must maintain a room to service inflatable liferafts that—

(1) Is clean;

(2) Is fully enclosed;

(3) Has enough space to service the number of liferafts likely to be present for service at one time;

(4) Has a ceiling high enough to hold and allow overturning of a fully inflated liferaft of the largest size to be serviced, or is furnished with an equally efficient means to facilitate the inspection of bottom seams;

(5) Has a smooth floor that will not damage a liferaft, can be easily cleaned, and is kept clean and free from oil, grease, and abrasive material;

(6) Is well lit but free from direct sunlight;

(7) Is arranged to maintain an even temperature and low humidity in each area where liferafts are pressure tested, including by mechanical air-conditioning equipment in climates where it is necessary;

(8) Is arranged so that stored liferafts are not subjected to excessive loads and, if stacked one directly on top of

Coast Guard, DHS

§ 160.151-47

another, does not have them stacked more than two liferafts high;

(9) Is efficiently ventilated but free of drafts; and

(10) Is a designated no-smoking area.

(b) In addition to the room required by paragraph (a) of this section, each facility must maintain areas or rooms for storage of liferafts awaiting servicing, repair, or delivery; for repair and painting of reinforced plastic containers; for storage of pyrotechnics and other materials, such as spare parts and required equipment; and for administrative purposes.

§ 160.151-45 Equipment required for servicing facilities.

Each servicing facility approved by the Coast Guard must maintain equipment to carry out the operations described in the manufacturer's servicing manual approved in accordance with § 160.151-35(b)(1), including—

(a) A set of plans, as specified in § 160.151-35(b)(3), for each inflatable liferaft to be serviced;

(b) A current copy of this subpart;

(c) A current copy of the manual approved in accordance with § 160.151-35(b)(1), including all revisions and bulletins in effect as indicated on the annual list issued in accordance with § 160.151-35(b)(2);

(d) Hot presses (if applicable);

(e) Safety-type glue pots or equivalents;

(f) Abrasive devices;

(g) A source of clean, dry, pressurized air; hoses; and attachments for inflating liferafts;

(h) A source of vacuum; hoses; and attachments for deflating liferafts;

(i) Mercury manometer, water manometer, or other pressure-measurement device or pressure gauge of equivalent accuracy and sensitivity;

(j) Thermometer;

(k) Barometer, aneroid or mercury;

(l) Calibrated torque-wrench for assembling the inflation system;

(m) Accurate weighing scale;

(n) Repair materials and equipment, and spare parts as specified in the applicable manual, except that items of limited "shelf life" need not be stocked if they are readily available;

(o) A complete stock of the survival equipment required to be stowed in the

liferafts, except for items of equipment that are readily available;

(p) A means for load-testing davit-launched liferafts, unless the facility services only non-davit-launched liferafts;

(q) A supply of parts for all inflation components and valves specified in the applicable manual; and

(r) A tool board that clearly indicates where each small tool is stored, or has an equivalent means to make sure that no tools are left in the liferaft when re-packed.

§ 160.151-47 Requirements for owners or operators of servicing facilities.

To maintain Coast Guard approval, the owner or operator of each servicing facility approved by the Coast Guard must—

(a) Ensure that servicing technicians have received sufficient information and training to follow instructions for changes and for new techniques related to the inflatable liferafts serviced by the facility, and have available at least one copy of each manufacturer's approved servicing manual, revision, and bulletin;

(b) Calibrate each pressure gauge, mechanically-operated barometer, and weighing scale at intervals of not more than 1 year, or in accordance with the equipment manufacturer's requirements;

(c) Ensure that each liferaft serviced under the facility's Coast Guard approval is serviced by or under the direct supervision of a servicing technician who has completed the requirements of either § 160.151-39 (a) or (b);

(d) Ensure that each liferaft serviced under the facility's Coast Guard approval is serviced in accordance with the approved manual;

(e) Specify which makes of liferafts the facility is approved to service when representing that the facility is approved by the Coast Guard; and

(f) Ensure that the facility does not service any make of liferaft for an inspected vessel of the U.S. or any other U.S.-flag vessel required to carry approved liferafts, unless the facility is approved by the Coast Guard to service that make of liferafts.

§ 160.151-49 Approval of servicing facilities at remote sites.

A servicing facility may be approved for servicing liferafts at a remote site, provided that appropriate arrangements have been made to ensure that each such site meets the requirements of §§ 160.151-41(e), 160.151-43, and 160.151-45. The facility must have a portable assortment of test equipment, spare parts, and replacement survival equipment to accompany the technician doing the servicing. However, if repair of liferafts will not be attempted at a remote site, equipment needed for repair does not need to be available at that site. A facility must be specifically authorized in its letter of approval to conduct servicing at a remote site.

§ 160.151-51 Notice of approval.

If the cognizant OCMI determines that the servicing facility meets the applicable requirements of §§ 160.151-39 through 160.151-47, the OCMI notifies the facility that it is approved and notifies the Commandant. The Commandant issues an approval letter to the servicing facility with copies to the OCMI and to the manufacturer(s) whose liferafts the facility is approved to service. The letter will specify any limits on the approval, and will assign the facility's approval code for use on the inspection sticker required by § 160.151-57(m)(3). The Commandant will maintain a current list of approved facilities.

§ 160.151-53 Notice to OCMI of servicing.

(a) Before servicing an inflatable liferaft under the servicing facility's Coast Guard approval, the owner or operator of the facility must tell the cognizant OCMI for each liferaft to be serviced—

- (1) The make and size of the liferaft;
- (2) The age of the liferaft; and
- (3) Whether the liferaft is due for a five-year inflation test.

(b) The OCMI will inform the servicing facility whether the servicing of the liferaft must be witnessed by an inspector.

(c) If the OCMI requires the servicing of the liferaft to be witnessed by an inspector—

(1) The servicing facility must arrange a schedule with the OCMI that will allow a Coast Guard inspector to travel to the site where the servicing is to occur;

(2) The owner or operator of the servicing facility, by permission of the OCMI, may arrange for the servicing to be witnessed instead by a third-party inspector accepted by the OCMI if a Coast Guard marine inspector is not available in a timely manner; and

(3) The servicing facility must not begin servicing the liferaft until the inspector arrives at the site.

(d) No deviation from servicing-manual procedures may occur without the prior approval of the OCMI. To request the approval of a deviation, the owner or operator of the servicing facility shall notify the OCMI of the proposed deviation from the procedures, and must explain to the OCMI the need for the deviation.

§ 160.151-55 Withdrawal of approval.

(a) The OCMI may withdraw the approval of the servicing facility, or may suspend its approval pending correction of deficiencies, if the Coast Guard inspector or accepted third-party inspector finds that—

(1) The facility does not meet the requirements of §§ 160.151-41 through 160.151-47, or

(2) The servicing is not performed in accordance with § 160.151-57.

(b) A withdrawal of approval may be appealed in accordance with part 1, subpart 1.03, of this chapter.

(c) The OCMI may remove a suspension pending correction of deficiencies if the servicing facility demonstrates that the deficiencies have been corrected.

§ 160.151-57 Servicing procedure.

(a) Each inflatable liferaft serviced by a servicing facility approved by the Coast Guard must be inspected and tested in accordance with paragraphs (b) through (r) of this section, and the manufacturer's servicing manual approved in accordance with § 160.151-35(b)(1).

(b) The following procedures must be carried out at each servicing:

(1) The working-pressure leakage test described in IMO Resolution A.689(17), paragraph 2/5.1.5, must be conducted.

(2) Inflation hoses must be pressurized and checked for damage and leakage as part of the working-pressure leakage test, or in a separate test.

(3) An inflatable floor must be inflated until it is firm, and let stand for one hour. The inflatable floor must still be firm at the end of the hour.

(4) The seams connecting the floor to the buoyancy tube must be checked for slippage, rupture, and lifting of edges.

(5) Each item of survival equipment must be examined, and—

(i) Replaced if its expiration date has passed; and

(ii) Otherwise, repaired or replaced if it is damaged or unserviceable.

(6) Each battery must be replaced with a fresh one if—

(i) Its expiration date has passed;

(ii) It has no expiration date; or

(iii) It is to return to service in an item of survival equipment, but its measured voltage is less than its rated voltage.

(7) Each power cell for the top and inside canopy lights must be inspected and tested as prescribed in the servicing manual unless it is a battery serviced in accordance with paragraph (b)(6) of this section. Each cell that is tested and found satisfactory may be reinstalled. Each cell that is outdated, is not tested, or fails the test must be replaced.

(8) If the liferaft is equipped with an Emergency Position-Indicating Radio Beacon (EPIRB) or a Search and Rescue Transmitter (SART), the EPIRB or SART must be inspected and tested in accordance with the manufacturer's instructions. An EPIRB must be tested using the integrated test circuit and output indicator to determine whether it is operative. Each EPIRB or SART not operative must be repaired or replaced.

(9) The manual inflation-pump must be tested for proper operation.

(10) Each damaged, faded, or incorrect instruction label or identification label on the liferaft or its container must be replaced.

(11) Each liferaft must be examined to ensure that it is properly marked with retroreflective material. The ar-

rangement of the retroreflective material must meet the requirements of IMO Resolution A.658(16). Damaged or missing retroreflective material must be replaced with Type I material approved under part 164, subpart 164.018, of this subchapter as complying with SOLAS.

(12) Each inflation cylinder must be weighed. If its weight loss exceeds five percent of the weight of the charge, it must be recharged.

(c) When an inflation cylinder is recharged for any reason, the following inflation-head components must be renewed:

(1) The poppet-pin assembly, if any.

(2) Each plastic or elastomeric seal, and each other part that deteriorates with age.

(d) Each recharged inflation cylinder must stand for at least two weeks and be checked for leakage by weighing before being installed in a liferaft. An alternative mechanical or chemical test for fast detection of leakage may be used if the servicing manual approved by the Commandant in accordance with §160.151-35(b)(1) provides for it.

(e) Each inflation cylinder that requires a hydrostatic test under 49 CFR 173.34 must be tested and marked in accordance with that section.

(f) At every second servicing of a davit-launched liferaft, the launching-load test in paragraph 2/5.2 of IMO Resolution A.689(17) must be conducted.

(g) At every fifth annual servicing, before the conduct of the tests and inspections required in paragraphs (b) through of this section, each liferaft must be removed from its container and, while still folded, inflated by the operation of its gas-inflation system.

(h) Each liferaft showing minor leaks during the gas inflation test conducted in accordance with paragraph (g) of this section, may be repaired.

(i) Each liferaft ten or more years past its date of manufacture must be condemned if it leaks extensively, or shows fabric damage other than minor porosity, during the gas inflation test conducted in accordance with paragraph (g) of this section.

(j) After the gas inflation test conducted in accordance with paragraph (g) of this section, the liferaft may be evacuated and refilled with air for the

tests in paragraphs (b) through (f) of this section.

(k) At each annual servicing of a life-raft ten or more years past its date of manufacture during which the gas-inflation test in paragraph (g) of this section is not conducted, a "Necessary Additional Pressure" (NAP) test must be conducted. Before the tests and inspections required in paragraphs (b) through (f) of this section are conducted, the NAP test must be completed, using the following procedure:

(1) Plug or otherwise disable the pressure-relief valves.

(2) Gradually raise the pressure to the lesser of 2 times the design working pressure, or that specified in the manufacturer's servicing manual as sufficient to impose a tensile load on the tube fabric of 20 percent of its minimum required tensile strength.

(3) After 5 minutes, there should be no seam slippage, cracking, other defects, or pressure drop greater than 5 percent. If cracking in the buoyancy tubes is audible, accompanied by pressure loss, condemn the life-raft. If it is not, reduce the pressure in all buoyancy chambers simultaneously by enabling the pressure-relief valves.

(l) At each annual servicing of a life-raft 10 or more years past its date of manufacture, the integrity of the seams connecting the floor to the buoyancy tube must be checked by the following procedure, or an equivalent procedure specified in the manufacturer's approved servicing manual:

(1) With the buoyancy tube supported a sufficient distance above the floor of the servicing facility to maintain clearance during the test, a person weighing not less than 75 kg (165 lb) shall walk or crawl around the entire perimeter of the floor of the life-raft.

(2) The seams connecting the floor to the buoyancy tube must then be inspected for slippage, rupture, and lifting of edges.

(m) The servicing facility must complete the following for each life-raft that passes these inspections and tests:

(1) Permanently mark the life-raft on its outside canopy, or on a servicing-record panel on an interior portion of one of its buoyancy tubes near an entrance, with—

(i) The date of the servicing;

(ii) The identification and location of the servicing facility; and

(iii) If applicable, an indication that the special fifth-year servicing was performed.

(2) Permanently and legibly mark on the identification device provided in accordance with §160.151-17(c), or on the outside canopy of the life-raft, the name, if known, of the vessel on which the raft will be installed or the name, if known, of the vessel owner.

(3) Affix an inspection sticker to the life-raft container or valise. The sticker must be of a type that will remain legible for at least 2 years when exposed to a marine environment, and that cannot be removed without being destroyed. The sticker must be about 100 mm×150 mm (4 by 6 inches), with the last digit of the year of expiration superimposed over a background color that corresponds to the colors specified for the validation stickers for recreational-boat numbers in 33 CFR 174.15(c), and be marked with the Coast Guard identifying insignia in accordance with the requirements of 33 CFR 23.12. The sticker must also contain the following:

(i) The name of the manufacturer of the life-raft.

(ii) The year and month of expiration determined in accordance with paragraph (n) of this section.

(iii) Identification of the servicing facility, printed on the sticker or indicated on the sticker by punch using an approval code issued by the Commandant.

(n) The expiration date of the servicing sticker is 12 months after the date the life-raft was repacked, except that:

(1) For a new life-raft, the expiration date may be not more than two years after the date the life-raft was first packed, if—

(i) Dated survival equipment in the life-raft will not expire before the sticker expiration date; and

(ii) The life-raft will not be installed on a vessel certificated under SOLAS.

(2) For a life-raft stored indoors, under controlled temperatures (between 0 °C (32 °F) and 45 °C (113 °F)), for not more than 6 months from the date it was serviced or first packed, the expiration date may be extended up to

the length of time the liferaft remained in storage.

(3) For a liferaft stored indoors, under controlled temperatures (between 0 °C (32 °F) and 45 °C (113 °F)), for not more than 12 months from the date it was serviced or first packed, the expiration date may be extended up to the length of time the liferaft remained in storage, if the liferaft is opened, inspected, and repacked in a servicing facility approved in accordance with §§160.151-49 and 160.151-51. When the liferaft is opened—

(i) The condition of the liferaft must be visually checked and found to be satisfactory;

(ii) The inflation cylinders must be checked and weighed in accordance with paragraph (b)(12) of this section;

(iii) All survival equipment whose expiration date has passed must be replaced; and

(iv) All undated batteries must be replaced.

(o) The servicing facility must remove and destroy the markings of Coast Guard approval on each liferaft condemned in the course of any servicing test or inspection.

(p) The servicing facility must issue a certificate to the liferaft owner or owner's agent for each liferaft it services. The certificate must include—

(1) The name of the manufacturer of the liferaft;

(2) The serial number of the liferaft;

(3) The date of servicing and repacking;

(4) A record of the fifth-year gas-inflation test required in paragraph (g) of this section, whenever that test is performed;

(5) A record of the hydrostatic test of each inflation cylinder required in paragraph (e) of this section, whenever that test is performed;

(6) A record of any deviation from the procedures of the manufacturer's servicing manual authorized by the OCMI in accordance with §160.151-53(d);

(7) The identification of the servicing facility, including its name, address, and the approval code assigned by the Commandant in accordance with §160.151-51;

(8) The name, if known, of the vessel or vessel owner receiving the liferaft; and

(9) The date the liferaft is returned to the owner or owner's agent.

(q) The servicing facility must keep a record of each liferaft approved by the Coast Guard that it services for at least five years, and must make those records available to the Coast Guard upon request. Those records must include—

(1) The serial number of the liferaft;

(2) The date of servicing and repacking;

(3) The identification of any Coast Guard or third-party inspector present;

(4) The name, if known, of the vessel or vessel owner receiving the liferaft; and

(5) The date the liferaft is returned to the owner or owner's agent.

(r) The servicing facility must prepare and transmit to the OCMI, at least annually, statistics showing the nature and extent of damage to and defects found in liferafts during servicing and repair. The facility must notify the OCMI immediately of any critical defects it finds that may affect other liferafts.

[CGD 85-205, 62 FR 25547, May 9, 1997, as amended by USCG-1998-4442, 63 FR 52192, Sept. 30, 1998; USCG-2010-0759, 75 FR 60004, Sept. 29, 2010]

§ 160.151-59 Operating instructions and information for the ship's training manual.

(a) The liferaft manufacturer shall make operating instructions and information for the ship's training manual available in English to purchasers of inflatable liferafts approved by the Coast Guard, to enable vessel operators to meet regulations III/18.2, 19.3, 51, and 52 of SOLAS.

(b) The instructions and information required by paragraph (a) of this section may be combined with similar material for hydrostatic releases or launching equipment, and must explain—

(1) Release of the inflatable liferaft from its stowage position;

(2) Launching of the liferaft;

(3) Survival procedures, including instructions for use of survival equipment aboard; and

(4) Shipboard installations of the liferaft.

(c) The operating instructions required by paragraphs (a) and (b) of this section must also be made available in the form of an instruction placard. The placard must be not greater than 36 cm (14 in.) by 51 cm (20 in.), made of durable material and suitable for display near installations of liferafts on vessels, providing simple procedures and illustrations for launching, inflating, and boarding the liferaft.

§ 160.151-61 Maintenance instructions.

(a) The liferaft manufacturer shall make maintenance instructions available in English to purchasers of inflatable liferafts approved by the Coast Guard, to enable vessel operators to meet regulations III/19.3 and III/52 of SOLAS.

(b) The maintenance instructions required by paragraph (a) of this section must include—

- (1) A checklist for use in monthly, external, visual inspections of the packed liferaft;
- (2) An explanation of the requirements for periodic servicing of the liferaft by an approved servicing facility; and
- (3) A log for maintaining records of inspections and maintenance.

Subpart 160.171—Immersion Suits

SOURCE: CGD 84-069a, 52 FR 1188, Jan. 12, 1987, unless otherwise noted.

§ 160.171-1 Scope.

This subpart contains construction and performance requirements, and approval tests for adult and child insulated, buoyant immersion suits that are designed to prevent shock upon entering cold water and lessen the effect of hypothermia (extreme body heat loss due to immersion in cold water). Immersion suits approved under this subpart will meet the requirements of Regulation 33 of Chapter III of the International Convention for Safety of Life at Sea (SOLAS), 1974, under the Second Set of Amendments adopted 17 June 1983.

§ 160.171-3 Incorporation by reference.

(a) Certain materials are incorporated by reference into this subchapter with the approval of the Direc-

tor of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. The Office of the Federal Register publishes a table, "Material Approved for Incorporation by Reference," which appears in the Finding Aids section of this volume. In that table is found citations to the particular sections of this part where the material is incorporated. To enforce any edition other than the one listed in paragraph (b) of this section, notice of change must be published in the FEDERAL REGISTER and the material made available. All approved material is on file at the Office of the Federal Register, Washington, DC 20408, and at the U.S. Coast Guard, Lifesaving and Fire Safety Division (CG-5214), 2100 2nd St., SW., Stop 7126, Washington, DC 20593-7126.

(b) The materials approved for incorporation by reference in this subpart are:

AMERICAN SOCIETY FOR TESTING AND MATERIALS
100 Barr Harbor Drive, West Conshohocken, PA 19428-2959.

ASTM B 117-97, Standard Practice for Operating Salt Spray (Fog) Apparatus—160.171-17

ASTM C 177-85 (1993), Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus—160.171-17

ASTM C 518-91, Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus—160.171-17

ASTM D 975-98, Standard Specification for Diesel Fuel Oils—160.171-17

ASTM D 1004-94a, Standard Test Method for Initial Tear Resistance of Plastic Film and Sheeting—160.171-17

FEDERAL STANDARDS SPECIFICATION UNIT (WFSIA)

Regional Office Building, Room 6039, 7th and D Streets SW, Washington, DC 20407.

National Bureau of Standards Special Publication 440—Color, Universal Language and Dictionary of Names; December 1976.

Federal Test Method Standard No. 191a dated July 20, 1978, Method 5304.1, Abrasion Resistance of Cloth, Oscillatory Cylinder (Wyzenbeek) Method, dated July 9, 1971.

Federal Standard No. 751a, Stitches, Seams, and Stitchings, dated January 25, 1965.

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