

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 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 desalinator 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 ad-

ditional 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