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meter of pan area (6.25 fluid ounces per square foot).

(ii) The test must be conducted in a draft-free location. The ambient temperature, the temperature of the water, and the temperature of the heptane must all be between 20 °C (68 °F) and 25 °C (77 °F) at the time of the test.

(iii) The signal under test must be held with the flame end pointing upward at an angle of approximately 45°, 1.2 m (4 ft.) directly above the center of the pan. The signal must be ignited as soon as the heptane is observed to spread out over the water in continuous layer. The signal must be allowed to burn completely, and must remain in position until is has cooled.

(iv) The heptane must not be ignited by the flare or by material from the flare.

CAUTION: Heptane ignites rapidly and burns vigorously. The flare should be remotely ignited and all personnel should stay clear of the test pan while the flare is burning and while any part of it remains hot.

[CGD 76–048a and 76–048b, 44 FR 73060, Dec. 17, 1979, as amended by CGD 80–021, 45 FR 45280, July 3, 1980]

§ 160.021–5 Labeling and marking.

(a) *Labeling.* Each hand red flare distress signal shall bear a label securely affixed thereto, showing in clear, indelible black lettering on a red background, the following wording and information:

(Company brand or style designation)

Hand Red Flare Distress Signal

500 Candela—2 Minutes Burning Time

USE ONLY WHEN AIRCRAFT OR VESSEL IS SIGHTED

DIRECTIONS: Pull tape over top of cap. Remove cap and ignite flare by rubbing scratch surface on top of cap sharply across igniter button on head of signal.

CAUTION: Stand with back to wind and point away from body when igniting or flare is burning.

Service Life Expiration Date (Month and year to be inserted by manufacturer) (Month and year manufactured) (Lot No.____). Manufactured by (Name and address of manufacturer). U.S. Coast Guard Approval No.____

(b) *Marking of expiration date.* The expiration date must be not more than 42 months from the date of manufacture.

(c) *Other marking.* (1) There shall be die-stamped, in the side of the wooden handle in figures not less than 3 mm (C⅛ in.) high, numbers indicating the month and year of manufacture, thus: ''6–54'' indicating June, 1954.

(2) In addition to any other marking placed on the smallest packing carton or box containing hand red flare distress signals, such cartons or boxes shall be plainly and permanently marked to show the service life expiration date, date of manufacture, and lot number.

(3) The largest carton or box in which the manufacturer ships signals must be marked with the following or equivalent words: ''Keep under cover in a dry place.''

NOTE: Compliance with the labeling requirements of this section does not relieve the manufacturer of the responsibility of complying with the label requirements of 15 U.S.C. 1263, the Federal Hazardous Substances Act.

§ 160.021–6 Container.

(a) *General.* Containers for stowage of hand red flare distress signals in lifeboats and life rafts on merchant vessels are not required to have specific approval or to be of special design, but they shall meet the following test for watertightness when closed, and shall be capable of being opened and reclosed hand-tight to meet the same watertightness test. The materials shall be copper, brass, bronze, or equally corrosion-resistant to salt water and spray. The type container illustrated by Figure Number 160.021–6(a) is recommended for most purposes.

(b) *Watertightness test for containers.* Whenever a question arises as to the watertightness of a container, the following test may be made to determine whether it is satisfactory in this respect. Open the container, remove the contents, insert colored blotting paper as a lining, re-close container as tightly as possible by hand (no wrenches or special tools permitted), submerge container with top about 30 cm (1 ft.) below the surface of the water for two hours, remove container from water, wipe off excess moisture on outside, then open the container and examine the blotting paper and entire interior for evidence of moisture penetration. If

any moisture or water is evidenced, the container is not satisfactory.

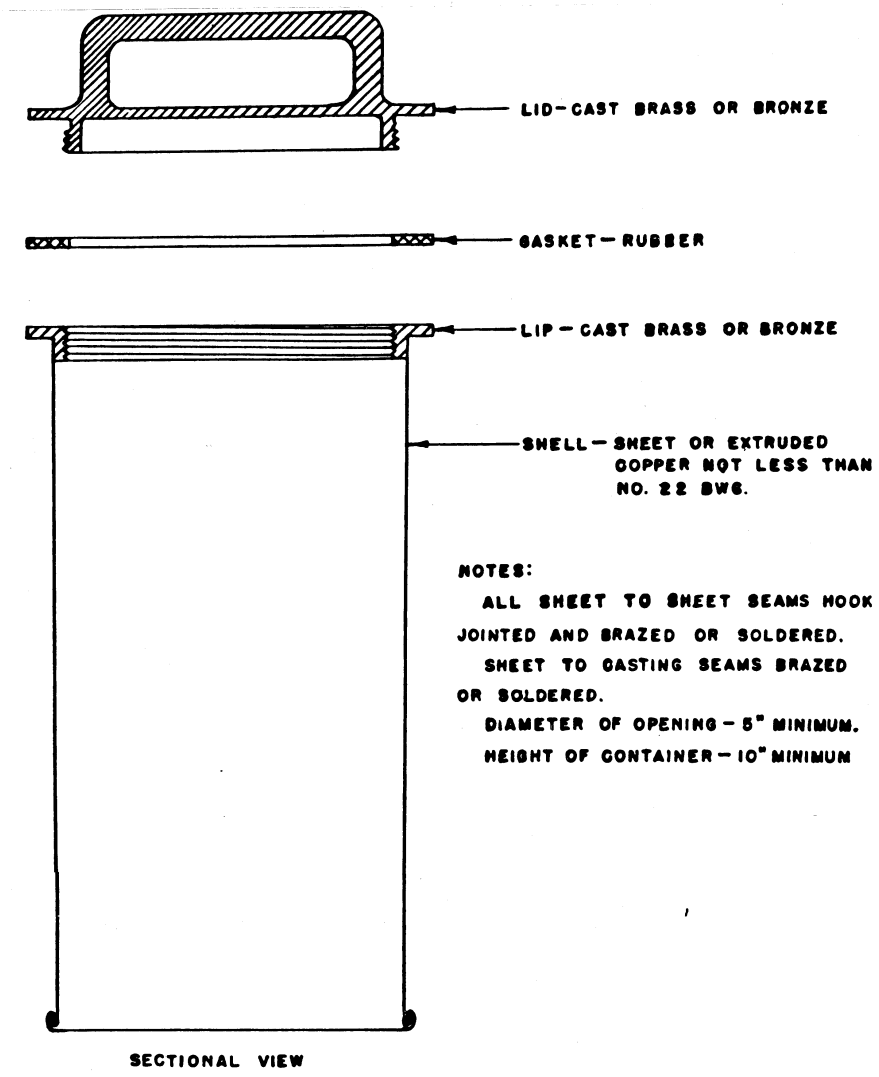

Figure 160.021-6(a). Watertight Container for Hand Red Flare Distress Signals.

(c) *Marking of container.* Containers shall be embossed or bear a brass or equivalent corrosion-resistant nameplate, or otherwise be suitably and permanently marked, to plainly show in letters not less than 13 mm (½ in.) high

the following wording: ''HAND RED FLARE DISTRESS SIGNALS''. No additional marking which might cause confusion as to the contents shall be permitted. The vessel's name ordinarily is painted or branded on equipment such as this container, and nothing in this subpart shall be construed as prohibiting same.

§ 160.021–7 Procedure for approval.

(a) Signals are approved by the Coast Guard under the procedures in subpart 159.005 of this chapter.

(b) [Reserved]

Subpart 160.022—Floating Orange Smoke Distress Signals (5 Minutes)

SOURCE: CGD 76–048a and 76–048b, 44 FR 73067, Dec. 17, 1979, unless otherwise noted.

§ 160.022–1 Incorporation by reference.

(a) The following are incorporated by reference into this subpart:

(1) ''The Color Names Dictionary'' in *Color: Universal Language and Dictionary of Names*, National Bureau of Standards Special Publication 440, December 1976.

(2) ''Development of a Laboratory Test for Evaluation of the Effectiveness of Smoke Signals,'' National Bureau of Standards Report 4792, July 1956.

(b) NBS Special Publication 440 may be obtained by ordering from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402 (Order by SD Catalog No. C13.10:440).

(c) NBS Report 4792 may be obtained from the Commandant (CG–ENG–4), U.S. Coast Guard, 2100 2nd St., SW., Stop 7126, Washington, DC 20593–7126.

(d) Approval to incorporate by reference the materials listed in this section was obtained from the Director of the Federal Register on November 1 and 29, 1979. The materials are on file in the Federal Register Library.

[CGD 76–048a and 76–048b, 44 FR 73067, Dec. 17, 1979, as amended by CGD 82–063b, 48 FR 4782, Feb. 3, 1983; CGD 88–070, 53 FR 34535, Sept. 7, 1988; CGD 95–072, 60 FR 50467, Sept. 29, 1995; CGD 96–041, 61 FR 50733, Sept. 27, 1996; USCG–2009–0702, 74 FR 49237, Sept. 25, 2009]

§ 160.022–2 Type.

(a) Floating orange smoke distress signals, specified by this subpart shall be of one type which shall consist essentially of an outer container, ballast, an air chamber, an inner container, the smoke producing composition, and an igniter mechanism. Alternate arrangements which conform to the performance requirements of this specification will be given special consideration.

(b) [Reserved]

§ 160.022–3 Materials, workmanship, construction, and performance requirements.

(a) *Materials.* The materials shall conform strictly to the specifications and drawings submitted by the manufacturer and approved by the Commandant. Metal for containers shall be not less than 0.5 mm (0.020 in.) in thickness. Other dimensions or materials may be considered upon special request when presented with supporting data. Igniter systems shall be corrosion-resistant metal. The combustible material shall be of such nature that it will not deteriorate during long storage, nor when subjected to frigid or tropical climates, or both.

(b) *Workmanship.* Floating orange smoke distress signals shall be of first class workmanship and shall be free from imperfections of manufacture affecting their appearance or that may affect their serviceability.

(c) *Construction.* The outer container shall be of a size suitable for its intended use. All sheet metal seams should be hook-jointed and soldered. The whole container shall be covered with two coats of waterproof paint or equivalent protection system. The igniter mechanism shall be simple to operate and provide ignition in most unfavorable weather. The mechanism shall be protected with a watertight cover having a finish which is corrosion-resistant to salt water and spray. The cover shall be easily and quickly removable by hand without the use of tools. If attachment of the cover is by formed screw threads, it shall be of such construction or material to prevent rusting or corrosion and will not back off and loosen under shipboard vibration.