

paragraph (c)(2)(i) of this section. Ignite specimen and let it burn about 15 seconds in air. Submerge the burning signal in water in a vertical position with head down. Obtain underwater measurements from time of submersion until smoke emission ceases. The test specimen shall burn underwater not less than 10 seconds when subjected to this test.

(2) *Bending strength.* Place the specimen on supports 15 cm (6 in.) apart. Attach a weight of 35 kg (77 lb.) to a length of wire. Hang the weight from the supported signal by looping the wire around the signal approximately equidistant from the two points of support. Let the weight hang approximately 5 minutes. The test specimen shall not deflect more than 7 mm ( $\frac{1}{4}$  in.), nor shall the joint between the casing and the handle fail when subjected to this test.

(3) *Tensile strength.* Place the specimen in a chuck firmly holding it about 13 mm ( $\frac{1}{2}$  in.) below the cap. Attach a weight of 35 kg (77 lb.) to a length of wire. Hang the weight from the supported signal by looping the wire through a hole bored perpendicular to and through the axis of the handle. Let the weight hang approximately 5 minutes. The test specimen shall not show noticeable distortion, nor shall the joint between the casing and handle fail, when subjected to this test.

(4) *Elevated temperature, humidity and storage.* Place specimen in a thermostatically controlled even-temperature oven held at 75 °C. with not less than 90 percent relative humidity for 72 hours. Remove specimen and store at room temperature (20° to 25 °C.) with approximately 65 percent relative humidity for 10 days. If for any reason it is not possible to operate the oven continuously for the 72-hour period, it may be operated at the required temperature and humidity for 8 hours out of each 24 during the 72-hour conditioning period. (Total of 24 hours on and 48 hours off.) The signal shall not ignite or decompose during this conditioning. The signal shall ignite and operate satisfactorily following this conditioning.

(5) *Spontaneous ignition.* Place the specimen in a thermostatically con-

trolled even-temperature oven held at 75 °C. with not more than 10% relative humidity for 48 consecutive hours. The signal shall not ignite or undergo marked decomposition.

(6) *Susceptibility to explosion.* Remove smoke composition from signal and punch a small hole in the composition. Insert a No. 6 commercial blasting cap. Ignite the cap. The test specimen shall not explode or ignite.

(7) *Color of smoke.* Ignite specimen in the open air in daytime according to the directions printed on the signal, and determine the smoke color by direct visual comparison of the unshadowed portions of the smoke with a color chart held so as to receive the same daylight illumination as the unshadowed portions of the smoke. The color of the smoke must be orange as defined by Sections 13 and 14 of the "Color Names Dictionary" (colors 34-39 and 48-54).

(8) *Volume and density of smoke.* The test specimen shall show less than 70 percent transmission for not less than 30 seconds when measured with apparatus having a light path of 19 cm ( $7\frac{1}{2}$  in.), an optical system aperture of +3.7 degrees, and an entrance air flow of 18.4m<sup>3</sup> per minute (650 cu. ft. per minute), such apparatus to be as described in National Bureau of Standards Report No. 4792.

#### § 160.037-5 Labeling and marking.

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

(Company brand or style designation)

HAND ORANGE SMOKE DISTRESS SIGNAL

For daytime use—50 seconds 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 signal is burning.

## § 160.037-6

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 not be 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 ( $\frac{1}{8}$  in.) high, numbers indicating the month and year of manufacture, thus: "6-54" indicating June, 1954.

(2) In addition to any other marking place on the smallest packing carton or box containing hand orange smoke 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.

## § 160.037-6 Container.

(a) *General.* The container for storing the signals on lifeboats and liferafts is not required to be of a special design or be approved by the Coast Guard. The container must meet the requirements in subpart 160.021 (§160.021-6) except that the wording on the container must be: "Hand Orange Smoke Distress Signals."

(b) [Reserved]

## § 160.037-7 Procedure for approval.

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

(b) [Reserved]

## Subpart 160.038—Magazine Chests, Portable, for Merchant Vessels

SOURCE: CGFR 49-43, 15 FR 122 Jan. 11, 1950, unless otherwise noted.

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### § 160.038-1 Applicable specifications.

(a) There are no other specifications applicable to this subpart.

(b) [Reserved]

### § 160.038-2 Type.

(a) Portable magazine chests shall be of a type suitable for stowage of pyrotechnic distress signals, rockets, or powder for line-throwing guns, and shall be of a size not less than 6 nor more than 40 cubic feet capacity. Alternate types of construction to that specified below will be given special consideration.

(b) [Reserved]

### § 160.038-3 Materials, workmanship, and construction.

(a) Portable magazine chests shall be constructed of metal and lined with wood.

(b) The lining shall be so fitted and finished as to form a smooth surface within the interior of the chest. Fastenings shall be recessed below the surface to avoid projections within the interior. Construction shall be such as to separate all containers of explosives or pyrotechnics from contact with metal surfaces.

(c) The metal shall be  $\frac{1}{8}$  inch thick and free from crimps, buckles, and rough edges. All metal surfaces shall be wire brushed and all oil, grease, rust, loose scale, and other extraneous matter, removed before application of any primer. All surfaces of the metal chest and fittings shall be given a heavy coat of quick drying red lead, zinc chromate, or other suitable primer before painting. The finish shall consist of two coats of paint. The interior shall be lined with wood sheathing of a minimum thickness of  $\frac{3}{4}$  inch. Securing means shall be countersunk below the surface of the sheathing. Securing means for the cover and 4 lashing rings shall be provided. The lashing rings shall be 3" I.D.  $\times$   $\frac{3}{8}$ " wire permanently attached to the magazine chest. Two runners, not less than 2 inches high shall be permanently attached to the bottom of the chest.

### § 160.038-4 Inspections and tests.

(a) Portable magazine chests specified by this subpart are not ordinarily