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this section is determined by the combined capacity of the group of life floats.

(6) Each life float, as stowed, must be capable of easy launching. Life floats weighing over 400 pounds must not require lifting before launching.

(7) Life floats must be secured to the vessel only by a painter and lashings that can be easily released or by hydraulic releases. They must not be stowed in more than four tiers. When stowed in tiers, the separate units must be kept apart by spacers.

(8) There must be means to prevent shifting.

(e) *Hydraulic Releases.* Each hydraulic release used in the installation of any inflatable liferaft or life float must meet subpart 160.062 of this chapter.

EQUIPMENT FOR PRIMARY LIFESAVING APPARATUS

§ 169.525 General.

(a) Equipment for primary lifesaving apparatus must be kept in good condition.

(b) Lifeboats, inflatable liferafts and lifefloats must be fully equipped before the vessel is navigated and throughout the voyage.

(c) No person may stow in any lifeboat, inflatable liferaft, or lifefloat any article not required by this subpart unless the article is authorized by the OCMI, in good working order, and properly stowed so as not to reduce the seating capacity, the space available to the occupants, or adversely affect the seaworthiness of the lifesaving apparatus.

(d) Loose equipment, except boathooks in lifeboats, must be securely attached to the lifesaving appliance to which it belongs.

§ 169.527 Required equipment for lifeboats.

Lifeboats must be equipped in accordance with Table 169.527. This equipment is described in § 169.529.

TABLE 169.527

Letter identification and item	Exposed and partially protected waters	Protected waters
a—Bailer .....	1	None
b—Bilge pump .....	1	None
c—Boathooks .....	2	1
d—Bucket .....	2	1

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TABLE 169.527—Continued

Letter identification and item	Exposed and partially protected waters	Protected waters
e—Compass and mounting .....	1	None
f—Ditty bag .....	1	None
g—Drinking cup .....	1	None
h—Fire extinguisher (motor-propelled lifeboats only) .....	2	2
i—First-aid kit .....	1	None
j—Flashlight .....	1	None
k—Hatchet .....	2	1
l—Heaving line .....	2	None
m—Jackknife .....	1	None
n—Ladder, lifeboat, gunwale .....	1	None
o—Lantern .....	1	1
p—Lifeline .....	1	1
q—Life preservers .....	2	2
r—Locker .....	1	None
s—Mast and sail (oar-propelled lifeboats only) .....	1	None
t—Matches (boxes) .....	2	1
u—Mirror, signaling .....	2	None
v—Oars (units) .....	1	1
w—Oil, illuminating (quarts) .....	1	None
x—Oil, storm, (gallons) .....	1	None
y—Painter .....	2	1
z—Plug .....	1	1
aa—Provisions (per person) .....	2	None
bb—Rowlocks (units) .....	1	1
cc—Rudder and tiller .....	1	None
dd—Sea anchor .....	1	None
ee—Signals, distress, floating orange smoke .....	2	None
ff—Signals, distress, red hand flare (units) .....	1	None
gg—Signals, distress, red parachute flare (units) .....	1	None
hh—Tool kit (motor-propelled lifeboats only) .....	1	1
ii—Water (quarts per person) .....	3	None
jj—Whistle, signaling .....	1	None
kk—Fishing kit .....	1	None
ll—Cover, protecting .....	1	None
mm—Signals, lifesaving .....	1	None

§ 169.529 Description of lifeboat equipment.

(a) *Bailer.* The bailer must have a lanyard attached and must be of sufficient size and suitable for bailing.

(b) *Bilge pump.* Bilge pumps must be approved under subpart 160.044 of this chapter. They must be of the size given in Table 169.529(b) depending upon the capacity of the lifeboat as determined by the six-tenths rule as described in § 160.035–9(b) of this chapter.

TABLE 169.529(b)

Capacity of lifeboat, cubic feet		Bilge pump size
Over—	Not over—	
	330	1
330	700	2
700	.....	3

(c) *Boathooks.* Boathooks must be of the single hook ballpoint type. Boat-hook handles must be of clear grained white ash, or equivalent, and of a length and diameter as given in Table 169.529(c).

TABLE 169.529(c)

Length of lifeboat, feet		Boathook handles	
Over—	Not over—	Diameter, inches	Length, feet
	23	1.50	8
23	29	1.75	10
29		2	12

(d) *Bucket.* Each bucket must be of heavy gage galvanized iron, or other suitable corrosion-resistant metal, of not less than 2-gallon capacity, and must have a 6-foot lanyard of 12-thread manila or equivalent attached.

(e) *Compass and mounting.* The compass and mounting must be of an approved type.

(f) *Ditty bag.* The ditty bag must consist of a canvas bag or equivalent and must contain a sailmaker's palm, needles, sail twine, marline, and marline spike.

(g) *Drinking cups.* Drinking cups must be enamel coated or plastic, graduated in milliliters or ounces, and provided with lanyards 3 feet in length.

(h) *Fire extinguishers.* Each fire extinguisher must be an approved Type B-C, Size I. One must be attached to each end of the lifeboat.

(i) *First-aid kit.* The first-aid kit must be approved under subpart 160.041 of this chapter.

(j) *Flashlights.* Each flashlight must be approved under §94.20-15(j) of this chapter. Three spare cells (or one 3-cell battery) and two spare bulbs, stowed in a watertight container, must be provided with each flashlight. Batteries must be replaced yearly during the annual stripping, clearing, and overhaul of the lifeboat.

(k) *Hatchets.* Hatchets must be approved under subpart 160.013 of this chapter. They must be attached to the lifeboat by individual lanyards and be readily available for use, one at each end of the lifeboat.

(l) *Heaving line.* The heaving line must be of adequate strength, 10 fathoms in length, and 1 inch in circum-

ference. It must remain buoyant after being submerged for 24 hours.

(m) *Jackknife.* The jackknife must be approved under subpart 160.043 of this chapter.

(n) *Ladder, lifeboat gunwale.* The lifeboat gunwale ladder must consist of 3 flat wood steps with cut outs for hand holds. The steps must be spaced 12 inches apart and fastened with 5/8 inch diameter manila rope or equivalent. Each rope end must be tied inside the lifeboat at about amidships with the ladder stowed on top of the side benches and ready for immediate use.

(o) *Lantern.* The lantern must contain sufficient oil to burn for at least 9 hours, and be ready for immediate use. In totally enclosed lifeboats, an interior lighting system may be used in lieu of a lantern.

(p) *Lifeline.* The lifeline must be properly secured to both sides of the lifeboat along its entire length, festooned in bights not longer than 3 feet, with a seine float in each bight. The float may be omitted if the line is of an inherently buoyant material and absorbs little or no water. The lifeline must be of a size and strength not less than 3/8-inch diameter manila. The bights must hang to within 12 inches of the water when the lifeboat is light.

(q) *Life preservers.* Life preservers must be of an approved type. These preservers are in addition to those required by §169.539 of this chapter.

(r) *Locker.* The locker must be suitable for the storage and preservation of the small items of equipment required under §169.527.

(s) *Mast and sail.* A unit, consisting of a standing lug sail together with the necessary spars and rigging, must be provided in accordance with Table 169.529(s). The sails must be of good quality canvas, or other material acceptable to the Commandant, colored Indian Orange (Cable No. 70072, Standard Color Card of America). Rigging must consist of galvanized wire rope not less than three-sixteenths inch in diameter. The mast and sail must be protected by a suitable cover.

TABLE 169.529(s)

Length of lifeboat, feet	Over— Not over—	Standing lug sail										Commercial designation number		Mast <sup>1</sup>		Yard <sup>1</sup>	
		Area, square feet	Luff and head lengths		Leach length		Foot length		Clew to throat		Ounces per square yard	Feet	Inches	Feet	Inches	Feet	Inches
			Feet	Inches	Feet	Inches	Feet	Inches	Feet	Inches							
17	17	58	5	11	12	1	8	10	10	14.35	11	2	11	6	11	3	2
19	19	74	6	8	13	8	10	0	12	14.35	12	6	7	7	8	3	2
21	21	93	7	5	15	1	11	2	13	14.35	13	10	8	8	5	3 1/2	2 1/2
23	23	113	8	3	16	11	12	4	15	14.35	15	2	9	9	3	3 1/2	2 1/2
25	25	135	9	0	18	6	13	6	16	14.35	16	6	6	10	0	4	3
27	27	158	9	9	20	0	14	7	17	17.50	17	10	10	10	9	4	3
29	29	181	10	5	21	5	15	7	19	17.50	19	2	11	11	5	4 1/2	3 1/4
31 <sup>2</sup>	31	203	11	0	22	8	16	6	20	20.74	20	6	12	12	0	4 1/2	3 1/4

<sup>1</sup> Mast lengths measured from heel to center of upper halyard sheave. Mast diameters measured at thwart. Mast and yard shall be of clear-grained spruce, fir, or equivalent.

<sup>2</sup> Subject to special consideration.

(t) *Matches*. A box of friction matches in a watertight container, stowed in an equipment locker or secured to the underside of the stern thwart if no locker is fitted, must be provided.

(u) *Mirrors, signaling*. Signaling mirrors must be of an approved type.

(v) *Oars*. A unit, consisting of a complement of rowing oars and steering oar, must be provided for each lifeboat in accordance with Table 169.529(v) except that motor-propelled and hand-propelled lifeboats need only be equipped with four rowing oars and one steering oar. In any case, the emergency lifeboats must be provided with the full complement of oars prescribed by the table. All oars must be buoyant.

TABLE 169.529(v)

Length of lifeboat (feet)		Number of oars—		Length of oars (feet)—	
Over—	Not over—	Rowing	Steering	Rowing	Steering
	15	4	1	8	9
15	19	6	1	10	11
19	21	6	1	11	12
21	23	6	1	12	13
23	25	8	1	13	14
25	27	8	1	14	15
27	.....	8	1	15	16

(w) *Oil, illuminating*. One quart of illuminating oil must be provided in a metal container if a lantern is carried.

(x) *Oil, storm*. One gallon of vegetable, fish, or animal oil must be provided in a suitable metal container so constructed as to permit a controlled distribution of oil on the water, and so arranged that it can be attached to the sea anchor.

(y) *Painter*. Painters must be of manila rope not less than 2¾ inches in circumference, or equivalent, and of a length not less than 3 times the distance between the deck on which the lifeboat is stowed and the light draft of the vessel. For lifeboats on vessels certificated for exposed or partially protected water service, one of the painters must have a long eye splice and be attached to the thwart with a toggle. The other painter must be attached to the stem.

(z) *Plug*. The automatic drain required in the lifeboat must be provided with a cap or plug attached to the lifeboat by a suitable chain.

(aa) *Provisions*. Approved emergency rations must be provided, consisting of 10,000 kJ (2390 calories) for each person the lifeboat is approved to carry. The provisions must be stowed in lockers or other compartments providing suitable protection.

(bb) *Rowlocks*. A unit, consisting of sufficient rowlocks and rowlock sockets for each oar required by Table 169.529(v) plus 2 additional rowlocks must be provided. The rowlocks must be attached to the lifeboat by separate chains so as to be available for immediate use, except that the 2 additional spare rowlocks must be carried in the equipment locker or stowed near the stern if no locker is fitted. The rowlocks and rowlock sockets must be distributed so as to provide the maximum amount of single banked oars practicable.

(cc) *Rudder and tiller*. The rudder and tiller must be constructed in accordance with § 160.035-3(t) of this chapter.

(dd) *Sea anchor*. The sea anchor must be of an approved type.

(ee) *Signals, distress, floating orange smoke*. The floating orange smoke distress signals must be approved under subpart 160.022 of this chapter. The signals must be replaced no later than the first annual stripping, cleaning, and overhaul of the lifeboat after the date of expiration.

(ff) *Signals, distress, red hand flare*. A unit consists of twelve hand red flare distress signals approved under subpart 160.021 or 160.023 of this chapter and stored in a watertight container. Signals must be replaced no later than the first annual stripping, cleaning, and overhaul of the lifeboat after the date of expiration.

(gg) *Signals, distress, red parachute flare*. A unit consists of twelve parachute red flare distress signals with an approved means of projection approved under subparts 160.024 and 160.028 respectively; or twelve approved hand-held rocket-propelled parachute red flare distress signals approved under subpart 160.036. Flares must be stored in a portable watertight container. Flares must be replaced no later than the first annual stripping, cleaning, and overhaul of the lifeboat after the date of expiration.

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(hh) *Tool kit.* The tool kit must consist of at least the following tools in a suitable container:

- (1) One 12-ounce ball peen hammer.
- (2) One screwdriver with 6-inch blade.
- (3) One pair 8-inch slip joint pliers.
- (4) One 8-inch adjustable end wrench.

(ii) *Water.* (1) For each person the lifeboat is certified to carry, there must be provided three quarts of drinking water in containers approved under subpart 160.026. Water must be replaced no later than the first annual stripping, cleaning, and overhaul of the lifeboat after date of expiration.

(2) One or more desalting kits, approved under subpart 160.058 of this chapter, may be used as a substitute for one-third of the drinking water required.

(3) The drinking water must be stowed in drinking water tanks, lockers, or other compartments providing suitable protection.

(jj) *Whistle, signaling.* The whistle must be of the ball-type or multi-tone type, of corrosion resistant construction, with a 36-inch lanyard attached, and in good working order.

(kk) *Fishing kit.* The fishing kit must be approved under subpart 160.061 of this chapter.

(ll) *Cover, protecting.* The cover must be of highly visible color and capable of protecting the occupants against exposure.

(mm) *Table of lifesaving signals.* The table of lifesaving signals must be in accordance with the provisions of Chapter V, Regulation 16, of the International Convention for Safety of Life at Sea, 1974, and must be printed on water resistant paper.

[CGD 83-005, 51 FR 896, Jan. 9, 1986, as amended by CGD 95-072, 60 FR 50468, Sept. 29, 1995]

**§ 169.535 Required equipment for lifefloats.**

Each lifefloat must be equipped in accordance with Table 169.535. The equipment is described in § 169.537.

TABLE 169.535

Letter identification and Item	Number required for each lifefloat	
	Exposed and partially protected water	Protected water
(a) Boathook .....	1	1
(b) Lifeline .....	1	1
(c) Paddles .....	4	4

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TABLE 169.535—Continued

Letter identification and Item	Number required for each lifefloat	
	Exposed and partially protected water	Protected water
(d) Painter .....	1	1
(e) Water light .....	1	None

**§ 169.537 Description of equipment for lifefloats.**

(a) *Boathook.* Each boathook must be of the single hook ball point type. Boathook handles must be of clear grained white ash, or equivalent, not less than 6 feet long and 1½ inches in diameter.

(b) *Lifeline and pendants.* The lifeline and pendants must be as furnished by the manufacturer with approved life floats. Replacement lifelines and pendants must meet the requirements in subpart 160.010 of this chapter.

(c) *Paddles.* Paddles must be not less than 5 feet long.

(d) *Painter.* The painter must—

(1) Be at least 30m (100 ft.) long, but not less than 3 times the distance between the deck on which the life float(s) are stowed and the light draft of the vessel,

(2) Have a breaking strength of at least 6.7 KN (1500 lbs.), except that if the capacity of the life float is 50 persons or more, the breaking strength must be at least 13.4 KN (3000 lbs.),

(3) Be of a dark color, if synthetic, or of a type certified to be resistant to deterioration from ultraviolet light, and

(4) Be stowed in such a way it runs freely when the life float floats away from the sinking vessel.

(e) *Water light.* The water light must be approved under subpart 161.010 of this chapter. The water light must be attached to the lifefloat by a 12-thread manila or equivalent synthetic lanyard 3 fathoms in length.

PERSONAL FLOTATION DEVICES

**§ 169.539 Type required.**

All personal flotation devices (PFDs) must be either—

(a) A Type I approved under subpart 160.055, 160.002, or 160.005 of Subchapter Q (specification) of this chapter; or

(b) a Type V approved specifically for sailing school vessel use under subpart