

(323)

Horizontal Sectors

(324) (a)(i) In the forward direction, sidelights as fitted on the vessel shall show the minimum required intensities. The intensities shall decrease to reach practical cut-off between 1 and one degrees outside the prescribed sectors.

(325) (ii) For sternlights and masthead lights and at 22.5 degrees abaft the beam for sidelights, the minimum required intensities shall be maintained over the arc of the horizon up to 5 degrees within the limits of the sectors prescribed in Rule 21. From 5 degrees within the prescribed sectors the intensity may decrease by 50 percent up to the prescribed limits; it shall decrease steadily to reach practical cut-off at not more than 5 degrees outside the prescribed sectors.

(326) (b)(i) All-round lights shall be so located as not to be obscured by masts, topmasts or structures within angular sectors of more than 6 degrees, except anchor lights prescribed in Rule 30, which need not be placed at an impracticable height above the hull « , and the all-round white light described in Rule 23(e), which may not be obscured at all».

(327) (ii) If it is impracticable to comply with §(b)(i) by exhibiting only one all-round light, two all-round lights shall be used suitably positioned or screened so that they «to» appear, as far as practicable, as one light at a «minimum» distance of 1 «nautical» mile.

(328) «Note: Two unscreened all-round lights that are 1.28 meters apart or less will appear as one light to the naked eye at a distance of 1 nautical mile.»

(329)

Vertical Sectors

(330) (a) The vertical sectors of electric lights as fitted, with the exception of lights on sailing vessels underway «and on unmanned barges», shall ensure that: (i) At least the required minimum intensity is maintained at all angles from 5 degrees above to 5 degrees below the horizontal; (ii) at least 60 percent of the required minimum intensity is maintained from 7.5 degrees above to 7.5 degrees below the horizontal.

(331) (b) In the case of sailing vessels underway the vertical sectors of electric lights as fitted shall ensure that: (i) At least the required minimum intensity is maintained at all angles from 5 degrees above to 5 degrees below the horizontal; (ii) at least 50 percent of the required minimum intensity is maintained from 25 degrees above to 25 degrees below the horizontal.

(332)

Annex I (Inland)
(c) In the case of unmanned barges the minimum required intensity of electric lights as fitted shall be maintained on the horizontal.

(333) (c)(d) In the case of lights other than electric lights these specifications shall be met as closely as possible.

(334)

Intensity of Non-electric Lights

(335) Non-electric lights shall so far as practicable comply with the minimum intensities, as specified in the «Intensity of Lights» Table.

(336)

Maneuvering Light

(337) «Notwithstanding the provisions of §2(f)», the maneuvering light described in Rule 34(b) shall be placed «approximately» in the same fore and aft vertical plane as the masthead light or lights and, where practicable, at a minimum height of < 2 >«1.5» meter vertically above the forward masthead light, provided that it shall be carried not less than < 2 >«1.5» meter vertically above or below the after masthead light. On a vessel where only one masthead light is carried, the maneuvering light, if fitted, shall be carried where it can best be seen, not less than < 2 >«1.5» meters vertically apart from the masthead light.

(338)

High-speed Craft

(339) (a) The masthead light of high-speed craft may be placed at a height related to the breadth «of the craft» lower than that prescribed in §2(a)(i), provided that the base angle of the isosceles triangle formed by the sidelights and masthead light when seen in end elevation is not less than 27 degrees.

(340) (b) On high-speed craft of 50 meters or more in length, the vertical separation between foremast and mainmast light of 4.5 meters required by §< 2(a)(ii) >«2(k)» may be modified provided that such distance shall not be less than the value determined by the following formula:

(341)

$y = \frac{y = (a+17\Psi) C}{1000} + 2$
<p>y the height of the mainmast light above the foremast light in meters.</p>
<p>a is the height of the foremast light above the water surface in service condition in meters</p>
<p>Y is the trim in service condition in degrees.</p>
<p>C is the horizontal separation of masthead lights in meters.</p>
<p>Note: Refer to the International Code of Safety for High-Speed Craft, 1994 and the International Code of Safety for High-Speed Craft, 2000.</p>

(342)

Approval

(343) The construction of lights and shapes and the installation of lights on board the vessel < shall be to the satisfaction of the appropriate authority of the State whose flag the vessel is entitled to fly >«must satisfy the Commandant, U. S. Coast Guard».

(344)

Annex II—Additional Signals for Fishing Vessels Fishing in Close Proximity

(345) See Rule 26(f).

(346)

Annex III—Technical Details of Sound Signal Appliances

(347) (a) Frequencies and range of audibility. The fundamental frequency of the signal shall lie within the range 70-700 Hz. The range of audibility of the signal from a whistle shall be determined by those frequencies, which may include the fundamental and/or one or more higher frequencies, which lie within the range 180-700 Hz (+/- 1 percent) for a vessel of 20 meters or more in length, or 180-2100 Hz (+/- 1 percent) for a vessel of less than 20 meters in length and which provide the sound pressure levels specified in §1(c).

(348) (b) Limits of fundamental frequencies. To ensure a wide variety of whistle characteristics, the fundamental frequency of a whistle shall be between the following limits: (i) 70-200 Hz, for a vessel 200 meters or more in length; (ii) 130-350 Hz, for a vessel 75 meters but less than 200 meters in length; (iii) 250-700 Hz, for a vessel less than 75 meters in length.

(349) (c) Sound signal intensity and range of audibility. A whistle fitted in a vessel shall provide, in the direction of maximum intensity of the whistle and at a distance of 1 meter from it, a sound pressure level in at least one one-third octave band within the range of frequencies 180-700 Hz (+/- 1 percent) for a vessel of 20 meters or more in length, or 180-2100 Hz (+/- 1 percent) for a vessel of less than 20 meters in length, of not less than the appropriate figure given in the table below.

(350)

Length of vessel in meters	One-third octave band level at 1 meter in dB referred to $2 \times 10^{-9} \text{N/m}^2$	Audible range in nautical miles
200 or more	143	2
75 but less than 200	138	1.5
75 but less than 200	130	1
Less than 20	120* 115** 111***	0.5

* When the measured frequencies lie within the range 180-450 Hz
 ** When the measured frequencies lie within the range 450-800 Hz
 *** When the measured frequencies lie within the range 800-2100 Hz

(351) The range of audibility in the table is for information and is approximately the range at which a whistle may be heard on its forward axis with 90 percent probability in conditions of still air on board a vessel having average background noise level at the listening posts (taken to be 68 dB in the octave band centered on 250 Hz and 63 dB in the octave band centered on 500 Hz). «It is shown for informational purposes only.» In practice, the range

at which a whistle may be heard is extremely variable and depends critically on weather conditions; the values given can be regarded as typical but under conditions of strong wind or high ambient noise level at the listening post the range may be reduced.

(352) (d) Directional properties. The sound pressure level of a directional whistle shall be not more than 4 dB below the < prescribed > sound pressure level < on the axis at >, «specified in §(c)» any direction in the horizontal plane within +/- 45 degrees of the axis. The sound pressure level at «of the whistle in» any other direction in the horizontal plane shall be not more than 10 dB < below the prescribed > «less than the» sound pressure level < on the > «specified for the forward» axis, so that the range «audibility» in any direction will be at least half the range «required» on the forward axis. The sound pressure level shall be measured in that one-third octave band which determines the audibility range.

(353) (e) Positioning of whistles.

(354) (i) When a directional whistle is to be used as the only whistle on < a vessel, it shall be installed with its maximum intensity directed straight ahead > «the vessel and is permanently installed, it shall be installed with its forward axis directed forward».

(355) (ii) A whistle shall be placed as high as practicable on a vessel, in order to reduce interception of the emitted sound by obstructions and also to minimize hearing damage risk to personnel. The sound pressure level of the vessel's own signal at listening posts shall not exceed 110 dB(A) and so far as practicable should not exceed 100 dB(A).

(356) (f) Fitting of more than one whistle. If whistles are fitted at a distance apart of more than 100 meters, < it shall be so arranged that they are > «they shall» not «be» sounded simultaneously.

(357)

Annex IIIg (International)
(g) Combined whistle systems. If due to the presence of obstructions the sound field of a single whistle or of one of the whistles referred to in §(f) is likely to have a zone of greatly reduced signal level, it is recommended that a combined whistle system be fitted so as to overcome this reduction. The whistles of a combined system shall be located at a distance apart of not more than 100 meters and arranged to be sounded simultaneously. The frequency of any one whistle shall differ from those of the others by at least 10 Hz.
Annex IIIg (Inland)
(g) Combined whistle systems. (i) A combined whistle system is a number of whistles (sound emitting sources) operated together. For the purposes of the Rules a combined whistle system is to be regarded as a single whistle. (ii) The whistles of a combined system shall: (1) Be located at a distance apart of not more than 100 meters; (2) Be sounded simultaneously;

(3) Each have a fundamental frequency different from those of the others by at least 10 Hz; and

(4) Have a tonal characteristic appropriate for the length of vessel which shall be evidenced by at least 2-thirds of the whistles in the combined system having fundamental frequencies falling within the limits prescribed in §(b) of this section, or if there are only two whistles in the combined system, by the higher fundamental frequency falling within the limits prescribed in paragraph (b) of this section.

Note: If, due to the presence of obstructions, the sound field of a single whistle or of one of the whistles referred to in §(f) of this section is likely to have a zone of greatly reduced signal level, a combined whistle system should be fitted so as to overcome this reduction.

(358) For the purposes of the Rules a combined whistle system is to be regarded as a single whistle. < (ii) > The whistles of a combined system shall:

(359) (1) Be located at a distance apart of not more than 100 meters;

(360)

Annex III(h) (Inland)

(h) Towing vessel whistles

A power-driven vessel normally engaged in pushing ahead or towing alongside may, at all times, use a whistle whose characteristic falls within the limits prescribed by §1(b) for the longest customary composite length of the vessel and its tow.

(361)

Bell or Gong

(362) (a) Intensity of signal. A bell or gong, or other device having similar sound characteristics shall produce a sound pressure level of not less than 110 dB at < a distance of > 1 meter < from it >.

(363) (b) Construction. Bells and gongs shall be made of corrosion-resistant material and designed to give clear tone. The diameter of the mouth of the bell shall be not less than 300 mm for vessels of 20 meters or more in length. Where practicable, a power-driven bell striker is recommended to ensure constant force but manual operation shall be possible. The mass of the striker shall be not less than 3 percent of the mass of the bell.

(364)

Approval

(365)

Annex III (International)

The construction of sound signal appliances, their performance and their installation on board the vessel shall be to the satisfaction of the appropriate authority of the State whose flag the vessel is entitled to fly.

(366)

Annex IV—Distress Signals

(367)

«Need of Assistance»

(368) The following signals, used or exhibited either together or separately, indicate distress and need of assistance:

(369) (a) a gun or other explosive signal fired at intervals of about a minute;

(370) (b) a continuous sounding with any fog-signaling apparatus;

(371) (c) rockets or shells, throwing red stars fired one at a time at short intervals;

(372) (d) a signal made by any signaling method consisting of the group . . . — . . . (SOS) in the Morse Code;

(373) (e) a signal sent by radiotelephony consisting of the spoken word “Mayday”;

(374) (f) the International Code Signal of distress indicated by N.C.;

(375) (g) a signal consisting of a square flag having above or below it a ball or anything resembling a ball;

(376) (h) flames on the vessel (as from a burning tar barrel, oil barrel, etc.);

(377) (i) a rocket parachute flare or a hand flare showing a red light;

(378) (j) a smoke signal giving off orange-colored smoke;

(379) (k) slowly and repeatedly raising and lowering arms outstretched to each side;

(380) (l) a distress alert by means of digital selective calling (DSC) transmitted on: (i) VHF channel 70, or (ii) MF/HF on the frequencies 2187.5 kHz, 8414.5 kHz, 4207.5 kHz, 6312 kHz, 12577 kHz or 16804.5 kHz;

(381) (m) a ship-to-shore distress alert transmitted by the ship’s Inmarsat or other mobile satellite service provider ship earth station;

(382) (n) signals transmitted by emergency position-indicating radio beacons;

(383) (o) approved signals transmitted by radiocommunication systems, including survival craft radar transponders <meeting the requirements of 47 CFR 80.109>.

(383.001) (p) A high intensity white light flashing at regular intervals from 50 to 70 times per minute.

(383.001)

«Exclusive Use»

(383.002) The use or exhibition of any of the foregoing signals except for the purpose of indicating distress and need of assistance and the use of other signals which may be confused with any of the above signals is prohibited.

(383.003)

«Supplemental Signals»

(383.004) Attention is drawn to the relevant sections of the International Code of Signals, the International Aeronautical and Maritime Search and Rescue Manual, Volume III, < the International Telecommunication Union Radio Regulations, > and the following signals:

(383.005) (a) A piece of orange-colored canvas with either a black square and circle or other appropriate symbol (for identification from the air);

(383.006) (b) A dye marker.

(383.008)

Annex V—Pilot Rules

(383.009) See **33 CFR 88**, chapter 2, for regulations.

(383.010)

Implementing Rules

(383.011) **Alternative Compliance**—see **33 CFR 81** and **33 CFR 89**, chapter 2, for regulations.

(383.012) **Vessel Bridge-to-Bridge Radiotelephone Regulations**—see **33 CFR 26**, chapter 2, for regulations.