

**§ 80.1057 Special requirements for Class C EPIRB stations.**

Class C EPIRB's shall not be manufactured, imported, or sold in the United States after February 1, 1995. Class C EPIRB stations installed on board vessels before February 1, 1995, may be used until February 1, 1999, and not thereafter.

(a) A Class C EPIRB must operate on the frequencies 156.750 and 156.800 MHz, must use G3N modulation, and employ the international Radiotelephone Two Tone Alarm signal. The EPIRB transmission must be cycled. Each cycle must consist of 6 periods (T1 to T6) as shown in the table below. During T1, T2, T3, and T5 the 156.750 MHz and 156.800 MHz carriers must be modulated alternately by a 2200 Hz and a 1300 Hz tone.

The modulating duration of each tone must be 250 milliseconds. The maximum tolerance of the frequency and modulating duration of each tone must be ±5 percent. During T4 and T6 neither of the RF carriers must be emitted. The T4 and T6 time periods must be varied according to the predetermined schedule shown in the table below. After the last cycle the transmissions must be terminated. The EPIRB must be able to recycle its transmissions in accordance to the schedule shown in the table below by placing the activation switch to the "off" and then "on" position.

Period	Duration in seconds	Transmission frequency in MHz
T <sub>1</sub> .....	1.5 .....	156.800
T <sub>2</sub> .....	14.5 .....	156.750
T <sub>3</sub> .....	1.5 .....	156.800
T <sub>4</sub> .....	40.0 (16 cycles) .....	None.
T <sub>4</sub> .....	80.0 (32 cycles) .....	
T <sub>4</sub> .....	160.0 (64.2 cycles) .....	
T <sub>4</sub> .....	320.0 (83.2 cycles) .....	
T <sub>5</sub> .....	14.5 .....	156.750
T <sub>6</sub> .....	Sames as T <sub>4</sub> duration .....	None.

(b) The effective radiated power must not be less than 1 watt. The power must be determined according to FCC Bulletin OCE 45. The EPIRB must meet the power requirements over each of the following temperature ranges for the time period shown below. Batteries may be replaced after completion of tests for each temperature range:

- (1) 0 to +50 degrees Celsius for 24 hours continuous operation.
- (2) -20 to 0 degrees Celsius for 12 hours continuous operation.

(c) The equipment must have a transmitter, an integral antenna and a power supply. The transmitter and power supply must be in separate compartments in a single watertight case.

(d) The equipment must be provided with a visible or audible indicator which clearly shows the device is operating. The indicator must be activated by the RF output power.

(e) The equipment must operate when hand held or when floating in water after storage for extended periods under marine environmental conditions.

(f) The switch used to activate the EPIRB must indicate the state of the equipment (on-off) by the physical position of the switch. A guard must be provided to prevent inadvertent operation.

(g) The equipment case must be waterproof and resealable without special tools or sealing compounds. EPIRB operation must not be degraded by submersion in sea water for a period of 24 hours.

(h) The EPIRB must float in fresh water with the antenna vertical and completely out of the water.

(i) Vacuum tubes are not permitted in EPIRB's. The EPIRB must meet the requirements after extended periods of inaction while carried in vessels and subjected to marine environmental conditions. Operation into any load from open to short must not result in continuous degradation of performance.

(j) The exterior of the equipment must have no sharp edges or projections. Means must be provided to secure the EPIRB to a survival craft or person.

(k) Operating instructions understandable by untrained personnel must be permanently displayed on the equipment. It must indicate that the device is "to be used solely for distress purposes."

(l) The equipment must have no exposed areas or terminals that could ignite flammable gases or materials.

(m) The omnidirectional antenna must be securely attached to the case and capable of being stowed without being damaged.

(n) The equipment must meet the technical standards after being dropped

into water from a height of 6 meters (20 feet).

(o) The EPIRB must meet the technical standards when plunged into sea water at +20 degrees Celsius after storage at a temperature of +50 degrees Celsius.

(p) If testing of an EPIRB with Coast Guard coordination is not possible, brief operational tests are authorized provided the tests are conducted within the first five minutes of any hour for not more than 10 seconds.

(q) The EPIRB must automatically turn off after 24 hours  $\pm 5$  percent. It must be possible to restart the transmission sequence by placing the on-off switch momentarily in the off position and returning it to the on position.

(r) The EPIRB must be equipped with a visual indication of a low battery condition.

(s) The EPIRB must have a designation that indicates it is a "Class C" EPIRB.

[51 FR 31213, Sept. 2, 1986, as amended at 58 FR 33344, June 17, 1993]

**§ 80.1059 Special requirements for Class S EPIRB stations.**

(a) A Class S EPIRB station must be able to float or be permanently secured to a survival craft.

(b) A Class S EPIRB able to float must meet the following:

(1) Be watertight and float in calm water with at least 5 cm (2 in.) of the EPIRB out of the water and the base of the antenna at least 5 cm (2 in.) above the water, with the antenna in a vertical position completely above the water surface;

(2) Be ballasted to right itself from a position 90 degrees from its upright position in one second or less;

(3) Meet the requirements in § 80.1053 (a)(4) through (9) after free fall into water 3 times from a height of 20 meters (67 ft.).

(c) A Class S EPIRB intended to be permanently secured to a survival craft is not required to float in water.

(d) Additionally, all Class S EPIRB's must meet the following:

(1) Be capable only of manual activation by an on-off switch protected by a guard to prevent inadvertent operation;

(2) Be designed to be deployed, its controls actuated, or its antenna erected, each by a single action task which can be performed by either hand;

(3) Meet the requirements in §§ 80.1053 (a)(4) through (a)(8) and (b) through (i) of this part;

(4) Class S EPIRBs may provide either continuous or intermittent operation. If the EPIRB is designed for intermittent operation, the duty cycle must be from 50 to 60 per cent and the period two minutes plus or minus 12 seconds. In either event, the EPIRB must meet the power output characteristics described in § 80.1053(a)(8) of this part;

(5) If testing of an EPIRB with Coast Guard coordination is not possible, brief operational tests are authorized provided the tests are conducted within the first five minutes of any hour and are not longer than three audio sweeps or one second whichever is longer;

(6) Have a designation that indicates it is a "Class S" EPIRB.

(e) Applications for certification must include a letter from the manufacturer stating that the EPIRB meets the requirements in paragraphs (b) and (d), or (c) and (d) of this section.

[51 FR 31213, Sept. 2, 1986, as amended at 56 FR 11517, Mar. 19, 1991; 63 FR 36607, July 7, 1998]

**§ 80.1061 Special requirements for 406.025 MHz EPIRBs.**

(a) Notwithstanding the provisions in paragraph (b) of this section, 406.025 MHz EPIRBs must meet all the technical and performance standards contained in the Radio Technical Commission for Maritime Services document titled "RTCM Recommended Standards for 406 MHz Satellite Emergency Position-Indicating Radiobeacons (EPIRBs)" dated July 31, 1987, with editorial updates of December 31, 1987 (RTCM Recommended Standards). This RTCM document is incorporated by reference in accordance with 5 U.S.C. 552(a). The document is available for inspection at Commission headquarters in Washington, DC or may be obtained from the Radio Technical Commission for Maritime Services, Post Office Box 19087, Washington, DC 20036.

(b) The 406.025 MHz EPIRB must contain as an integral part a "homing"