

affected after the equipment has been totally immersed in salt water.

(6) The equipment shall be buoyant and, when floating in fresh water or salt water, shall be self-righting and sufficiently stable to maintain the antenna substantially in its normal operating position. Any flotation collar fitted shall be permanently attached. Buoyancy shall not depend upon inflation.

(7) A strong flexible cord shall be provided as a means of tethering the equipment. The line is to be attached permanently to the equipment in such a manner that it will not adversely affect any of the requirements of this Part.

**29. Controls**—(1) There shall be a positive means of switching the equipment on and off, it shall be unambiguous in operation and clearly labelled. The switch shall be designed to preclude accidental activation by physical shock or other causes. After activation the equipment shall operate automatically.

(2) The equipment shall be capable of being set in operation by unskilled persons, and a set of concise operating instructions in the English language shall be permanently affixed to the casing of the equipment.

In addition the following warning shall be displayed:

“For marine distress use only. Unauthorised operation is prohibited.”

Displays shall be weather resistant, waterproof and abrasion resistant.

(3) The equipment shall be designed so that it may be deployed, its controls actuated, or the antenna erected each by a single action task which can be performed by either hand.

(4) The equipment shall be fitted with a device to indicate that the beacon is transmitting once it has been activated.

**30. Antenna**—(1) If the antenna is not designed to be stowed in its normal operating position, it shall be deployable to the designed length and operating position in a foolproof manner. If this antenna or its sections can be taken apart and detached from the equipment, they shall be secured against loss.

(2) The antenna shall provide optimum performance at 121.5 MHz and 243.0 MHz. Radiation shall be vertically polarised and essentially omnidirectional in the horizontal plane.

**31. Power supply**—(1) The battery shall be capable of supplying all the electrical energy requirements of the equipment to meet the minimum performance requirements of this Part. The equipment shall be protected against reversed polarity or incorrect installation of the battery.

(2) If an unintentional gas or liquid seepage can be emitted from the power supply, the internal components of the equipment shall not be adversely affected to the extent that the minimum performance standards specified herein cannot be met.

(3) The battery shelf life shall be specified by the equipment manufacturer and shall not be less than 12 months. The expiry date shall be clearly and conspicuously marked on an external label.

**32. Transmitter**—(1) The transmitter shall operate simultaneously on 121.5 MHz and 243.0 MHz. The carrier frequencies shall remain within  $\pm 0.005\%$  under all environmental operating conditions.

(2) Manufacturers shall endeavour to limit all spurious radiations to a level 30 dB below the output of the carrier frequencies of operation.

(3) The type of emission shall be A3X and shall have a distinctive audio characteristic achieved by amplitude modulating the carrier with an audio frequency sweeping downward over a range of not less than 700 Hz, within the range 1600 Hz to 300 Hz and with a sweep repetition rate of between 2 and 4 Hz.

(4) The modulation factor shall be at least 0.85.

(5) The carrier frequency duty cycle shall be at least 33%.

(6) The transmission shall not be interrupted.

(7) The radiated peak envelope power shall be not less than 100mW (+20 dBm) on each frequency throughout a 50 hour period.

(8) The transmitter shall attain a radiated peak envelope power level of 100 mW at each carrier frequency within five minutes of the EPIRB being activated.

(9) For a manually activated EPIRB the performance requirements of this Part shall be met over the temperature range 0°C to +55°C. For an EPIRB which is water activated the operating temperature range is 0°C to +40°C.

**33. Test facilities**—(1) Any test facility provided to indicate proper operation of the equipment shall not produce a field strength of greater than 25 microvolts per metre, whether the antenna is extended or not, measured at a distance of 50 metres from the beacon in any direction.

(2) In the absence of an integral test facility, the equipment shall not be tested in such a manner that a false distress alarm may result.

**34. Test procedures**—(1) General

(a) The following test procedures are considered satisfactory for determining required performance under standard and stressed environmental conditions. Although specific test procedures are cited, it is recognised that other methods may be preferred. These alternative procedures may be used if they provide at least equivalent information.

(b) EPIRB testing should be conducted so as to avoid outside radiation on 121.5 MHz and 243 MHz. A screened room or metal enclosure should be used when testing on the operational frequencies.

(c) For bench or ground tests conducted outside of a screened enclosure offset crystals should be used for operation on 122.0 MHz and 244 MHz.

(d) In all cases, EPIRB testing should be co-ordinated with the Head Office of the Maritime Transport Division of the Ministry of Transport.

(2) Definitions of terms and conditions of test

The following definitions of terms and conditions of test are applicable to the test procedures specified in this subsection.

(a) Power input voltage

Unless otherwise specified, all tests shall be conducted with the EPIRB using its self-contained battery source connected in the normal mode of operation.

(b) Adjustment of equipment

The circuits of the equipment under test shall be properly aligned and otherwise adjusted in accordance with the manufacturer's recommended practices, prior to the application of the specified tests. No adjustments shall be performed on the EPIRB after initiation of the tests.

(c) Test instrument precautions

Due precautions shall be taken during the conduct of the tests to prevent the introduction of errors resulting from the improper connection or adjustment of test instruments across the input and output impedances of the equipment under test.

(d) Ambient conditions

Unless otherwise specified, all tests shall be conducted under conditions of ambient room temperature, pressure and humidity. However, the room temperature shall not be lower than 10°C.

(e) Warm up period

Unless otherwise specified, all tests shall be conducted after an equipment warm-up period of not less than fifteen minutes.

(f) Modulation factor

The modulation factor shall be defined with respect to the