

RECOMMENDATION ITU-R M.690-1*

**TECHNICAL CHARACTERISTICS OF EMERGENCY POSITION-INDICATING
RADIO BEACONS (EPIRBs) OPERATING ON THE CARRIER
FREQUENCIES OF 121.5 MHz AND 243 MHz**

(Question ITU-R 31/8)

(1990-1995)

Summary

This Recommendation contains technical characteristics to which emergency position-indicating radio beacons (EPIRBs) intended to operate on the carrier frequency of 121.5 MHz and 243 MHz should conform.

Additional characteristics for EPIRBs intended for carriage on aircraft are specified in relevant annexes to the Convention on International Civil Aviation.

The ITU Radiocommunication Assembly,

considering

- a) that the Radio Regulations define the purpose of emergency position-indicating radio beacon (EPIRB) signals;
- b) that administrations authorizing the use of EPIRBs operating on carrier frequencies of 121.5 MHz and 243 MHz should ensure that such EPIRBs comply with relevant ITU-R Recommendations and the standards and recommended practices of ICAO,

recommends

- 1 that the technical characteristics of EPIRBs operating on the carrier frequencies of 121.5 MHz and 243 MHz should be in accordance with Annex 1.

ANNEX 1

**Technical characteristics of emergency position-indicating
radio beacons (EPIRBs) operating on the carrier
frequencies of 121.5 MHz and 243 MHz**

EPIRBs operating on the carrier frequencies of 121.5 MHz and 243 MHz should fulfil the following conditions (see Note 1):

- a) emission in normal antenna conditions and positions should be vertically polarized and be essentially omnidirectional in the horizontal plane;
- b) carrier frequencies should be amplitude-modulated (minimum duty cycle of 33%), with a minimum depth of modulation of 0.85;
- c) the emission should consist of a characteristic audio-frequency signal obtained by amplitude modulation of the carrier frequencies with a downward audio-frequency sweep within a range of not less than 700 between 1 600 Hz and 300 Hz and with a sweep repetition rate of two to four times per second;

* This Recommendation should be brought to the attention of the International Civil Aviation Organization (ICAO) and the COSPAS-SARSAT Secretariat.

- d) the emission should include a clearly defined carrier frequency distinct from the modulation sideband components; in particular, at least 30% of the power should be contained at all times within:
 - ± 30 Hz of the carrier frequency on 121.5 MHz;
 - ± 60 Hz of the carrier frequency on 243 MHz;
- e) the class of emission should be A3X; however, any type of modulation which satisfies the requirements laid down in b), c) and d) above may be used, provided it does not impair the precise locating of the radio beacon.

NOTE 1 – Additional characteristics for EPIRBs aboard aircraft are specified in the relevant annexes to the Convention on International Civil Aviation.
