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| **Radiocommunication Study Groups** |  |
| **INTERNATIONAL TELECOMMUNICATION UNION** |  |
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| Radiocommunication Study Group 5 |
| DRAFT REVISION OF RECOMMENDATION ITU-R M.690-2 |
| Technical characteristics of emergency position-indicating radio beacons operating on the carrier frequencies of 121.5 MHz and 243 MHz |

Summary of revision

The revision proposes for EPIRBs operating on 121.5 MHz or 243 MHz the removal of any ambiguity that might arise with interpreting the changes introduced in Recommendation ITU‑R M.690-2 concerning the characteristic audio-frequency signal that indicates when such EPIRBs are active.

In line with industry standards of the time, Recommendation ITU-R M.690-1 only allowed for a repeating downward audio sweep with an abrupt return to the start frequency. Following the advice of industry and standards developing organizations outside ITU that a repeating upward audio sweep should also be accommodated, Recommendation ITU-R M.690-2 was revised so as to allow both an upward and a downward sweep. However, this did not make it clear that individual beacons should only emit either a downward or an upward sweep and not send some combination of both downward and upward sweeps (e.g., continuous up and down sweeps without abrupt breaks or distinct up and down sweeps in a sequence/pattern).

Although, this revision could be considered as an editorial correction, the circumstance that Recommendation ITU-R M.690-1 has been incorporated by reference, in accordance with paragraph 11.6 of Resolution ITU-R 1-6, there must be formal revision to version Recommendation ITU-R M.690-3 followed by advice to WRC-15, through the Radio Assembly, that the Conference should consider updating the reference to Recommendation ITU-R M.690 in the Radio Regulations in accordance with the procedure described in Resolution **28 (Rev.WRC-03)**.

DRAFT REVISION OF RECOMMENDATION ITU-R M.690-2[[1]](#footnote-1)\*

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

(1990-1995-2012)

Scope

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.

Keywords

Maritime, EPIRB, 121.5 MHz, 243 MHz, characteristics

Abbreviations/Glossary

EPIRB Emergency position-indicating radio beacon

ICAO International Civil aviation Organization.

The ITU Radiocommunication Assembly,

…

Annex 1

Technical characteristics of emergency position-indicating
radio beacons 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 an upward or a downward audio‑frequency sweep within a range of not less than 700 Hz between 300 Hz and 1 600 Hz and with a sweep repetition rate of two to four times per second;

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.

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1. \* This Recommendation should be brought to the attention of the International Civil Aviation Organization (ICAO) and the COSPAS-SARSAT Secretariat. [↑](#footnote-ref-1)