

## RESOLUTION 207 (REV.WRC-15)

**Measures to address unauthorized use of and interference to frequencies in the frequency bands allocated to the maritime mobile service and to the aeronautical mobile (R) service**

The World Radiocommunication Conference (Geneva, 2015),

*considering*

- a) that the HF frequencies currently used by the aeronautical and maritime mobile services for distress, safety and other communications, including allotted operational frequencies, suffer from harmful interference and are often subject to difficult propagation conditions;
- b) that WRC-97 considered some aspects of the use of the HF bands for distress and safety communications in the context of the Global Maritime Distress and Safety System (GMDSS), especially with regard to regulatory measures;
- c) that unauthorized operations using maritime and aeronautical frequencies in the HF bands are continuing to increase and are already a serious risk to HF distress, safety and other communications;
- d) that some administrations have resorted to, for example, transmitting warning messages on operational HF channels as a means of deterring unauthorized users;
- e) that provisions of the Radio Regulations prohibit the unauthorized use of certain safety frequencies for communications other than those related to safety;
- f) that enforcing compliance with these regulatory provisions is becoming increasingly difficult with the availability of low-cost HF single side-band (SSB) transceivers;
- g) that monitoring observations of the use of frequencies in the frequency band 2 170-2 194 kHz and in the frequency bands allocated exclusively to the maritime mobile service between 4 063 kHz and 27 500 kHz and to the aeronautical mobile (R) service between 2 850 kHz and 22 000 kHz show that a number of frequencies in these frequency bands are still being used by stations of other services, many of which are operating in contravention of No. **23.2**;
- h) that, in certain situations, HF radio is the sole means of communication for the maritime mobile service and that certain frequencies in the frequency bands mentioned in *considering g)* are reserved for distress and safety purposes;
- i) that, in certain situations, HF radio is the sole means of communication for the aeronautical mobile (R) service and that this is a safety service;
- j) that WRC-2000 and subsequent conferences have reviewed the use of the HF bands by the aeronautical mobile (R) and maritime mobile services with a view to protecting operational, distress and safety communications;

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k) that this Resolution identifies several interference mitigation techniques that can be employed by administrations on a non-mandatory basis,

*considering in particular*

a) that it is of paramount importance that the distress and safety channels of the maritime mobile service be kept free from harmful interference, since they are essential for the protection of the safety of life and property;

b) that it is also of paramount importance that channels directly concerned with the safe and regular conduct of aircraft operations be kept free from harmful interference, since they are essential for the safety of life and property,

*resolves to invite ITU-R and ITU-D, as appropriate*

to increase regional awareness of appropriate practices in order to help mitigate interference in the HF bands, especially on distress and safety channels,

*invites administrations*

1 to ensure that stations of services other than the maritime mobile service abstain from using frequencies in distress and safety channels and their guardbands and in the frequency bands allocated exclusively to that service, except under the conditions expressly specified in Nos. **4.4**, **5.128**, **5.137** and **4.13** to **4.15**; and to ensure that stations of services other than the aeronautical mobile (R) service abstain from using frequencies allocated to that service except under the conditions expressly specified in Nos. **4.4** and **4.13**;

2 to make every effort to identify and locate the source of any unauthorized emission capable of endangering human life or property and the safe and regular conduct of aircraft operations, and to communicate their findings to the Radiocommunication Bureau;

3 to participate, in accordance with item 4 in the Annex, in any monitoring programmes organized by the Bureau or administrations, if so agreed among those administrations, without adversely affecting the rights of other administrations or conflicting with any provisions of the Radio Regulations;

4 to make every effort to prevent unauthorized transmissions in frequency bands allocated to the maritime mobile service and the aeronautical mobile (R) service;

5 to request their competent authorities to take, within their respective jurisdiction, such legislative or regulatory measures which they consider necessary or appropriate in order to prevent stations from unauthorized use of distress and safety channels or from operating in contravention of No. **23.2**;

6 to take all necessary steps in such cases of contravention of No. **23.2** to ensure the cessation of any transmissions contravening the provisions of the Radio Regulations on the frequencies or in the frequency bands referred to in this Resolution;

7 to employ as many of the interference mitigation techniques referred to in the Annex as are appropriate for the maritime mobile and aeronautical mobile (R) services,

*instructs the Radiocommunication Bureau*

1 to seek the cooperation of administrations in identifying the sources of those emissions by all available means and in securing the cessation of those emissions;

2 when the station of another service transmitting in a frequency band allocated to the maritime mobile service or to the aeronautical mobile (R) service has been identified, to inform the administration concerned;

3 to include the problem of interference to maritime and aeronautical distress and safety channels on the agenda of relevant regional radiocommunication seminars,

*instructs the Secretary-General*

to bring this Resolution to the attention of the International Maritime Organization and the International Civil Aviation Organization for such actions as they may consider appropriate.

## ANNEX TO RESOLUTION 207 (REV.WRC-15)

### **Interference mitigation techniques**

This Annex lists several possible HF interference mitigation techniques that may be used, either in combination or singly, depending on the resources of administrations. Use of any or all of these techniques is not mandatory.

#### **1 Alternative modulation methods**

The use of digitally modulated emissions, such as QPSK, to replace or supplement analogue SSB voice (J3E) and data (J2B) emissions. This initiative would need to be adopted internationally to allow the interoperability of equipment. For example, ICAO has adopted an HF data-link standard to provide packet data communications using automated link establishment and adaptive frequency control techniques as a supplement to analogue SSB voice communications (see ICAO Convention, Annex 10).

#### **2 Passive and active/adaptive antenna systems**

Use of passive and active/adaptive antenna systems to reject unwanted signals.

#### **3 Channel barring**

Administrations should ensure through their licensing, equipment standardization and inspection arrangements that, in compliance with No. **43.1**, HF radio equipment cannot transmit on frequencies exclusively allocated to the aeronautical mobile (R) service, as detailed in Appendix **27**, except for frequencies allocated for worldwide use and shared with the aeronautical mobile (OR) service (see Appendix **26/3.4**).

#### **4 Regional HF monitoring and direction-finding facilities**

Collaboration and cooperation between regional administrations to coordinate the use of monitoring and direction-finding facilities.

#### **5 Transmission of warning messages**

Transmission of multilanguage warning messages on specific channels affected by strong or persistent interference. Such transmissions should be conducted after coordination with the users of the affected services and the administration(s) or competent authorities concerned.

#### **6 Education and publicity initiatives**

Administrations should provide education and publicity initiatives on the proper use of the radio-frequency spectrum in these frequency bands.