**History Maritime Communications in the ITU-R Radio Regulations**

The use of radio communications, for maritime purposes, has been an important part of ship safety and port operations, for many years. Some of the history even dates back to the early part of the 20th century. At that time, maritime communications were mainly (if not exclusively) in the LF frequency band.

Whilst, there were service allocations in the VHF range at that time: 157-162 MHz mobile regional, 162-170 MHz stations of low power regional, these were not specifically identified for the maritime service. Use of the VHF frequency band, as indicated, for the use by maritime was facilitated through a number of Decisions of ITU Conferences which are included for information only:

* **1947**: Here specific maritime allocations were made in the frequency band 152‑162 MHz. In addition, the identification of 156.8 MHz: for worldwide use for safety, calling, and inter-ship and harbour control communications in the maritime mobile service, was made.
* **1959**: Introduction of RR Appendix 18, which identified the channels 1-28, as we currently recognize, with a 50 kHz channel or channel spacing. Also at this time the now deleted RR Appendix 19, reflected that phase modulation had to be used.
* **1974**: World Maritime Administrative Radio Conference transition plans are announced to move from a channel spacing of 50 kHz to that of 25 kHz by modifying transmitters to a maximum deviation of ±5 kHz from 1 January 1972. Modifications for all existing equipment, was to be completed by 1 January 1973 and all new equipment to conform to 25 kHz standards from 1 January 1973. Finally, all equipment was to conform to the 25 kHz standards from 1 January 1983.
* **1979**: RR saw the introduction of the additional channels; 60-88, which was possible via the earlier recognition of the 25 kHz channelling. Here, it was reflected, that the extra channels derived from the 1967 RRs and was in accordance with Resolution No. Mar 2-14. That Resolution was derived from the World Maritime Administrative Radio Conference in 1974 and gave a plan for the transition from 50 kHz to 25 kHz.
* **1983**: 1 January 1983 was the date by which all maritime radio equipment, that operate in RR Appendix 18, were required to conform to the 25 kHz standards (Resolution 308 (WRC-79)).
* **1987**: Since that time the next major global change to RR Appendix 18 was the identification of channel 70 for the use of the global maritime distress and safety system (GMDSS). This was done at WRC-87 (MOB-87), but whilst 70 was identified for the sole use by GMDSS, in RR Appendix 18, it was not until WRC-03 where the frequency was identified as exclusively maritime mobile via an identification in Article 5 (of the RR). This is an example of where it should not be inferred that identification in RR Appendix 18 means that the frequency is recognized, formally, as exclusive to the maritime mobile service.
* **1997**: Next, and probably the most recent change in RR Appendix 18, was the creation and identification of the two channels for the use of the system referred to as; automatic identification system (AIS). Channels AIS 1 and AIS 2, were formally identified at WRC‑97. That saw the splitting of the VHF channels 87 and 88 into four single frequencies with the “high” frequencies being used for AIS and the lower two frequencies retained for simplex operation. This change has facilitated the use of AIS which has proved to be a useful and valuable system that assists the management of shipping fleets by companies and those who interact with them around the world. As a consequence of the AIS channel changes, at WRC-97, two additional single frequencies were identified in RR Appendix 18.
* **2000**: WRC-00 modified RR Appendix 18, to include the addition of note o) against a number of the channels. This note o) permits the possible use, on a national basis, of various channels or frequency bands created by conversion of some duplex channels into simplex channels, for uses such as initial testing and the possible future introduction of new technologies.
* WRC-00 also updated Resolution 342 for the introduction of new technologies to provide improved efficiency in the use of the frequency band 156-174 MHz by stations in the maritime mobile service.
* **2007**: WRC-07 modified the following notes:

 e) to permit administrations to apply 12.5 kHz channel interleaving via coordination with affected administrations.

 f) to permit aircraft stations to use, in addition to channel 06, channels 70, 16, AIS 1 and AIS 2 for search and rescue operations and additionally, other safety-related communication.

 l) to acknowledge the worldwide usage of AIS 1 and AIS 2.

 m) to permit certain two frequency channels to be operated as single frequency channels, subject to coordination with affected administrations.

 o) to permit these two frequency channels to be used for new technologies, instead of only testing, providing that such systems do not interfere with the detection of AIS signals on 161.975 MHz or 162.025 MHz.

 WRC-07 also added the following notes:

 p) to permit the use of AIS 1 and AIS 2 by the mobile-satellite service (Earth-to-space) to receive AIS transmissions from ships.

 q) requiring precautions when using channels 10 and 11, so as to avoid harmful interference to channel 70.

Additionally, over the period from the mid-1980s until the present, there have been minor changes to the frequency arrangements in RR Appendix 18. These predominately permit national flexibility which do not require global changes and, consequently, these arrangements do not affect or influence the global maritime environment.