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| **Radiocommunication Study Groups** |  |
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| **18 January 2024** |
| **English only** |
| Working Party 5A |
| ITU-R TEXTS RELATING TO THE AMATEUR AND AMATEUR-SATELLITE SERVICES |
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*(Last update: 18 January 2024)*



# 1 Scope

This document describes various topics that are relevant to the amateur service and the amateur-satellite service, and identifies the ITU-R texts ([Radio Regulations](https://www.itu.int/pub/R-REG-RR/en) excerpts, [Recommendations](https://www.itu.int/rec/R-REC-M/en), [Reports](https://www.itu.int/pub/R-REP-M/en) and [Handbooks](https://www.itu.int/pub/R-HDB)) applicable to these topics. The information included in this document is based on completed work within the ITU-R. The ongoing work on these topics is documented in the latest [WP 5A Chair’s Report](https://www.itu.int/md/R15-WP5A-C-1065/en).

# 2 Keywords

Amateur, amateur-satellite, regulations, handbooks, recommendations, reports.

# 3 Relevant provisions in the Radio Regulations

The provisions of the [Radio Regulations](https://www.itu.int/pub/R-REG-RR/en) (including ITU-R Recommendations incorporated by reference) relevant to the amateur and amateur-satellite services are listed in Table 1 of the Annex at the end of this guide.

As defined in Article **1** of the Radio Regulations, the amateur service is a radiocommunication service for the purpose of self-training, intercommunication and technical investigations carried out by amateurs that is, by duly authorized persons interested in radio technique solely with a personal aim and without pecuniary interest (RR No. **1.56**). The amateur-satellite service is a radiocommunication service using space stations on earth satellites for the same purposes as those of the amateur service (RR No. **1.57**).

The frequency allocations to the amateur and amateur-satellite services are listed in the table and footnotes of RR Article **5**.

RR Article **19** contains rules regarding the identification of stations and the formation of call signs. All transmissions in the amateur service should be identified (RR No. **19.5**). Call signs in the amateur service are formed in accordance with the provisions of RR Nos. **19.67**-**19.69**, inclusive.

RR Article **25** contains general regulations applicable to stations in the amateur and amateur-satellite services. The article is divided into two sections; Section I for the amateur service and Section II for the amateur-satellite service. RR Article **25** is reproduced in full here:

Section I − Amateur service

**25.1** § 1 Radiocommunication between amateur stations of different countries shall be permitted unless the administration of one of the countries concerned has notified that it objects to such radiocommunications.     (WRC‑03)

**25.2** § 2 1) Transmissions between amateur stations of different countries shall be limited to communications incidental to the purposes of the amateur service, as defined in No. **1.56** and to remarks of a personal character.     (WRC‑03)

**25.2A** 1A) Transmissions between amateur stations of different countries shall not be encoded for the purpose of obscuring their meaning, except for control signals exchanged between earth command stations and space stations in the amateur-satellite service.     (WRC‑03)

**25.3** 2) Amateur stations may be used for transmitting international communications on behalf of third parties only in case of emergencies or disaster relief. An administration may determine the applicability of this provision to amateur stations under its jurisdiction. (WRC‑03)

**25.4** (SUP - WRC‑03)

**25.5** § 3 1) Administrations shall determine whether or not a person seeking a licence to operate an amateur station shall demonstrate the ability to send and receive texts in Morse code signals.     (WRC‑03)

**25.6** 2) Administrations shall verify the operational and technical qualifications of any person wishing to operate an amateur station. Guidance for standards of competence may be found in the most recent version of Recommendation ITU‑R M.1544.     (WRC‑03)

**25.7** § 4 The maximum power of amateur stations shall be fixed by the administrations concerned.     (WRC‑03)

**25.8** § 5 1) All pertinent Articles and provisions of the Constitution, the Convention and of these Regulations shall apply to amateur stations.     (WRC‑03)

**25.9** 2) During the course of their transmissions, amateur stations shall transmit their call sign at short intervals.

**25.9A** § 5A Administrations are encouraged to take the necessary steps to allow amateur stations to prepare for and meet communication needs in support of disaster relief.     (WRC‑03)

**25.9B** § 5B An administration may determine whether or not to permit a person who has been granted a licence to operate an amateur station by another administration to operate an amateur station while that person is temporarily in its territory, subject to such conditions or restrictions it may impose.     (WRC‑03)

Section II − Amateur-satellite service

**25.10** § 6 The provisions of Section I of this Article shall apply equally, as appropriate, to the amateur-satellite service.

**25.11** § 7 Administrations authorizing space stations in the amateur-satellite service shall ensure that sufficient earth command stations are established before launch to ensure that any harmful interference caused by emissions from a station in the amateur-satellite service can be terminated immediately (see No. **22.1**).     (WRC‑03)

RR Appendix **42** contains the allocation of call sign series to various countries and international organizations. The administration or organization authorizing a station in the amateur service may be determined by comparing the first characters of the call sign with the list in RR Appendix **42**.

Resolution **642** relates to the bringing into use of earth stations in the amateur-satellite service. Resolution **642** notes that that certain information specified in Appendix **4** of the Radio Regulations cannot reasonably be provided for earth stations in the amateur-satellite service, and establishes provisions for notification and publication of satellite systems in the amateur-satellite service that take this fact into account.

# 4 ITU-R Recommendations incorporated by reference in the Radio Regulations

[Recommendation ITU-R M.1544-1](http://www.itu.int/rec/R-REC-M.1544/en) defines minimum levels of operational and technical knowledge for use by administrations when verifying the qualifications of a person wishing to operate a station in the amateur services.

[Recommendation ITU-R M.1172-0](http://www.itu.int/rec/R-REC-M.1172/en) lists miscellaneous abbreviations and signals to be used for radiocommunications in the maritime mobile service. Section I (from QRA to QUZ) and Section II are relevant to the amateur and amateur-satellite services, as the abbreviations are frequently used therein.

# 5 ITU-R Recommendations not incorporated by reference in the Radio Regulations

Recommendations relevant to the amateur and amateur-satellite services (other than the Recommendation incorporated by reference in the [Radio Regulations](https://www.itu.int/pub/R-REG-RR/en)) are listed in Table 2 of the Annex at the end of this guide.

Recommendation [ITU-R M.1041-2](http://www.itu.int/rec/R-REC-M.1041/en) specifies recommended design criteria and objectives for future amateur radio systems.

[Recommendation ITU-R M.1042-3](http://www.itu.int/rec/R-REC-M.1042/en) addresses disaster communications in the amateur and amateur-satellite services. It is recommended that administrations encourage the development of amateur service and amateur-satellite service networks capable of providing radiocommunications in the event of natural disasters, that such networks be robust, flexible and independent of other telecommunications services and capable of operating from emergency power, and that amateur organizations be encouraged to promote the design of robust systems capable of providing radiocommunications during disasters and relief operations.

Recommendation [ITU-R M.1043-2](http://www.itu.int/rec/R-REC-M.1043/en) addresses the use of the amateur and amateur-satellite services in developing countries. It recommends that administrations encourage and facilitate the amateur and amateur-satellite services in order to develop radio operator skills, train engineers and technicians to design, construct and maintain radio equipment and systems, assist in forming groups capable of providing local support, exchange technical and operational information, experiment with new technology, and establish stations in rural and remote areas, among several other objectives.

Recommendation [ITU-R M.1044-2](http://www.itu.int/rec/R-REC-M.1044/en) contains frequency sharing criteria for the amateur and amateur-satellite services. The Recommendation lists the radiocommunication services with which the amateur and amateur-satellite services may readily share, and those services with which sharing would be difficult. It states that the amateur services operate with relatively weak signals and provides mitigation procedures that facilitate sharing.

Recommendation [ITU-R M.1677-1](http://www.itu.int/rec/R-REC-M.1677/en) defines the International Morse code characters and the operational provisions applying to their use in radiocommunication services. Morse telegraphy is still widely used in the amateur services.

Recommendation [ITU-R M.1732-3](http://www.itu.int/rec/R-REC-M.1732/en) documents the technical and operational characteristics of systems used in the amateur service and amateur-satellite services for the purposes of carrying out sharing studies. The systems and their characteristics described in this Recommendation are considered representative of those operating in the frequency bands available to these services ranging from 135.7 kHz through 250 GHz.

[Recommendation ITU-R M.2034-0](http://www.itu.int/rec/R-REC-M.2034/en) establishes a telegraphic alphabet and transmission protocols for phase shift keying at 31 baud in the amateur and amateur-satellite services.

Recommendation [ITU-R M.2164-0](https://www.itu.int/rec/R-REC-M.2164/en) provides guidance on technical and operational measures for administrations authorizing stations operating in the amateur and amateur-satellite services to protect the radionavigation-satellite service (space-to-Earth) in the frequency band 1 240-1 300 MHz. The relevant measures are contained in the Annex to this Recommendation.

# 6 ITU-R Reports

Reports relevant to the amateur and amateur-satellite services are listed in Table 3 of the Annex at the end of this guide.

Report [ITU-R M.2085-1](http://www.itu.int/pub/R-REP-M/publications.aspx?lang=en&parent=R-REP-M.2085) addresses the role of the amateur and amateur-satellite services in support of disaster mitigation and relief.

[Report ITU-R M.2117-1](http://www.itu.int/pub/R-REP-M/publications.aspx?lang=en&parent=R-REP-M.2117) addresses software-defined radio in the land mobile, amateur and amateur-satellite services.

Reports [ITU-R M.2200-0](http://www.itu.int/pub/R-REP-M/publications.aspx?lang=en&parent=R-REP-M.2200), ITU-R [M.2203-0](http://www.itu.int/pub/R-REP-M/publications.aspx?lang=en&parent=R-REP-M.2203), and ITU-R [M.2226-0](http://www.itu.int/pub/R-REP-M/publications.aspx?lang=en&parent=R-REP-M.2226) contain information relevant to the amateur service allocation at 472-479 kHz adopted at WRC-12.

[Report ITU-R M.2281-0](http://www.itu.int/pub/R-REP-M/publications.aspx?lang=en&parent=R-REP-M.2281) contains characteristics of stations in the amateur service that may operate within the frequency range 5 250-5 450 kHz for the purposes of sharing studies for WRC-15 agenda item 1.4.

[Report ITU-R M.2335-0](http://www.itu.int/pub/R-REP-M/publications.aspx?lang=en&parent=R-REP-M.2335) is the sharing study for stations in the amateur service that may operate within the frequency range 5 250-5 450 kHz under WRC-15 agenda item 1.4.

[Report ITU-R M.2478-0](https://www.itu.int/pub/R-REP-M.2478) is the study undertaken to assess the spectrum needs for the amateur service in the frequency band 50-54 MHz in Region 1 and sharing with mobile, fixed, radiolocation and broadcasting services under WRC-19 agenda item 1.1.

[Report ITU-R M.2532-0](https://www.itu.int/pub/R-REP-M.2532) provides a detailed review of the different systems and applications used in the amateur service and amateur-satellite service allocations in the frequency band 1 240-1 300 MHz under WRC-23 agenda item 9.1 topic b).

# 7 ITU-R Handbooks

ITU handbooks with content relevant to the amateur and amateur-satellite services are listed in Table 4 of the Annex at the end of this guide.

A handbook containing the documentation listed herein, titled [*Handbook on amateur and amateur-satellite services*](http://www.itu.int/pub/R-HDB-52), is periodically updated. The handbook also contains detailed information on specific amateur and amateur-satellite frequency allocations, usage conventions, and operational procedures. The handbook was last revised in 2014.

Chapter 9 of the ITU handbook [*Utilization of telecommunications/ICTs for disaster preparedness, mitigation and response*](http://www.itu.int/dms_pub/itu-d/opb/stg/D-STG-SG02.22.1-2014-PDF-E.pdf) (Edition of 2014) presents information on the use of stations in the amateur and amateur-satellite services in disaster and emergency situations.

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| **Contact:** Mr Dale Hughes | **E-mail:** dalevk1dsh@gmail.com |

ANNEX

TABLE 1

From the [Radio Regulations](http://www.itu.int/pub/R-REG-RR-2016) (RR)

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| Article **1** | *Amateur service*: A *radiocommunication service* for the purpose of self‑training, intercommunication and technical investigations carried out by amateurs, that is, by duly authorized persons interested in radio technique solely with a personal aim and without pecuniary interest (RR No. **1.56**)*amateur-satellite service*: A *radiocommunication service* using *space stations* on earth *satellites* for the same purposes as those of the *amateur service* (RR No. **1.57**) |
| Article **5** | Frequency allocations |
| Article **19** | Identification of stations |
| Article **25** | Amateur services |
| Appendix **42** | Table of allocation of international call sign series |
| Resolution **642** | Relating to the bringing into use of earth stations in the amateur-satellite service |
| **ITU-R Recommendations incorporated by reference in the RR** |
| [Rec. ITU-R M.1172-0](http://www.itu.int/rec/R-REC-M.1172/en) | Miscellaneous abbreviations and signals to be used for radiocommunications in the maritime mobile service. (Section I QRA to QUZ and Section II are relevant to the amateur and amateur-satellite services.) |
| Rec. [ITU-R M.1544-1](http://www.itu.int/rec/R-REC-M.1544/en) | Minimum qualifications of radio amateurs |

TABLE 2

[ITU-R Recommendations](http://www.itu.int/rec/R-REC-M/en) relevant to the amateur and amateur-satellite services and year of last revision

|  |  |  |
| --- | --- | --- |
| Rec. [ITU-R M.1172-0](http://www.itu.int/rec/R-REC-M.1172/en) | 1995 | Miscellaneous abbreviations and signals to be used for radiocommunications in the maritime mobile service |
| [Rec. ITU-R M.1041-2](http://www.itu.int/rec/R-REC-M.1041/en) | 2003 | Future amateur radio systems |
| Rec. [ITU-R M.1042-3](http://www.itu.int/rec/R-REC-M.1042-3-200703-I/en) | 2007 | Disaster communications in the amateur and amateur-satellite services |
| Rec. [ITU-R M.1043-2](http://www.itu.int/rec/R-REC-M.1043/en) | 2003 | Use of the amateur and amateur-satellite services in developing countries |
| Rec. [ITU-R M.1044-2](http://www.itu.int/rec/R-REC-M.1044/en) | 2003 | Frequency sharing criteria in the amateur and amateur-satellite services |
| Rec. [ITU-R M.1544-1](http://www.itu.int/rec/R-REC-M.1544/en) | 2015 | Minimum qualifications of radio amateurs |
| Rec. [ITU-R M.1677-1](http://www.itu.int/rec/R-REC-M.1677/en) | 2009 | International Morse code |
| Rec. [ITU-R M.1732-3](http://www.itu.int/rec/R-REC-M.1732/en) | 2023 | Characteristics of systems operating in the amateur and amateur-satellite services for use in sharing studies |
| Rec. [ITU-R M.2034-0](http://www.itu.int/rec/R-REC-M.2034/en) | 2013 | Telegraphic alphabet for data communication by phase shift keying at 31 baud in the amateur and amateur-satellite services |
| Rec. [ITU-R M.2164-0](https://www.itu.int/rec/R-REC-M.2164/en) | 2023 | Guidance on technical and operational measures for the use of the frequency band 1 240-1 300 MHz by the amateur and amateur-satellite service in order to protect the radionavigation-satellite service (space to-Earth) |

TABLE 3

[ITU-R Reports](http://www.itu.int/pub/R-REP-M/en) relevant to the amateur and amateur-satellite services and year of last revision

|  |  |  |
| --- | --- | --- |
| Rep. [ITU-R M.2085-1](http://www.itu.int/pub/R-REP-M/publications.aspx?lang=en&parent=R-REP-M.2085) | 2011 | Role of the amateur and amateur-satellite services in support of disaster mitigation and relief |
| [Rep. ITU-R M.2117-1](http://www.itu.int/pub/R-REP-M/publications.aspx?lang=en&parent=R-REP-M.2117) | 2012 | Software-defined radio in the land mobile, amateur and amateur-satellite services |
| Rep. [ITU-R M.2200-0](http://www.itu.int/pub/R-REP-M/publications.aspx?lang=en&parent=R-REP-M.2200) | 2010 | Characteristics of amateur radio stations in the range 415-526.5 kHz for sharing studies |
| Rep. [ITU-R M.2203-0](http://www.itu.int/pub/R-REP-M/publications.aspx?lang=en&parent=R-REP-M.2203) | 2010 | Compatibility of amateur service stations with existing services in the range 415-526.5 kHz  |
| Rep. [ITU-R M.2226-0](http://www.itu.int/pub/R-REP-M/publications.aspx?lang=en&parent=R-REP-M.2226) | 2011 | Description of amateur and experimental operation between 415 and 526.5 kHz in some countries |
| Rep. [ITU-R M.2281-0](http://www.itu.int/pub/R-REP-M/publications.aspx?lang=en&parent=R-REP-M.2281) | 2013 | Characteristics of amateur radio stations in the range 5 250-5 450 kHz for sharing studies  |
| Rep. [ITU-R M.2335-0](http://www.itu.int/pub/R-REP-M/publications.aspx?lang=en&parent=R-REP-M.2335) | 2014 | Sharing and compatibility analysis of possible amateur service stations with fixed, land mobile, and radiolocation services in the frequency band 5 250-5 450 kHz and the aeronautical mobile service in an adjacent band |
| Rep. [ITU-R M.2478-0](https://www.itu.int/pub/R-REP-M.2478) | 2019 | Spectrum needs for the amateur service in the frequency band 50-54 MHz in Region 1 and sharing with mobile, fixed, radiolocation and broadcasting services |
| Rep. [ITU-R M.2513-0](https://www.itu.int/pub/R-REP-M.2513) | 2022 | Studies regarding the protection of the primary radionavigation-satellite service (space-to-Earth) by the secondary amateur and amateur-satellite services in the frequency band 1 240-1 300 MHz  |
| [Rep. ITU-R M.2532-0](https://www.itu.int/pub/R-REP-M.2532) | 2023 | Amateur and amateur-satellite services characteristics and usage in the 1 240-1 300 MHz frequency band |

TABLE 4

[ITU-R Handbooks](http://www.itu.int/pub/R-HDB) relevant to the amateur and amateur-satellite services and year of last revision

|  |  |  |
| --- | --- | --- |
| [Handbook on amateur and amateur-satellite services](http://www.itu.int/pub/R-HDB-52)  | 2014 | Periodically updated Handbook containing the documentation described herein and other information describing amateur and amateur-satellite services operation. |
| [Utilization of telecommunications/ICTs for disaster preparedness, mitigation and response](http://www.itu.int/dms_pub/itu-d/opb/stg/D-STG-SG02.22.1-2014-PDF-E.pdf)  | 2014 | Periodically updated Handbook with chapter on use of amateur radio in emergency and disaster telecommunications. |

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