YOUR ENTRY INTO AMATEUR RADIO

THE FOUNDATION LICENCE MANUAL

3rd Edition
Manual Supplement

by

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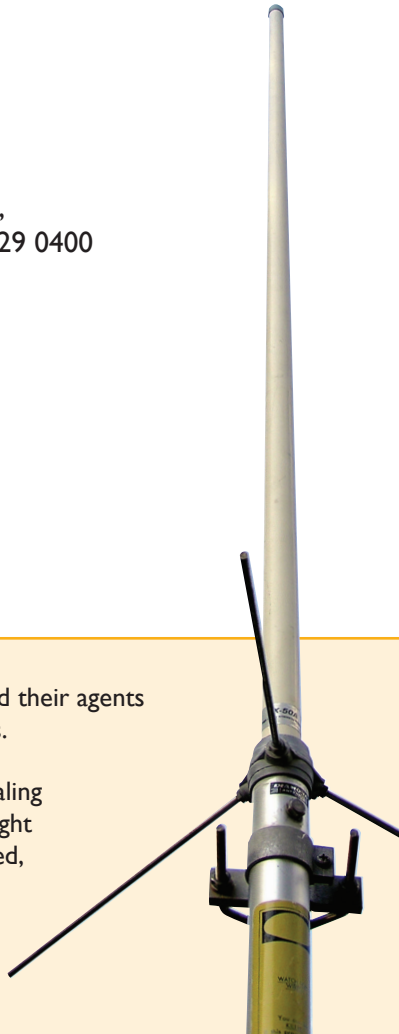

changes

On the 12th September 2019 the Commonwealth of Australia amended the Conditions for the Amateur Radio Foundation Licence.

The amendments increase the flexibility, utility, and relevance of the Foundation licence by removing unnecessary restrictions, while balancing the risk of interference to other radio spectrum users.

The following is a summary of the changes to the current Foundation Licence Manual (rev 3).

What has changed ?

Page 58 – The Foundation Licence:

A Foundation License is now subject to the conditions in; the Radiocommunications Licence Conditions (Amateur Licence) 2015 Compilation 2 of 2019. The Licence Conditions Determination No.1 of 1997 is no longer in force.

Page 58 – Restrictions on a Foundation Station:

Point 1. Foundation Licensees may authorise another person to operate their station. If the person is unlicensed the Foundation licensee must be in attendance at all times.

Point 3. Foundation licensees may operate an amateur station over the internet in automatic mode or computer-controlled mode, and may operate a station that is directly connected to a public telecommunications network.

Page 59 – Type of Equipment:

Foundation licensees may transmit using equipment constructed by themselves or others.

Page 59 – Permitted Frequencies and Modes:

Previously, by only permitting transmission of analogue voice and Morse code, Foundation licensees were effectively restricted to narrow bandwidth modes of less than 8kHz.

Foundation licensees can now transmit any mode (such as digital data, digital voice and image modes i.e. television) with maximum occupied bandwidths specified in the table below. The effective restrictions on emission modes have now been removed. Naturally, the entire transmission must be wholly within the amateur frequency band.

The frequency band 7.100 – 7.300 MHz is a primary short-wave broadcast band, and is used by amateurs on a secondary basis. Transmissions above 8kHz bandwidth are not permitted in this band. All modes less than 8kHz bandwidth are permitted.

Digital Modes:

Foundation licensees are now permitted to transmit data or digitised speech and can use digital repeater networks.

changes cont ...

Power of Wideband Transmissions:

In a wideband transmission the transmitter power is spread over a wide range of frequencies. Power is then described as a spectral power density, and it is kept low to avoid interference to other stations using that frequency range. In fact, other stations are likely to be unaware of a wideband transmission sharing the same frequency range.

The maximum permitted spectral power density for Foundation Licensees using wide bandwidth transmissions is 1 Watt per 100 KHz. That means 1 Watt of power can be evenly spread out over 100kHz, or two watts could be spread out over 200kHz, or 0.5 Watts over 50kHz etc.

The maximum transmitted bandwidth, over which power must then be measured as a spectral density, is shown in the table below.

	Frequency band	Permitted emission modes
1	3.500 MHz–3.700 MHz 7.000 MHz–7.100 MHz 21.000 MHz–21.450 MHz	Any emission mode. Where the necessary bandwidth exceeds 8 kHz, the maximum power spectral density from the transmitter must not exceed 1 watt per 100 kHz.
2	28.000 MHz–29.700 MHz	Any emission mode. Where the necessary bandwidth exceeds 16 kHz, the maximum power spectral density from the transmitter must not exceed 1 watt per 100 kHz.
3	7.100 MHz–7.300 MHz	Any emission mode with a necessary bandwidth no greater than 8 kHz.
4	144.000 MHz–148.000 MHz 430.000 MHz–450.000 MHz	Any emission mode.

changes cont ...

Changes to the Foundation Syllabus & Examinations

Amateur Radio syllabuses are produced by the ACMA in association with the WIA and others. At the time of writing the ACMA had not released changes to the Foundation Licence Syllabus, but some possibilities are listed below together with the outdated clauses in the current syllabus. This information may change and should be taken as a guide only

1. Nature of Amateur Radio - No change:

2. Licence Conditions – Changes:

2.1 The Licence Conditions Determination No.1 of 1997 is no longer in force. A Foundation Licensee is now subject to the conditions in; the Radiocommunications Licence Conditions (Amateur Licence) 2015 Compilation 2 of 2019.

2.12 Foundation licensees may transmit using equipment constructed by themselves or others.

2.16 Foundation Licensees may authorise another person to operate their station. If the person is unlicensed the Foundation licensee must be in attendance at all times.

2.17 This clause no longer applies. A Foundation licensee may now operate a station in computer controlled mode.

2.18 This clause no longer applies. A Foundation licensee may operate an amateur station over the internet in automatic mode or computer-controlled mode, and may operate a station that is directly connected to a public telecommunications network.

3. Technical Basics – Changes:

This section will probably be expanded to reflect the minimum level of knowledge required for digital techniques. Some possibilities are:

- Recall that analogue signals are constantly changing in amplitude, frequency or both.
- Recall that digital signals are a stream of finite values at a specific sampling rate.
- Recall that a high-speed digital signal uses greater bandwidth.
- Recall that a low-speed digital signal uses less bandwidth.
- Recall that digital signals can be processed by a computing device with suitable software.
- Recall that an Analogue to Digital Convertor (ADC) is a device used to convert an analogue signal to a digital signal.

changes cont ...

4. Transmitters and Receivers – Changes:

This section will probably be expanded to reflect the minimum level of knowledge required for digital techniques. Some possibilities are:

- Recall that an SDR receiver takes in all analogue electrical signals from the antenna and converts them to digital format. The signals are tuned (filtered) using software in a digital signal processor (special type of computer).
- Recall that there are a number of different digital voice (DV) and digital data (DD) modes and that different systems may not be compatible.

5. Transmission Lines and Antennas – No change

6. Propagation – No change

7. Interference – No change

8. Operating Practices and Procedures – No change

9. Safety – No change

What About Frequencies and Power ?

Changes have not been made to the Foundation Licence Conditions with respect to permitted frequency bands and transmitted power. The ACMA have advised the WIA that these outstanding items will be reviewed within the ACMA's current 5-year work plan.