

South Bristol Amateur Radio Club

Lesson 1 – Amateur Radio & Licence Conditions 01

Syllabus sections 1a.1, 2a.1, 2b.1, 2c.1 – 2c.9

Nature of Amateur Radio

(Syllabus section 1a.1)

With amateur radio you can communicate all over the world or just speak to your friends across town. You may operate directly, via local repeaters, via internet linking, or satellites. You may use speech (telephony), Morse code or a variety of digital modes.

To communicate on amateur radio you must have a licence. It is the law! The licence is issued for the purposes of:

“Self-training and experimentation in radio communications”

and is:

“Non-commercial in nature”

Amateur Radio has proved useful in areas of:

- Technical innovation
- Emergency communications
- International friendship
- Recreational use

Amateur Radio Licence Structure

(Syllabus sections 2a.1 & 2b.1)

Following the amendments in July 2003, the UK amateur radio licence structure now comprises of three licence classes:

- Foundation Licence
- Intermediate Licence
- Full Licence

The entry level is the Foundation Licence. The Intermediate and Full Licences allow greater facilities and the ability to build and modify transmitting equipment.

The Full Licence achieves an agreed international standard, and therefore holders of a UK Full Licence are allowed to operate in many foreign countries as well. However the status of both the Foundation and the Intermediate licences haven't yet achieved any degree of international harmony. Consequently you cannot operate radio equipment outside of the United Kingdom with a Foundation Licence.

Every licensed radio amateur in the United Kingdom is issued with a unique call sign. The call sign format is determined by the licence class and the region the licensee is operating from. The current call sign allocation is:

Foundation: M ζ 3ABC or M ζ 6ABC
Intermediate: 2 ζ 0ABC or 2 ζ 1ABC
Full: M ζ 0ABC or M ζ 1ABC or M ζ 5ABC

The M and the 2 (and also G) are the internationally recognised prefixes for the UK. The ABC represents the three unique letters allocated to the individual. This means that for each grouping there are a possible 17,576 (26 x 26 x 26) unique callsigns although in practice it is a little less than this as some combinations will spell rude or otherwise controversial words that are not permitted as callsigns. It is possible to request a specific combination of letters subject to these not already being allocated. Names, such as Tom or Ian, tend to get taken quickly.

The ζ is replaced by the appropriate Regional Secondary Identifier:

- D Isle of Man
- E England (Intermediate call signs only)
- I Northern Ireland
- J Jersey
- M Scotland
- U Guernsey
- W Wales

This is represented in table form below:

Class of Licence	Prefix	Regional Secondary Identifier	Number	Suffix
Foundation	M	D, I, J, M, U, W	3, 6	Three Letters
Intermediate	2	D, E, I, J, M, U, W	0, 1	Three Letters
Full	M	D, I, J, M, U, W	0, 1, 5	Three Letters

Note that the E regional secondary identifier is not used for Foundation or Full licence callsigns.

For example: MW3XYZ is a Foundation Licence and its holder is operating in Wales.

- M6BCD is Foundation Licence in England.
- 2M0CDE is an Intermediate Licence in Scotland.
- 2E1DEF is an Intermediate Licence in England.
- MD1EFG is an Full Licence in the I.O.M.
- M0FGH is an Full Licence in England.

Although not part of the examination note that older UK call signs use a G prefix, and maintain the same Regional Secondary Identifiers as the Full Licence described above. Special event stations, such as our own Lundy Dxpedition and repeaters in the UK are allocated GB callsigns.

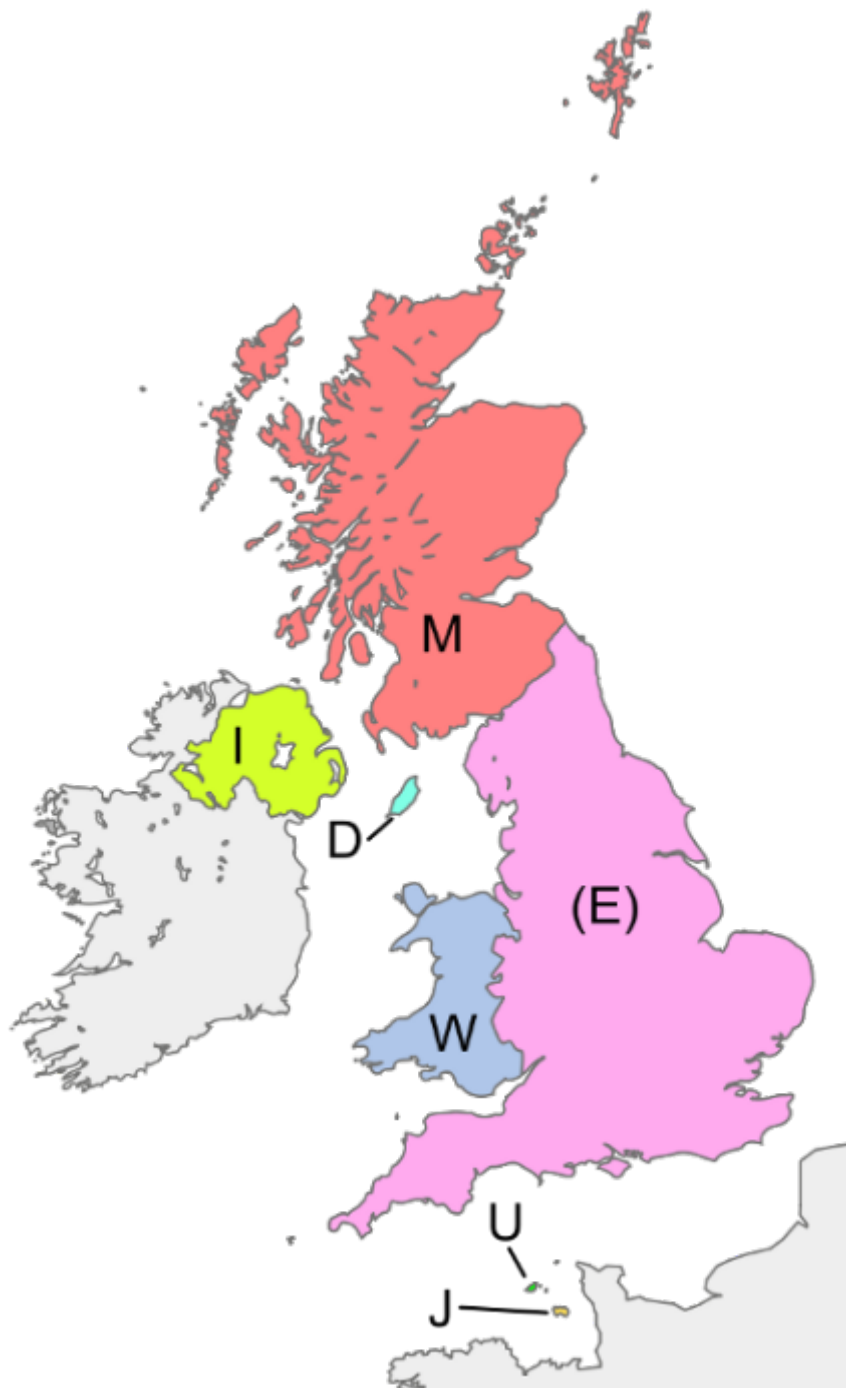


Figure 1 - Regional Secondary Locators

If you are interested there are a number of web articles about the history of callsigns, you can start your search at our own website:

<http://www.sbarc.co.uk/about/amateur-radio-callsigns/>

Amateur Radio Licence Conditions

(Syllabus section 2c.1 to 2c.9)

All the licensing conditions are in Section 2 of the new Licence for Life documentation entitled "Terms, Conditions and Limitations", unfortunately you won't have your own copy of these until you pass and are awarded your licence.

Don't panic though, we have distilled the salient points, and listed below are some of the more important conditions that you should be aware of and could be tested on:

- Sections 1(1)
- Sections 2(1) & 2(2)
- Section 3(1)
- Sections 5(1), 5(2) & 8(1)
- Section 6(2)
- Sections 11(2), 11(3) & 11(4)
- Section 12(1)
- Section 13(1)

To put it simply:

- The purpose of your licence is for self-training in communication by radio.
- The radio equipment should not be used for commercial purposes.
- When away from the main station address, use the appropriate regional secondary locator if applicable.
- Only the licensee may operate the station, or supervise another licensed amateur subject to the terms and limitations of the licence holder.
- Local Ofcom officials have the right of inspection and to close down or restrict operation of the station.
- Notify the issuing authority, Ofcom of any change of address.
- You send messages only to other licensed amateur radio stations.
- Do not use secret codes.
- Do not broadcast, other than initial (CQ) calls or when part of a group (net).
- Maintain a log when directed by a person authorised by Ofcom.
- Give call sign at least every 15 minutes or when changing frequency.

You need to understand the licence schedule in the 'Terms, Conditions and Limitations' document. As a Foundation licensee you should refer to Table A. It is not necessary to memorize it. A copy will be provided for the exam.

The schedule basically provides 4 columns of information, the first is the frequency, bands permitted for the Foundation Licence, the second and third give the status for the Amateur Service and the Amateur Satellite Service respectively. The final column is the maximum allowable power.

Table A - Foundation Licence Parameters

Frequency Bands (in MHz)	Status of Allocations in UK to the Amateur Service	Status of Allocations in UK to the Amateur Satellite Service	Maximum Peak Envelope Power level in Watts (and dB relative to 1 Watt)
0.1357 - 0.1378	Secondary. Available on the basis of non-interference to other services inside or outside the UK	Not allocated	1W (0dBW) e.r.p.
1.810 - 1.830	Primary. Available on the basis of non-interference to other services outside the UK	Not allocated	10W (10dBW)
1.830 - 1.850	Primary	Not allocated	10W (10dBW)
1.850 - 2.000	Secondary. Available on the basis of non-interference to other services inside or outside the UK	Not allocated	10W (10dBW)
3.500 - 3.800	Primary. Shared with other services	Not allocated	10W (10dBW)
7.000 - 7.100	Primary	Primary	10W (10dBW)
7.100 - 7.200	Secondary. Available on the basis of non-interference to other services inside or outside the UK	Not allocated	10W (10dBW)
10.100 - 10.150	Secondary	Not allocated	10W (10dBW)
14.000 - 14.250	Primary	Primary	10W (10dBW)
14.250 - 14.350	Primary	Not allocated	10W (10dBW)
18.068 - 18.168	Primary	Primary	10W (10dBW)
21.000 - 21.450	Primary	Primary	10W (10dBW)
24.890 - 24.990	Primary	Primary	10W (10dBW)
28.000 - 29.700	Primary	Primary	10W (10dBW)
50.00 - 51.00	Primary. Available on the basis of non-interference to other services outside the UK	Not allocated	10W (10dBW)
70.00 - 70.50	Secondary. Available on the basis of non-interference to other services inside or outside the UK	Not allocated	10W (10dBW)
144.0 - 146.0	Primary	Primary	10W (10dBW)
430.0 - 431.0	Secondary	Not allocated	10W (10dBW)
431.0 - 432.0	Secondary. Not available for use within 100km radius of Charing Cross, London (51°30'30"N, 00°07'24"W)	Not allocated	10W (10dBW)e.r.p.
432.0 - 435.0	Secondary	Not allocated	10W (10dBW)
435.0 - 438.0	Secondary	Secondary	10W (10dBW)
438.0 - 440.0	Secondary	Not allocated	10W (10dBW)
10000 - 10125	Secondary	Not allocated	1W (0dBW)
10225 - 10450	Secondary	Not allocated	1W (0dBW)
10450 - 10475	Secondary	Secondary	1W (0dBW)
10475 - 10500	Not Allocated	Secondary	1W (0dBW)

Except where the maximum allowable power is given in terms of Effective Radiated Power (ERP) this restriction is the power fed to the antenna. This means that if there is considerable loss between the transmitter and the antenna it is permissible to increase the power produced by the rig to compensate.

It also means, again except where the maximum power is given in terms of ERP, that antennas that exhibit gain (such as a Yagi) can be fed the full permitted power under the terms of the Foundation licence and the effects of the antennas gain are an additional bonus.

Measuring the power at the antenna feed point is quite complicated, measuring the power at the output of the transmitter is easier but requires a suitable RF power meter.

Next Lesson

Technical Basics Part 1 – Electricity, Frequency and Wavelength

Lesson 1 – Summary

At the end of this lesson you should be able to:

- Recall that the amateur radio licence is for self-training in radio communications and is of a non commercial nature;
- Recall the types of UK Amateur Radio Licence;
- Recall that more advanced classes of amateur licence exist and that they allow greater facilities and the ability to design/modify transmitting equipment;
- Recall that many other countries do not currently accept the UK Foundation Licence;
- Recall the format of the current Foundation, Intermediate and Full callsigns;
- Recall that secondary identifiers are used, but be able to state only those for the Foundation licence.
- Recall the requirements for station identification
- Recall the requirement to send messages only to other amateurs
- Recall that secret codes are not permitted
- Recall that broadcasting is not permitted
- Recall that only the licensee, or another UK licensed amateur operating under his or her supervision, may use the Radio Equipment
- Recall that in certain circumstances the licensee may allow the equipment to be used by a member of a User Service. Note that the nature of the circumstances and the identity of the user services are not examinable
- Recall the requirement to notify Ofcom of a change of address
- Recall that a person authorised by Ofcom has the right to inspect, require the modification, close down or restrict the operation of the Radio Equipment
- Understand and apply the Schedule to the licence
- Identify allowable frequencies and power limits