

R.S.G.B News Bulletin

FOR MEMBERS ONLY

R.S.G.B Headquarters: Alma House, Cranborne Road, Potters Bar, Hertfordshire EN6 3JW.

SUPPLEMENTARY NEWS BULLETIN - SEPTEMBER 1984

The department of Trade and Industry are to publish the long awaited new schedule to the amateur licence on 10 September 1984. This is also the date that the new Schedule comes into effect. This special issue of the R.S.G.B News Bulletin contains the information which will be published in the London, Edinburgh and Belfast Gazettes on 10 September 1984.

One important note about the new Schedule which is common to both A and B licencees - Class B licencees are not permitted to use frequencies below 144 MHz, nor may they use the type of Transmission known as "morse". Further information on this new Schedule will be published in the October issue of RAD COM.

THE SCHEDULE

Frequency bands in MHz	Status of allocations in the UK to: The Amateur Service	The Amateur Satellite Service	Maximum power Carrier PEP	Permitted types of transmission
1.810-1.850	Available to amateurs on a basis of non interference to other services.	No allocation.	9dBW 15dBW	Morse Telephony RTTY Data Facsimile SSTV
1.850-2.000				Morse Telephony Data Facsimile SSTV
3.500-3.800	Primary. Shared with other Primary services.	No allocation.	20dBW 26dBW	Morse Telephony RTTY Data Facsimile SSTV
7.000-7.100	Primary.	Primary.		
10.100-10.150	Secondary.	No allocation.		
14.000-14.250	Primary.	Primary.		
14.250-14.350		No allocation.		
18.068-18.168	Available to amateurs on a basis of non interference to other services. Antennas limited to horizontal polarisation, maximum gain 0dB with respect to a half-wave dipole.	No allocation.	10dBW —	Morse, A1A only
21.000-21.450	Primary.	Primary.	20dBW 26dBW	Morse Telephony RTTY Data Facsimile SSTV
24.890-24.990	Available to amateurs on a basis of non interference to other services. Antennas limited to horizontal polarisation, maximum gain 0dB with respect to a half-wave dipole.	No allocation.	10dBW —	Morse, A1A only
28.000-29.700	Primary.	Primary.	20dBW 26dBW	Morse Telephony RTTY Data Facsimile SSTV
70.025-70.500	Secondary basis until further notice. Subject to not causing interference to other services. Use of any frequency shall cease immediately on demand of a government official.	No allocation.	16dBW 22dBW	
144.0-146.0 *	Primary.	Primary.	20dBW 26dBW	Morse Telephony RTTY Data Facsimile SSTV Television
430.0-431.0	Secondary. This band is not available for use within the area bounded by: 53 N 02 E, 55 N 02 E, 53 N 03 W, and 55 N 03 W.	No allocation.	10dBW 16dBW	
431.0-432.0	Secondary. This band is not available for use: a) Within the area bounded by: 53 N 02 E, 55 N 02 E, 53 N 03 W, and 55 N 03 W. b) Within a 100km radius of Charing Cross, 51 30'30"N 00 07'24"W.		e.r.p. e.r.p.	
432.0-435.0	Secondary.	No allocation.	20dBW 26dBW	
435.0-438.0		Secondary.		
438.0-440.0		No allocation.		
1240-1260	Secondary.	No allocation.		
1260-1270		Secondary. Earth to Space only.		
1270-1325		No allocation.		
2310-2400				
2400-2450	Secondary. Users must accept interference from the ISM allocations in this band.	Secondary. Users must accept interference from the ISM allocations in this band.		

THIRD SYMBOL

Type of information to be transmitted

- | | |
|---|---|
| 1. No information transmitted: | N |
| 2. Telegraphy — for aural reception: | A |
| 3. Telegraphy — for automatic reception: | B |
| 4. Facsimile: | C |
| 5. Data transmission, telemetry, telecommand: | D |
| 6. Telephony (including sound broadcasting): | E |
| 7. Television (video): | F |
| 8. Combination of the above: | W |
| 9. Cases not otherwise covered: | X |

Notes:

- In this context the word "information" does not include information of a constant, unvarying nature such as provided by standard frequency emissions, continuous wave and pulse radars etc.
- For the purposes of this licence, modulation used only for short periods and for incidental purposes, such as identification or calling, may be ignored when calculating the emission designator.
- For the purposes of this licence, Double Sideband emissions with reduced or suppressed carrier are included in the designation A**.

J. Interpretation:

Gain of an Antenna: The ratio, usually expressed in decibels, of the power required at the input of a loss free reference antenna to the power supplied to the input of the given antenna to produce, in a given direction, the same field strength or the same power flux-density at the same distance. When not specified otherwise, the gain refers to the direction of maximum radiation. The gain may be considered for a specified polarisation. The reference antenna is usually either an isotropic antenna or a half-wave dipole. The gains may be referred to as decibels relative to an isotropic antenna (dBi) or as decibels relative to a half-wave dipole (dBd).

Equivalent Isotropically Radiated Power (e.i.r.p.): The product of the power supplied to the antenna and the antenna gain in a given direction relative to an isotropic antenna.

Effective Radiated Power (e.r.p.) (in a given direction): The product of the power supplied to the antenna and its gain relative to a half-wave dipole in a given direction.

By convention, e.r.p. is used below 1GHz, and e.i.r.p. above 1GHz; e.i.r.p. is 2.1dB greater than e.r.p.

Mean Power (of a radio transmitter): The average power supplied to the antenna by a transmitter during an interval of time sufficiently long compared with the lowest frequency encountered in the modulation taken under normal operating conditions.

Carrier Power (of a radio transmitter): The average power supplied to the antenna by a transmitter during one radio frequency cycle taken under the condition of no modulation.

Peak Envelope Power (p.e.p.) (of a radio transmitter): The average power supplied to the antenna by a transmitter during one radio frequency cycle at the crest of the modulation envelope taken under normal operating conditions.

Telegraphy: A form of telecommunication which is concerned in any process providing transmission and reproduction at a distance of documentary matter, such as written or printed matter or fixed images, or the reproduction at a distance of any kind of information in such a form.

For the purposes of the Radio Regulations, unless otherwise specified therein, telegraphy shall mean a form of telecommunication for the transmission of written matter by the use of a signal code.

Telephony: A form of telecommunication primarily intended for the exchange of information in the form of speech.

Television: A form of telecommunication for the transmission of transient images of fixed or moving objects.

Facsimile: A form of telegraphy for the transmission of fixed images, with or without half-tones, with a view to their reproduction in a permanent form.

These licence conditions represent the situation in the UK. Frequency allocations may differ from the international allocations given in Article 8 of the Radio Regulations.

Frequency bands in MHz	Status of allocations in the UK to: The Amateur Service	The Amateur Satellite Service	Maximum power Carrier PEP	Permitted types of transmission
3400-3475	Secondary.	No allocation.	20dBW 26dBW	Morse Telephony RTTY Data Facsimile SSTV Television
5650-5670		Secondary. Earth to Space only.		
5670-5680		No allocation.		
5755-5765	Secondary. Users must accept interference from the ISM allocations in this band.	No allocation.		
5820-5830		Secondary. Users must accept interference from the ISM allocations in this band. Space to Earth only.		
5830-5850				
10000-10450	Secondary.	No allocation.		
10450-10500		Secondary.		
24000-24050	Primary. Users must accept interference from the ISM allocations in this band.	Primary. Users must accept interference from the ISM allocations in this band.		
24050-24250	Secondary. This band may only be used with the written consent of the Secretary of State. Users must accept interference from the ISM allocations in this band.	No allocation.		
47000-47200	Primary.	Primary.		
75500-76000				
142000-144000				
248000-250000				

(*See Footnote A)

For the sake of convenience, this schedule appears in an identical format in both the Class A and Class B licences.

FOOTNOTES

A. Except in accordance with clause 1 (2) (c) (ii) holders of the Amateur Radio Licence (B) are not permitted to use frequencies below 144 MHz, nor may they use the type of transmission known as morse (whether sent manually or automatically).

B. **Definition of types of transmission and classes of emission permitted:**
Under the ITU classification (see section I) emissions are designated by groups of three characters. The types of transmissions defined here are grouped according to the third character, that is the type of information being used.

1. **Morse:** Morse telegraphy intended for aural reception using any classes of emission ending in A, i.e. **A.

Telephony: Telephony using any classes of emission ending in E, i.e. **E.

Television: Television using any classes of emission ending in F, i.e. **F.

This may only be used where indicated on bands above 430 MHz and the station's callsign must be sent periodically using either morse telegraphy or telephony on the centre frequency of the video channel, as required by this licence.

2. When using any of the following types of transmission the station's callsign must be sent periodically on the same frequency using either morse telegraphy or telephony.

Radio Teleprinter (RTTY): Automatic telegraphy using any classes of emission ending in B, i.e. **B.

This includes teleprinters using any CCITT recognised codes, and morse telegraphy intended for automatic reception.

Data: Data using any classes of emission ending in D, i.e. **D. The Radio Regulations require that transmissions between amateur stations in different countries shall be in plain language. Transmissions between UK amateur stations and those in different countries shall be restricted to using CCITT recognised codes (in plain language); this requirement also applies to transmissions between UK amateur stations in all bands allocated to the Amateur Service on a secondary basis.

Facsimile: Facsimile using any classes of emission ending in C, i.e. **C.

Slow Scan Television (SSTV): Television operating in a reduced bandwidth using any classes of emission ending in F, i.e. **F.

Simultaneous use of combinations of any of the preceding types of transmission, e.g. Telephony and Data, are described as classes of emission ending in W, i.e. **W.

NB: The symbol "***" when used in emission designators represents any appropriate symbol as defined in section I.

C. Maximum power levels refer to the rf power supplied to the antenna. These levels will be specified by carrier power. For emissions having a suppressed, variable or reduced carrier, the power shall be determined by the peak envelope power (p.e.p.) under linear conditions.

For pulse emissions (P**) the mean power shall not exceed the carrier power, and the peak power shall not exceed the p.e.p. specified on that band.

D. For frequency bands above 1 GHz, since high intensities of rf radiation may be harmful, the following safety precaution must be taken: in locations to which people have access, the power flux density on transmit must not exceed the limits recommended by the competent authorities. (Currently, this limit is 10mW per square centimetre.)

E. The bands allocated to the amateur service at 3.5, 7.0, 10.1, 14.0, 18.068, 21.0, 24.890 and 144 MHz may, in the event of a natural disaster, be used by non-amateur stations to meet the needs of international disaster communications in the disaster area in accordance with the Radio Regulations.

F. The bandwidths of emissions shall be such as to ensure the most efficient utilisation of the spectrum; in general this requires that bandwidths be kept at the lowest values which technology and the nature of the service permit.

Where bandwidth-expansion techniques are used, the minimum spectral power density consistent with efficient spectrum utilisation shall be employed.

However, whatever class of emission is in use, the bandwidth occupied by the intended emission shall be such that not more than 1% of the mean power of the transmission shall fall outside of the authorised bands. This 1% does not include the power contained in harmonic and spurious emissions.

G. The class of emissions, type P**, may only be used on bands above 1 GHz.

H. Primary, permitted and secondary services: For the purpose of this licence, bands are allocated to the Amateur Service and the Amateur Satellite Service on a primary basis on the understanding that they cannot claim protection from harmful interference from any other authorised services. This applies equally to bands allocated on a secondary basis where stations of the Amateur Service and the Amateur Satellite Service are also required not to cause harmful interference to stations of a primary or permitted service to which frequencies are already assigned or to which frequencies may be assigned at a later date.

I. Designation of emissions:

The symbols used to designate the classes of emission have the meaning assigned to them in the Radio Regulations, International Telecommunication Union (Geneva 1982).

The classification is specified by three symbols. The first denotes the type of modulation of the main carrier, the second the nature of the modulating signal(s), and the third the nature of the information to be transmitted.

FIRST SYMBOL

Type of modulation of main carrier

- 1. Emission of unmodulated carrier:
- 2. Emission in which the main carrier is amplitude modulated, including cases where sub-carriers are angle modulated.

Double sideband:

Single sideband, full carrier:

Single sideband, reduced or variable carrier:

Single sideband, suppressed carrier:

Independent sideband:

Vestigial sideband:

A
H
R
J
B
C

- 3. Emission in which the main carrier is angle modulated.

Frequency modulation:

Phase modulation:

F
G

- 4. Emission in which the main carrier is amplitude or angle modulated either simultaneously or in a pre-arranged sequence:

D

- 5. Emission of pulses.

Unmodulated sequence of pulses:

P

A sequence of pulses

- (a) modulated in amplitude:
- (b) modulated in width/duration:
- (c) modulated in position/phase:
- (d) in which the carrier is angle modulated during the period of the pulse:
- (e) which is a combination of the foregoing or is produced by other means:

K
L
M
Q
V

- 6. Cases not covered above, in which an emission consists of the main carrier modulated, either simultaneously or in a pre-established sequence, in a combination of two or more of the following types of transmission — amplitude, angle, pulse:

W
X

- 7. Cases not otherwise covered:

Note: Emissions where the main carrier is directly modulated by a signal which has been coded into quantized form (e.g. pulse code modulation) should be designated under 2 or 3.

SECOND SYMBOL

Nature of signal(s) modulating main carrier

- 1. No modulating signal:
- 2. A single channel containing quantized or digital information without the use of a modulating subcarrier (excluding time-division multiplex):
- 3. A single channel containing quantized or digital information with the use of a modulating subcarrier (excluding time-division multiplex):
- 4. A single channel containing analogue information:
- 5. Two or more channels containing quantized or digital information:
- 6. Two or more channels containing analogue information:
- 7. Composite system with one or more channels containing quantized or digital information, together with one or more channels containing analogue information:
- 8. Cases not otherwise covered:

0
1
2
3
7
8
9
X