To convert from frequency to wavelength, select a point on the 'X' (horizontal) axis of the graph, say 100MHz, and look vertically upwards until your reach the diagonal line. Now look horizontally to the 'Y' (vertical) axis to read off the wavelength, in this case 3 metres.

To convert from wavelength to frequency, start with the wavelength on the vertical axis, 40 metres for example. Look along horizontally to the diagonal line and then vertically down to the 'X' axis. Read off 7·5MHz. A radio wave of wavelength 40 metres has a frequency of 7·5MHz.

To be sure that you read the graph correctly, it may be helpful to mark the number you are given (frequency or wavelength) on the axis and then draw the two lines.

Other radio users

AMATEURS SHARE the use of radio and the radio spectrum with many other users. Sometimes the other users are on adjacent frequencies and, where it is possible to do so, amateurs share frequencies with other users.

Table 3 shows other radio users in part of the VHF band.

Amateurs occupy 144·0 to 146·0MHz, often called the 2 metre band because the wavelength is about 2 metres.

The band from 87·5 to 108·0MHz is shown as Broadcasting. It is the VHF FM broadcast band, containing national and local radio stations.

Adjacent to the amateur allocation is the Land Mobile band from 138·0 to 144·0MHz and above is the Mobile except aeronautical mobile band. The Land mobile band is for the use of land based mobile transmitters, vehicles or pedestrians, and the band 146·0 to 149·9MHz may be used by land or sea based transmitters but not from aircraft.

A typical exam question will ask who has the use of a particular band or who a user is next to in the table. It is worth reading the table a few times but there is no need to memorise it. This table will be provided, as will the Frequency to Wavelength chart, even if there is no question on that topic!

Frequency			Use
87·5	-	108·0MHz	Broadcasting
108·0	-	117·975MHz	Aeronautical Radionavigation
117·975	-	137·0MHz	Aeronautical Mobile
137·0	-	138·0MHz	Space Operations & Space Research
138·0	-	144·0MHz	Land Mobile
144·0	-	*146·0MHz*	*Amateur & Amateur Satellite*
146·0	-	149·9MHz	Mobile (except aeronautical mobile)
149·9	-	150·05MHz	Radionavigation-Satellite
150·05	-	152·0MHz	Radio Astronomy
152·0	-	156·0MHz	Land Mobile
156·0	-	158·525MHz	Maritime Mobile
158·525	-	160·6MHz	Land Mobile
160·6	-	160·975MHz	Maritime Mobile

Table 3: The various uses of part of the VHF band of frequencies.

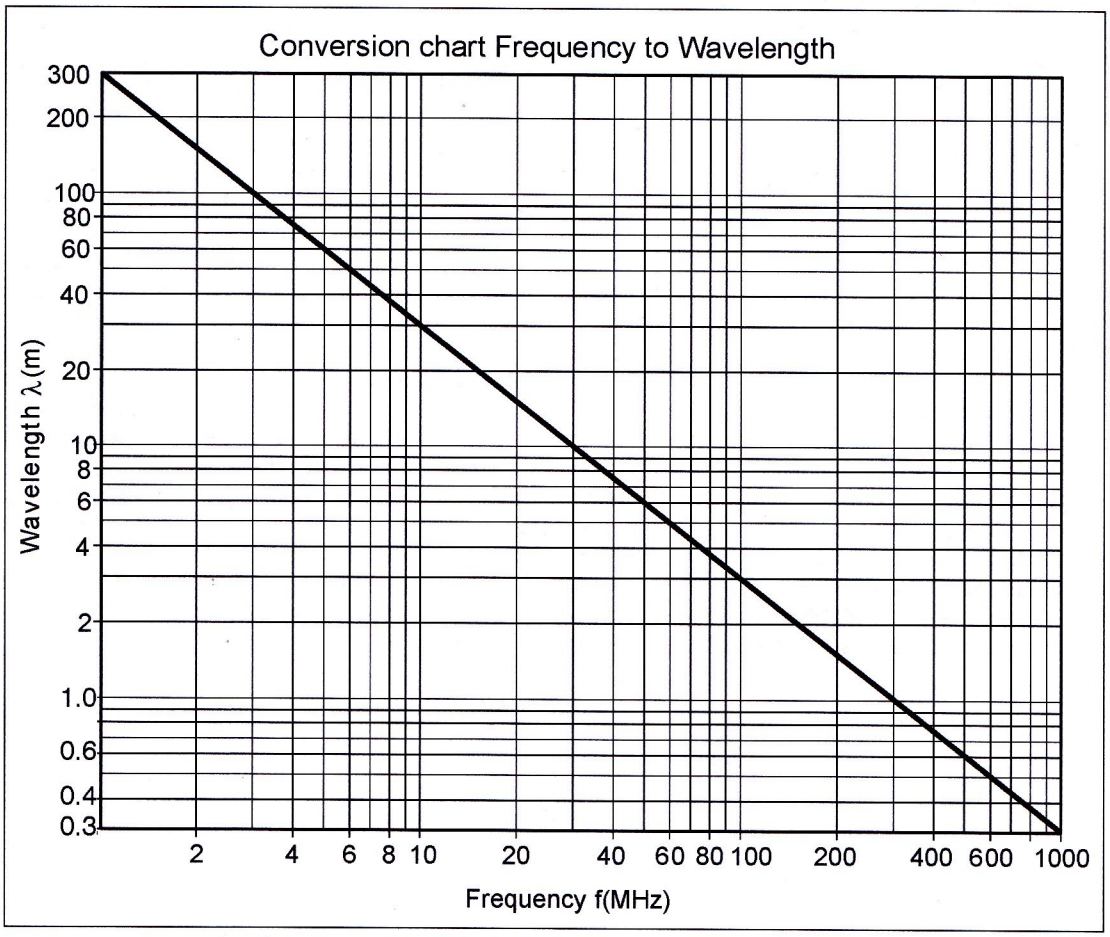

Fig 8: Graph to convert frequency to wavelength (or wavelength to frequency).