Driving Lesson

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After being bitten by the amateur radio bug, the newcomer is often at a loss to know how to start. At first it may seem that all that can be done is to bone up on the RAE and the Morse test needed to get a Home Office licence.

Although the idea of just listening to radio amateurs may seem a bit boring compared to actually talking to them, it really can be a fascinating hobby in itself. I spent a couple of years (not all of it!) glued to a short wave receiver before getting a licence, with never a dull moment, because there is *always* something new to discover. Like the transmitting amateur, you can explore the mysteries of the ionosphere as it continually changes in the way it bends radio signals around the Earth's surface — sometimes slowly and subtly, sometimes so suddenly that you think a fuse has gone. This *propagation* of radio signals is one area of fascination. Another such is aerials — there is an infinite variety of aerials for different jobs, and endless scope for building, modifying and testing out your ideas and learning by experiment.

There are countless more reasons why SWLs the world over are content to just listen and not talk. They're willing to leave a 'ticket' until they've solved the challenges and answered the questions that SWLing inevitably brings.

If you've got this far and not decided that I'm bonkers then stick with us. The purpose of this article is to show the complete novice around the controls of a typical, reasonably modern, receiver or transceiver. Yes, while we're at it we might as well deal with the transmitting bits — they're easy. Let's find our way round the receiver first.

The first thing is to set the receiver to the right frequency, ie. somewhere in our chosen amateur band. (The bands allocated for amateur use are listed in **Table 1**.) There is always some kind of bandswitch which is marked in either frequency, measured in Megahertz (MHz), or wavelength (measured in metres). The table shows how the two quantities are related. note that as the frequency gets higher, the wavelength gets shorter.

Some bandswitches have a position marked WWV or JJY. This is usually a 10MHz band for listening to 'standard frequency' transmissions to check the receiver calibration.

Having chosen which band to listen on, the next step is to master the main tuning dial. There is a huge variety of these, but the easiest to read are the digital ones. These are included on virtually every modern rig. Older receivers often rely on a combination of two 'analogue', mechanical indications — a 'course' indication, usually on a dial behind a plastic window, and a 'fine' indication, often on a 'skirt' on the tuning knob itself. The skirt can usually be moved independently of the knob, enabling exact calibration. These dials reached near perfection in the Seventies, just in time to be ditched by digitals.

Crystal calibrator

Although these 'analogue' tuning dials can be set accurately, an accurate reference is needed to set them with. A crystal calibrator is the usual answer. This is a very accurate crystal-controlled oscillator that produces an output at several frequencies across the short wave spectrum, typically 100kHz apart. The trick is to switch the calibrator on and 'tune it in for zero-beat'; ie. adjust the dial until the pitch of the tone coming from the loudspeaker is so low that you can't hear it. Then adjust the skirt to the '0' position, *without moving the main control*. The receiver is now calibrated — at least for that band. Try checking the calibration up and down the band to see if it's OK at other 100kHz points.

Frequency range (MHz)	Approximate wavelength (metres)
1.810-2.000	160
3.500-3.800	80
7.000-7.100	40
10.100-10.150	30
14.000-14.350	20
18.068-18.168	17
21.000-21.450	15
24.890-24.990	12
28.000-29.700	10

Table 1: HF amateur bands (in UK)

Another commonly found control connected with setting the frequency is a *preselector* knob. This