Forgotten antenna lore – and some common myths

I have often heard it said that there is no point trying to put out a signal on Top Band (160m) unless your garden is X feet long – X being some quite large number, often around 130 or 270 (40 or 82⅓m). Now, as many holders of G3xxx callsigns (and those licensed even longer) will know, this simply isn't the case.

Editor's note: all dimensions in this article were originally given in feet and inches and are just for guidance. They are reproduced as per the original, along with a metric approximations *in brackets.*

When those G3xxx callsigns were issued – strictly in alphabetical order! – most of us used 160m as a 'starter' band and there was usually activity of some sort throughout the day. But gardens were often just as small and all but a lucky few had to 'make do'. Most did so reasonably successfully and those who made a special effort often succeeded spectacularly. I knew one North London G3 who managed to come up with a usable system on the windowsill of a first floor flat. He operated on 160 and 2 metres and had plenty of contacts on both bands.

What was apparent at the time – and seems to have been largely forgotten now – is this: if you can put up a pole 25 feet (7⅔m) high and manage a 40 foot (12m) span of wire (**Figure 1**) then all you need to radiate a perfectly usable signal is a couple of earth rods and some buried earth wires. Two or three 30ft (9.1m) ones would usually be better than one 70ft (21⅓m) wire). If you can manage a 30 foot (9.1m) pole and a 60+ foot (18⅓m) span (**Figure 2**) then this, with a little more effort on the earth connection, will mean you should be able to compete quite well with most of the signals on the band and some quite serious DX should be within your grasp. In fact this is precisely the arrangement I used when first licensed and my 6 or so watts from a Codar AT5 made contacts all over Europe (at least where the band was available) and down to ZB2 and ZC4 stations. I once managed a RS57 report from ZC4 using just 4 watts of AM. Admittedly I never did manage a trans-Atlantic contact then, but my excuse is that, as a teenager, I wasn't any good whatsoever at early mornings.

The 66 foot wire

An end fed wire of 66 feet (20.1m) was always considered to be very useful, and with good reason. Indeed, Figure 1 is based on this length (in an inverted L configuration). On 80m it is a quarter wavelength long, so has a low impedance and should be easy to feed. On 40m it is a half wave, high impedance but non-reactive, so not too difficult. It's the same story for 20 and 10m, while on 15m it falls somewhere between so might be more tricky, but with an ATU that has a good range of inductance and capacitance this shouldn't be a problem. The same is also true for Top Band; it is just about long enough to radiate with reasonable efficiency. It is worth remembering, also, that it doesn't necessarily need to be erected in a straight line.

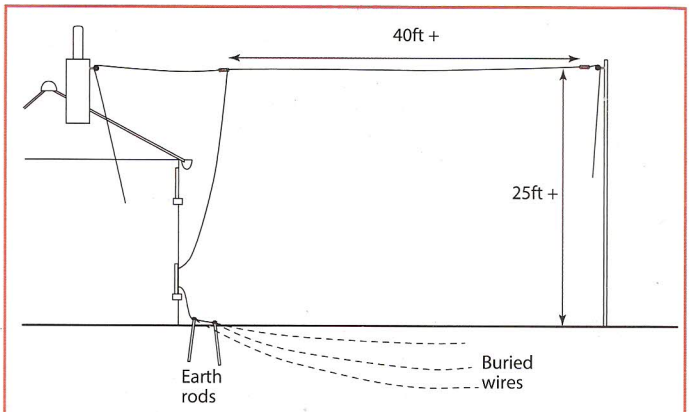

FIGURE 1: Basic long wire antenna arrangement.

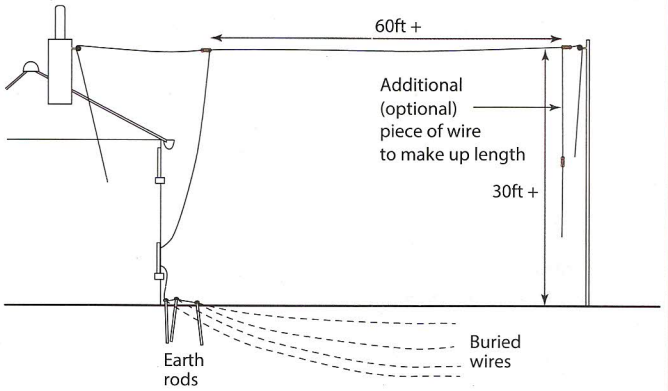

FIGURE 2: A longer and higher wire, with an optional drop-down extension, also performs well.

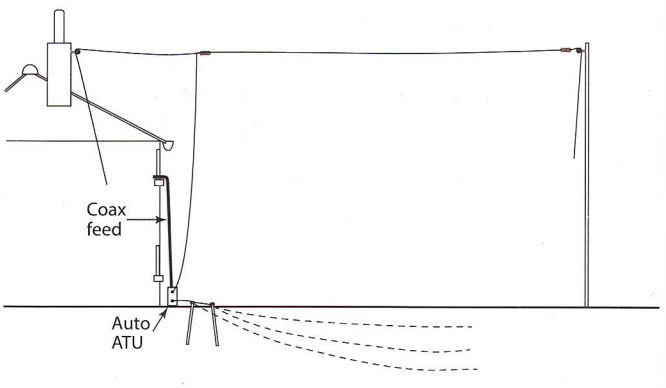

FIGURE 3: Using an (automatic) ATU at ground level against a good earth makes an upstairs shack very viable.