

## A Hard-Working Garage Sale Antenna

With the decline of interest in 27 MHz CB, "Stationmaster" CB base station half-wave verticals are starting to show up at garage sales, sometimes even to be had for the dismantling and removal from homeowners who may have inherited one with a home purchase. As found, they are a ground-independent  $\frac{1}{2}$  wavelength 11-metre vertical. It would be a relatively trivial exercise to convert one to the 10-metre ham band by chopping a bit off, but there is a better way to go:

By adding roughly 2 metres to the base end, it becomes  $\frac{3}{4}$  wavelength on 10 metres. Insulated from its mounting hardware, and fed in typical  $\frac{1}{4}$ -wave fashion, the impedance is a good match to 50-ohm coax. A 3-metre downrigger of regular house wire (see illustration) allows it to resonate on 15 metres as well, also as a  $\frac{3}{4}$  wavelength. Three-quarters of a wavelength on 15 metres equals  $\frac{1}{4}$  wavelength on 40 metres, so a good match there as well. With the revised height, it works out to about  $\frac{3}{8}$ ths of a wave on 20 metres. Normally, this would be a bit of a problem to match, but a  $\frac{1}{4}$  wave transmission line transformer made of RG-11 75-ohm coax (accounting for velocity factor, of course) transforms the mystery impedance nicely to 50 ohms.

Four bands (40/20/15/10) from a simple monopole! Not bad for an afternoon's work and about 20 bucks worth of assorted clamps and fittings and a bit of ingenuity!



73 de Trent, VK4TI

Credits go to Brent, VK4TI for the piece.