

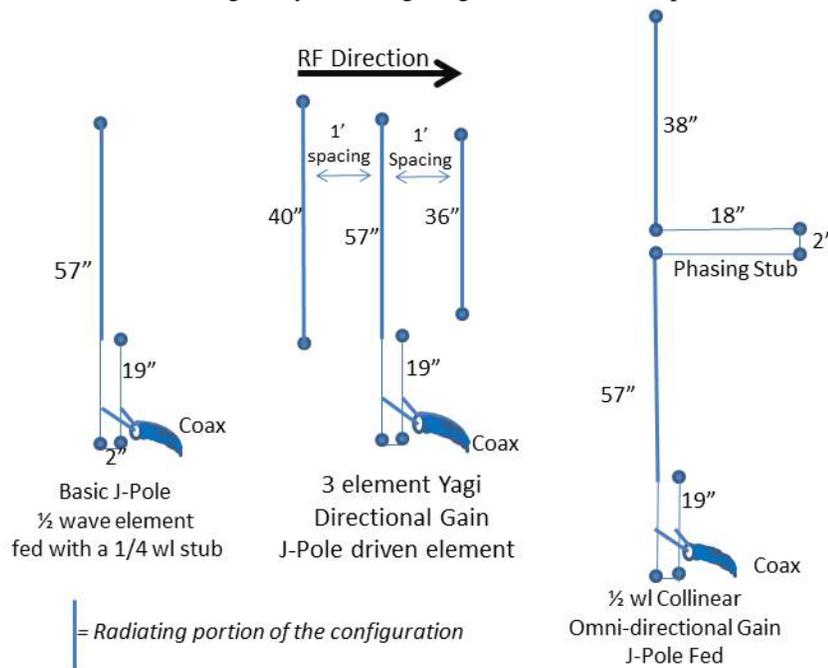
# The Radio Hotel - VHF Antennas from Thumbtacks and Wire

## By Rick Hiller -- W5RH

Listening on YVQ's 94 machine these days you can hear the wonderful sound of the ever increasing number of call prefixes of newly licensed Hams...KE's, KF's and KG's. Most new Hams start out on the VHF bands using handhelds to get into the repeater. They listen a lot to learn the proper etiquette, procedures and who the local folks are and what they like to talk about. Checking into the various local 2 meter nets is also a way for them to start to enjoy our hobby. But, sometimes that "rubber duck" antenna on top of that handheld just does not cut it. For a few dollars and a few minutes, these newbies can have easy up, full size antennas for 2 meters. Even some with gain and directionality. My suggested antennas, pictured below, are all vertically polarized for repeater use and easily put together on a sheet rock wall in your shack using thumbtacks (or push pins) and bare wire #14 or smaller. They all use the J-Pole, 1/4 wavelength stub, "end fed" feed system and are easily fed with 50 ohm RG-8X coax. By keeping the coax reasonably short, you should have no feedline loss issues, which typically occur at these higher frequencies.

**Notes:** 1) The longest antenna – the 1/2 wl Collinear fits into an 8 foot high wall space. 2) Keep all antennas away from any vertical AC distribution wires hidden within the wall. 3) You will need to adjust the location of the feed point coax connection to get the best SWR. The 1/4 wl stub section varies in Z, from close to 0 Ohms at the bottom to about 1K Ohm at the top. You have got to find the sweet spot for that 50 ohm match. 4) Lengths are noted for distances between the thumbtacks and that means that the wires need to be cut about 1" longer to have extra to wrap around the thumbtacks. The J-Pole element can be cut as one single long wire wrapped around the thumbtacks at the end. For reference: 1/4 wl = 19.1" and 1/2 wl = 38.2" – for 146.94 MHz.

The drawing below has 4 items: 1) dots for the location of the thumbtacks; 2) lines for the wires; 3) the feed point where you connect the coax; and 4) thick lines indicating the radiating portions of the elements (just as an FYI). Connecting the coax inner and outer conductors to the feed point can be accomplished by a) twisting the wire around the j-pole wire; b) sliding to get the best match using your SWR meter; and finally, c) soldering the wires. Or, you can use alligator clip leads and just leave it like that. A bit of ingenuity on configuring these antennas helps a lot and will make it your own.



Enjoy your hobby. GL ES 73 DE W5RH

**Next time.... Antennas for the Wednesday night 3910 KHz Rag Chew Net**

*The purpose of **The Radio Hotel** is to give you a practical kickstart into exploring the workings of antenna systems. Google the buzz words and find out what they mean. Read up on antenna system theory to see how it all works together. You will be glad you did.*