

## The Twinlead J-Pole

It is often necessary to squeeze every bit of performance possible out of a 2 meter Hand Held Radio. One way to do that is to replace that stock rubber duck antenna with. This simple antenna, that will work well for emergency use or as a portable antenna for hotel room operations while traveling.

### There are several features which make a Twinlead J-Pole antenna a good addition to your kit:

- When rolled up, it is an extremely compact, pocket-sized antenna.
- In use, it makes for a very effective antenna and provides about 3 db of gain.
- When used on your HT, it will dramatically out-perform your stock antenna.
- It can be built in no time flat for a few dollars of readily available materials.

### Here's what you'll need to build one for the 2 meter band:

- A 60-inch piece of flat TV twinlead. Use the inexpensive Radio Shack twinlead. Don't use the more expensive foam-filled line.
- 6 feet or more of coax cable. RG-174/U miniature cable makes for a very portable antenna but don't use more than 6 feet of it; it's very lossy. Use RG-58/U if you like, but it will be a bit bulkier.
- Ferrite bead, type 43 material (*optional - see below*)
- BNC connector (or other connector of your choice)

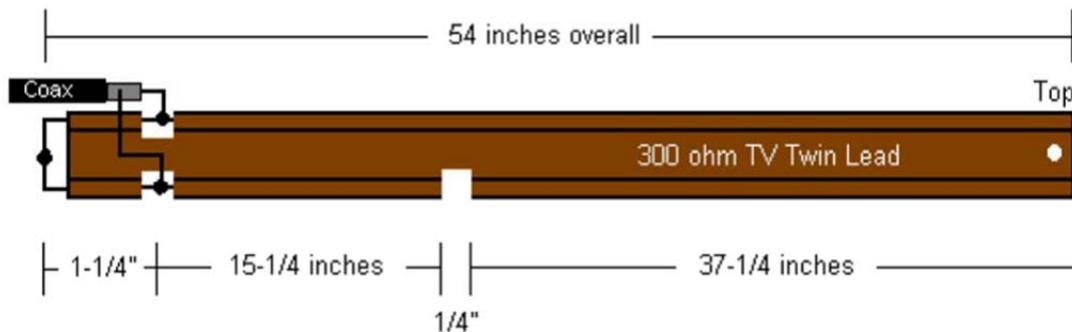


Figure 1. J-pole  
(Not to scale)

WB3GCK '98

### Here's how you build it:

1. Cut a 60 inch piece of twinlead and strip back about 1/2 inch from one end. Twist and solder the two wires together. Keep the connection as short as possible. This will be the bottom of the antenna.
2. Measure up 1-1/4 inches from the bottom and carefully remove the insulation, exposing both wires, as shown in Figure 1. Keep the notches small (1/8" or so) and be careful **not to cut the wires**. This is where we will be attaching the coax later.
3. Attach your coax as shown in Figure 1.
4. Measure up 15-1/4 inches from the point where the coax braid is attached and make a 1/4-inch notch. This time, you want to cut through the wire. Only cut one notch and make sure it is on the side where the braid is attached. This will form the 1/4 wave matching section.
5. Tape the coax to the twin lead for strain relief. Also, tape all solder connections and add some tape at the 1/4-inch notch for added strength.
6. Now, measure up from the bottom of the antenna and cut it to an overall length of 54 inches.

Punch a small hole in the top of the antenna. Use fishing line or other non-conductive line through the hole for hanging. Just unroll and hang it up, and communicate.