

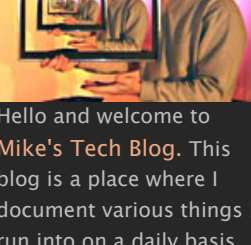
# Mike's Tech Blog

Geeze! What is he up to now?

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Hello and welcome to Mike's Tech Blog. This blog is a place where I document various things I run into on a daily basis

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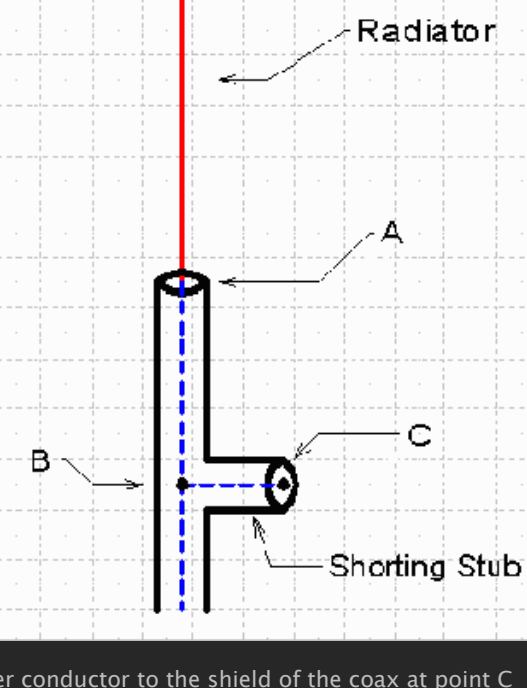
## 2 Meter Antenna for Bicycle Mobile Operation

Ham Radio - Antennas

Perhaps the biggest problem with taking your HT bicycling is coming up with a decent antenna on your bicycle. This is because the bike doesn't provide much of a ground plane. I found an article in the ARRL's [Hints and Kinks](#) written by [Charlie Lofgren](#) , W6JJZ, titled "The Bike 'n Hike Special". Below are the plans for the antenna he described in the article.

This antenna is a 1/2 wave vertical dipole made out of RG-58/U coax. The beauty of this design is that it is cheap, simple, and easy to make with readily available materials. The radiator should be 39 inches long for 2 meter operation. In the diagram below you see the basic design. What I use for the radiator, is the center conductor of the RG-58/U coax. I start out with a 12 foot piece of coax. Then there is enough left so it can be run up to the radio. I keep my radio in my handlebar bag.

First measure how long the radiator is to be, then trim off the outer sheath, and shield. Next, on the other end of the coax, I cut off a piece of coax that is going to be the shorting stub. Its proper length is dependent on the velocity factor of the coax used (see table below). In all cases, I always make the lengths to the long side. This way the antenna can be trimmed in to the desired frequency with a SWR bridge.



Short the center conductor to the shield of the coax at point C

The dimensions for the matching section are dependent on the velocity factor of the coax used.

| Dimension | Vel. Factor 0.66 | Vel. Factor 0.80 |
|-----------|------------------|------------------|
| A to B    | 11.25 in.        | 13.5 in.         |
| B to C    | 1.63 in.         | 2.0 in.          |

To connect the shorting stub to the feedline, carefully remove a small section of insulation from the center conductor (no more than 1/4 of an inch). Solder and tape the inner conductor, then join and solder the shields. To insure proper shielding, split a spare piece of braid lengthwise on top of the shield connection, and carefully solder the shield together. Finally, hang up your antenna in an open space, and tune it in with a SWR meter. I have found that adjusting the length of the shorting stub has the most affect in adjusting for minumim SWR.

I purchased a fiberglass bicycle-flag pole from the local bicycle shop, and taped the antenna to it. You could also use heat-shrink tubing over the fiberglass pole and wire, if available. I also like to attach a 2 foot 1/4 inch dowel rod to the bottom part of the antenna. This helps stabilize it while you are riding, and the antenna whips from side to side less. Another thing that helps is to make the antenna more rugged is to slip on a short piece of garden hose and secure it so that where ever your bike frame hits the antenna it will hit the garden hose instead. Finally, I use a "bungee cord" around my rear carrier rack and the antenna for added support.

This antenna can be built in about an hour. Hope to "catch-ya" bicycle mobile some day!

-- Mike

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