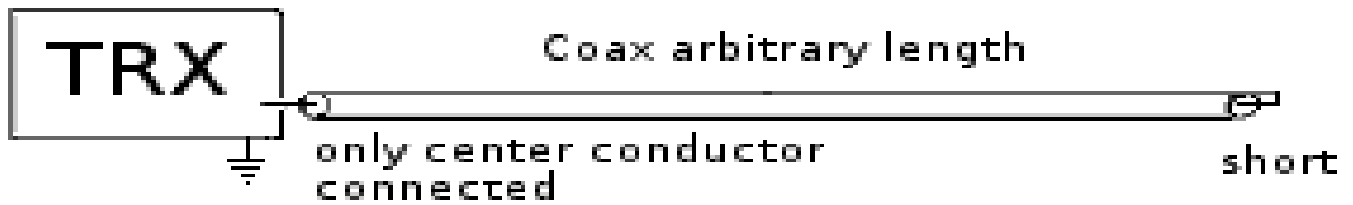


The Grasswire Antenna or Snake Antenna

by Jerry McIntosh



The snake or grasswire antenna is not a miracle antenna. On the receive end it does attenuate the background noise more than the wanted signal. This makes it a great receive antenna for the top bands. It has a good signal-to-noise ratio. These antennas are mounted on or near the ground level. They are also known as "wave" antennas because they extract the energy from the wave as it travels down the length of wire. Its low height minimizes static induced charged particles blowing in the air. Listen to a dipole antenna during a normal windy day and you will appreciate this characteristic.

First these antennas are related to a Beverage antenna except you don't need a 500 ohm terminating resistor at the far end to ground. Now a Beverage antenna should be no longer than one wavelength at desired frequency. Again on a snake or grasswire antenna amateurs can't agree on what length is best. The reason is the ground conditions are different from one QTH to another QTH. So when building a snake or grasswire antenna try to make it one or two wavelengths should give good results.

This is a great antenna for receiving and it does work for a transmitting antenna, but just remember it does attenuate the transmitting signal. Then if you have a small area or on vacation and still would like to work some HF stations try the snake or grasswire antenna. Well, the snake or grasswire antenna is a simple modest roll of coax. Just stop anywhere and lay it out straight on a roadside or across a picnic table or whatever might work for you. It's better than being QRT.

Ok now let's build one. Here is the formula that I use in my construction of a snake or grasswire antenna. Length in feet = $984 \times \text{Velocity factor} / \text{Frequency in Mhz}$. So in this example let's calculate one for 80 meters with using RG58A or RG59A the VF = .66. Velocity factor of coax can be found in the ARRL Handbook or the manufacturer's spec sheets. So $(984 \times .66) / 3.5 = 185.55$ ft of coax. Take the coax and remove 8 inches of braid from one end of the cable. At the other end solder the center to the braid then weather proof that connection. Using a PL259 connector attach the center of the coax to the center of the PL259 connector. As shown in the above picture. Now connect an ATU between your rig and the feedline going to the snake or grasswire antenna. At the point where the feedline is connected to the antenna add a ground stake and then unroll the antenna onto the ground. The coax that is the antenna can be run ANYWHERE it doesn't have to be in a straight line, but can be run in a series of serpentine lines on the ground.

Build it and try it either as a receive only antenna for the top bands or if needed use as both transmit

and receive antenna. You may not be able to work Europe or anyother DX, but you will be able to work NVIS stations

RESOURCES:

<http://www.hard-core-dx.com/nordicdx/antenna/special/swlant.html>.(this is a reprint of Joseph Buch's articles in the NASWA Journal, December 1992 and January 1993).

http://www.w0btu.com/Beverage_antenns.html.

<http://www.youtube.com/watch?GAXzs80Wyuw>.

<http://sa555.blogspot.com>.

On-Ground Low-Noise Receiving Antennas QST April 1988

QST. January 1982.

QST. December 1981, letters section.

Happy Hamming Jerry WB9ONU