



The Radio Hotel - The Antenna – Part 1 - Introduction by W5RH

I heard N5XZ say the other day that the most important part of a Ham Radio station is the antenna. I couldn't agree more. It's similar to the old adage; rather a master carpenter with poor tools than a novice carpenter with the best tools. Give me great antennas and it does not matter that I am QRP at 5 watts or barefoot at 100 watts, I will work many more stations than if I was 1000 watts and an end fed long wire at 10 feet.

One reason, I will hear much more with the better antenna. We typically listen more than we transmit. So, it is not just transmit we are trying to improve, it is the receive side of things also. Lucky for us that antennas exhibit reciprocity. They say, if you can't hear um, you can't work'um. Better antennas provide stronger receive signals, less noise, appropriate main lobe launch angles, and, through directionality, maximum station rejection, noise rejection, etc. Of course, all this depends on how the antenna is designed and/or configured. It is an excellent attribute for you, when working with antennas, to understand what makes them tick. Find out why they work, how they work and from there, you can best figure out how to deploy them to get the best performance out of them. Local, regional or DX work – they all have different requirements.

Now, I understand, sometimes you are not able to do much....nothing wrong with the above referenced end fed longwire at 10 feet, if that is all you can put up. Look on the positive side – it is outside, and not folded into some multi-sided quadrangle looking like a piece of mis-understood modern art in your attic. Being outside, in itself, has a bit of gain associated with it. If that is what you have, then make the best of it. Maybe use more power or see what bands are the better bands for you. Also, try the various modes to see which one works best for you. You can still have tons of fun.

However, just because you can't put up a 4 element SteppIR at 75 feet does not mean that you don't need to know how antennas work. It is even more important that you understand antenna systems when you are in such a critical situation, because then you can think through your given situation and apply all of your antenna knowledge in getting the best performance out of the area that you have to use. In QST in 1925, W.H. Murphy stated that *“The average amateur has simply got to fit his antenna into his space. Just what makes the best antenna does not concern him very much. He is only interested in ‘what makes the best antenna within my space’ ”*. Still holds true today, but in order to place the best antenna into your space, I recommend that you know how antennas work.

Next month: **The Antenna - Part 2 - The Recipe**

*The purpose of **The Radio Hotel** is to give you a practical kickstart into exploring the workings of antenna systems. It is a series, so go back and read the previous columns to get the whole picture, as one month relies on the previous month's information. 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.*

