

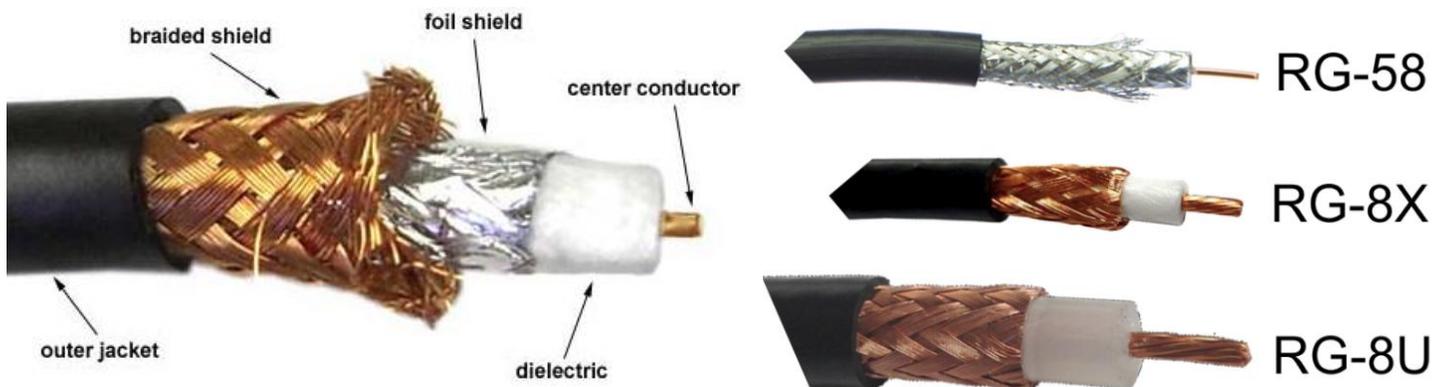
The Radio Hotel Coax Elements – Dissecting Series #3

By Rick Hiller – W5RH

Note: This is Part 2 of the Coax -- Dissecting Series #3. Small Loop Antennas will be next month.

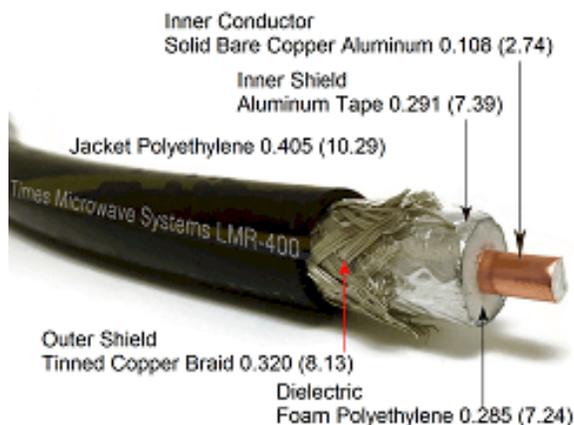
Last month I highlighted the specifications of coaxial cable. But what actually makes a coaxial cable? It is the concentric ring-structure and spacing between the physical elements, such as the center conductor, the dielectric, the shield and the outer housing. Each of these parts are made with various materials, such as copper, aluminum, Polyvinyl Chloride, etc. Then, also, combined in various ways such as solid versus stranded wire; solid foil shield versus braid; Teflon or foam or even air dielectric. By varying the type and structure of the components that make up the coaxial cable, the manufacturer can control all of the characteristics, as discussed last month. Therefore, they can produce cables that will fit exactly to our specific need from 160 Meters up to above 10 GHz and at all authorized power levels. The RG designation that you see as a coaxial cable number prefix, stands for **Radio Guide**.

If you have never seen coax stripped back, below, is your chance. (Left) .405" OD, double shielded (braid and foil), foam dielectric, with a solid center conductor. (Right) Popular Ham Radio 50 ohm (nominal) coaxes RG-58, 8X and 8U.



And below, some higher end (\$\$\$) low loss, coax configurations.

The very popular LMR-400 from Times Microwave



Heliax from Andrew – semi-rigid, corrugated, solid shield.



Note the hollow center conductor to save weight and cost. Taking advantage of the RF skin affect .

So, that is all I have on coax. But, I encourage you to have a Google for two **Power Point/PDF's**, about coaxial cable:

Feed Me With Some Good Coax – W5YI Group and **All Coaxial Cables Are Not Created Equal -- VE3EJ**

Next time (really)... Small “Mag” Loops **Enjoy your hobby -- W5RH**

*The purpose of **The Radio Hotel** is to give you a practical kick start 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.*