

# Loudoun Amateur Radio Group

## Regular Meeting Minutes April 15, 2023

Venue: Leesburg Lutheran Church

Meeting called to order at 8:35 AM.

- Pledge of Allegiance
- Ron WA6YOU presented material on coax cables and connectors. Coax cable is the most popular transmission line. The first coax design was designated RG-8 where RG indicates Radio Guide. There are many characteristics of cable that are specified by manufacturers. Important characteristics are Direct Bury and UV Resistant.

Dielectric is the flexible insulation between the center conductor and the braided sheath. Common types are polyethylene and PTFE (Teflon). It was noted that the RF signal travels on the outside surface of the center conductor and on the inside surface of the braided sheath. Signal attenuation of the signal increases as the frequency increases. Attenuation of the signal decreases as the diameter of the coax and the quality of the coax increases.

Coax deteriorates with age. Stored coax should be capped on the ends to keep moisture out. Coax should be replaced when the jacket flakes, when there are any holes in the jacket or when increased attenuation of the signal is measured. Cable should be removed from the reel by unrolling the cable rather than pulling it. Cable should never be dragged on hard surfaces. The smallest bend radius for cable is approximately 10 times the diameter of the cable.

Connectors should allow a high number of connection cycles. Ideally the connector will not change the impedance of the cable across the connection. The force and surface area of the mating surfaces should be large enough to minimize micro arcing of the signal across the contact surfaces.

Overheating the dielectric when installing connectors can result in a bump in the impedance across the connector. Crimping the connector avoids this. Crimped connectors should be finished using heat shrink tubing. This tubing is available in several shrink ratios. Four to one ratio is recommended. It was noted that SMA connectors can be used up to 26 GHz without significantly affecting the signal. The SMA connector is also limit to a small number of mating cycles before it becomes worn.

Any connector that is knurled should only be tightened using hand pressure. Avoid adapters since they introduce impedance changes across the connections. They are also difficult to weatherproof. Connections should be sealed with Coax Wrap or X-Treme which is non-sticky but self-fusing.

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- Scott WB6EFW reminded the members that the local Alzheimer's group will sponsor a bike race on May 7. They have requested support of radio operators for the event. Send email to [WB6EFW@WB6EFW.com](mailto:WB6EFW@WB6EFW.com) to volunteer.
- Kevin WA4KBM requested volunteers to support the Gravel Grinder bike race on May 13. Volunteers must have a 50 watt 2 meter radio because the event will operate as simplex. The club supported this event last year. The course will be the same. Send email to the club reflector to volunteer.
- It was noted that Jeff KOZR has completed writing a book on the subject of High Power Filter Design. The book should be available in print very soon.
- The treasurer's report indicates that the current balance of the club checking account is \$11,159.19.
- The next club meeting is scheduled for May 20.
- The meeting adjourned at 10:10 AM.

- Attendance

KQ4HCO	Jeremiah
KQ4CI	Evan
N4RAF	Steve
N4FAF	Jim
KS1G	Steve
KOZR	Jeff
WA4KBM	Kevin
K4FWD	Frank
N1RM	Rick
W4PMP	Chris
KJ4NXG	Bob
KJ4BXA	Harry
WB6EFW	Scott
N2ALA	Dwight
KE4OKY	David

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K4FW	Jim
KR9D	Rick
N4PD	Paul
KM4GC	Doug
KE4S	Dave
KI4UTB	Jay
N7BRJ	Gary
N7EVN	Carla
WA6YOU	Ron