The Signal Report

A Publication of the Greenwood Amateur Radio Society (GARS)

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HTTP://WWW.W4GWD.ORG W4GWD@ARRL.NET

2021 CLUB OFFICERS

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The W4GWD Repeater Network
147.165+ t107.2
Echolink: 584003
443.900+ t107.2
W4GWM/R
145.420- DV
W4DEW/R
146.910- t123.0

Ham Radio - Social Distancing for Over 100 Years

June 2021 Meeting

Our Club normally meets at the Westminster Presbyterian Church, located at 2330 Cokesbury Rd, Greenwood, SC. We meet on the 2nd Tuesday of each month making our next meeting on June 8, 2021. **Unless notified otherwise** it will be held "On the air" at 8 p.m.. A net roll call will be taken and it will become the official attendance roster for this meeting. The clubs 2m (147.165) and 70 cm (443.900) repeaters will be linked during that time. Although Vaccines are available to many *Covid-19 is still with us and continues to take lives.*

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Greenwood Amateur Society Recurring Events:

Chat 'N' Chew

Every Friday at 11:30 a.m. the members of the Greenwood Amateur Radio society meet at a local restaurant. Please feel free to wear a mask if more comfortable. Locations will vary from week to week and will be announced on the weekly nets. The current rotation includes China Garden, Fat Daddy's and Smokehouse BBQ.
See you there!

Weekly Nets

Each Thursday night at 9pm on the 147.165+ machine, The Greenwood Amateur Radio Society holds our weekly 2 meter net.
Our UHF net on 443.900+ is held Mondays at 8pm
Help spread the word for everyone to check-in to our nets. If you would like to fill in or be a backup net controller please contact Tedd Davison

VE Exam Session

The next GARS ARRL Volunteer Examiners (VE) Team exam date is to be determined. Currently suspended due to Covid-19.

Congratulations!!

Happy Birthday!

Kevan Nason	N4XL	June 5
David Russ	K4DWR	June 9
Paul Anderzunas	KO4ALK	June 12
Adam Shirley	WJ4X	June 15
Amy Bagwell	Fmly Mbr	June 20
George Crane	W3RXF	June 20
Diantha Litwer	N4DLL	June 24

Happy Anniversary!

Earl (KC4AXY) & Betty Jean Powell
June 5

Tedd (AI4WN) & Gail Davison
June 15

Are you an ARRL Member? Joining ARRL helps protect our rights as Amateur Radio Operators as well as providing education, QSL Bureau, technical advise, and the ARRL VEC. http://www.arrl.org

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Presidents QSO

Daylight is certainly longer. Days are getting hotter. Summer may not be here officially, but sure feels like to me. Personally I just prefer the cooler days.

Reminder of the On-Air Meeting Tuesday June 8th at 8:00pm. I plan to email the agenda beforehand. If anyone has something for the agenda, please email me accordingly. Hopefully, we are closer to meeting in-person, and resuming weekly Chat-n-Chews as well as VE sessions.

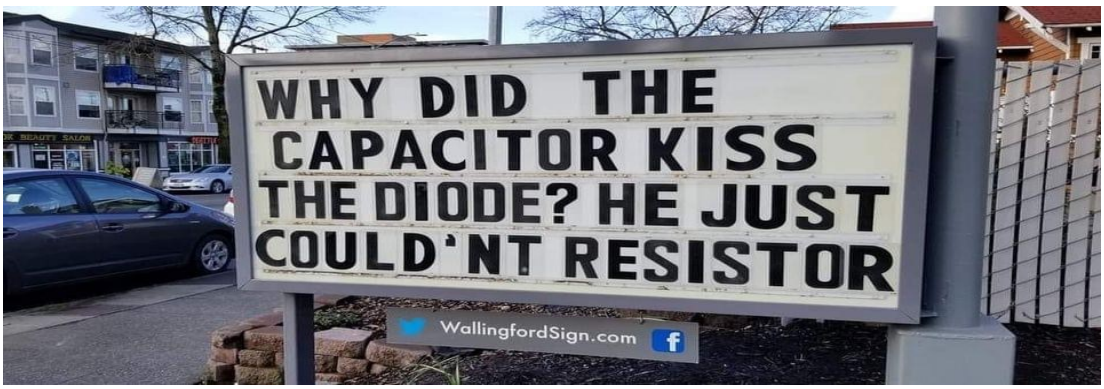
A big thank you to K4DWR Dave Russ for contacting K4RM Fred Pinson and in turn Pastor Todd Polatty of Coronaca Baptist Church for use of the grounds and facilities for Field Day 6/26/2021. So plan on attending Field Day. Bring your gear, rigs, antennas, tarps, canopies, sunscreen, food and drinks for a day of fellowship, contacts and all around ham activities. http://www.arrl.org/field-day#rules

We are fortunate to have a 70cm repeater and a 2M repeater supported and maintained by our club. A number of our members check-in to other nets in the area. This not only provides more operator time and experience, but represents our club. We always appreciate those of you that promote our nets as you check-in with other clubs. On a different thought, I personally have only tried Simplex one time, need to experiment with that more often to get a better feel of the range of my base unit and HT's. Again our hats are off to W4DEW Buddy, AF4E Darrell, N4LRD Richard, WJ4X Adam, K4XB Tommy and AI4WN Tedd for keeping the repeaters up, running and properly programmed. They also do a fine job as groundskeepers.

We are proud to have KU4LAW Andrew Hodges as new member to the Greenwood Amateur Radio Society.

I hope each of you and your families had a safe Memorial Day. We should not take our freedoms lightly or for granted. We should always remember the men and women who died in military service to The United States of America.

Russ, KN4TUI



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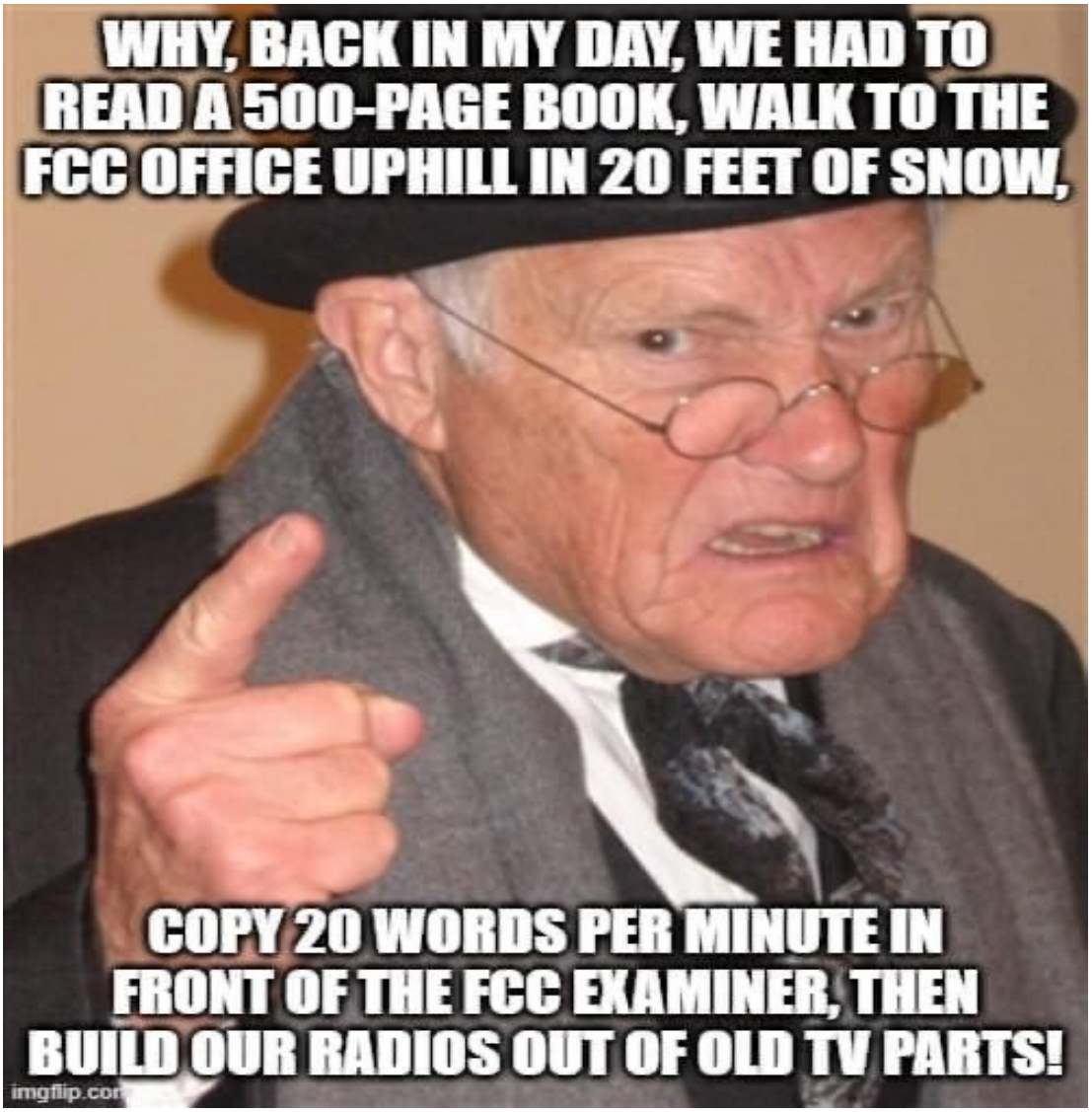
Welcome our newest member

Andrew Hodges, KU4LAW, He is a new Technician who received his license on the 23rd of April 2021. Please welcome him.



ARRL members remember your supplemental magazines, “On the Air,” “QEX.” & “NCJ,” are available free of charge at ARRL.com. Lots of other interesting articles etc. are available there, well worth your time to check them out.

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Why FT8 is awesome. K0LWC

http://k0lwc.com/5-reasons-why-ft8-is-awesome-for-ham-radio/?fbclid=IwAR0TVr-zCCpCxa8EEfnC43pBzghdJ2LfHaTwzPe-mjRqEQHNgYR89MEo-Ys

FT8 Accounts for Nearly Two-Thirds of HF Activity Since zooming to prominence after its debut in mid-2017, the popular FT8 digital protocol has become the mode of choice for some 60% of HF operators, according to Club Log's latest activity report compiled by Michael Wells, G7VJR. FT8 is one of the protocols in the WSJT-X suite of free programs. Wells says FT8 activity level sits at nearly 85% on 6 meters. The dramatic FT8 upswing has come at the expense of phone, CW, RTTY, PSK, and other modes. Over the same period, the number of FT8 contacts logged each year per active call sign has continued to climb to about 60% between 2015 and 2021, with the most dramatic increase being nearly 29% in the past year. The use of all other modes has continued to flutter downward since the advent of FT8, which occupies vastly less spectrum than the more traditional ham radio operating modes.

Between 2015 and 2020, the number of contacts logged per day by Club Log users has trended steadily upward, regardless of mode. The report draws on data of more than 84,000 logs uploaded to the Club Log site -- some 730 million contacts in all. Wells reported that in 2025, the "typical call sign" logged 620 CW contacts, 558 SSB contacts, and 372 data (digital) contacts. Five years later, the statistics were 500, 300, and 1,700, respectively.
ARRL's Logbook of The World (LoTW) does not typically report this level of detail as far as mode usage is concerned, but the statistics available certainly confirm FT8's increasing popularity. The rocketing usage of FT8 over the past few years may be demonstrated most dramatically by a comparison in contacts-by-mode statistics between March 2017 and March 2018, when FT8 contact numbers in the hundreds shot to some 2.6 million contacts by the following year -- an increase of nearly 1 million percent.

From mid-2019 to mid-2020, FT8 usage appears to have slumped slightly to 50% before climbing back to 60%. FT8 usage peaked at just over 65% in late 2020 and has held steady at 60 - 65% since. The same period saw SSB usage dip by 15%, CW activity by 10%, and RTTY by 29%. Introduced later, FT4, the contest mode of FT8, also showed an initial fast upward trajectory, before steadying at 5 - 8%.

Named after its developers, Steven Franke, K9AN, and Joe Taylor, K1JT, FT8 indicates the mode's eight-frequency shift-keying format. Tones are spaced at 6.25 Hz, and an FT8 signal occupies just 50 Hz.

Field Day is fast approaching. Providing there are no new developments with Covid it will be held on the **26th of June 2021 at the Coronaca Baptist Church**, 300 Highway 246 N, in Greenwood. The club trailer will be there and will be put into operation, and several members have indicated a desire to build a battery box.

Tedd AI4WN, shared his thoughts on Field Day: It is all about amateur radio operators participation in the legacy era of Amateur Radio. You must remember that from 1916 to 1933 the evolution of AM radio was a gigantic leap in engineering pioneered by unpaid hobbyists. Field day was a way to demonstrate that with short notice amateur radio operators could set up and communicate with other operators from across the county. The first Field Day in 1933 was governed by rules that evolved every year to encourage the maximum participation of USA licensed operators. During a few years of World War II, amateur radio was embargoed and field day did not happen.

Please bring your family, friends and **your own food and drinks.** If you have any ideas please contact Russ, KN4TUI or Andy KN4DYV.

Popular Electronics, June 1956, submitted by Darrell AF4E

https://worldradiohistory.com/Archive-Poptronics/50s/56/Pop-1956-06pdf

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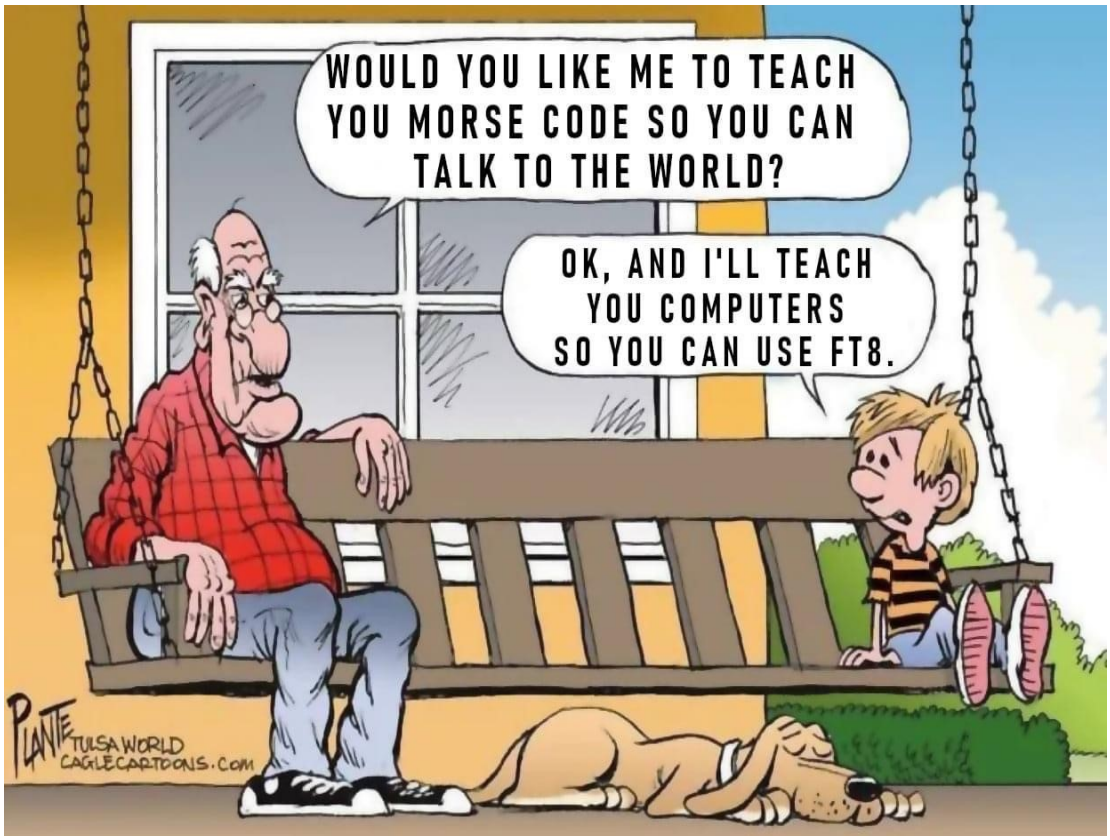
Ferrites & Common Mode Chokes, N4XL Kevan

https://youtu.be/LpwjC5z9C2E



The Anderson SC Radio Club is conducting a Licensing exam on Sunday, June 20 @ 1 & 4 p.m. Contact Ethan Poole, KW4EK at ehpoole@earthlink.net for details

Finding and Fixing RFI

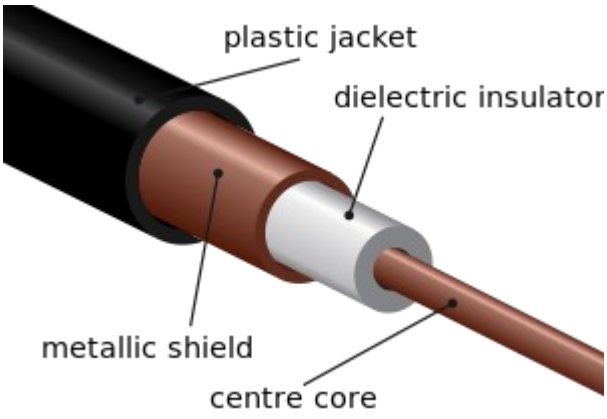
(22) Finding and Fixing RFI - YouTube

COAX, AF5NP

Because it's commonly used in radio work, every ham should be familiar with coaxial cable, often simply called coax.

Coaxial cable is most often used between the transceiver (or T/R switch) and antenna. In this application coax acts as the feed line (AKA transmission line) to carry transmitted and received RF signals between the antenna and radio. Other types of feed line can be employed but coax is used by many hams because it is easy to work with and readily available.

Coax is a type of electrical cable that has an inner conductor surrounded by a tubular insulating layer, surrounded by a tubular conducting shield. Most coaxial cables also have an insulating outer sheath or jacket. The term coaxial comes from the inner conductor and the outer shield sharing a geometric axis.



To be useful coaxial cable must be terminated with mating RF connectors. An experienced ham may terminate their own coax; at greater cost they may purchase ready-made and tested assemblies

COAX, (continued) AF5NP

A wide variety of coaxial cable and assemblies are available with different characteristics. A quick summary of the important features:

- Characteristic impedance
- Signal loss
- Power capacity
- Diameter/weight
- Flexibility
- Environmental resistance

A seventh important characteristic of coax is velocity factor but that is a more advanced topic of lesser importance so we'll simply mention it here.

Coaxial cable selection for each installation may be a compromise between features, requirements, and cost. The ham has to factor in what he needs or wants, what is available, and what it costs.

A quick look at these features of coaxial cable:

Characteristic impedance– Like all other cable, coax is specified at so many ohms impedance based on its physical and electrical properties. In radio work the characteristic impedance is usually needed to match that of the radio and antenna. Hence 50Ω is commonly used, although 75Ω cable may sometimes be used with an impedance matching device.

Signal loss– RF signal strength will attenuate as it passes through coax. This is an undesired characteristic which must be considered for each installation.

COAX, (continued) AF5NP

Different coax types have different losses so material selection (type) can be important. Online and manufacturer calculators are helpful here to select the best cable. Links to a couple are given at the end of this post.

Cable loss depends on diameter of the cable and dielectric (insulation) used between the inner and outer conductors.

Length is also a major factor; loss is specified in dB per 100ft, so it's apparent that short runs will have less loss. Conversely, a long run between the radio and antenna demands careful consideration of coax cable type.

Additionally, loss is proportional to frequency.

For VHF and UHF application, a ham is advised to choose a lower loss cable, particularly for long runs.

Whatever frequency you operate, recall that a 3dB loss represents half power so make careful consideration of loss.

Power capacity– Different coax types have different power ratings. For most hams with 100W maximum power, there are many common cables to choose from. Hams blessed with RF amplifiers running 500 to 1500W transmit power will need to be more selective about their coax. For receiver only situations or low power transmit (QRP), coax power rating is not a concern.

Here again online calculators are very helpful for cable selection based on power requirements. As with all kinds of wire and cable, higher current demands thicker conductors so high wattage coax will be larger in diameter and less flexible.

COAX, (continued) AF5NP

Diameter/weight– Coaxial cable comes in a range of diameters and proportional weight:

Cable diameter should be a minor consideration, as other factors such as power handling and loss are much more important. However, there are occasions when weight or size do matter.

Flexibility– Coax is available with solid or stranded center conductors. Solid conductors make the overall cable more rigid but easier to terminate (solder) should you choose to roll your own. Stranded center cable is more flexible but also more expensive.

Environmental resistance– The outer jacket determines the suitability of a coaxial cable use in various conditions. The biggest concern is resistance to ultraviolet (UV) light from the sun when coax is run outdoors.

Other considerations are chemical resistance, if so exposed, and ability to bury coax under ground (direct burial), as some hams do.

All of these features can be found in the manufacturer's spec sheets and/or sales info for every particular coaxial cable type.

One of the more important considerations with coaxial cable use is to prevent moisture from entering the dielectric insulator between the center conductor and outer shield. Water intrusion will dramatically alter the characteristic impedance and increase loss of the cable, affecting performance. Obviously we should also be concerned about cuts and abrasions in our coax.

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To Zero Beat or Not To Zero Beat, K1LEE

When calling a station that is CQing on a crowded band, you might use different strategies depending on whether anyone else is also calling that station. If you're competing with other callers in any kind of pileup, you want your signal to stand out just a little - try calling a few Hz off the CQing station's frequency.

If you're calling in the clear, if at first you don't succeed, try zero-beating their frequency and call again. "In a crowded band, filters are often set to be very narrow, so an off-frequency CW signal won't be heard." Many of today's rigs have an auto-zero-beat function and it pays to know how to use it.

Seasoned CQers know that they should keep their filters opened to hear those slightly off-frequency stations calling, and most keep their RIT on all the time to tune off-frequency stations as necessary. Some ops use a "Clear RIT" command embedded in their "CQ" (N1MM Logger+'s F1) or "ThankYou" (N1MM Logger+'s F3) macros to reset for the next contact. Some ops will also go further and include a "reset the filter bandwidth to a wide setting" command into the same macros, in case they switched to a narrower filter during a contact.

HAMFESTS & EVENTS

Greenwood Amateur Radio Society (GARS) Field Day, June 26, 2021, Coronaca Baptist church, Coronaca SC

Shelby Hamfest, September 3-5, 2021
2021 Shelby Hamfest - Shelby, NC - Shelby Amateur Radio Club - Shelby Hamfest 2021

W4DXCC Contest Convention, Pigeon Forge, September 24 & 25, 2021

Greenwood Amateur Radio Society Hamfest (GARS) January 8, 2022.

Hamcation , Orlando, Florida 11-13 February 2022,

* The American Radio Relay League protects our rights as Amateur Radio Operators **http://www.arrl.org**
* Support for SERA supports proper coordination! **http://www.sera.org**
* Remember your local and regional interest clubs!
* Southeast DX Club **http://www.sedxc.org**
* Spread the word GARS weekly nets: 147.165 2m Net Thursdays 9 p.m.
  443.900 70cm Net Mondays 8 p.m.
* Callsign info **http://www.ae7q.com***
* Track us on APRS: **http://aprs.fi**,
* Swamp Fox Contest Group **http://swampfoxcontestgroup.com**

Classifieds:

Classifieds will be run for 3 consecutive months then removed. They may be may be posted again after a 3 month period. 3 on then 3 off.

I hope you have enjoyed reading our newsletter. Please contact me at Mike31406@gmail.com to place a classified ad or with any ideas/ comments/suggestions etc.

Mike