

# The Signal Report

A Publication of the Greenwood Amateur Radio Society (GARS)

VOLUME 18 ISSUE 10

OCTOBER 2020

[HTTP://WWW.W4GWD.ORG](http://www.w4gwd.org)

[W4GWD@ARRL.NET](mailto:w4gwd@arrl.net)

## 2020 CLUB OFFICERS

### President

Adam Shirley, WJ4X

### Vice President

Ken Trapnell, KQ4RB

### Secretary

George Crane, W3RXF

### Treasurer

Tedd Davison, AI4WN

### Repeater Trustee

Buddy Willis, W4DEW

### Activities Manager

Andy Bagwell, KN4DYV

### Editor in Chief

Michael Wills, KA4CSM

### 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

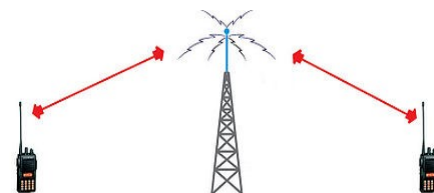
**WJ4X/R**

442.600+ t107.2 / DV

## Ham Radio - Social Distancing for Over 100 Years



## October 2020 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 October 13th.

**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. It’s still with us so continue to **practice social distancing, the frequent washing of hands and the wearing of masks, Covid-19 is still with us and continues to take lives.**

## Greenwood Amateur Society Recurring Events:



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### Chat 'N' Chew

Every Friday at 11:30 a.m. the members of the Greenwood Amateur Radio society meet at a local restaurant. However, due to Covid-19 they have been temporarily suspended until further notice.

### 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.

If you have any ideas for books you'd like to see in the GARS Library, Contact Mitch KJ4JGP

## Congratulations!!

### Happy Birthday!

Russell Myrick	KN4TUI	Oct. 6
Marsha Ridlehuber	KD4AYF	Oct. 15
Mary Pinson	N4MRY	Oct. 21
David Haynes	AJ4PU	Oct. 28

### Happy Anniversary!

David (K4DWR) & Betsy Russ	Oct 14
Russell (KN4TUI) & Judy Myrick	Oct. 31

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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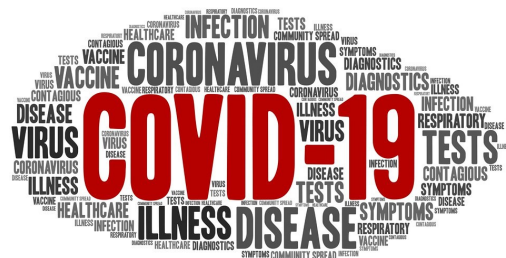
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Arthur Gillespie, KJ4UAU has proposed having a swap net each month following the 1st Thursday club net, he will be the net controller. If you would support it be prepared to discuss at the next “on air club” meeting on October 13th. All transactions will be strictly between the seller and buyer with the club having no liability nor role as arbitrator. All items offered for sale must be Amateur Radio related. Contact [Arthur](#) if you have any questions.



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Greenwood Amateur Radio Society, Ted, AI4WN

With so much happening now about covid-19 we have decided to cancel our Hamfest 2021 of January 9, 2021, at the Piedmont Technical Collage, Greenwood, SC.

It's a difficult decision for everyone. Our concerns begin with the promised vaccine that may or may not be available prior to our scheduled event. As I am sure you have seen the majority of our patrons are in the 60 years old or older high risk group. Several of the other Hamfest venues in the Southeast for the remaining year have been canceled because of their similar concerns. Furthermore, the unknown liability afforded by gate admission could be a cash cow for hungry lawyers.

We remain optimistic for 2022. We will put our Club's efforts into a January 8, 2022, Hamfest date at the Medford Center to reconvene the Club's Hamfest legacy.

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Improve your HT's performance by adding an easy counterpoise

<https://hackaday.com/2014/02/08/improve-your-ht-ham-radio-by-adding-a-counterpoise-antenna-wire/>

Innovative and cheap sound pipe for your Icom 7300. The concept may work on other rigs as well.

<https://m.youtube.com/watch?v=Ha1nOo2KXJE>



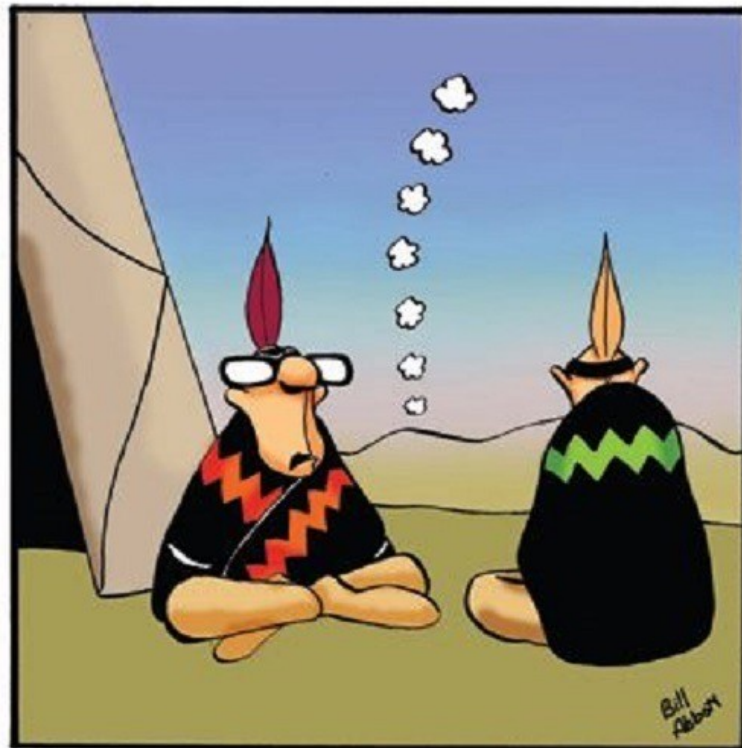
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Any Veterans wishing to be recognized in the November Newsletter please submit information about your service to me at [Mike31406@gmail.com](mailto:Mike31406@gmail.com). If you were in last November's newsletter and do not desire to change what was printed, there is no need to provide me with anything as I will use the same information.



“Ignore it. Telemarketer.”

Like Us on  
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Greenwood ARSIf you have any ideas for books you'd  
like to see in the GARS Library,  
Contact Mitch KJ4JGPRelay Cleaning and Life, Part 1  
Submitted by Kevan Nason, N4XL

Tom Rauch, W8JI, is considered by many to be one of the foremost technical experts in Amateur Radio, particularly in the areas of all things 160 meters and amplifier design. Tom's web pages at [W8JI.com](http://W8JI.com) are filled with useful information and insights. The following are excerpts in which he discussed problems with relay contacts. Check out the full article at [https://www.w8ji.com/relay\\_cleaning\\_and\\_life.htm](https://www.w8ji.com/relay_cleaning_and_life.htm). It has much more information and often explains the claims I've quoted below. Many of these points also apply to switch contacts.

### Caution before Cleaning!

There is a tendency to immediately blame the relay (and switches) for any amplifier or antenna switch problem, from high input SWR to intermittent output.

Relays (and switches) *almost never* cause input SWR issues or intermittent operation *during transmit* in an amplifier or antenna switch. Despite the rarity of contact problems during transmission, it is common to immediately rush forward and physically "clean contacts" as a first step.

Physically cleaning low-to-medium current switch and relay contacts generally should be one of the *last* things done for *transmitting* problems.

... There are rare cases where a relay or switch contact can cause intermittent transmitting, but such cases generally indicate a relay or switch so severely damaged replacement is a better solution...

Unnecessary cleaning often leads to life and reliability problems. Cleaners themselves can contaminate ceramics in high power switches, reducing voltage breakdown. Misplaced lubricants also catch and hold dust and dirt, reducing voltage breakdown. Even worse, cleaning can remove contact plating or flashing that aids low-level receive signal connections.

### Intermittent Receiving Issues

Intermittent connections causing sporadic weak receive signals can occur anywhere in a receiving system. The bad or intermittent connection might be inside the antenna system, in a coaxial connector, or anyplace between the antenna and receiver input components.

Connections are often healed by momentary application of transmit signal through the poor connection.

Intermittent receive is *almost* always caused by a poor pressure-connection, where the receiver signal path depends on pressure to form a good low-resistance electrical bond...

Intermittent connections in any pressure contact, from relays to large switches, is almost always aggravated by low or zero current. These poor connections almost always heal at the first application of RF power. It is actually very rare for switches and relays to open while carrying high power. It is very common for them to develop open or poor connections with very low voltages and currents, such as when receiving signal or panel meter currents pass through them.

One way to clear a bad connection on receive is to "bump" the relay receive path with a little power. If the receive drops down, or drops out, from a bad connection in an amplifier relay, place the amplifier on standby and bump the system with normal exciter RF. This will often heal the relay, although often only temporarily. Another way to clear a receive fault is by application of a dc "wiping" current while cycling the relay. This will often restore receiving for a longer period. You'll see why below...

By far the most common relay problems or outright failures are lack of receive, or high resistance receive connections. Now let's look at a few common claims or causes I have never seen:

1.) **Weakening of beryllium copper contact carriers by flexing.** I have seen excessive current heat beryllium copper contact bars to the point of discoloration. I have found a few relays particularly sensitive to RF heating of contact carrier bars. The relay used in Ameritron power line transfer makes a very poor RF relay at very high power... At about 8-9 amperes on steady 10 MHz carrier for five minutes, the contact bars in the AC power relay will overheat. This same relay is fine at 30 amperes 60 Hz AC (the actual application)..

Relay Cleaning and Life Part 1 (Continued)  
Submitted by Kevan Nason, N4XL



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2.) **Residual magnetism in pole pieces.** If this happens, it must be rare. I've only heard this from one person or source. I haven't seen this, nor have service techs recalled this as a problem...

Many people think silver makes the best low-pressure contact material... Silver low-pressure connections do not have long low-voltage (receiving) life or reliability! ... The silver layer is thin, and in low current applications (like receive contacts) should **not** be burnished or filed..

The best receiving or low power transmitting contacts have a very thin gold flash. While the gold flash solves receiving return problems and low-current low-voltage connection problems, it also creates a new problem. Gold flash is thin and soft, and does not take well to sanding, filing, rubbing, heat, or arcing. Gold flash should not be burnished, filed (no contact should be filed), or cleaned with anything abrasive... This reduces shelf and service life, increasing surface resistance and receiving connection problems.



"Harmful interference"

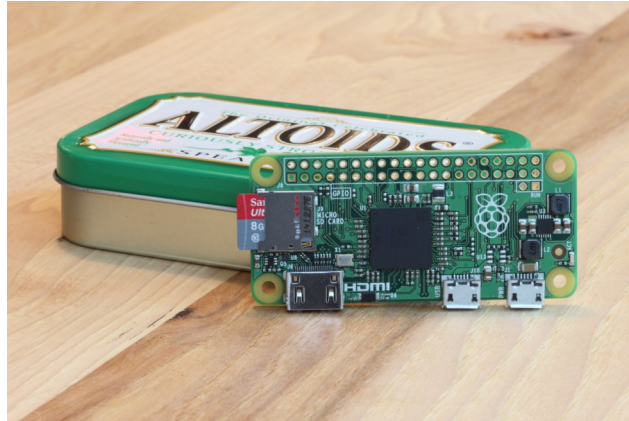
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## Raspberry Pi for Ham Radio



<https://hamprojects.wordpress.com/2020/09/06/raspberry-pi-for-ham-radio/>

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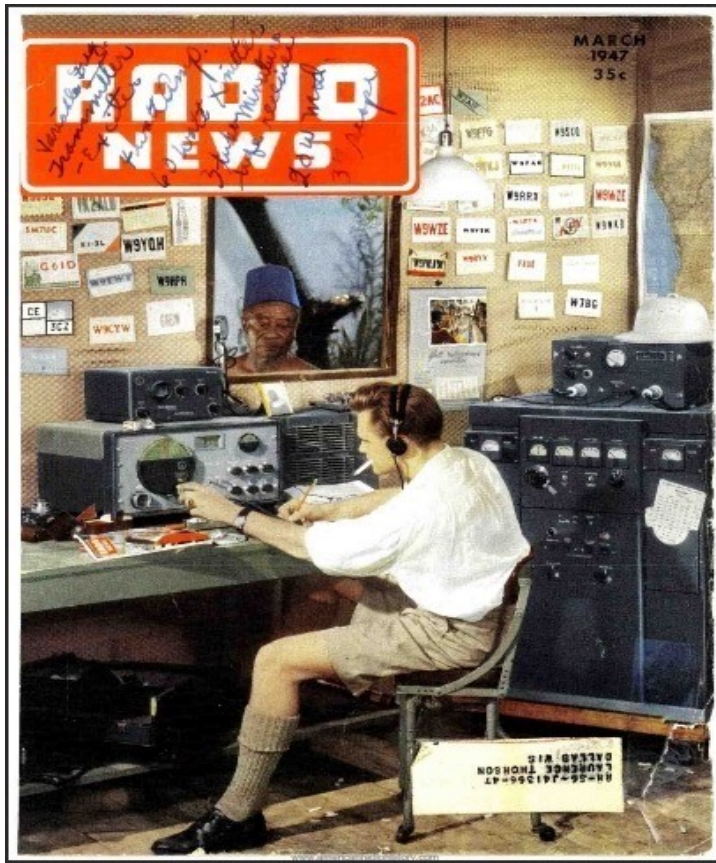
Anyone interesting in taking an online testing session check out the below link. I ran across this on an ARRL site and cannot vouch for it. Although it is not sanctioned by your club, it may be worth checking out.

<https://hamstudy.org/sessions>



Gary, ZL2IFB has written an excellent user guide for getting started and using ARRL's Logbook Of The World (LOTW.) Courtesy of the North Augusta Radio Club.

<https://k4nab.org/download/lotw-user-guide/>



GARS Net check-ins for September 2020, Tedd AI4WN

2m	Check-ins	98
	Traffic	5
	Sessions	5
70 cm	Check-ins	63
	Traffic	4
	Sessions	4

“Getting Connected,” Courtesy of the ARRL

THE BIG PICTURE

## Getting Connected

The world of electronics is populated by an almost countless number of connectors. We use them to attach wires and cables to various types of equipment, or to each other. When you attach a lamp cord to a wall outlet, you're using an *ac plug*. Your smartphone battery might be recharged through a type of *USB plug*.

While radios and antennas use many specialized connectors, the four most common are PL-259, Type N, BNC, and SMA.

<p>1 Shell</p> <p>2 Shield</p> <p>3 Insulator</p> <p>4 Center Pin</p> <p>5 Gasket</p>	<p>Screws on (or, in the case of the BNC, twists on) to attach to the female connector.</p> <p>Attaches to the outer shield of the coaxial cable.</p> <p>Separates the shield from the center pin.</p> <p>Attaches to the center wire of the coaxial cable.</p> <p>Keeps the inside of the connector free from moisture.</p>
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All ARRL members be sure to check out the two digital magazines available, free of charge, to you after logging into [ARRL.com](http://ARRL.com). The National Contest Journal and On the Air Magazines are both very informative and published Bi-monthly.

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## Popular Electronics, March 1955, submitted by Darrell AF4E

<https://worldradiohistory.com/Archive-Poptronics/50s/55/Pop-1955-03.pdf>

## From the South Carolina Section Manager Report—July 2020

Those of you who've been on the air during the summer (or any time in the past couple of years) have probably noticed that lack of propagation on the higher HF bands. The sun has been very quiet in since 2018, with the sun having no sunspots at least 50% of the time in each of the past three years. The good news is that this is beginning to change. Sunspots heralding the start of solar cycle 25 have begun to appear on the sun's surface. While they are few in number and not very large, they are a harbinger of better time to come.

The table below shows the annual number of days without sunspots for the past 15 years:

## Spotless Days

2020 total:	166 days (68%)
2019 total:	281 days (77%)
2018 total:	221 days (61%)
2017 total:	104 days (28%)
2016 total:	32 days (9%)
2015 total:	0 days (0%)
2014 total:	1 day (<1%)
2013 total:	0 days (0%)
2012 total:	0 days (0%)
2011 total:	2 days (<1%)
2010 total:	51 days (14%)
2009 total:	260 days (71%)

What the next solar maximum will look like and when it will occur is still a matter of discussion, but the general consensus seems to be that it will look a lot like cycle 24, which just ended, and that the solar maximum will occur during 2025.

While it is helpful to have an idea of when really good propagation will return, we still have to figure out how best to use the four years sandwiched between now and then. An application that could be very helpful is VOACAP's on-line HF propagation prediction tool, which can be found at <https://www.voacap.com/hf/>. Some of you may have downloaded VOACAP in the past and found that it had a steep learning curve. While the learning curve is not flat with VOACAP HF online, it is considerably shallower than the full-featured VOACAP download. If you get lost, there is an on-line manual available.

If you have any ideas for books you'd like to see in the GARS Library, Contact Mitch KJ4JGP

# HAMFESTS & EVENTS

**Amateur Radio Club of Augusta** Fall Picnic & Swap Meet, October 17—8a.m. to 1p.m. [W4DV.club](http://W4DV.club) or email [arca.w4dv@gmail.com](mailto:arca.w4dv@gmail.com)

[Rock Hill Hamfest](#), October 3, 2020 **Cancelled**

Lake Hartwell Hamfest, Darwin Wright Park, Anderson, October 17, **Cancelled**

[Stone Mountain Hamfest](#), November 7 & 8, **Cancelled**

Greenwood Amateur Radio Society Hamfest (GARS) January 9, 2021 **Cancelled**

[Hamcation](#) , Orlando, Florida 11-14 February 2021

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- \* 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](mailto:Mike31406@gmail.com) to place a classified ad or with any ideas/comments/suggestions etc.

*Mike*