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## St. Paul Radio Club Ground Wave

*Jeff Iverson, WB9DAN, Editor*  
*Dale Maroushek, NØPEY, Publisher*

**KØAGF**

[www.stpaulradioclub.org](http://www.stpaulradioclub.org)  
Club Repeater: 145.310 MHz  
114.8 kHz Tone  
PO Box 9375  
North St. Paul, MN 55109

### NEWS AND NOTES FOR SEPTEMBER 2019 — Volume 79, Issue 9

#### **NEXT MEETING: FRIDAY SEPTEMBER 6, 2019.**

6:00 PM Board Meeting (all are welcome to attend)

7:00 PM Fellowship and Refreshments

7:30 PM Short Business Meeting with Program following.

#### **Program**

Our September program will feature Jeff Iverson, WB9DAN, speaking on the popular FT-8 digital mode and the WSJT-X program that runs it. He will touch on the history of amateur digital communication and how to connect your rig and computer.

Jeff was licensed as a Novice in 1969, upgraded to General in 1970, Advanced in 1971, and Extra in 2002. He has been a member of the St. Paul Radio Club 1975-1988 and 2001-present. In addition to amateur radio his hobbies include photography, writing computer programs, and reading theology. He holds Bachelor's and MBA degrees from the University of Minnesota and an M.Div. from Luther Seminary.

All meetings are in the Commons meeting room in the John R Albers Center at Cretin-Derham Hall High School, 555 Hamline Ave. S., St. Paul MN 55116. From the intersection of Randolph Avenue and Hamline Avenue S., take Hamline southward for 3 blocks. The parking lot entrance is on the west side of Hamline Ave. opposite Watson St. The Albers Center building is about 400 feet west of the lot entrance—use the double-door entrance on the east side of the building.

#### **Dale's Details** by Dale Maroushek, NØPEY

First on Ham fests and Vintage Radio Sales. Some are formal and inside buildings. With the cost of rent for a venue and insurance mounting beyond profit, most of our events are now in church parking lots, etc. The Saturday weather for Tailgater was in our favor again this year. To be factual, the event was really a fund raiser for the Church! Sellers paid \$5 per parking space to set up, buyers parked in a free lot or on the streets and shopped for free. The youth group served food, (actually cheap but donations were "expected", like I got the dollar hot dog but gave them \$5)

Our St. Paul Radio Club had just received a large old donation of an Estate of an old ham. The family was good enough to pack it, load it and delivery it to our storage area. Members made a first general sort, culling the mass down to the electronics stuff.

That was then packed and loaded to bring to the Ham fest that morning. We covered four parking spots with boxes of all kinds of interesting and old stuff.

Back up a bit here... Since I have been "doing" estate recovery (and I stayed back on

*(Continued on page 2)*

*(Continued from page 1)*

this one) after our local electronics overstock collection store closed, I have become a preacher to our community about clearing the stuff and not leaving the widow or kids to deal with it. At first I saw nothing changing until our Auction last January, and especially today! They have heard the news and are trying to ditch the tonnage, for some "no return on investment" deals. I would say eighty per cent of the sellers were in the "make it go away" category. The biggest and best deal I saw was the fellow offering mid-size boxes of electronic parts for \$2 A BOX, later reduced to 3 boxes for \$2...and still not moving them out! The builders we used to have are few, and they have their inventory already. I predict, they, or someone who doesn't want the job, will selling that off soon, or dump it at their cost.

Our sign said, make donations, meaning pick out your goodies and make an offer. It took a lot of sales talk to clear that up, but one fellow was a perfect example. He was rummaging through a box of tubes and asked if there were some 12AX7s in there. I said give me a dollar, take the whole box and find out. We had a mountain of "old" coax, which hams either find good or bad, so the risk factor to buyers tells them NO. Scrap yards give you forty cents a pound for unclean copper, so I said give us a quarter a pound (estimated by arm scale) and take it away.

Back to real time today! Call it success and failure together, but the "old school" hams are doing it! Since I left off on coax, let's start there. Coax of every size, shape, color and markings that I have never seen before, and it was all priced to go "cheap", kind of like my quarter a pound estimate. Lots of antennas of the transportable size, many HF radios and HTs, most with paperwork and available accessories, and priced competitively. Lots of OLD gear from before the War on up, and newer gear that really dropped in price as the morning went on.

Don't get me wrong, I am a victim here as well as a winner. I didn't sell today although I had planned to. Looking at what I had to sell, I have to revert back to my previous mantra: a Hamfest is a sale where hams try to sell the same stuff to other hams who already have the same stuff, no winners forecast. I did my duty with the Club as a seller/loader and assisting Leon with VE testing. My stuff will have to find either another storage space as the garage cleaning continues, or save my time and recycle what I can and forget about it. Word to the wise, there are now "portable" yard sales out there. Just like us, get permission to use a parking lot, set up your stuff and sell. No advertising/overhead costs, pack up and go to the next lot. My neighbor did another "kids clothes" sale last weekend (after one 2 years ago), both failed in profit, and too much work. When we could itemize deductions that worked great, but actually the new tax code made it simpler for me, didn't have to do all that input.

It is not impossible to profit from a hobby inheritance. My 2nd cousin was left with a house and garages full of old electronic stuff. She was retired and got on eBay and averaged \$10K a year for 14 years selling the small and ex-large stuff first. Now she is working with other vintage radio dealers and users trying to thin the inventory. Anyone

*(Continued on page 3)*

(Continued from page 2)

need 25,000 tubes?

## **We all remember Fred McCormick right?**

Well the family had his name and memorial etched into a State Fair bench. It is located in front of the Visitors Center at Dan Patch and Underwood St. by Bremer bank. Attached is a picture.

Thanks for the memories Fred!



## **Making Changes by Scott NØAR**

Sometimes we are our own worst enemy when it comes to making changes in the shack. When the club repeater lived at St. Thomas it was just a bit too far from me to access with an indoor antenna. So up went a 3' Comet dual band antenna. I wanted to get on the air quickly so I used a 30 foot chunk of RG-58 that had connectors on it. I know there would be loss but this was to be quick. I hooked the radio up to the antenna and it was all but deaf. The SWR was good, I could hear myself opening the machine but reception was terrible. Turned out I had put up too good of an antenna and my radio was being overloaded by the FM and TV stations signals from Shoreview. The gear wasn't matched to my local conditions. That nice DC to light front end on the radio with no filtering at all was an invitation for IMD and overload. I replaced that radio with my 30 year old Icom. It plays fine with the antenna and the cheap dual band now lives in the car.

The same effect can happen on HF. You may think a bigger, longer extended antenna is going to solve all your reception issues. It might just increase your overall noise and lower your ability to hear the weaker stations. The classic G5RV might seem to be a better antenna but that vertical section is now picking up all the RFI generators in the neighborhood, something your dipole wasn't sensitive to.

Often we read about others experience with a new antenna or radio and how they think it's the best thing since sliced bread. The one thing that stands out is that they have nothing to compare it to. So maybe keeping that old radio or vertical antenna in the corner of the backyard is a good thing. When you do put up something new you now have a benchmark to A/B measure it against. It may not be scientific but I'd take a real life evaluation over a lab measurement any day. Something to think about.

## **Building Blocks – Jay Maher NJØM**

Hey, we're back – sort of. I just wanted to write quick note to point out a few of the things I think make this such an exciting time to be a builder and experimenter in radio (or other maker hobby). Three big ones are: free/open hardware or software, cheap manufacturing/parts/modules from overseas, and the ability to find and share infor-

(Continued on page 4)

*(Continued from page 3)*

mation on the web.

Earlier this summer I saw a reference to a new 50 kHz to 900Mhz Vector Network Analyzer (VNA) on one of the Indian homebrew lists. It was called the nanoVNA and gave a reference to an open source design on github. At the time I couldn't find much information in English but the device was widely available on eBay and the usual Chinese sites. I found it for under \$50.00 and sent off an order to check it out. By the time it arrived, much more information was available on YouTube and elsewhere and I think they are showing up in local club meetings. It is incredibly small and light and runs off a battery (2 hr life?) which is recharged via a USB-C cable. This would hardly be noticed in a pocket and could be quite handy for a portable operator. I have some doubts about the longevity of the selector switch on the top and would rather have some protection on the sides, but perhaps something can be worked out for a case. I believe the touch screen will do everything the selector switch does, though you will probably need some sort of stylus since the screen is so small. I use the toothpick from my knife. It is a useful little device and is evolving to be even more so. Google it and prepare to spend some time.

I appreciate these devices because I am a rather visual learner. Staring at mathematical expressions doesn't translate well to understanding for me. Being able to change components or add/subtract capacitance and inductance and see the change interactively in a Smith chart makes concepts more approachable. There are many tools and tutorials out there to help. If you haven't run across W2AEW's YouTube channel already, check out his videos dealing with Smith charts. His channel is one of those gold mines of information that are worth watching.

If you want to play with an interactive Smith chart program on your computer, check out SimSmith by Ward Harriman, AE6TY. It is incredibly powerful and totally free. I love being able to use those two phrases to describe the same thing. It will run on Windows, Linux, or a Mac. Ward has some tutorials up on YouTube but you should also check out the ones by Larry Benko, WØQE, who has taken it upon himself to be a beta tester and evangelist for the program. Remember you can set the delivery speed on videos.

I'll close with a photo of the nanoVNA on our kitchen table as Rachel makes her week's supply of peanut butter and squash pancakes. Note how the nanoVNA accurately plots the pancake shape along with air pockets and gives gluten-free salivation dips between 0.2 and 0.3 kilocalories.

*(Continued on page 5)*



(Continued from page 4)

Actually a 1-300 Mhz sweep of a dual band HT antenna. The nanoVNA doesn't quite fit in an Altoids tin.

## WANTED

Looking for a clean and very good condition (preferably from a non-smoking environment) Yaesu FT897D. I'm interested in one with the optional filters and the internal FP-30B internal AC power supply, if possible.

Contact Joe [ke0psk.joe@gmail.com](mailto:ke0psk.joe@gmail.com)

## Editor's Notes by Jeff Iverson, WB9DAN

After nearly 50 years in ham radio (and 50 years of mistakes) I thought I would pass along some tips on buying coax:

1. Buy the best that you can. It makes no sense to spend thousands on a rig and hundreds on an antenna and connect them with crappy coax. I recommend Times Microwave LMR-400 for long runs and LMR-240 for short runs. That gray generic RG8-X is usually garbage.
2. Estimate the lengths you need and buy custom cables with pre-assembled connectors. Life is too short to solder on your own connectors and they do not match the quality that the professionals can do.
3. RF does not like to bend. Make sure your bending radii do not exceed the manufacturer's specifications. If you need a rule of thumb, bends in large coax should not exceed that of a large coffee can and bends in small coax should not exceed that of a soup can.
4. Again, RF does not like to bend (at HF, VHF, and UHF frequencies, anyway). Avoid 90 degree connectors if you can. If you must use them, buy good ones (which will set you back \$20—\$30 each). (If you are working with microwaves,

(Continued on page 6)



90 degree SMA connectors are not so bad).

If you spend more on your coax up front, your SWR will be lower, your rig will be happier, and more of your signal will go into the airwaves.

73, Jeff, WB9DAN (jaiverson@juno.com)









St. Paul Radio Club, Inc.  
PO Box 9375  
North St. Paul, MN 55109

ADDRESS CORRECTION REQUESTED

## SPRC Calendar

Fri Sept 6	6PM SPRC Board meeting, Commons Meeting Room, John R. Albers Center, Cretin-Derham Hall High School. *
Fri Sept 6	7PM Socializing followed by 7:30 PM SPRC Membership meeting. Commons Meeting Room, John R. Albers Center, Cretin-Derham Hall High School. See Page 1.
Sat Sept 7	10AM VE testing. Sun Ray Library, 2105 Wilson Ave., St. Paul. Contact Leon Dill, WØCOE@arrl.net or 651-425-0338.
Sat Sept 14	8AM – NOON Lake Elmo Tailgate Swapfest. 8247 27 <sup>th</sup> St. N, Lake Elmo, MN 55042
Sat Sept 21	9AM SPRC Breakfast. Denny's, 1664 University Ave, west of Snelling.
Sat Sept 21	8AM - ? Twin City FM Club Last Chance Tailgate Swapfest. West Medicine Lake Community Club, 1705 Forest View Lane, Plymouth, MN
Sat Sept 28	8AM – NOON SMARTSFEST 2019. SMARTS Radio Club and Sibley ERT. Cologne Community Center, 1211 Village Pkwy, Cologne, MN
Fri Oct 4	6PM SPRC Board meeting, Commons Meeting Room, John R. Albers Center, Cretin-Derham Hall High School. *
Fri Oct 4	7PM Socializing followed by 7:30 PM SPRC Membership meeting. Commons Meeting Room, John R. Albers Center, Cretin-Derham Hall High School.
Sat Oct 5	10AM VE testing. Sun Ray Library, 2105 Wilson Ave., St. Paul. Contact Leon Dill, WØCOE@arrl.net or 651-425-0338.
Sat Oct 19	9AM SPRC Breakfast. Denny's, 1664 University Ave, west of Snelling.

\* Depending on business to be considered, Board Meetings are sometimes held electronically. Check with a Board member beforehand to confirm a meeting.