

 www.arrl.org		St. Paul Radio Club Ground Wave <i>Jeff Iverson, WB9DAN, Editor</i> <i>Dale Maroushek, NØPEY, Publisher</i>	KØAGF www.stpaulradioclub.org Club Repeaters: 145.310 MHz, 442.450 MHz 114.8 kHz tone PO Box 9375 North St. Paul, MN 55109
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NEWS AND NOTES FOR DECEMBER 2021 – Volume 81, Issue 12

NEXT MEETING: FRIDAY DECEMBER 3, 2021

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

7:00 PM Holiday Party

Program

The December meeting will be a hybrid meeting. That means there will be an in-person meeting at Cretin-Durham Hall (CDH) and a meeting on Zoom for those unable to attend in person. Zoom details are at the end of the newsletter.

Parking on the east (Hamline) side of the campus should be available, but it is unknown if the doors will be open. Your best bet may still be to park on the west (Albert) side and enter through door 24. Go straight down the hall to the commons at the end on your right. A recorded message at 651-842-1015 on Friday will confirm this.

The program will be our annual holiday party for those able to attend in person. The club will provide deli trays and beverages. If you are able, you are asked to bring something to share. RSVP to Jay at jay@umn.edu by Friday 11/26 to help with planning. If you cannot come in person, join us on Zoom for fellowship.

Don't forget the SPRC Auction coming up January 22, 2022.

Program Suggestions

An important part of our member meetings, be they on-line or in-person, is our programs. The board plans the programs and we would like your suggestions of what you would like to see. If you would like to present a program, that's a great idea, too! Please send your suggestions, including potential presenters' contact information if appropriate, to dk@donkelly.biz (or WA6ZMT@arrl.net, if that's easier to remember).

From Br. Bob

CDH RYAN STEM CENTER

The director of the stem center, Ellen Schafer, will be at our December meeting to give us a tour of the new facility and answer questions.

CDH RADIO SHACK

The room will be open so you can take a look during the evening of our December meeting.

CDH SCHOOL CLUB

We are meeting on Fridays during lunch periods; one group 11:30 - 12:05 and the second group 12:05 – 12:40. I ordered three technician class exam manuals from ARRL. A president and secretary/treasurer have been selected. Both are 11th graders. Thank you to Allan Klein for helping with the student activity fair and thank you to Jay Bellows for writing a club Constitution with By-Laws.

MEMORANDUM OF UNDERSTANDING (SPRC and CDH)

Thanks to Jay Bellows for drafting a memorandum of understanding between our SPRC and the CDH High School. The school reviewed it and sent us their suggestions.

ANTENNAS ON THE SCHOOL ROOF

Repair work on the roof was completed 11/19 so antennas can now be reinstalled. Thank you to all who were here during many summer evenings to install the antennas.

Dale's Details by Dale Maroushek NØPEY

A copy of this was sent to Eric and Pete as FYI and inviting them to contribute to the story.

After FD I started my research on how to make these light tower generators work better for use as quieter, long running and easily portable units. At least much easier than gen sets, gas tanks or propane refueling at odd hours. Somehow my Degree in Supermarket Management from Dakota County Vo-Tech circa 1973 just isn't cutting it.

I know the club has many highly trained and experience Engineers in various related fields, or maybe they have a contact at one of the manufactures of these towers. Probably a better place to start than the Half Assed Mechanic (HAM) group we belong to. Eric and his team came up with a secondary transformer box that seemed to work well for the couple stations they powered with it. I'm hoping that if we work together and do some investigations of wiring and breaker values, we should be able to make the towers work better, power more and not self-destruct.

History tells us that of the gas gen sets we have used, both 4KW and 3KW, have been capable of powering two air-conditioned RV's being used as stations. Usually they are fairly equal units or one small, one larger for balance. The larger one would use the 30 Amp line and the secondary the 20 Amp line. They hummed along for 24+ hours with the 12 gallon gas tanks and averaged the half gallon per hour expectation.

Pete's 6KW could run almost all of FD, but it is very noisy and distracting. Although external shielding and remote placement have been used and found to reduce the noise,

the power loses from the extend extension cords starts to eat into voltage at the rigs, which causes other problems.

So, what happened? At FD, Eric was kind enough to bring out numerous light tower gen sets. We tried running two RV stations, an RV and a Scamp, RV and a tent with poor results. Just about the time you started feeling confident, a breaker would trip and we started all over again. If I recall, Kevin, Pete and Dale ran their RV's on internal gen sets, while the VHF camper, the Phone RV and GOTA tent shared one tower with the transformer box.

Eric indicated that since the tower sets have special wiring, no neutral just L1 L2 and ground, that drawing unbalanced amps from each line would/may cause damage/destruction of the set. Secondly, when we did plug into the supposed 20 amp 120V circuit it would trip very soon indicating to me a faulty/poor breaker.

I did some testing when I got home. I have an in-line watt/amp meter from Harbor Freight, (Yah real quality) that simply plugs in line with what you want to test. I checked the needs of the RV. Static reading which includes the fridge and anything else the RV has on it mind, was 4.8 amps. I turned on the fan and it went to 6.4 and with full A/C only to 12.8. Not bad, the old RV pulled over 15 amps.

Let's throw out the questions I'm looking for answers too.

If we split the 240V/30A/Gnd line into two 120V/30A/Gnd Unbalanced lines with no neutral, will it destroy the gen set? I know more schematic information would be needed and hope it is available online.

Next, we have the breakers for the 20Amp circuits. No 25 amp breakers? Probably wouldn't fit anyway but could be hacked in. Giving us a cushion for voltage surges. Not legal you say?

Find a bigger 10KW tower Gen that could power FD with one unit, like TCFM used to get from Cat. Wouldn't that be great? Pull into the FD site, park the gen in a central location, run out the 30Amp 10 Gauge feeders, to the RV's and 12 Gauge drops to others and be on the air in 30 minutes.

Dale Maroushek, N0pey

Don Kelly, WA6ZMT added the cream on the top! Many problems solved at once.

Maybe I can talk my neighbor in the RV Resort in Mesa out of his trailer.

--Don

Pete Gulden, KD0SQJ answered:

The only things I would add that can be considered are:

1. If we could keep the main power lines from the generators at 240 volts the voltage drop over the same distance would be less. (Almost half?) Of course, this would raise

the safety concern of having 240VAC power lines running through the area. We could then step down to 120V as close to where it is needed. 2. The biggest draw is air conditioning. The rules state that only the station equipment has to be on emergency power if we are claiming that for our category. (3A) If we could get "mains" power from Benson's or wherever we are, we could run our "comfort loads" on any power available and run only the station equipment on "emergency power." If this were a true emergency deployment type of situation, we would bring everything with us we could and use whatever resources were available to us.

Eric Westgard, NY9D answered:

Vin the Diesel- the final answer for Field Day

At Field Day 2021 we identified a use case for a larger diesel. The club had a big motorhome with a broken internal (7-8 kw?) genset. These have the 50A power cords. This is really 50A of 120VAC, not really 240V per se. The little single phase diesel light tower 6KW generators are set up for two 20A legs of 120V or one 240V, but the 240V maxes out at 30A. For Field Day 2021, we built at the direction of NONAS a transformer to supply 120V/30A to one "RV"- nominally my 17' Palo camper with a TT-30 plug. But we had warning of a 50A disabled RV.

These RVs/campers will pull 30A or more on a TT-30 plug with adapter. And blow a fuse/breaker above that. One serious worry is an unbalanced 120v load on the small gensets. We have had one 100% burned out genset and one 1/2 open genset. This is not an easy or cheap fix. If you try to pull 30A of 120V AC on one leg, the breaker might blow or the generator winding might blow. They are designed for 5000W loads, and one or two 20A 120V outlets.

Newer, larger diesels in general now often have RV plugs.

On Field Day the 30-50A RV ran OK on our transformer via a TT-30. My camper ran via an adapter on the 120V outlet and the GOTA station did the same. We got several GFI breaker trips on my camper and on the 120V genset outlet. More grounding needed. This led to the need for true 30-50A of 120V AC power. We have two gasoline gensets that can handle close to that- Pete has one- about 8KW with a TT-30. And Doug has a 10KW Honda with a California 240v non NEMA outlet (40+ A). The little 4000DF Sportsman gas gensets have a TT-30 and will do their best.

A big 15KW Coleman diesel showed up at auction. It had the California outlet. And a 30A L6-30 outlet. "Vin" also supports three phase 208V - that is another topic.

We brought it home. It looks like we can run via adapters:

California Jack to native 50A RV

Then the L6-30 to TT30 for a smaller RV @30amps

Then 2x 20A normal 115V AC outlets for smaller loads.

This genset has a regulator board (not just a ~25 mfd 450V run cap) and voltage/load/frequency metering. So a lot more real world Field Day load. Fuel consumption is higher than the 6KW trailers, .45>1.5 GPH.



For the record by Pete Guldán KDØSQJ

Some of you know that for my job I drive a semi-truck. Just so we're clear it has been several years since I've hauled printing paper. The printed version of *QST* is delayed due to "Supply Chain Issues." Yep you guessed it... It wasn't me, I didn't do it, you can't prove it. The online version is available so I peeked at it and can tell you that the Field Day results will be on page 63. Of all the Minnesota stations in the category 3A we did have the highest score. But as usual there is more to the story. The Minnesota Wireless Association NØAT has been and continues to be our nemesis on FD scores if you will. They ran their club station as a 2A and had 9 affiliated home stations so it's not a direct comparison. They had a score of 8198 from their 2A club station and added 9 home stations for an overall score of 16,394. From our 3A club station we scored 3510 and added 2 home stations for a combined 3860 score. I need to do a better job of supporting those home stations who affiliate with our clubs. ARRL have a good thing going and if I had to guess they will keep the club affiliation provision in the results. One thing we have always excelled at was the number of people who participate with our clubs. We had a really good turnout at Benson's Airport and as was previously stated, the good food to go along with it. You've read in Dale's Details we are rethinking options for power. I am thinking about antenna options for the digital station. I am also looking at ways to better support those of you who want to play along from your home stations. If you want to participate in Winter Field Day January 29-30 let me know. 73

Ramblings from the VP's Work Bench - Kevin Welna - W5LNA

I decided to go to the November Hams in the Park event up at Long Lake Regional Park in New Brighton, MN. To that end I decided to bring my newly completed Go Box to use

and show off.... It is/was assembled using a surf green, 4 RU (Rack Unit) box I purchased from Guitar Center. It is/was pretty cool looking and had everything, but the kitchen sink installed inside. Definitely a chick magnet, LOL. By the way, if you have never participated/been to a Hams in the Park event, I cannot recommend them enough. Great people, good times and you can see/try a number of different radios and antenna configurations and evaluate how they perform in real conditions.

I do believe the folks that put on this event are going to try and have one every month on the Second Saturday even through the winter. (Weather permitting) Through the winter months they will start the event around 9am-10am and run till Noon at which time they will break down their equipment and head over to Welches Big Ten Tavern, 4703 US-10, Arden Hills, MN for an eyeball QSO and a bite to eat.

All are welcome!

Now back to my story. I go to pick up my go box and almost get a hernia. At this point I decide that it is just way too much hassle to drag this heavy monster out to the car and then lug is back inside when I get home. Plus, it takes up most of the back of my car. Plus, I still had to bring a separate tripod and battery. This is just way too much work for 3-4 hours of mic time in a park. Hmm, I guess it not much of a go box after all. Time to rethink this and start over? Alas, Yes.

That brings me to my latest article. My Go Box redo:

First I decided to get rid of as much unnecessary equipment as possible to help lighten the load. Next reduce the size of the box itself. Third I wanted a complete set up to be contained in one box, including the Power supply, radio, antenna, Coax and all support equipment, tools etc. I wanted to/needed to shed at least 15 lbs. off the weight.

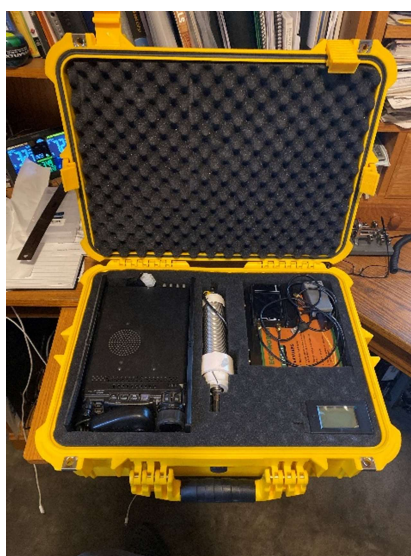
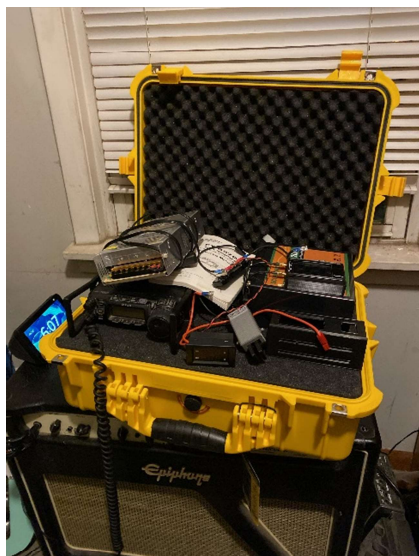
First, I needed a different case. Taking a page from Steve (N0YQ), I looked into Pelican Cases and almost had a heart attack at the prices. Yea I know they are really nice, but the price was almost prohibitive. Then I remembered that Harbor Freight sold a Chinese knock off for a more palatable amount. I purchased their case for about 1/3 the cost of a Pelican case. Its slightly bigger than the Pelican case and about the same weight. But still a good 15 lbs. lighter than my original box and about 2/3rds the size. Honestly, I do not see much of a difference between the two cases especially for my intended use. These things are well built and tough.

Next, I needed an antenna. Initially I looked at wire antennas but decided to go with the Wolf River Coil TIA Mini antenna instead. I'm not a big fan of pulling wires through trees and if I'm using a wire, I would most likely need an antenna tuner as well. That's just more weight in the box. The wolf River Coil Antenna is small enough to fit in the box and is tunable from 10m to 40m. It comes with its own tripod and is still pretty light, plus with a bit of trimming on the tripod legs it too should fit in the go box.

Power was next. I have a switching power supply that is good for up to 30 amp and it doesn't weight all that much and is fairly small. Maybe I can get that in the box but what if there is not AC power available? I'm going to need a battery for sure.

Thanks to amazon, I found a 20Ah Lithium Ion battery that is not only light but will fit in the box. The batter is less than ½ the weight of a comparable AGM or Sealed Lead Acid battery. Yes, they are a bit spendy, but since I did not buy the Pelican case, I figured I could/would treat myselfBe careful when buying these batteries as they have different discharge rates and require special chargers. You will need to confirm that the battery's discharge rate will be high enough when using your radio at maximum power. Since the Wolf River antenna is tunable, I can leave out the antenna tuner. I also opted to leave out the external speaker. They would both be added weight and not actually necessary. I am lucky enough to have a Nano VNA that I can use for tuning up the antenna (I just have to learn how to use the thing!). I should now be good to go. Its small and light so it the perfect compromise for my go box.

I did opt to add in a voltage\current meter to my set up so I can monitor my power usage and battery health. It does not weigh much and was not very expensive. Below are a few pictures of my completed Go Box:



Let's call this the Before Picture. Here is the After Picture.



Storage for antenna and tripod legs. Storage under the top layer. Room for Coax and manuals.

November Board Meeting Minutes

Lou: Called the in-person meeting to order at 6:15 pm.

Board members present:

Kevin Welna-W5LNA

Ben Otto-KEØRFZ

Br. Bob Walsh-WCØJ
(Zoom)

Art Thell-NØ0IWQ

Don Kelly-WA6ZMT

Excused: Allan Klein-WØONLY

Also present:

Dale Maroushek-NØPEY

John Crabtree-KCØG

Jay Maher-NJØM

Joe Koppi-WØSU

Minutes for Oct. Meeting: Approval moved by Kevin, seconded by Art. Approved.

Art commented that the minutes should be approved from the copy that is submitted to board members as that becomes the Club record. I invite any board members to submit corrections to errors or omissions I may make.

Treasurer's report: Allan Klein email presented by Art Thell

General fund: \$8147 Education fund: \$1287 Repeater fund: \$882

Kevin: Pixie Project is still alive. Will continue to pursue. Has parts for power supply. Will report on progress in the spring. Next week, Hams in the Park. Has a restaurant available in case of bad weather.

Ben Otto (Equipment inventory): Have some additional donated equipment. Dale will update list. More is coming.

Br. Bob Walsh: Antennas on the roof are disabled for roof repairs. Tower is undisturbed.

The MOA (Memo of Understanding) between SPRC and CDH is in process. A copy of the proposed agreement is provided at the end of this meeting for board member consideration at the next Board meeting.

Open house at CDH (late AM) and STEM Center Grand Opening (4:00) is Monday Nov. 8 at CDH.

Dale: There are 75 club members paid through 2022. This was bumped up to 76 by the end of the meeting.

Pete: Is again conducting W4P Special (fun) event.

He noted that he will be updating the club computers (Win.7) this weekend.

He proposed that the Club could do Winter Field Day which is the weekend of 1/29/22—the weekend after the Auction. Winter Field Day can be done as a group outdoors using the club callsign or done from the Ham's QTH, or some combination.

Dale: Noted that we will need several extra printer cartridges for the Auction.

Note was made that the Club has a prodigious amount of equipment on hand.

Will continue using the present computers (Win. 7) as is. There was some later discussion on this. Art noted that compatibility with other software is always a potential upgrading issue.

Mention was made that we could split the Auction with club material in January and outside stuff in February. Dale noted that this would present other problems. Don suggested possibly a Hamfest.

Dale: Suggested that we use the same format as before and expand to a second event several months later and that we should limit incoming items to 10 per person. This appeared to resonate with the group.

Don: We need to advertise pre-event with a list and photos. Several members offered to assist in this effort. Some discussion was had around using "Minimum" or "Reserve" and Minimum was accepted. This is in the interest of efficiency as "Minimum" represents the opening bid acceptable versus "Reserve" which represents the lowest acceptable bid.

New Business:

Jay: Holiday party. Proposed at CDH on Friday 12-3-2021, regular meeting night. The last event had 50 attendees.

Pot luck plus party tray (Cub or other). Lou will check out other source for trays.

Suggestion was made that we email out invitations with RSVP.

7:05: Kevin moved to adjourn. Lou seconded.

Art

NØIWQ

November Membership Meeting Minutes

Lou: Called the meeting to order at 7:30 pm.

Members present: 15-in person, plus others on virtual. In-person include our presenter, Ralph Bierbaum NØAWN.

Dale: There are 76 members paid through 2022.

Art gave the Treasurer's Report as provided to board members by Treasurer, Allan Klein:

General Account	\$8,147
Repeater Account	\$ 882
Education Fund	\$1,287

Pete: Winter Field Day is weekend of 1/29, the weekend after the auction. Can be conducted outside as a club, in the Ham's QTH or a combo. (Details are available in QRZ or ARRL.com).

Election of Board Members: The terms of Ben Otto and Bro. Bob Walsh are up. Both consented to be re-nominated.

Lou: Requested floor nominations.

Don K. Moved we nominated both by acclaim.

Kevin: Seconded.

Membership: Approved unanimously.

Dale: Presented auction information. Noted that profits are dedicated to the ARRL Spectrum Defense Fund. Some minor discussion centered on details of the auction.

Ralph Bierbaum NØAWN:

Presented an excellent program on the subject of "Go-Boxes and Emergency Management".

Mr. Bierbaum's extensive experience in over 20 years of working with emergency management resulted in an interesting look into the work of that field and the complexities involved in producing an effective work force on the ground. Sit was also good to hear that some of the agencies such as FEMA have contributed positively to those efforts.

8:45: Dale moved to adjourn.

Art
NØIWQ

Editor's Notes – by Jeff Iverson, WB9DAN

I would like to remind everyone about our St. Paul Radio Club Facebook page. We have over 100 members who are interested in what we are doing. Find the group and ask to join.

Remember, contributions to the *Ground Wave* are always welcome. Send them in a Word document (.docx) or Open Office document (.odt) as an email attachment to jaiverson@juno.com. Deadline is one week before the next meeting.

Officer Contact Information

President	Michaels, Lou WD8NOV	louthephotoguy@gmail.com	612-638-8159
Vice President	Welna, Kevin W5LNA	kwelna@gmail.com	651-354-5515
Past President	Kelly, Don WA6ZMT	dk@donkelly.biz	651-276-4838
Treasurer	Klein, Allan WØNLY	allankmn@cs.com	612-720-1324
Secretary	Thell, Art NØIWQ	thellaj@comcast.net	651-457-5533
Member At-Large	Otto, Ben KEØRFZ	ke0rfz@gmail.com	651-352-9590
Member At-Large	Walsh, Bob WCØJ	brw.fsc@gmail.com	612-201-0818

Zoom Information

Simply click the link below (or copy and paste link into your browser if that doesn't work) or call in from any phone. If you're not familiar with Zoom and would like to arrange to practice, text Don at 651 276-4838 or email dk@donkelly.biz.

Since they are all the first Friday, I've just scheduled 8 meetings on the first Friday of the next 8 months. The link will be the same for all of them.

SPRC is inviting you to a scheduled Zoom meeting.

Topic: SPRC Monthly Meeting

Time: Oct 1, 2021 06:00 PM Central Time (US and Canada)

Every month on the First Fri, 8 occurrence(s)

Dec 3, 2021 06:00 PM

Jan 7, 2022 06:00 PM

Feb 4, 2022 06:00 PM

Mar 4, 2022 06:00 PM

Apr 1, 2022 06:00 PM

May 6, 2022 06:00 PM

Please download and import the following iCalendar (.ics) files to your calendar system.

Monthly: https://us02web.zoom.us/meeting/tZcoc-uqppjosHNYgigyhIdJi19w4O3qkrK_G/ics?icsToken=98tyKuGr qz8oGNyUth-FRpwqGY-ga-rxiH5dgo1kmxbiGih6Zin_Z7tVZp0sAdPC

Join Zoom Meeting

<https://us02web.zoom.us/j/83542281662?pwd=QjhLNGhBZ2RuaUxrMWV4Z3laSWRLZz09>

Meeting ID: 835 4228 1662

Passcode: 440211

One tap mobile

+13462487799,,83542281662#,,,,*440211# US (Houston)

+12532158782,,83542281662#,,,,*440211# US (Tacoma)

Dial +1 312 626 6799 US (Chicago)

Meeting ID: 835 4228 1662

Passcode: 440211

Find your local number: <https://us02web.zoom.us/u/kdYAGIKilf>

SPRC Calendar

Fri Dec 3	6PM SPRC Board meeting, Commons Meeting Room, John R. Albers Center, Cretin-Derham Hall High School. *
Fri Dec 3	7PM SPRC Holiday Party Commons Meeting Room, John R. Albers Center, Cretin-Derham Hall High School.
Sat Dec 4	10AM VE testing. Galilee Lutheran Church. 145 N McCarrons Blvd, Roseville, MN 55113. Reservations required. No walk-ins until further notice. Contact Leon Dill, WØCOE@arrl.net or 651-425-0338.
Sat Dec 18	9AM SPRC Breakfast. Denny's, 1664 University Ave, west of Snelling.
Sat Jan 1	10AM VE testing. Galilee Lutheran Church. 145 N McCarrons Blvd, Roseville, MN 55113. Reservations required. No walk-ins until further notice. Contact Leon Dill, WØCOE@arrl.net or 651-425-0338.
Fri Jan 7	6PM SPRC Board meeting, Commons Meeting Room, John R. Albers Center, Cretin-Derham Hall High School. *
Fri Jan 7	7PM Socializing followed by 7:30 PM SPRC Membership meeting. Commons Meeting Room, John R. Albers Center, Cretin-Derham Hall High School.
Sat Jan 15	9AM SPRC Breakfast. Denny's, 1664 University Ave, west of Snelling.
Sat Jan 22	SPRC Auction, Commons Meeting Room, John R. Albers Center, Cretin-Derham Hall High School. More details to come.

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