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# St. Paul Radio Club Ground Wave

Don Kelly, WA6ZMT, Editor  
Dale Maroushek, NØPEY, Interim Publisher

**KØAGF**

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## NEWS AND NOTES FOR MAY 2017 — Volume 77, Issue 5

### Monthly Meeting

May 5, 2017

UST OWS LL54

7:00 pm Socializing

Membership Meeting 7:30 pm

#### PROGRAM

### LoTW & ARRL Updates

Greg Widin, KØGW

Greg will share what's new with ARRL and the Logbook of The World (LoTW).

A life member of ARRL and currently First Vice President of ARRL, Greg's first ARRL appointment was in 1967 as an Official Relay Station. He has been Assistant Section Manager and Technical Specialist in the Minnesota section and is a Registered Instructor. He has served on the ARRL Board of Directors since 2007 when he was appointed Vice Director of the Dakota Division, becoming Director in 2010. In 2013, he proposed the formation of the Board's Logbook of The World Study Committee and has been its chairman since.

Greg lives in Stillwater and has been a Minnesotan since 1974 when he obtained his Amateur Extra class license and became KØGW.

Recently retired after 31 years with 3M, Greg belongs to the Twin Cities DX Association and Minnesota Wire-less Association. He's active in DX and casual contesting, ARES, and emergency communications. He also enjoys constructing electronic and mechanical equipment.

### 2017 Annual SPRC Banquet



**All banquet photos courtesy of Dawn Holmberg, WXØZ**

Thirty three members and guests enjoyed the annual St. Paul Radio Club Banquet at the University of St. Thomas, attracted by the usual excellent buffet provided by UST Catering Services—fresh fruit, salad, vegetable medley, roasted red potatoes, pork loin, and chicken marsala. As we enjoyed our chocolate cake, we were introduced to Olaf Danielson—author, traveler, religious theorist, art collector, and businessman. It's sometimes said that he could be the most interesting man in the world. He's



*(Banquet, continued on page 2)*

The OWS building is located on the **University of St. Thomas (UST) South Campus**.

From I-94, take Cretin Ave south about a mile to Grand Ave. Turn right, then park in the ramp on your left or the surface lot on the right. In general, on-campus parking restrictions are not enforced after 6:00 p.m. on Fridays, but do not park in spots with parking meters unless paying or displaying a handicapped placard.

Enter the building just north of

the parking ramp and take the elevator (in the hallway to the right) or stairs to the lower level. LL54 is not far from the stairs.

For detailed maps, see [www.stthomas.edu/campusmaps](http://www.stthomas.edu/campusmaps).

OWS: Owens Science Hall

Contact Kim Schumann in Disability Services at 651-962-6315 or [kjschumann@stthomas.edu](mailto:kjschumann@stthomas.edu) for any accessibility requests.

(Banquet, continued from page 1)

certainly among the most interesting that might speak at our banquet on our budget (He claims he “will work for food”).



Olaf convinced us that hams aren't the only people who can find ways to spend time and money on their hobby. In 2016, Olaf's avian avocation took him throughout North America for a “Big Year”—a competition among birders to see who can identify by sight or sound the largest number of species of birds within a single calendar year and within a specific geographical area. He told us of challenges presented by bears, weather and airline schedules as he eclipsed the 2013 American Birding Association (ABA) Area count of 749 birds by spotting 776 (+2) birds (an Australian dude counted 780 (+3) in 2016, so Olaf doesn't hold the record). Olaf reached 700 species by May, a couple months earlier than previous birders.



Adding birds in Hawaii (not included in the ABA area), Olaf reached a record 827 birds in the United States.

His travel included 253,800 miles

flown (burning through 862,500 frequent flyer miles), 46,735 miles driven (just one speeding ticket), 475 miles on scooters/ATVs, 545 miles walked, and 4 miles on snowshoes.

### Member of the Year

Dale Maroushek (NØPEY) was honored as Member of the Year. Although Dale has been the go-to guy for all things SPRC for years, he has been ineligible for the award as it cannot be presented to a director or officer and Dale has served the club in some “official” capacity as long as most members can remember. Although no longer “on the board,” Dale currently is the membership chair, hosts the club's System Fusion computer, has been the Ground Wave “Interim” Publisher for years

(and a regular contributor), appears to haul the entire contents of his basement to Field Day—and will probably continue to feed us all for years to come.

When the moment arrived to make the presentation, President John (KDØCAC) looked around for the framed certificate and discovered it hadn't been prepared; apparently everyone assumed Dale would take care of it.

Clarence Netwal (K9ELX) took home the coveted canned ham. No doubt it has taken its place with other cherished heirlooms on his mantelpiece.



**All attendees' names had been placed in the hat (actually a stainless steel bowl) and many left with their choice of door prizes.**

### Ham Estate Sale

The estate of John Schaefer, WBØGGM, in Montgomery MN on Saturday, May 6, 9 a.m. – 6 p.m. For complete information, see <http://www.nlrs.org/home/wb0ggm> and click the link for the PDF.

### Paul Szydlik, WB2HCF, SK

Former SPRC member Paul Szydlik, 83, died Friday, April 7, in Robbinsdale, following a brief illness. <http://www.gearty-delmores.com/m/?p=memorial&id=1947750>

### Service Opportunity

Save the date for a rowing regatta at Lake Elmo on August 11 and 12.

### Field Day Gear

As usual, Ed Jacobson (WBØVHF) will pick up Field Day gear at the Dayton Hamvention and save you the shipping costs. Popular items include:

T-Shirts, red or white, \$14.95.  
Hat \$12.95.  
Pin \$6.00.

Please contact Ed by the evening of May 20 at [wb0vhf@arrl.net](mailto:wb0vhf@arrl.net) (don't forget to include colors, sizes and quantities). If email doesn't work for you, call or text 952 261-7547.

See <http://www.arrl.org/shop/Field-Day-Supplies/> for additional items and more information.

## Presidential Ponderings

For May, and maybe longer, my project is to build a large lithium battery bank--something along the line of Tesla's Power Wall, but not as big; maybe 500 to 1000 amp hours.

Many of the electric cars use this approach, which seems odd to me, a non-engineer; one of the rules of engineering is KISS--keep it simple, stupid. These batteries contain hundreds of 18650 cells (18650 is from the dimensions 18mm x 65mm--a little larger than an AA battery), kinda breaking the KISS rule--sooo many connections, but it seems to work.

So a lot of this is research--not reinventing the wheel, but seeing what others have done and building on their ideas. The research includes checking out forums, groups, and YouTube videos (I think I am well past 200 subscriptions on YouTube).

Tesla's Power Wall can start at \$7,000 to \$10,000 for a house system, and many electric car batteries can be over that. Well I am definitely not going there!

My solution is to gather used laptop and other batteries containing the 18650 cells, then testing to see which can be recovered, matched, and combined into a good battery pack. I've been scrapping for a few years now, and I'm bummed out that I threw many away. Testing them means buying or building more tools; one of the first is a charging/discharging/balancing unit (my poor-mans, cheap-hams method has been to find free, broken gear). At this time I am just using an adjustable bench power supply—I started a couple days ago just charging one at a time with the C method, averaging about 4 volts and up to 1.5 amps. I need to get one of my other power supplies set up because the limit of the one at the bench is 1.5 amps. 18650s should be charged at 4.2 volts and, depending on capacity, 2 -

3.4 amps.

Over the last 4-5 years, I have been buying, on the occasions when I find a deal and have the funds at the same time, about 1200-1400 watts in solar panels and have lost count/memory of the total that I've put in storage. When my battery bank is ready, I'm looking forward to getting the panels out of storage and into the sunshine.

As far back as about 40 years, I have lived in RVs where the power grid was not available and have been designing/building systems ever since. To meet a need 10+ years ago, I used four Trojan L-16 6 volt batteries (two pairs in series for 12v and those pairs in parallel) making a total of 750 amp hours. When I bought those about twenty years ago, they cost \$650 for the four, and last I checked some years ago, the price had doubled, so I have been looking at other options for the last 10+ years. The best shopping is not done in a hurry! There are all kinds of options but, for relatively low cost, using old--or at least been around the block a little while--brings pricing lower, and the lithium batteries are it right now.

I think I will probably do a small 100 amp hour for now to help refine and prove the solution. This should make a good, carryable battery for field use with my Yaesu FT-897D. One of the issues with many portable radios is that they are set up to examine the voltage coming in and, if running off battery (12v), they automatically cut back on output--maybe 20 watts on a 100-watt radio, which would be what the 897 internal batteries do as well as with an outside SLD (Sealed Lead Acid) around 12AHR. My system's output will be a regulated 13.8 volts, so most radios should output their full rating.

So, I'm keeping an eye out for used laptop, etc., batteries. Thanks to Marty (KAØNAN) for the last batch.

73 de John, KDØCAC

## Dale's Details

### Dale Maroushek, NØPEY

April is ending, taxes are done and gone, but they will return again next year. The Banquet is almost here, a new menu and a very interesting program to watch. Then we roll into May for our final meeting of this season and start planning our Field Day event.

Field Day, a weekend of Amateur Radio related events that can be as big, or as small as the participants want to make it. Emergency preparedness practice, satellite contacts, space shuttle contacts, the surprise six meter opening, phone contacts, good old CW, maybe some digital contacts. The learning opportunities and demonstrations of various antenna and tower erections, operating techniques of how to run a pile up or hunt and pounce for multipliers.

Those two old guys will be out there with the food and beverages again, no picnic, but plenty to eat for the crew and visitors all weekend long. The core group is available and ready to go. If you operated or helped with preparation and takedown last year, please come out again and if you can stay a few hours more, it will be appreciated.

My RV will be home for the phone station again, and we get to see the New CW station in Ed's 45 foot diesel pusher. He may want to charge for a tour because it will be busy. I'll let him tell you more about it and what he has planned to install in it.

The location is once again at what we lovingly now call "the Lake Elmo park

*(Details continued on page 4)*



Support the  
League  
[www.arrl.org/join](http://www.arrl.org/join)

*(Details, Continued from page 3)*

formerly known as Tartan.” Entrance will be the back gate on the east side off Lake Elmo Blvd. Porta potties only --no facilities like years ago. Mark the dates, set up starts at 1500 hours Friday June 23<sup>rd</sup> and out the gate on Sunday afternoon.

Our ten-meter Friendly Net and two-meter net on Wednesday nights are continuing nicely with the “usual suspects” and an assortment of others to round out the evening. It’s fun to hear what the guys are doing with radio or home adventures. Which reminds me, I have to get the 160M wire up in the trees before the leaves fill in.

After retirement, my spring is being used up continually with yard and garden projects, some over five years old. Depending on the weather and other conflicts, I move from one to another, and eventually, they will get completed. Murphy is on the job too--in fact I think I have the Murphy Brothers working against me. Friday I was in the process of moving the snow blower out of the garage and back into the storage shed for the summer. Time to change the old and clean it up, and some grease as needed and lube the cables. So I get to the grease part and grab the gun, pump in a load on the right shaft and move to the left, no grease is coming out. Grab the Marine gun and it wouldn’t pump either! Two options came to mind, clean them up or run to Harbor Freight and get a new one. Upon disassembly, I found they both had grease but it was so old it didn’t want to move up into the pump. Soaked the parts in gas and then brushed and cleaned them to the point of pumping the cleaner through the nozzles. Just like new. Reassembled and they work great again.

The winter winds did a great job on tree trimming, it rained branches on the yard and even toppled a dead tree that was back there. I had two stacks of branches and limbs that finally got to the fire pit that night. About five hours of stoking the fire and it was done, leaving me with a nice pile of ash to spread around the garden as I start the task of condensing the flower area and improving the lawn area.

Deb bought a new large TV so we had Xfinity come out to upgrade the system to X-1 operations and add the home security feature. Included in the upgrade was a new high speed router that not only improved my speed but we eliminated my old network router and use the two that are in their box. Which just reminded me, we got all the desktops and new gear to join the new networks, but I still have three older vintage laptops to convert into the new system. Just more fun than one should have!

Watch for other email blasts as the days move toward the big FD. We usually have a June GW for closing minutes and stuff, but FD info will be handled as needed.

Dale, NØPEY

## UST Tobacco-Free

UST’s St. Paul and Minneapolis campuses are tobacco free.

In the St. Thomas policy, “tobacco” is defined as any lighted cigarette, cigar, pipe, clove cigarette, hookah smoked products, electronic cigarettes and any other smoking product, as well as smokeless or spit tobacco, also known as kip, chew or snus. Promotion, sale and distribution of tobacco products and merchandise, including any items carrying tobacco logos, also are prohibited on the campuses or at any university-sponsored events.

## Building Blocks Jay Maher, NJØM

In April, Orcy Lyle (WØQT), Chuck Stroud (KA8HDE), and I met at the Circuit Builders group to work through the first of the “Hands on Radio” experiments from Ward Silver’s (NØAX) column in QST. We breadboarded the common-emitter amplifier and made the circuit changes to observe the variations in output. Despite being handicapped by my poor scope navigation (so many menus!), we managed to work through the whole exercise. It looked simple on paper but a few things left us scratching our heads. Chuck relayed a comment from Mert Nellis (WØUFO): “If you want to understand it, you need to do the math.” That was certainly the case here, and another session was in order. Model/ calculate it. Build it. Measure it. Write it down. These exercises may take longer than I thought.

If you think of building/experimenting along a scale of difficulty, you might start with a basic kit like the Humana-Light I mentioned last month. It is an easy kit with all the parts and instructions to solder it together in 30 minutes or less. A step up would be a more complex kit, but one that still supplied all the parts and instructions. A semi-kit could come with just a PCB and some (or none) of the parts, or might be sparse on the instructions. As you venture farther off the beaten path, you move into “Projects.” A Project might duplicate something you’ve seen elsewhere or it could be of your own creation, but it is usually characterized by the need to pull together significant amounts of information and parts. It doesn’t come in a package.

The categories listed above are arbitrary, but you should note the increasing importance of documentation as you move up the scale. If you aren’t documenting, you aren’t learning as much as you could from your building

*(Building Blocks, Continued on page 5)*

(Building Blocks, Continued from page 4)

efforts and your frustration level is probably higher than necessary. Though there are some handy software programs for information management out there, my background has left me with a preference for a paper lab notebook and simple project files.

If you haven't had to keep a lab notebook before, Google "how to keep a lab notebook" for some guidelines. Opportunities abound for obsessive behavior here. Decide what level fits your personality and needs. There is also a short ebook on Amazon by James McClanahan (W4JBM)--*Record Keeping for the Radio Experimenter*. Readable on your Kindle or PC, it is 99 cents well spent for the tips you might pick up. For my own use, I prefer a bound notebook that is quad ruled because I can't seem to draw straight lines without help. Number all the pages and leave about 5% in the front for contents/index. In the home lab notebook, the entries likely cover many subjects and are chronological. The first day you work on your flux capacitor project, make a note of it in the front with the page number. Leave some space after each contents/index entry for noting addi-

tional page numbers as you go back to the flux capacitor project in the future.

Project files on your computer can help cut the frustration level if you are working on something complex or over longer periods of time. Collecting all the information in one place saves you from having to find that article or website down the road. Some might print everything out but I usually just save things in a project specific folder on the computer. If you are pulling it off the web, just print to a pdf and save in your project folder. Remember to go through the document looking for photos or schematics that are "clickable" for links to larger versions on the web page and save those files along with the pdf you made. Do the same with software that might be associated. If you forgot something but have the pdf and click on a link in the future, it should take you back to the original. If it has disappeared from the web, the header information on your pdf will give you a place and date to look in the Internet Wayback Machine. Supporting articles, datasheets, parts lists, build photos, annotated schematics, and test results are all possi-

ble things you might want to keep in a project file. Making use of the "customer reference" field on Digi-key or Mouser order forms to note project name and part ID (R2, D2, etc) gives you a detailed base for the project file parts list and helps you identify those parts if you don't build right away. Save the BOMs (Bill of Materials) and you can share them with others. Don't forget to back up those computer files!

Your brain and the information you collect form the most important tool you have for building. Make the most of it by organizing your files and recording your observations. Remember the adage "the shortest pencil beats the longest memory." Better yet, write that down.



### Your email Bounced

Well, maybe yours didn't—but some of them do. If you haven't been receiving email every month from SPRC, make sure that we have your correct email address. Send it to:  
**NOPEY at comcast.net**

Fri May 5 7PM Socializing followed by 7:30 PM SPRC Membership meeting. UST classroom OWS LL-54. See Page 1.  
Sat May 6 10AM VE testing. Ramsey County Library, 3025 Southlawn Dr., Maplewood. Contact Leon Dill, WØCOE@arrl.net or 651-688-9964  
Sat May 6 9AM Circuit Builders. OSS 415 UST Campus\*  
Fri May 12 7PM SPRC Board meeting, OSS 121 UST campus (Alternate location is OSS 415) \*\*  
Sat May 13 9AM Circuit Builders. OSS 415 UST Campus\*  
Sat May 20 9AM SPRC Breakfast. Midway Perkins on University Ave east of Snelling.  
Sat May 20 After Breakfast. Circuit Builders. OSS 415 UST Campus\*  
Sat May 27 9AM Circuit Builders. OSS 415 UST Campus\*  
Sat Jun 3 10AM VE testing. Ramsey County Library, 3025 Southlawn Dr., Maplewood. Contact Leon Dill, WØCOE@arrl.net or 651-688-9964  
Sat Jun 3 9AM Circuit Builders. OSS 415 UST Campus\*  
Sat Jun 10 9AM Circuit Builders. OSS 415 UST Campus\*  
Sat Jun 17 9AM SPRC Breakfast. Midway Perkins on University Ave east of Snelling.  
Sat Jun 17 After Breakfast. Circuit Builders. OSS 415 UST Campus\*  
June 24 – 25 Field Day Weekend

\*Circuit Builders is each Saturday morning if someone is available to open the lab and there is no conflicting activity. Check the SPRCCB Google Group to confirm that the lab will be open.

\*\* Depending on business to be considered, Board Meetings are sometimes held electronically. Check with an officer or board member to confirm that the meeting will be at UST.