SPARC Gap

The Official Newsletter of the Saint Petersburg Amateur Radio Club

Vol. 2 No. 2 November 2024

Club Members Exhibit Mobile Radio Installations

by: Bruce H. Solov, KF4TYA

The St. Petersburg Amateur Radio Club held its monthly meeting on May 3, 2024. The program for this meeting was a chance for club members to showcase and even "show-off" their mobile installations for the club's distinguished panel of judges. The winners received trophies for the best ones. The installation were for HF, VHF & UHF.

There were five contestants for this program. The contestants were: Dave Wiegman-K4DRW, Charles Adkinson-W4BPP, Ryan Rager-AF4O, Alex Harvey-KO4CEE and Bob Wanek-N2ESP. All of whom are competing for this year's coveted trophies and exhibiting their mobile installation prowess to the membership guests and judges. One of the entries was a bicycle installation.

After the judges took some time to tabulate their results, the winners were announced. The winners of the 2024 trophies were:

First Place:
Ryan Rager, AF4O with his Icom IC-705 (160-6-meters) shack in a box, Kenwood 710 VHF/UHF mobile transceiver in his maroon Ford pickup with a 80 – 10-meter antenna mounted on the side of the truck's bed.

Second Place:
Charles Adkinson, W4BPP with an Icom IC-5200 VHF/UHF mobile transceiver. The radio is mounted inside his red Dodge pickup truck.

Last but certainly not least…
Third Place:
Alex Harvey, KO4CEE aka: "Bicycle Mobile" won the third-place trophy for his eye opening and innovative installation of an Alinco DJMD5XT dual-band handheld on the handlebars of his bicycle.

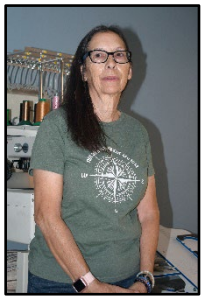
All the contestants showed their prized rolling shacks. Some with HF, VHF and UHF while others just the VHF/UHF equipment. The weather was cooperative and all had a good time and even got some ideas for a mobile installation of their own. Thank you to all who competed.

What is Parks on the Air (POTA)?

A Detailed Overview of POTA Operation & Equipment

by: Bruce H. Solov, KF4TYA

The St. Petersburg Amateur Radio Club held its monthly meeting on July 12, 2024. The program for this meeting was an overview on POTA Operations and Equipment. Lisa Neuscheler, KC1YL facilitated the presentation.



First of all, what ***is*** Parks on the Air (POTA)? *Wikipedia.org* defines POTA as "an international radiosport awards program that encourages licensed amateur radio operators to visit, enjoy and operate portable equipment in a variety of parks and public lands always respecting other park users and local regulations." The *Wikipedia* article continues to cite that, "POTA

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issues awards to participants based on a wide range of criteria."

There are many different setups that can be used for POTA depending on if a pavilion is available or not. It can even be done from a picnic table, or even in your car.

The basic equipment you need to do POTA activations is:

- An end-fed antenna
- A mast
- A portable radio like a Yaesu FT-891 or Icom IC-706
- A portable digital SWR meter

Lisa's typical setup includes an antenna mast that is telescopic to 31 feet. A bio-environmental 14 – 15-amp lithium-ion battery that can provide power for up to three hours. She also uses a whip antenna on a tripod, fully extended, the antenna it can be used for 10-meters, on a tripod, that antenna can be used for 20-meters. With a base and a coil the antenna can be used for 40-meters. She also uses a computer-based log to log any contacts made, with a paper log as a backup. Lisa runs approximately 60 watts, but said that there is no power limit for POTA.

You don't have to notify the park of your presence, Neuscheler said, but cautioned that the park doesn't want any type of installations. All areas in the park are accessible by car. Additionally, the park needs to be a state or federal park for POTA.

She operates exclusively on phone. In order for any park to be considered a valid activation, POTA requires a total of at least ten contacts. Less than ten contacts is deemed a failed activation. You can also work multiple parks in a single outing.

POTA has no limit as to the types of stations that can be worked for the contact to be considered an activation. The contacts can be DX, North America, and CONUS are all ok. The awards include certificates for activating your first ten parks, 20 parks, 100 parks, etc. You may also work POTA stations from your home station.

Neuscheler said that being in a public park, you get a lot of questions from interested or simply curious passersby. She said that one of the weirdest comments was from a Park Ranger who told her that she couldn't fish there.

In closing the presentation, she said, "I have seen so many beautiful parks." Why don't you get involved and give it a try.

A Look Into Magnetic Loop Antennas

by: Bruce H. Solov, KF4TYA

The St. Petersburg Amateur Radio Club held its monthly meeting on August 2, 2024. The program for this meeting was a look into magnetic loop antennas.

Richie Cariello, AA2MF was living in Brooklyn, NY back in the 1970's. Anyone who knows anything about real estate in New York City, knows that the living spaces are small and the rent can be high (might I digress..)

It all started in 1985, when Cariello read an article in *QST* Magazine about magnetic loop antennas. The article was originally published back in 1967. It gave a history of magnetic loop antennas.

He said that even though loops are not the best option when space is limited, it was the best solution for him at that time. Loops, if built correctly, will do the job said Cariello. Also, loop antennas are cost-effective the antenna in the photo is a 20-meter loop.

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Lou McCoy wrote an article in March 1968. Essentially, his first one (antenna) was a complete "flop". McCoy then asked for help to improve the antenna. He found it critical to keep losses to an impedance of less than 1Ω.

Loop antennas have been around since the creation of radio and were often used by the military. In 1985, the ARRL had a design competition with the ultimate goal for one antenna to be resonant on multiple bands.

Ted Hart, W5QJR, wrote an article for *QST* on small loop antennas with a high efficiency. Hart also published a book in 1985 on the same topic. It was pointed out that a loop antenna that is perpendicular to the ground has a bidirectional radiation pattern. A loop that is horizontal to the ground has an omnidirectional radiation pattern. The horizontal loop needs to be four feet above ground, not used near any metals and must have a non-conductive (e.g.: PVC pipe) framework for a horizontal mount. The maximum bandwidth on this antenna is 50 kHz.

The antenna did have multiple shortcomings. The goal was to have one antenna for multiple bands. These drawbacks included:

- Problems with cost and construction.
- Not designed to be constantly tuned as the copper bellows will fail over time.
- It was just better to make monoband loops vs. a multi-band loop.

The wavelength would be anywhere between 1/3 and 1/8 wave. For example:

Band	Circumference
20 meters	20 feet
15 meters	15 feet
10 meters	10 feet

Richie gave the formulas for figuring out the circumference for any given band, based on 1/3 vs. 1/8 wave.

1/3 Wave = *308/frequency (MHz)*
1/8 Wave = *558/frequency (MHz)*

He also showed a bunch of antennas that he had built for himself. Some of these antennas included an 80-meter octagonal loop, a 10' tri-band loop which is resonant on 10, 15, and 20 meters. Also a full-size 10-meter loop which took 10 feet worth of copper pipe, a capacitor of a couple of picofarads, and he adjusted the spacing to account for SWR.

He also mentioned that the performance of the antenna is affected by its shape. A circular antenna is optimal which makes it more effective than a square or an octagonal loop, Cariello said.

VK3CPU is a program that will "crunch the numbers", by inputting all the variables. It will also give you the capacitor size and voltage based on that information.

Cariello summed up the 45-minute presentation by saying that magnetic loops antennas work if they are constructed correctly, and if the connections are soldered and not mechanical connections.

Ham Radio Q & A:

Questions from the Membership to a Panel of Experts

by: Bruce H. Solov, KF4TYA

The St. Petersburg Amateur Radio Club held its monthly meeting on September 6, 2024. The program for this meeting was a question-and-answer session with a panel of experts in select topics. The panel consisted of:

- Richie Cariello, AA2MF – Antennas
- Ed Erny, NZ1Q – Echolink
- Tom Shaefer, NY4I – Networking

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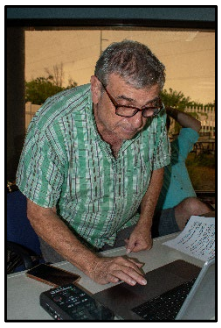

Richie, AA2MF discussed antennas and shared general information as an overview regarding the construction of various antenna types. He further noted that radiation from an antenna is not necessarily affected by the feed point of an antenna (e.g. a center fed dipole vs. an off center fed dipole).

Ed, NZ1Q discussed Echolink. He said the NZ1Q-L Echolink node has a dedicated transceiver, computer and antenna. The antenna is a vertically polarized beam that is pointed to the repeater in St. Petersburg. He gave an overview of how to get on Echolink. He also answered multiple membership questions on this subject.

Tom, NY4I discussed Networking and how it applies to amateur radio. He spoke of various topics pertaining to networking. These topics included the use of various ISP (Internet Service Providers), routers and tips for installation and implementation.

Collectively, the membership asked a total of 16 questions of the panel during the 45-minute Q & A session. Richie answered a total of six questions pertaining to antennas. Ed also answered a total of six questions pertaining to Echolink. Tom answered a total of four questions pertaining to networking.

Getting a New Vanity Callsign

Here is what is involved to obtain one

by: Pat Connelly, AAØO

Applying for a new callsign is a surprisingly arduous and involved process. First and foremost, each application will cost $35 regardless of whether or not your request is granted. If the callsign is not granted, your license expiration date will be reset to ten years from the date of the new license grant. You will need to use the FCC ULS (Universal Licensing System) website to make your application.

Callsigns in the 2x2 format (previously issued for Advanced license class), 1x2 or 2x1 are only available to Extra Class licensees. Some club member examples of these callsigns are AB4YI, N4GD and KR4U respectively. 2x3 and 1x3 callsigns are available to any class. You also, can request a callsign in any area (0-9) but only within the continental US and using a continental US prefix. You would need to live in Alaska, Hawaii, Puerto Rico or any other special prefix are to request any callsign (having the second prefix letter of L, H or P).

If the callsign you want is available, you can apply for it and you will receive it after eighteen calendar days (including weekends). If you submit your application on a weekend or holiday, it will not be processed until the next business day, and you 18 days will commence at that time.

This gets more complicated with the four digit calls (1x2 & 2x1). These callsigns are all accounted for at this time. After a callsign expires and is not renewed, cancelled or the owner becomes a silent key and the FCC is notified, it will become available two years and one day from that date. That is the day you will want to put in your application. Remembering that applications only get processed on business days, if the two years and one day falls on a Saturday, apply on the following Monday. Most likely, there will be multiple applications

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for these callsigns. Keep in mind that call area 4 is the most popular.

If the FCC receives multiple applications for any given callsign, they will use a lottery system to randomly determine who receives it, after those eighteen days have elapsed. This eighteen-day period allows for mail-in applications, for those that prefer to apply by mail (though uncommon in this day and age). Only the processed date matters and not the time, which makes it unnecessary to stay up until after midnight to apply. You can also apply for multiple callsigns with one application. If more than one callsign is available on the application date, this will increase your chances. There are websites available for tracking callsign availability. The best two are: https://vanities.k2cr.com which focuses on four digit callsigns and https://www.ae7q.com which has a myriad of information on all callsigns.

Additionally, if a close relative becomes a silent key, you can request their callsign and this will bypass the lottery system. You must have the license class for that callsign.

It is important to note that 1x1 special event callsigns are available to all hams. This is limited to one request per year and used for a maximum of 15 days. They can be requested without a fee using the website https://www.1x1callsigns.org They must be used in relation to a public event.

Best of luck in getting your new callsign.

What is Echolink and How Does it work?

By: Bruce Solov, KF4TYA

The St. Petersburg Amateur Radio Club held its monthly meeting on October 4, 2024. The program for this meeting was a dive into the world of EchoLink. How it works, and what is needed to use

Anyone that uses Echolink, whether it is every so often or every day has a general idea of how it works. SPARC has an Echolink node for those who wish to use it. The node is tied to the WA4AKH 2-meter repeater on 147.060 MHz. He mentioned that he has a dedicated radio set to the SPARC 2-meter frequency However, the Echolink node for this repeater is NZ1Q-L. Ed Erny, NZ1Q manages the Echolink node and makes sure that it is up and running for all wish to use it.

Getting started on Echolink is not difficult, Erny said. There are a couple of things that are needed for this. First and foremost, you need an *official* copy of your Amateur Radio license to access Echolink. This is obtainable from the FCC's website in the ULS System. Then you just need a computer or cell phone that is capable of accessing the internet. That's it!

Erny gave step-by-step instructions on how to set up access. The internet is Echolink's server using a mobile rig via an interface with a USB connector. Additionally, Echolink does not require much in the way of processing power.

Some links are repeaters, but most are just private people that set up these links. For SPARC, the node for Echolink access is set up as **NZ1Q-L**, since it is not a repeater site. Only the 2-meter repeater is accessible via Echolink.

Many people have used NZ1Q's Echolink link. There have been stations that have checked into the clubs nets from, Indiana, the Blue Ridge Mountains, Dallas. There have also been DX stations checking in from Germany, the United Kingdom and Erny

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himself checked in via Echolink from a cruise ship out in the Atlantic.

He demonstrated how Echolink works on his cellphone. There are a couple of limitations to be aware of. First of all, an Echolink node is tied to a single frequency. Here are a couple of other items to be aware of when using Echolink:

- Because it is tied to only one frequency, it cannot be used for HF communications.
- Also, when a signal is being received, the Transmit button will not show up.
- There is a delay of 15 seconds after the carrier drops, so at least that time needs to be allowed for any users to begin making a transmission
- There is also a 500 millisecond delay between what the user is saying and what is received by the rest on the frequency. So the moral of that story is…Be Patient!

Erny concluded the presentation by taking additional questions from the membership.

VE Testing Results:

By: Bruce Solov, KF4TYA

The St. Petersburg Amateur Radio Club holds monthly VE testing sessions at the Club Station located at DMI Research, in Pinellas Park.

The results are as follows:

4/16/24

New-Technician
Alexander Short, KQ4NIU
David Centrowitz, KQ4RHZ (now N9CSI)

Upgrade-Extra
Dan Nichols,Sr., KZ4GQ

5/21/24

Upgrade-Extra
Orin D. Walker, KG1S

6/18/24

Upgrade-General
Bob Cole, KQ4MOM
Michael Fauser, KA4WIZ (now W1WIZ)

7/16/24

Upgrade-General
John Mejia, N4MBZ

Upgrade-Extra
Angela Basham, KQ4GRW

8/20/24

New-Technician
Brandon Seyl, KQ4UWQ
Brad Meyer, KQ4UWF

9/17/24

Upgrade-General
Brandon Seyl, KQ4UWQ

10/15/24

New-Technician
Ryan D. Werner, KQ4WII

New-General
Michael Hadden, KQ4WIY

Upgrade-General
Bruce Solov, KF4TYA

VE testing sessions are held on the third Tuesday of each month at DMI Research in Pinellas Park. If you wish to test, please contact the club. Congratulations to all the new hams and upgrades. Job well done! Enjoy.

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Looking for Participation from club members.

By: Bruce Solov, KF4TYA

As your editor of the ***SPARC Gap*** Newsletter, I am always looking for feedback, suggestions and submissions for future editions.

I am also always looking for a couple of staff members so that any event I am unable to attend, someone will be able to cover it and submit an article to me.

Also, a reminder that I would absolutely love some *real* reviews of gear that you have (whether it is good, bad or downright ugly). The reviews are not limited to just transceivers, but everything (e.g. antennas, tuners, accessories, testing equipment, etc.) As we all know this type of information would be beneficial to new and seasoned amateurs alike. If you have any questions on this, please feel free to reach out to me.

Finally, look for a 2024 Year in Review edition of SPARC Gap in January 2025. In this special edition, some of the articles of past 2024 editions will be reprinted. I am always open to suggestions as to what to reprint.

Of course I can be reached by email: bsolov@hotmail.com or kf4tya@spectrum.net. All are welcome to make submissions.

73's,

Bruce H. Solov, KF4TYA

Secretary and ***SPARC Gap*** Editor

Current SPARC Net Schedule

SPARC Nightly 2-meter Prenet from 18:00-18:30 on 147.060 MHz (7 days/week)

SPARC Nightly 2-meter Net starting at 18:30 on 147.060 MHz (7 days/week)

SPARC 220/440 Net starting at 19:15 on 224.66 MHz/444.475 MHz with a tone of 146.2 Hz (meets every Thursday evening). At this time, the 220 MHz repeater will remain down until further notice. The repairs are still a work in process as of the November 2024 meeting. Stay tuned for further updates.

Also, all Net Control Stations will continue to deliver their net reports to Ed, NZ1Q until further notice. Those reports may be delivered on-air or via email.