Nashoba Valley Amateur Radio Club

NVARC Signal

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In This Issue

Breakfast at Tiny's in Ayer continues to be popular after more than two decades.

Next Meeting

This month's meeting will be held 7:30 PM on April 16 2026 at the Pepperell Community Center at 4 Hollis Street in Pepperell Massachusetts.

Our guest speaker will be Tom Baillio W1PKX on his design of the PKX40 transceiver.

Weekly 2-meter Net

The NVARC Information Net is held Monday nights at 7:30PM local time on the 2m N1MNX repeater – 147.345MHz+100pL. An informal net on 28.400(+/-) may follow the VHF net.

President's Corner
Les N1SV

I can't believe that I've been President for a whole year now - how time flies. This month we will be holding a Special meeting pursuant to Article IV of our constitution and bylaws for the purpose of electing the following officers: President, Vice President, Secretary, Treasurer, and a Director. A nominating committee was formed and has been canvassing our members to gauge interest in wanting to run for any of these offices. And if you're interested in any of them it's not too late to throw your hat into the ring.

In addition to electing officers at this Special meeting, we will also be voting to amend Section 1 Article IV of the constitution and bylaws to increase the maximum amount of money the board may expend in a month before the membership must be polled from $200 to $500. The current maximum of $200 has been for more than 25 years. As costs have increased this value has not kept pace with inflation. As an example, the cost of the Port-o-john rental for Field Day exceeds this.

Remember for a special meeting to occur we need a minimum of 20% of our membership (approximately 13 members) to either show up or submit an absentee ballot. And all absentee ballots must be received prior to the meeting in order to be counted.

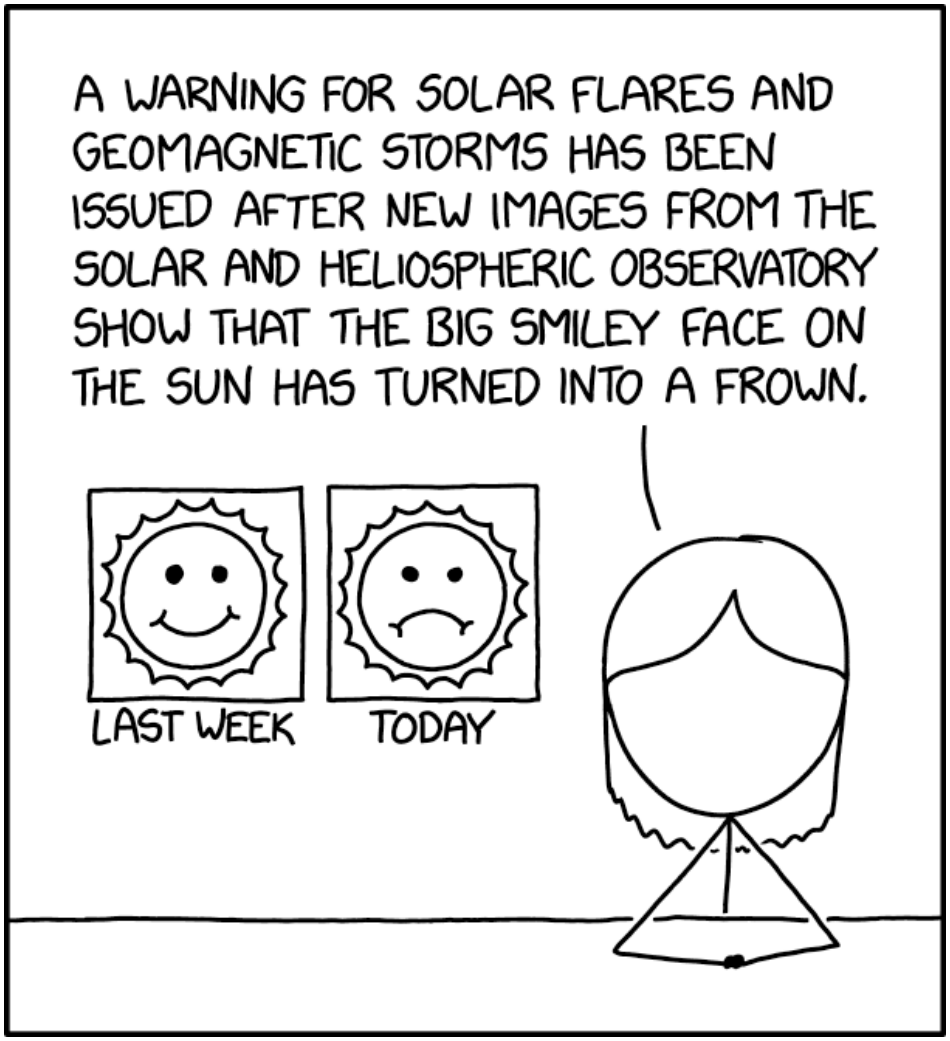
As one of three on the nominating committee, I really enjoyed reaching out to our members and discussing what's working well and where we could improve. Some of our members expressed an interest in meeting presentations and workshops geared to newer hams as well as kit building. These are all excellent ideas. We are working on trying to see if we can have an upcoming meeting that would include an antenna workshop designed for some of our newer licensees.

President's Corner
Les N1SV

I wanted to touch on some upcoming events. Bruce K1BG has started his next Technician license class at the Grady Research building. Classes will run Monday and Wednesday nights from 7:00 – 9:00 for five weeks. Bruce indicates that he has approximately (16) students signed up. There is also the Groton Road Race coming up on May 3rd. For more information on how you can help out please contact Ralph KD1SM.

The Monday 2M net on the 147.345 N1NC repeater at 7:30 PM continues to be doing well thanks to John K1JEB for being net control. If you're able to do so, I encourage you to check in. Remember after the net closes some of us QSY to 28.410 to talk with some of our members.

And finally, this month's speaker is Tom Baillio W1PKX who will be talking about designing and building his PKX40 transceiver. He will be focusing on the receiver performance. If you were at our December meeting last year Tom showed us his transceiver but with so many members wanting to share their projects that evening, we couldn't provide adequate time for Tom. So, I'm thrilled to get Tom back this month.



https://xkcd.com/3215

Treasurer's Report
Ralph KD1SM

Income for March was $203.75 in membership fees. Expenses were $0.90 in PayPal fees and $14.88 for mailings leaving a net income of $187.97 for the month.

Current balances:

General fund	$3,987.09
Community fund	$7,243.25

As of 2 April we have 64 members who are current with their dues. NVARC dues are still a bargain at just $15/year.

To pay membership dues via PayPal see the instructions in https://n1nc.org/membership/

If you are in doubt about your dues status please send me (Ralph) an email and I will be happy to answer your questions.

If you are joining ARRL or renewing your membership please note ARRL's instructions to enter your NVARC membership information. As a Special Service Club, the ARRL expects a majority of Club members to also be ARRL members and will send a portion of your new or renewal ARRL membership fee back to the Club. Contact me (Ralph) for further information if you need it.

Board Meeting Report
John K1JEB

John KK1X is working on the next Signal.

John KK1X made a page on n1nc.org for the story about the Pepper Hill Gang. Bruce K1BG had previously created a post for this story. Now it's a permanent page.

For the April club meeting the guest speaker will be Tom W1PKX speaking about his PKX40 High Performance Home Brew Transceiver.

The May meeting guest speaker will be Phil W1PJE speaking about HamSCI.

Ideas for future club activities and events were discussed. POTA seems a popular request.

Bruce K1BG has 16 to 17 Students signed up for the Technician Class. His students come from: 6 from his GMRS campaign, 3 from Facebook, and 2 From Bromfield HS.

Bruce K1BG has brought up, that at this year's HamXposition the club should set up and man a table.

A discussion on the 6 Bromfield HS Science Fair participants that the club wants to award them with RTL-SDR dongles. But, the V4 RTL-SDR dongles are getting hard to find.

Les N1SV requested a discussion on the procedure on how raise the the Board's spending limit above $200.

Les N1SV brought up the need for handling the absentee ballots for the April Election of Officers.

SOTA As a New Ham
Paul KC1YMR

One of the things that really motivated me when I was getting in to amateur radio last fall was the Summits On The Air program. I cannot recall exactly how I initially discovered it but I do distinctly recall realizing that this was something that was going to be something that I have a lot of fun with.

For those unfamiliar, Summits On The Air is a operating program similar in many ways to POTA but instead of going for a nice walk in a park you are climbing sometimes quite challenging mountains to set up a station at the summit and make contacts. Aside from needing to hike an entire mountain to make the activation count, the other main difference from POTA is that once you get your station set up you need only make 4 contacts to get activated. However, it is common for many SOTA operators to make 10 contacts as many mountains are also in POTA parks and your contacts can count toward both.

The scoring system also works a bit differently. Unlike POTA where every park counts the same towards any of the different awards offered in the POTA system, SOTA mountains can count for some number of “points” between 1 and 10 depending the height of the mountain. There are also an additional 3 “points” available on any 2-point or greater mountains if you activate between the 1st of December and the 15th of March as a reward for the added challenge of winter hiking.

I learned all of this and more in the months after I passed my license exam on the day that the government shut down on October 1st giving me a lot of time to study different on-air activities before I actually got my callsign. However, it did come soon enough and I was finally able to get on the air.

SOTA As a New Ham
Paul KC1YMR

After a month or so of learning how to actually operate and make contacts I finally headed out on my first SOTA activation of Mount Grace, SOTA designator W1/CR-005 in Warwick Mass. With my trusty QMX+ from QRP-LABS and a 20 meter dipole strung up in a tree I was able to make 10 SSB QSOs in between running laps in the snow in a failing effort to try to stay warm. It was a ton of fun but there was more to come.

A few weeks later I headed out again to do my first real big mountain and the first one that was tall enough to qualify for the winter bonus points. I climbed Mount Cardigan (W1/HA-012) and made 12 QSOs with the QMX+ and a brand new homebrew EFHW reaching as far as the west coast of California where I netted a 33 signal report. This time I was a lot more prepared and did not have as many issues with cold like on Mount Grace. The views were fantastic and so was the S1 noise floor at the summit. Propagation that day was absolutely fantastic and if it was not in the middle of the week and I had a bit more time at the summit I could have probably worked some pretty good DX from there.

Moonrise on the summit of Mount Grace W1/CR-005 after my first SOTA activation. *KC1YMR photo*

SOTA As a New Ham
Paul KC1YMR

My radio setup on the summit of Mount Cardigan W1/HA-012. Note the thick coating of ice on everything.
KC1YMR photo

Needless to say after this I was totally hooked on SOTA, I've always been in to hiking but I have never been great at setting aside the time to actually do it. Now, getting to play radio at the same time as seeing fantastic views really makes it a lot easier to set aside time to get out.

Since then I have done a few more SOTA mountains including Mount Cube (W1/HA-089) and Cannon Mountain (W1/HA-113). Neither of these were as successful as Cardigan but still a ton of fun. On Cube I suffered from only having 5 watts SSB on a day where propagation was really not working in my favor. And on Cannon I really struggled with not really having enough time due to poor planning and trying to do this on the weekend of the ARRL DX CW contest. The contest was distracting everyone from hunting SOTA or even being on voice at all. I could hardly hear anyone at all on the voice portions of 20 and 15 meters even though propagation was ok and I had I pretty low noise floor. On both of these occasions I was able to get the needed 4 QSOs but it was quite the challenge both times. On Cannon I even had to resort to using my phone to work stations using FT8 just to get the last contacts.

Not every mountain has been a success though. On the first weekend in March I set out on an attempt to activate Mount Wolf (W1/HA-074) as my last "Bonus Season" mountain. This mountain has only been activated for SOTA twice with the last time being in 2020. I was really excited to be the third activator of this mountain but unfortunately trail conditions were far more challenging then I had planned for. After 2.5hrs of hiking and losing track of the trail for the 4th time I decided to not become a rescue statistic and turn back after barely covering 50% of the distance to the summit. I enjoyed some nice warm soup courtesy of my camp stove and headed back to my car.

View on the way up Mount Wolf W1/HA-074. I will make it back here.
KC1YMR photo

I will return to Wolf this spring. I really want to become the third activator and maybe I will write another article about that when it happens.

Antenna Corner
John KK1X

This was supposed to be a report on my Winter Field Day operations in the February Signal. Nope. It was simply too cold, so I just operated from home as a 1H station. But one of the scoring opportunities in WFD was to use multiple antennas. Toward that end I had built a "20.5" as outlined by W4OGO in his ARRL publication Salty Walt's Portable Antenna Sketchbook. 20.5 feet of vertical radiator, a 4:1 unun, and some radials. I started out with four radials sitting on the snow pack, and although the antenna "tuned" on most of the bands, it performed dreadfully.

The map to the left illustrates the few contacts and poor performance of the 20.5 foot antenna.

Hoping to improve things, I increased the radiator to 29 feet and added another dozen radials from a spool of zip cord I got at the Henniker ham fest. That improved things immensely. Yeah, I know I changed two variables, but I'm not comparing – I'm just looking for better.

The 29 foot antenna seems to exhibit wider coverage. I swear I kept the power level the same.

The next improvement was to the 29 foot antenna.

At the Henniker hamfest I actually bought two 100 foot rolls of zip cord (labeled Radio Shack speaker wire, so it was the good stuff). One provided a dozen 16.5 foot radials as mentioned. While I subscribe to the theory that ground radial length isn't crucial, isn't it worth a little experiment to check? I cut the second spool up into six 33.3 foot radials, which is good for 40 meters if one believes ground radial length matters. I'll test more – with and without the 33 foot radials – to see whether I still believe myself.

There aren't many contacts showing in the above map due to time constraints, but I think there's promise to this design.

NVARC By the Numbers
Bruce K1BG

As many of you know, I'm usually involved in one way or another with our April elections. This year, I emailed absentee ballots to all eligible members. If you believe you should have received a ballot but didn't, please contact Ralph, KD1SM, our treasurer and keeper of the club roster. The current "roster" includes roughly 100 people who have been members of NVARC at some point over the last six years. Of those, 70 are active voting members.

Ralph maintains the roster, updating it when members become silent keys or ask to be removed. Naturally, you might wonder: If there are 100 people on the roster and 70 are eligible to vote, what about the other 30? Some have moved, some drifted away from the hobby, some lost interest in NVARC, and some simply forget to pay dues but still drop in for meetings or events. Since NVARC is an open club, dues aren't required to attend meetings or participate in activities. However, lapsed members eventually stop receiving The Signal, lose access to the email reflector, and miss out on benefits like the free outgoing QSL bureau.

Regardless of membership status, I always enjoy seeing familiar faces and old friends at meetings, breakfasts, Field Day, and other events. Like many clubs, NVARC was deeply affected by Covid. Zoom meetings kept us going, but when in person gatherings resumed, a number of long time members didn't return. Between silent keys, relocations, and shifting interests, our numbers declined. But something interesting happened.

NVARC By the Numbers
Bruce K1BG

Thanks to our outreach—emails, engaging meetings, Field Day, license classes, and more—membership has not only stabilized but grown.

Of our 70 current voting members:

- 38 joined for the first time after Covid (54%)
- 24 have been members for three years or less (34%)
- 12 of those 24 came from NVARC license classes, while the rest found us through other avenues

Even more encouraging is how active these new hams are.

Of the 12 graduates from our license classes:

- 4 have upgraded to Amateur Extra
- 4 have upgraded to General
- 8 are active on HF
- Many regularly check into our Monday night nets

NVARC is a healthy, growing club. We're welcoming new members from both the established amateur radio community and from our own home grown new hams—and those new hams are not only sticking with the hobby but thriving in it. It's exciting to see, and I'm excited to be part of it.

Bruce K1BG

A POTA Primer
John KK1X

A number of our newer members have expressed an interest in Parks On The Air, or POTA. It's a fun aspect of the hobby for a lot of people. The club will begin hosting POTA events on a monthly basis starting in May. I'm hoping to outline in this article what you need to know and what you need to do BEFORE you get out into the field.

The first thing to do is to join POTA. This allows your contacts to be logged by other people, and vice versa. I assume it's still relatively painless. I joined a number of years ago. A good place to start your POTA journey is at https://docs.pota.app/ which is the documentation side of POTA. There's a lot there, but don't feel compelled to read it all at once. It's sufficient at the outset to read this page and watch the 10-minute video also hosted on this page.

Once you're signed up and know the rudimentary rules, it's time to start considering equipment. At a minimum, a radio, power source, antenna, and feedline are necessary. Then, depending on your preferences, a microphone, a key or paddle, headphones, or (especially in my case) a computer and interface for running FT8 or other digital modes.

I typically use my Elecraft KX-3, though I've gone full Field Day mode and brought out the IC-7300, and have used an IC-7000 a few times. The KX-3 is small and light, and at 15W doesn't take a lot of power to keep it running. Contrast that to 100W on the 7000 or 7300, with bigger batteries and significantly higher weight overall. I find, though, that if you have only one radio, that's the best one to use. My rig interface is a DigiRig Mobile which powers from USB on my laptop.

There's not going to be an electrical outlet, so batteries are a must. Using your car battery is a must NOT, as a general rule. The current favorite technology appears to be lithium iron phosphate (LiFePo) batteries. There is a lot of "research" on the internet about how to properly determine which size battery to buy, but it's just so much easier to buy the biggest battery you can get that doesn't make your wallet squeak.

You have other stuff to buy. My power setup includes a volt/amp meter and a PowerPole splitter that powers my radio, laptop, and phone (the internet link). I have two batteries - one is a 12V 12AH Bioenno, and the other is a 12V 20AH Bioenno. The larger battery supplies a higher peak current so I can run the IC-7300 at full power if I'm feeling argumentative.

Antenna selection can be a huge rathole. I've tried just about all varieties that I can think of - dipoles, quarter wave vertical, half wave long wire, random long wire, and more. The one I find myself going to time an again is a simple hamstick style antenna on a triple-magnet mount on the roof of my car. Beyond that, I'm partial to a ground-mounted quarter wave vertical, which I can push to 40 meters with a base loading coil. I'd gotten a couple of them for reasonable prices a couple of years ago, and always keep one around. They require radials - the more the merrier. I typically lay out more than a dozen. I use orange so civilians can see them and hopefully avoid stepping on them. I'd make them blink if I could. I cut my radials to about 16.5' (5m) - a quarter wave on 20m, though I subscribe to the theory that ground radials need no tuning. Everybody has a different opinion.

Another antenna worth considering is the increasingly popular end fed half wave (EFHW). It does require a support, which can be either a tree or a support mast. The EFHW also requires choking to prevent common mode current (CMC) on the outside of the feedline shield. I choke at the radio end, using the coax shield as a counterpoise. Everybody has a different opinion. A drive-on mount (mine's a 2x8 with a pipe and flange) makes an easy support for a fiberglass mast even as tall as 40 feet (13 m).

A POTA Primer
John KK1X

Walt Hudson, K4OGO wrote a book for ARRL last year that contains a collection of antennas for portable use. I found Walt on his YouTube channel https://www.youtube.com/coastalwaveswires and used a number of his antennas in POTA activations in my 2024 pursuit of 500 contacts each month. The Rybakov antenna Walt presented was a 4:1 balun and a vertical radiating element ~25-26 feet (7.6-8.0 meter), along with as many radials as you can tolerate.

I employ a number of feedlines, but the ones I use most are either a 25 foot or 50 foot RG-8X with a built-in ferrite sleeve choke. The feedline from the magmount antenna had several turns of coax around a T240-43 toroid, which I've swapped out for a more-appropriate 31 mix. One uses what one has on hand, and the 31 mix cores arrived on Saturday.

Thinking ahead, what else would you need? If your antenna is supported in a tree, how do you get a line up? I use a slingshot most of the time, as air cannons are significantly less subtle.

You'll need some method to log, either a notebook or a phone/computer with your favorite logging software. I won't make any recommendations, but https://hamrs.app/HAMRS is a free app that runs on iOS and Android, as well as Windows, Mac, Linux and Raspbian. There are many others, including on-line logging, which I opine is a fool's errand if you're out in the deep woods!

Water? Snacks? Oh, bug spray and sunscreen. Yes, I have a way to make coffee...

Announcements

New Licensing Class

NVARC is running another Technician licensing class. The class started on Monday April 6th, running through Wednesday, April 29th, and is being held at the Grady Research building in Ayer. A total of 17 students signed up to take the class. A VE exam session is scheduled for Monday, May 4th.

Many of the students taking the class will attend our April meeting. Please welcome them to the meeting and encourage them in their Amateur Radio journey.

NVARC VE Team

NVARC will be having a VE session on Monday, May 4th, at the Grady Research building in Ayer. While the session is being organized to provide a test session from those graduating from the Technician license class, all are welcome to attend. Testing will take place for all license classes. Contact K1BG if you are interested in either testing or volunteering as a VE.

2026 Groton Road Race

NVARC has provided communications for this event for over thirty years.

The communications support that we provide is expected to start around 0900. We should be done shortly after 1300.

Contact Ralph KD1SM.

Nashoba Valley Amateur Radio Club
PO Box 900
Pepperell MA 01463-0900
https://n1nc.org

President: Les Peters N1SV
Vice President: Zack Harrison KC1VUY
Secretary: John Bielefeld K1JEB
Treasurer: Ralph Swick KD1SM

Board Members:
John Griswold KK1X (2024-2026)
Jim Hein N8VIM (2024-2027)
Matt Fennell KC1TUV (2025-2028)

N1NC Trustee: Bruce Blain K1BG

Join NVARC! Annual dues are
$15 individual, $20 family

Contact us on the N1MNX repeater:
442.900(+) PL100
147.345(+) PL100
53.890(-) PL100

This newsletter is published monthly. Submissions, corrections, and inquiries should be sent to

editor@n1nc.org

to reach the newsletter editor.

Editor: John Griswold KK1X