



# SIGNAL

A club since 1992



Since 1993

de N1NC

October 2022

Volume 31 Number 10

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### NVARC Monthly Meetings

NVARC General Meetings are scheduled for the third Thursday of the month at 2430 UTC (7:30pm, Eastern Time), except for July and August, when no General Meetings are held. When held, meetings are at the Pepperell Community center and are generally simulcast via Zoom. Non-members who are interested in attending may send an email to [meetings@n1nc.org](mailto:meetings@n1nc.org) requesting the teleconference details.

NVARC thanks **Medtronic, Inc** for providing the teleconferencing services under their employee volunteer support program for non-profit organizations.

### Upcoming General Meeting

The next General meeting will be held in person at the Pepperell Community Center, 2 Hollis St, Pepperell, MA 01463 on October 20, 2022. **No Zoom simulcast is scheduled.** The guest speaker will be Thaire Bryant W2APF. The title of presentation will be "DXing from the Other Side of the Pile-up". You are cordially invited.

### The President's Corner

de Bruce, K1BG

September turned out to be a really positive month for Amateur Radio here in New England. From all accounts, the "Big E" held annually in West Springfield the last two weeks in September was a huge success. For the first time in many years, amateur radio was represented. Larry Krainson, W1AST, organized a booth, and New England Sci-Tech organized a contact with the International Space Station. NVARC was represented by myself and Dan, KW3T, who each took an afternoon shift at the booth. Leads from the booth will be shared with amateur radio clubs close to the contacts, and it will be up to us to follow up with these people.

This week, October 14<sup>th</sup> and 15<sup>th</sup>, are the dates for this Autumn's NEAR-Fest ("New England Amateur Radio Festival", <https://near-fest.com/>) which is held in Deerfield, NH. For a complete agenda, have a look at the website. It features a large flea market, exhibit halls, seminars, and exam sessions. It's very popular and many club members can be found looking for bargains or selling excess parts or equipment at the flea market. Anyone else going? It would be great to arrange car pooling if you want to go. Please reach out to me and let me know if you are interested.

Now for some unpleasant news. In last month's signal and the September meeting, I asked for volunteers to help with several activities the club has supported in the past. Specifically, the Boy Scouts Jamboree on the Air and amateur radio technician class license classes. Quite frankly, the response from club members was underwhelming. I want to personally thank those that did respond, but neither activity got enough support for the club to actively participate. As a

result, we will not participate in the 2023 JOTA as a club, and technician classes will not resume at least until January. If you have interest in participating in Technician classes in January, please let me know. I'm looking for volunteers to participate weekly, and looking for someone to lead a class if I am unable to attend.

As I mentioned above, the annual Boy Scouts Jamboree on the Air will be held the weekend of October 15<sup>th</sup> and 16<sup>th</sup>.

<https://www.scouting.org/international/jota-joti/jota/>

Please look for JOTA stations on the bands and give them contacts and encouragement. Many, many hams got their introductions to amateur radio by participating in this event, and our participation will help make this year's event a success.

Finally, our guest speaker this month is Thaire Bryant, W2APF. Thaire is a has operated from many DX locations around the world, and he will be giving us his perspective on what it's like to operate from a DX location. I hope to see you at either NEAR-Fest or the October meeting.

- de Bruce, K1BG

### **Bennie Akins, KB1FJ (SK)**

I'm saddened to report that Bennie Akins, KB1FJ, recently became a silent key.



Ben was one of the original members of NVARC, serving as Treasurer from 1992 through 1994. He was Pepperell's RACES Radio Officer in the late 1980's and early 1990's. Ben had a passion for Morse code, and started the original NVARC slow speed CW net on ten meters.

RIP OM.

-de Bruce, K1BG

### **How I spend my summer vacation**

de Bruce K1BG



This summer, I had a relaxing 16 day summer vacation in England and Norway with family and friends none of them being ham radio addicts! So, you might ask, what does this have to do with ham radio? Well, for a start, ham radio is never far from my thoughts. If I am going to travel great distances, I try to see old friends and make new ones, even if I have no intention of operating.

My kids Camilla and Myles organized, with help of their English cousins, a family reunion to Devon in western England in early August. We spent 8 days in the English beach resort town of Westward Ho! (look it up), with 24 family members covering three generations.



Not to waste the opportunity, I looked up new radio friend Duncan Fiske, G3WZD, and old friend Tom Boucher, G3OLB, and escaped for a couple of lunches! Duncan and I are active in CWops, where we both serve as "Ambassadors" in our re-

gions (which explains why I am always making the CWops presentations at club meetings and conventions). In recent years, Duncan (he goes by “Mac” in contests) and I have had numerous CW contacts on-the-air, but had never met in person. In classic English fashion, we had a lunch and a pint at “The Farmer’s Arms” pub in Bideford, Devon. We talked for a long time about a range of things. I hope to return the favor at next years’ Dayton Hamvention.



Tom, G3OLB, and I go back a long way. Tom was a member of the Farnborough & District Radio Society (<https://farnboroughradio.org.uk/>), who warmly welcomed me as one of their own in the early 1980s when I lived in England (and was G4WJQ). We did Field Day together – in England! Tom is a huge 160 meter fan, and I have worked him on numerous bands (including top band) over the years. I hadn’t seen Tom in person since the mid 80s, and we had a lot of catching up to do. Marriages, divorces, what happened to old friends, etc. Like my meeting with Duncan, we met at a local pub – the Stags Head in Filleigh, North Devon. I thoroughly enjoyed both lunches and still have a smile on my face thinking about it.



After my trip to England with family, I took some time to visit old friend (and non-ham) Øyvind Roos

for 8 days Norway (some of you have met him at Saturday breakfasts at Tiny’s). We planned to spend a week at Roos’ cabin-by-the-sea, mostly boating, fishing, and relaxing, but he told me about the local radio club in Kristiansand Norway, Kristiansandgruppen AV NRRL, [LA9K](#). I did a little research, found out when the club met, and we “dropped in”! Wow, what an evening. LA9K is a very active club located at the very southern tip of the country. Their club station and meeting room is situated in an old military bunker located at the highest point in the city and overlooking ocean for probably 240 degrees, a truly breathtaking view.



On top of this location, they have a 20 meter (around 60 ft) tower, with antennas and equipment for 160 meters through 10 GHz. Check out their website for some awesome pictures. Club chairman, Asle, LA2JEA, welcomed us with open arms. We got a tour of the shack, a tour of the antennas, and a fantastic view of the harbor and surrounding islands around Kristiansand. We met a half dozen other club members while we were there, had coffee and snack, and discuss a variety of issues regarding amateur radio. I thoroughly enjoyed the evening.

Amateur radio is a truly amazing hobby, and I’m always amazed at how welcomed I am wherever I go. This summer was no exception, and I can’t wait for what next summer brings.

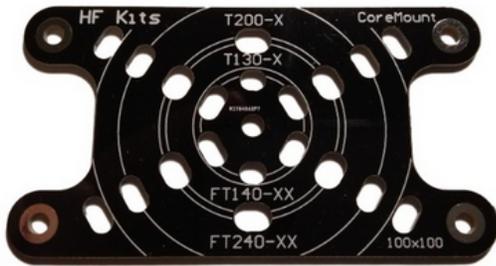
- de Bruce, K1BG

**My Adventures building an End-fed Half Wave (EFHW) Antenna**  
de Les Peters, N1SV

While helping out at the NVARC Field Day site this year, I was introduced to the End-fed Half Wave (EFHW) antenna. I'm typically skeptical when I hear about multi-band wire antennas that claim to work without traps. But having used one on 40m at the start of Field Day, it seemed to work better than I expected. So, I decided to build one myself. I found a lot of information on-line including a parts list, some YouTube videos, and even some commercial companies selling them.

**Whether to collect my own parts or buy a kit?**

The antenna utilizes a 49:1 UNUN to transform the 50-ohm impedance of the transmission line to the ~2450-ohm impedance of the antenna. I reviewed the UNUN parts list but also found a commercial company, HFkits selling a parts kit. While I could collect all parts myself, I was concerned about the minimum buy on certain items like magnet wire and how many different sources I would need to go to locate all the needed items. In the end decided to buy the kit from HFkits (<https://www.hfkits.com/build-instruction-impedance-transformer-250w-for-end-fed-antennas/>). The kit arrived from the Netherlands in less than a week with everything needed to build the UNUN. It also included a fancy PC board designed to secure the toroid in the enclosure.



**Toroid Mounting Plate**

**Assembling the 49:1 UNUN – Take #1**

The instructions for drilling out the enclosure and mounting the parts were straightforward and included a lot of pictures. In spite of this, I made a critical mistake winding the Toroid and ended up with one few to many turns on the secondary, and no extra wire. When it came to testing the UNUN with a decade box and antenna analyzer, I got some rather crazy readings (minimum SWR 4.5:1 that's not good!).

**Assembling the 49:1 UNUN – Take #2**

After doing some reading online and watching multiple Steve Ellington N4LQ, YouTube videos, I realized my mistake as well as the need to have really short connections to the load resistor. I was able to get some more magnet wire from electronics Plus in Littleton and successfully finished the UNUN. I tested it using a series of four resistors that totaled 2550-ohms and everything looked pretty good.



**Completed 49:1 UNUN SWR**

**Building the antenna**

The 80m version of the EFHW antenna is based on the half wave resonant frequency of 3.57 MHz which should be just over 131-feet long, so I started off with ~135-feet of antenna wire. Online information indicated that a compensation coil would be helpful in reducing the resonance point at higher frequencies. I built one out of a scrap piece of 1-inch OD PVC and wound 6 turns on it at approximately 78-inches from the feed point.



**Compensation Coil**

And while a counterpoise wasn't mandatory it seemed that those folks using one where able to

achieve a lower SWR so I added a 94-foot one as well.

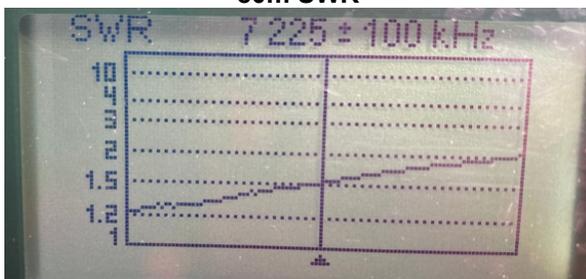
### Adjusting the antenna

Concerned with getting bad measurements in my yard with the towers and multiple wire antennas already up, I decided to set the antenna up in the parking lot of a local school. To do this I had to haul a bunch of stuff out there including a potato gun, compressor, and generator. On my initial attempt I was able to get the antenna setup using my portable 25-foot mast and a far tree in the parking lot. The school's facilities personnel got a kick out of the potato gun! I got the antenna adjusted pretty close but ran out of time and had to take everything down.

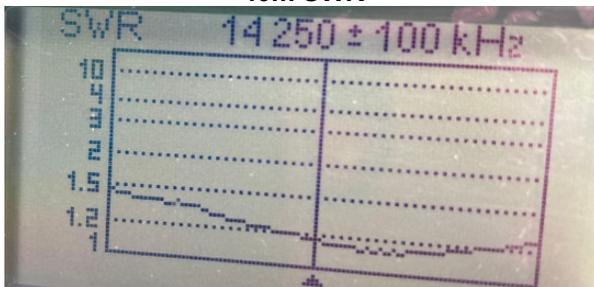
I returned to the schools parking lot a week later to fine tune the antenna for the SSB portion of each band. Everything looked good except the 80m phone band. Here are final measurements taken with my RigExpert AA-54 antenna analyzer. Trying to adjust the antenna's length to achieve minimum SWR on the desired portions of each band was a little bit of a balancing act.



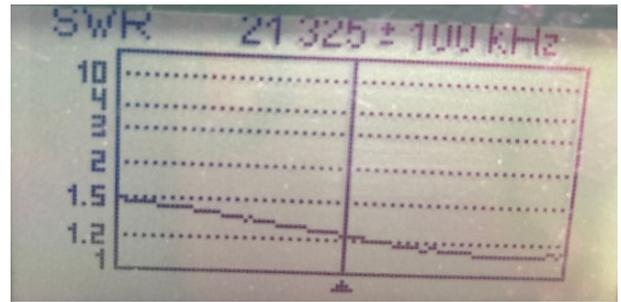
80m SWR



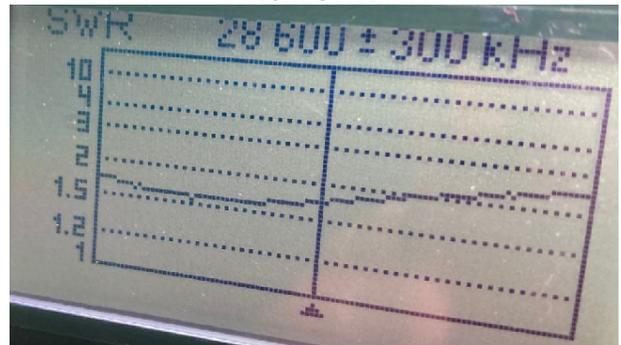
40m SWR



20m SWR



15m SWR



10m SWR

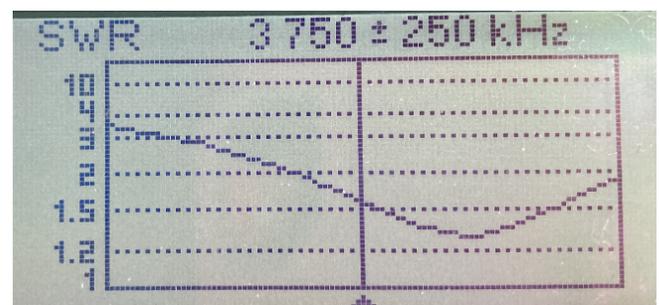
### Improving the SWR on 80m Phone band

Steve Ellington N4LQ, had another YouTube video on adding a high voltage capacitance at the halfway point of the antenna to raise the 80m resonance frequency without effecting the other bands. I constructed a Plexiglass plate to hold a capacitor, installed it, and prepared a handful of capacitors in the 250 – 500 pf range to try.



80m Capacitor Plate

I returned to the schools parking lot for a third time and set everything up again! I tried several different values and settled upon 330 pf as the best choice. In the end I was able to achieve below a 2:1 SWR from about 3.7 to 4 MHz.



Final 80m SWR

## Final Thoughts

While buying a kit saved me time and provided a nice mounting plate for the Toroid, it would have been cheaper to purchase the parts myself. And I could have made my own Toroid mounting plate out of a piece of perf-board.

After making the UNUN using a single Toroid I later found that you could improve the 80m efficiency (from 66% to 83%) by using two Toroid coils glued together.

For those wanting to be able to use this antenna on the CW portion of each band it might be interesting if you could add a pigtail of a certain length to the end of the antenna.

It may be useful to add a 1:1 balun at the transmitter output?

My goal for this antenna was to learn more about it and to start to create a kit that would include everything needed to set this antenna up for portable operations. I hope to have this available in the future for those looking for an antenna for POTA or other portable operations.

Thanks go to John Griswold KK1X for his inspiration and assistance.

## Resources for those wanting to build an EFHW

<https://www.youtube.com/watch?v=sty7RIXQoJI> (Steve Ellington N4LQ, EFHW – “Building the Transformer”)

<https://www.youtube.com/watch?v=4ceZnJM-7g4> (Steve Ellington N4LQ – “Winding a Transform for End-fed Half Wave Antennas – EFHW”)

<https://www.youtube.com/watch?v=Z7-FYm6r5jc> (Steve Ellington N4LQ – “EFHW Compensation Coil Experiment”)

<https://www.youtube.com/watch?v=p5rbVG3dpX4> (Steve Ellington N4LQ - “EFHW 8010 – 75 meter modification”)

[https://www.youtube.com/watch?v=pT\\_o487XQbs](https://www.youtube.com/watch?v=pT_o487XQbs) (Steve Ellington N4LQ – EFHW Grounding Compared”)

<http://gnarc.org/wp-content/uploads/The-End-Fed-Half-Wave-Antenna.pdf> (Steve Dick K1RF - “The End Fed Half Wave Antenna” 2018)

<http://www.arrl.org/end-fed-half-wave-antenna-kit> (“End Fed Half Wave Antenna Kit”)

-de Les, N1SV

## September General Meeting

After the summer hiatus NVARC's General meetings have resumed. The September meeting has featured two speakers: Fred, AB1OC and Ron



Evelt, N1QY. About thirty club members and guests were in attendance.

Lively discussions followed the talks. Both presentations were posted on the NVARC's [youtube channel](#) - check it out if your missed the meeting.

Fred gave an extensive update on the first round of ARRL grants issued to the clubs, as well as an overview of planned ARISS contact during the BigE exposition.



The feature presentation was about the theory and the practice of SWR. In a 45- minute session,

Ron explained the “nuts and bolts” of SWR and answered numerous questions.

Update from Ron: I've posted a link to the talk on my QRZ.COM page. I did find one miscue in the presentation. With a velocity factor less than one, the electrical length of a coax line is greater than its physical length, not less.

-de NVARC N1NC

### Monday 2 Meter Net

The NVARC Information Net was restarted in September after the summer break. It is held Monday nights at 7:30pm, Eastern time on the 2m Pepperell repeater, N1MNX: 147.345MHz, PL: +100. The activity has been steady, with an eight to four check-ins. Repeater is working normally.

Net control duties were performed by Bruce, K1BG and Rod N1SV. We are looking for volunteer NCS for months of November on. Any licensed amateur could be NCS. Please let Bruce K1BG know if you are interested.

- de NVARC, N1NC

### Treasurer's Report

Income for September was \$45 in membership fees. There were no expenditures.

Current balances:

General fund \$2,739.48

Community fund \$6,628.25

As of 6 October we have 35 members who are current with their dues and 42 renewals outstanding. Renewal months are in the member list on [www.n1nc.org](http://www.n1nc.org) in the Member's area; check yours on <https://www.n1nc.org/Members/Roster> or you may also email me. Thank you to those of you who mail your renewals or use PayPal without a reminder.

To pay membership dues via PayPal see the instructions in the same Members area.

If you are joining ARRL or renewing your membership please consider letting Ralph send in the paperwork for you. The Club will buy the stamp and will get a commission from ARRL.

As an Special Service Club, the ARRL expects a majority of Club members to also be ARRL

members. Contact Ralph for further information if you need it.

- de Ralph, KD1SM

### NVARC Board Meeting: October 6, 2022

#### Attendees:

Bruce, K1BG,  
Skip, K1NKR

John, K1JEB,  
Jim, N8VIM.

The SIGNAL is going relatively smoothly.

The NVARC Webpage needs an overhaul. Looking for someone to do it.

Jim N8VIM indicated there are 47 subscribers to YouTube. The last presentation was viewed 7 times.

The New QSL Program is on the back burner. Bruce K1BG.

The weekly 2-meter NET has started up again. 1<sup>st</sup> week there were a lot of check-ins and the second week there were 4 to 5 check-ins. Bruce K1BG.

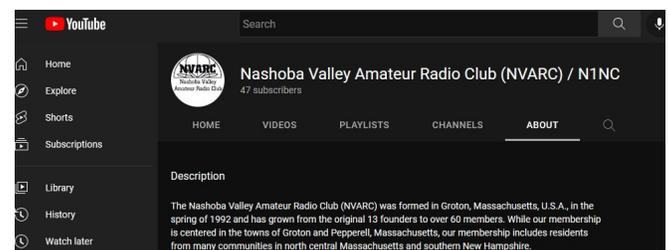
There will be no license classes till January. Bruce K1BG.

Skip K1NKR confirmed with Thaire B. Bryant W2APF if he is ready to do a talk at one of our general meetings. He is ready.

Bruce K1BG indicated that the “Big-E” Eastern States Exposition was very successful.

- de John, K1JEB

### NVARC'S YouTube Channel



[Please subscribe to the NVARC's YouTube channel, if you have not done so.](#)

-de NVARC, N1NC



The NEAR-Fest is an international event run by and for all radio hobbyists and enthusiasts, including “hams”, short-wave listeners, scanner buffs, vintage/antique radio fans, etc. NEAR-Fest is held twice annually, spring and fall, rain or shine, at the Deerfield Fairgrounds, Deerfield NH beginning on Friday at 0900 and ending Saturday at 1500 hours.

Admission is \$15. Persons under 18 and over 80 are admitted free of charge upon presentation of government-issued ID. Inside parking is available for \$10 and includes a “reasonable amount of flea market selling space” for PRIVATE INDIVIDUALS selling their own personal property. Commercial vendors must register and pay applicable fees. If you are wondering if you are a “commercial vendor” you probably are. One complimentary inside commercial space is available for clubs, estates and other “non-profit organizations” on an “as available” basis.

Overnight camping, trailer and RV hookups are available. Three food vendors provide meals and snacks at reasonable prices. The Deerfield Community Church ladies serve up a breakfast that has to be consumed to be believed. Angelino’s offers hamburgers, steak, sausage submarines and other great “fair food” specialties and Patty’s Polish Kitchen menu features wonderful “Mitteleuropa” cuisine. No one goes hungry at NEAR-Fest. We are extremely proud of the high quality of food that these vendors offer our guests while they are at the ‘Fester.

NEAR-Fest typically attracts attendees from the six New England states, NY, NJ, PA, MD and other states as well as from Quebec, Ontario, New Brunswick and Nova Scotia in Canada. Some attendees travel great distances; one gentleman from Los Angeles has attended fifteen events and in 2010 one radio amateur traveled

from Greece to join us for the fun.

The program of activities and events at NEAR-Fest is extensive; a huge outdoor electronic flea market, three buildings full of commercial vendors, forums, technical seminars and symposia, demonstrations, exhibits, displays, licensing examinations, special events radio stations, a “jam session”, good food, fellowship, fun and general mishigoss. NEAR-Fest is the largest event of its kind in the Northeast and has once been described as the “Woodstock of Amateur Radio”.

All of NEAR-Fest’s staff members are volunteers. Since NEAR-Fest is a 501(c)(3) Public Charity, any funds remaining after expenses are used for benevolent projects. NEAR-Fest directs some of its resources to attracting newcomers to our hobby with a special emphasis toward young people. To that end NEAR-Fest has gifted an amateur radio station capable of communicating through satellites orbiting the Earth as a gift to the McAuliffe-Shepard Discovery Center in Concord NH and brokered a partnership with the Contoocook Valley Radio Club (CVRC) to operate and maintain the station on a regular schedule.

In addition we have also funded several university and technical school scholarships and supported various charitable organizations such as the Shriners Hospitals and Boston Burns Unit. We also help to preserve our radio frequency spectrum allocations and have initiated a program providing for fund-matching grants to expand and enhance the amateur radio digital repeaters and networks throughout New England.

We look forward to seeing you at NEAR-Fest.

*-de Michael, W1RC/VE2XL*

## Calendar

### October

15/16 JARTS WW RTTY Contest

<http://jarts.jp/rules2022.html>

15/16 Worked All Germany Contest

<http://www.darc.de/der-club/referate/conteste/worked-all-germany-contest/en/rules/>

18,25 Worldwide Sideband Activity Contest

<https://wwsac.com/rules.html>

27 RSGB 80m Autumn Series, SSB

<https://www.rsgbcc.org/hf/rules/2022/rautumn.shtml>

28 Zombie Shuffle

<http://www.zianet.com/qrp/ZOMBIE/pg.htm>

29/30 CQ Worldwide DX Contest, SSB

<http://www.cqww.com/rules.htm>

29/30 Ham Spirit Contest, CW

<https://www.hamspiritcontest.com/eng/rules>

## November

2 Phone Weekly Test

[http://www.perluma.com/Phone\\_Fray\\_Contest\\_Rules.pdf](http://www.perluma.com/Phone_Fray_Contest_Rules.pdf)

3 NRAU 10m Activity Contest

<https://nrricontest.no/index.php/nrri-contests/nrau-nac/10m/nrau-nac-10m-english-rules/278-nrau-nac-10m-english-rules.html>

5/6 Gunung Jati DX Contest

<https://gjdxc.oraricirebon.com/>

7 RSGB 80m Autumn Series, Data

<https://www.rsgbcc.org/hf/rules/2022/rautumn.shtml>

12/14 PODXS 070 Club Low Band Sprint

<http://www.podxs070.com/o7o-club-sponsored-contests/triple-play-low-band-sprint>

12/13 WAE DX Contest, RTTY

<https://www.darc.de/der-club/referate/conteste/wae-dx-contest/en/>

12/13 10-10 Int. Fall Contest, Digital

<http://www.ten-ten.org/index.php/activity/2013-07-22-20-26-48/qso-party-rules>

12/13 JIDX Phone Contest

<http://www.jidx.org/jidxrule-e.html>

## Have YOU paid your NVARC Dues?



See: <http://n1nc.org/Members/Roster>  
for your renewal month.

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**Nashoba Valley  
Amateur Radio Club**  
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<http://www.n1nc.org/>

**President:** Bruce Blain, K1BG  
**Vice President:** Phil Erickson, W1PJE  
**Secretary:** John Bielefeld, K1JEB  
**Treasurer:** Ralph Swick, KD1SM

### Board Members:

Sean Pearson, KC1ONO, 2022-2025  
Skip Youngberg, K1NKR, 2020-2023  
Jim Hein, N8VIM 2021-2024

Property Master: John Griswold, KK1X  
Librarian: Peter Nordberg, N1ZRG  
N1NC Trustee: Bruce Blain, K1BG

Join NVARC! Annual membership dues  
are \$15; \$20 for a family.

NVARC general meetings are scheduled for the third Thursday of the month at 2330 UTC (7:30pm, Eastern Time).

NVARC thanks Medtronic, Inc for providing the teleconferencing services under their employee volunteer support program for non-profit organizations.

Contact us on the N1MNX repeater.  
442.900 (+), 100Hz  
147.345 (+), 100 Hz  
53.890 (-), 100Hz

This newsletter is published monthly. Submissions, corrections and inquiries should be directed to the newsletter editor:  
[editor@n1nc.org](mailto:editor@n1nc.org).

Articles and graphics in most PC-compatible formats are OK.

Editor: Vladimir A. Goncharov, W1MTI

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