



SIGNAL

A club since 1992



Since 1993

de N1NC

July 2022

Volume 31 Number 7

In this Issue

- Field Day Report.....2
- Field Day End Fed Half Wave Antenna.....5
- Proposed Experiments at Skywalker Ranch. .6
- Antique Wireless Association Conference7

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 requesting the teleconference details.

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

June General Meeting

At the June NVARC General meeting guest speaker George Allison, K1IG, gave a presentation "Giant Antenna's of the Navy". For its worldwide operations, the U.S. Navy has need for very large antennas and powerful transmitters. The sizes of these systems are measured in miles, not meters, and power is in megawatts. If you've got a few hundred square miles of land, maybe you'd like to build one yourself!

The President's Corner

de Bruce, K1BG

The first thing NVARC members look for in their July Signal is a report on Field Day. "How did we do?" The short answer is FANTASTIC! While we had no chairperson this year, we had a committee that delivered a really great experience and accomplished most of their goals. I was particularly excited by the number of young people who made contacts! More on Field Day elsewhere in this edition of the Signal.



NVARC is still looking for a volunteer to host our annual picnic, which is traditionally held in a member's back yard. Because of this, the volunteering member gets to make the rules! Usually, it's a pot-luck affair where attendees bring something to share, something they cook, and the host provides some means for grilling food. NVARC provides condiments, soft drinks, paper plates, etc. So far, no-one has stepped forward to host in 2022. If you are interested, please let me or another board member know.



NVARC typically slows down activities in the summer and starts them up again beginning in September. For the time being, the weekly 2 meter information net has been suspended for the summer. Formal club meetings will also begin again with the September meeting. There was discussion about having remote Zoom guest speakers for July and August, something we talked about at the last monthly meeting. The board decided NOT to proceed with this. There will be no Zoom meeting during July or August.



With that said, the next large activity that club

members traditionally participate is the ARRL New England Convention, now called HamXposition (<https://hamxposition.org/>), which will take place August 26th, 27, and 28th (the weekend BEFORE Labor Day) in Marlborough, MA. HamXpo features an exhibition area where vendors can display their latest gadgets, a flea market where you can find lots of used items, and meeting rooms where guest speakers talk about whatever their interest is. Plus there is lots of opportunity for you to have a face to face meeting with old friends and make new ones. HamXpo is the largest ham gathering in New England, and this year it's also serving as the ARRL's Hudson Division convention.

Last year, John, KK1X, organized an NVARC club table where we promoted the club and provided a place for club members to gather. It was popular with both club members and non-members alike. George, KB1HFT (our past Signal editor), left numerous copies of recent editions of the Signal on the table. They were ALL gobbled up by passers-by.

John has volunteered to organize the club table again this year, but he needs some volunteers to "man the booth". It's not a lot of work, and it's a lot of fun. Contact John at kk1x@kk1x.net if interested.

If there is interest, I'll coordinate a "club table" at the Saturday night "Grand Banquet". The guest speaker will be kit-building guru Joe Eisenberg, K0NEB. Joe will discuss how he got into kit-building and his experiences with the hobby. If you are interested at sitting at a club table, please let me know.

In any event, HamXpo is really fun event. I hope to see many of you there.



That's all I have for now. Have a fun, and above all, safe summer.

-de Bruce, K1BG

November One November Charlie Field Day!

A golden sun burns brightly in the hazy blue sky – yet another balmy midsummer day has already begun. At the entrance of Heald Street Orchard a yellow sign beckons me through an open gate: "Amateur Radio Communication Demonstration. Today!".



A sharp turn and you head up the wavy dirt road with a few protruding rocks marked bright yellow. The road ends with a short row of cars and pickup trucks on the right. A soft clattering sound reveals the presence of a trailer with diesel generator hidden in the bushes is straight ahead. At the left, a small but steep ridge thoroughly covered in grass stretches between the trees. Two tents for hosting radio stations and a larger tented common area complete with benches and tables have already sprung up.



Near the two smaller tents, Jim Wilber AB1WQ leads a team of Hams stretching guy ropes. Nearby, Sandor NB1N pounds down rebar

anchors to secure the antenna's base while John KK1X and John K1JEB set up two HF stations.

Soon after, Bruce, K1BG arrives in SUV filled with cables, ropes, small and large boxes and fishing gear.



At last, the "Iwo Jima moment" - the raising of the 35 feet steel mast to hold the end of antenna wire has arrived.

With the masts up, Bruce, K1BG expertly casts his fishing line over a tree to string antenna wire.

Nearby, I spy the man who just a minute ago energetically pounded several two feet rebar anchors into the rocky New England soil in order to secure the antenna's bases - Sandor NB1N. I approach him and strike up a conversation:

W1MTI: How long have you enjoyed the hobby?

NB1N: Since 1974. I got my first licence in Sonok, Hungary.

W1MTI: What is your favourite mode, if any?

NB1N: CW.

W1MTI: Any reasons why?

NB1N: SSB is less enjoyable, and I feel detached from the other operator when operating digital. It is like a machine.

W1MTI: It is sure true for FT8, but there are other modes like RTTY or PSK when you enter the message letter by letter, and the conversation protocol is similar to CW. Moreover, I know some operators who use keyboard keys to generate CW. So, one may say there is a lot of similarity between digital and CW.

NB1N: Yes, but I don't find it enjoyable.

W1MTI: For what I see the biggest difference between the CW and digital is that it takes years to reach proficiency in operating CW, while it takes a week or so to master a digital mode. Is it the challenge of CW that is attractive?

NB1N: Yes.

And so, Sandor also rides a motorcycle and stays up all night operating CW on 80m, except for a short nap that he takes in a hammock that he set up nearby.

Perhaps, the challenge is part of the enjoyment? What do you think, esteemed reader? Please send your opinion to: editor@nvarc.org.

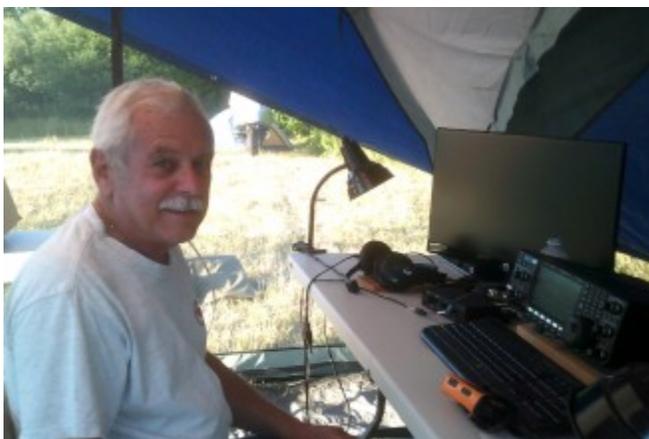


At noon, everything is ready for the action. During 2022 ARRL Field Day, June 26-27, NVARC has operated as Alpha 2 station with two End Fed Half Wave wire antennas and portable 6 kW diesel generator as power source. Twenty eight people participated in the Field Day activities, including seven guests. Coffee, cookies, banana bread, cold water and lemonade were provided at the common tent. A delicious dinner was served.

Despite a modest set up - two 100W HF stations operating CW and SSB, and absence of appointed coordinator, everything went remarkably well. The total number of contacts was 1206 with about 75% CW and 25% SSB. That is only 3% less than 1240 contacts from the previous year when NVARC had in addition VHF/UHF, GOTA stations and larger crew of operators.



Here is a summary of NVARC members contributions to the Field Day activities:



Jim AB1WQ provided an antenna and oversaw set up of both antennas.

John KK1X provided an antenna, set up SSB station and provided cold water and lemonade.



James N8VIM provided diesel generator, set up internet access and Wi-Fi.



Charly AB1ZN and his wife Judy supplied excellent sausages and sandwiches for the dinner.



K1BG contributed CW station.

Leo K1LK set up Food tent.

K1JEB installed signs directing the people to the site.

If we missed someone or something, or if you have anything to add to FD narrative, please send you comments to editor@nvarc.org. These will be posted in August issue of the newsletter.

Happy summer & 73!

- de_Vlad, W1MTI

Field Day End Fed Half Wave Antenna

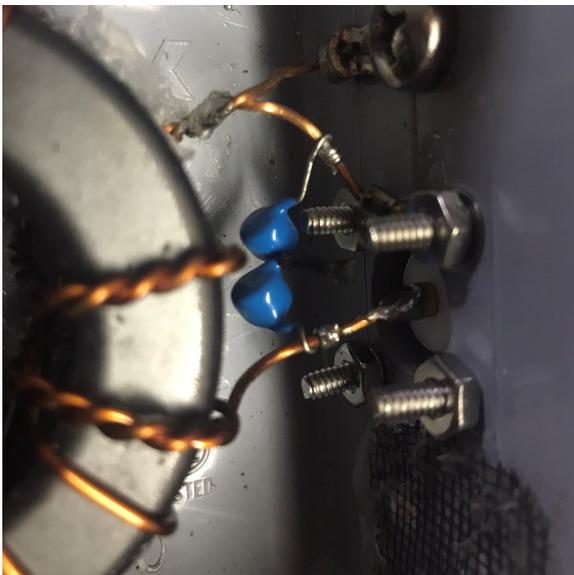
de John, KK1X

During Field Day 2021, the N1NC team fielded a mast supporting dipoles and another mast dedicated to Jim Wilber's commercial 80m EFHW (End Fed Half Wave). The dipoles worked well, of course, but were finicky and tended to get tangled with the guy lines. This problem is only exacerbated by additional dipoles. Jim's EFHW seemed to work gangbusters, so I wanted to take a stab at making one.



I gleaned the internet for ideas, hoping to find a build article that didn't require me to think too much. I found this page <https://noji.com/hamradio/pdf-ppt/noji/Noji-Article-80-10-EF-HW.pdf>

that didn't seem too difficult to follow. KN0JI did the heavy lifting, following the works of N4LQ and K1RF. I stood on their shoulders, and produced a pretty decent antenna. When I mentioned that I had DIY'ed the antenna during a Field Day exchange, the other OP said I must have made it out of something magic. I've been making phone

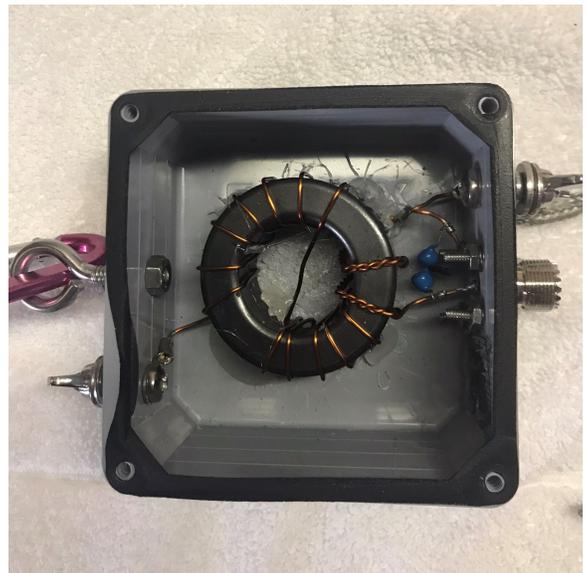


contacts at 10 W with my KX3 using the initial prototype (not breaking any pileup, though)

Rather than attempt to provide a blow-by-blow description of my construction, I'll just refer you to the better tutorial at noji.com above.

The design centers around a 49:1 UNUN transformer wound on a pair of FT240-43 toroids. The 49:1 ratio is intended to match the frequency-dependent impedance of the 132-ish foot radiating element to the 50 Ω radio. The impedance ranges from ~1800 Ω on 10 m to ~5 K Ω on 80 m. The 49:1 unun transforms this to ~37 Ω .. 102 Ω , which is not bad even without a tuner. I found the toroids on Amazon. Oddly, they are not available locally. The transformer/matching unit is housed in an outdoor electrical box, nominally 4 inch by 4 inch by 2 inch.

I purchased the enclosure at Home Depot. Lowes didn't seem to have quite this same box in stock.. It has no holes as purchased. The box has to have three 0.250 inch holes drilled for the radiating element, a ground connection, and a stainless eye bolt for hanging. The ground and radiating elements connect to 0.250 inch stainless machine screws. The coax connector, SO-239, requires a 0.625 inch hole for mounting, and, depending on the style, may need four holes for mounting screws.

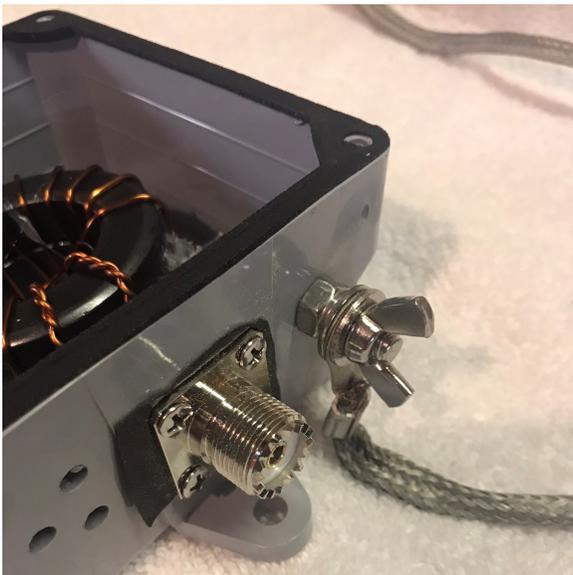


A few 0.125 inch weep holes covered with screen keep out the bugs and let water drain out. I used hot-melt glue to hold the screen in place, as well as secure the toroids to the back of the box once everything was soldered into place. (Funny bit -

I've not needed a box for an antenna before, and thought that no water would get in, so initially omitted the weep holes. Silly me! Yeah, they're needed.)



I cut an eight foot ground rod in two for the recommended counterpoise (though an argument could be made for using both halves at the same time?), and the ground braid is a bit of coax braid liberated from some retired feedline. It's clamped to the ground rod using a standard ground clamp, though most anything would work.



I used #16 superflex style wire, and used a 0.125 inch drill to create the compensation coil.

How tightly one should twist the transformer windings is debatable. The Field Day antenna was twisted much tighter than the prototype, but both seemed to work OK. I've seen the full range of "how it must be done or it won't work", from completely untwisted to absurdly overtightened to the point of metal fatigue.

My big departure from the directions was materials. Although I used stainless steel throughout, I dislike lock washers, so used "aircraft" nuts along with washers and wingnuts to make the wire connections.

For Field Day, we supported the antenna on a 35 foot mast. The transformer was about five feet off the ground, with the radiator going up about 25 feet to a pulley, then across to a tree. Pulling the wire higher would have brought the vertical part of the radiator very close to the steel mast.

-de John KK1X

Proposed experiments at Skinwalker Ranch

This year Skinwalker Ranch started an Insiders program. Joe is now one of the Insiders. As an Insider, they have access to the ranch cameras, interact with the Skinwalker Ranch Team, and have already logged sightings and events. Currently in the works, the Insiders have made experiment proposals and the Skinwalker Ranch team will be reviewing the proposals and will be getting back to the Insiders with their comments. Joe has proposed three experiment activities that are in the to be review list:

1. Do a mini Ham Radio field day in the triangle area of the ranch going from 160M to as high as they can go in the microwave bands to see if they get a reaction from the anomaly that is 5,000 ft above that area.
2. Get a better spectrum analyzer that is used for Electronic Warfare certification, that can analyze signals, to investigate the 1.6 GHz signal that happens during many of the Ranch experiments.
3. Put an ionosonde in the triangle area and see if over time it can see the anomaly come and go above them at 5,000 ft by blocking or affecting the ionosonde signal returns. One big problem is that between the anomaly and the 1.6 GHz signal, their GPS, ADS-B and other electronics get messed up.

This is a work in progress, so Joe will wait to see what the Skinwalker Ranch Team has to say on all of the proposed Insider experiments.

- de Joe, K1YOW

Treasurer's Report

Income for June was \$45 in membership fees. Expenses were \$200 for the annual club liability insurance leaving a net expense of \$155 for the month.

Current balances:

General fund \$2,767.22

Community fund \$6,628.25

As of 7 July we have 46 members who are current with their dues and 31 renewals outstanding. Renewal months are in the member list on 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: July 7, 2022

Attendees:

Bruce, K1BG,	Sean, KC1ONO,
James, N8VIM,	Vlad, W1MTI,
Ralph, KD1SM,	Skip, K1NKR

Call to order: 7:30PM

NVARC has one new club member – Dan WA1KVJ from Pepperell. Dan and his brother Don, WA1KVK, have been experiencing noise

problems on 6 meters. New LED street lighting is suspected.

Vlad, W1MTI, had questions regarding the Signal.

Jim, N8VIM, talked about the Field Day videos on the YouTube Channel.

On-line Zoom presentations during the summer have been held in recent years during COVID lock down. Since we have resumed in person meetings, it was decided not to continue the summer Zoom presentations.

Jim, N8VIM, asked if we felt the hybrid format should continue in September. He shared that he could make higher-quality videos for the YouTube channel if we drop Zoom. Jim reported that Zoom attendance was in the 4-6 range. Bruce, K1BG, suggested the meetings should be only in person at the Pepperell Community Center. It was proposed to stop the on-line portion of the meetings, which was agreed to by the board.

The Weekly Net will be put on the back burner till the end of summer.

There are no new plans for any immediate License Classes but, may resume in autumn. Five of the six students from the last class got their Amateur Licenses. This makes a total of 12 Licensees over the last few months.

Field Day was a lot of fun and there was a great group of people.

NVARC is still looking for a volunteer to host the annual club picnic. There will be an email going out for volunteers for the NVARC Picnic.

The Club Liability Insurance has been renewed by Ralph.

Bruce, K1BG, will send out an email for a member to volunteer manage the Club table at the HamX-position in August 26, 27, 28.

So far there is no response from the membership for participation at the Big-E or Eastern States Exposition.

Still looking for a volunteer to take advantage of the ARRL Foundation Club Grant Program.

The meeting was adjourned at 8:10PM

de John, K1JEB

2022 AWA Conference Announcement

The Antique Wireless Association 2022 Annual Conference will be held on October 4th through 8th. This is a great opportunity to get in touch with the roots of radio.



Features:

- Dual themes: "100 Years of Car Radios" and "Evolution of Audio"
- Free* access for buyers and sellers - Thursday 10/6 & Friday 10/7 to the
- AWA Communication & Electronic Equipment Flea Market
- Equipment auction on Saturday 10/8
- Book mart
- Over a dozen outstanding presentations
- Equipment contest

Admission to the Antique Wireless Museum is free Wednesday October 5th.

*You do not need to register for the conference to buy or sell at the flea market.

Conference registration: includes the free dessert social on Wednesday evening

October 5th, this year's registration also includes your free Friday night banquet dinner and includes equipment auction bidder's card. As always, registration for your spouse or significant other is free. You do not need to be an AWA member to attend.

RIT Inn and Conference Center - 5257 West Henrietta Road - Henrietta, NY 14467

For complete details:

<https://www.antiquewireless.org/homepage/annual-conference/>

Calendar

July

16 Trans-Tasmanian Low Bands Challenge

<https://www.wia.org.au/members/contests/transtasman/>

16/17 North American QSO party, RTTY

<https://www.ncjweb.com/NAQP-Rules.pdf>

21/22 Walk for the Beacon QRP contest

<https://qrpccontest.com/pigwalk20/>

30/31 Tennessee State Parks on the Air

<http://www.tnpota.com/>

August

4 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>

6/7 Batavia FT8 contests

<https://batavia-ft8.com/>

21 NoBARC HamFest

<http://www.nobarc.org/hamfest.htm>

Have YOU paid your NVARC Dues?



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

Sponsors



Fran Purcell

Electronics Plus

480 King Street
Littleton, MA. 01460

fpurcell@electronicsplus.com
Hours: M-F 9-6, Sat. 9-5

(978) 486-3375



**HAM
RADIO
OUTLET**
WORLDWIDE DISTRIBUTION

224 N Broadway STE D12 | Salem, NH 03079
Tel: 603-898-3750 | Fax: 603-898-1041
www.hamradio.com



**Nashoba Valley
Amateur Radio Club**
PO Box # 900
Pepperell Mass 01463-0900
<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). Non-members interested in attending may send an email to 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.

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.

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

Editor: Vladimir A. Goncharov, W1MTI

Copyright 2022 NVARC



Nashoba Valley Amateur Radio Club

PO Box 900

Pepperell, MA 01463-0900