



SIGNAL



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FEBRUARY 2023

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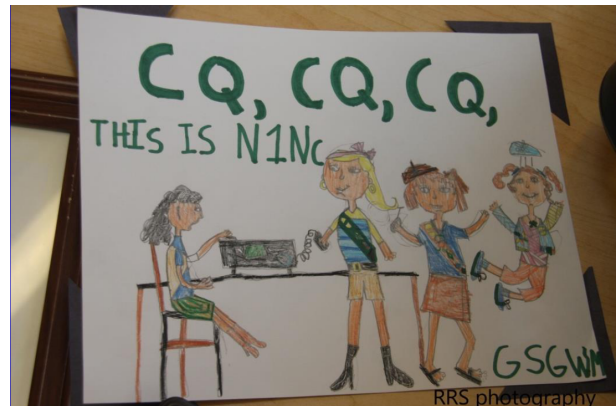
FROM THE PRESIDENT

de **BRUCE K1BG**

The presentation on DMR ("Digital Mobile Radio") by Dom Mallozzi, N1DM, at the January meeting seems to have struck a nerve with a lot of people. Besides getting excellent reviews by those in attendance, it seems to have been viewed many times on the club's YouTube channel, and there has been much interest on Facebook as well. I've seen references to the presentation on other Massachusetts club email reflectors, so word is getting out. Great publicity for NVARC! If you weren't able to see the presentation live, don't worry. Go to the YouTube channel and review it at your convenience.

As I said in last month's Signal, January is traditionally Short Subjects Night, but because we had the DMR presentation, we've decided to have it this month. It's an opportunity for club members to present on anything they like – between 15 minutes and half an hour. We haven't limited talks to amateur radio only talks, so if you have something you would like to

present, please plan on it. Without membership support it will be a pretty boring evening, but in all seriousness, Short Subjects Night is never boring.



I also mentioned last month that NVARC would again participate "Thinking Day On The Air" (TDOTA), an annual activity that is sponsored by the World Association of Girl Guides and Girl Scouts. An excellent write up on a previous TDOTA can be found [here](#). This year, we'll be working with Girl Scout Troop 65051 in Lunenburg. Our TDOTA activities will take place on Saturday, February 18th, at the United Parish Community Center in Lunenburg MA from 10 AM until 2 PM (and maybe later, depending on need). A number of club members have stepped forward, but we are looking for a few more volunteers. If you are interested in helping, please contact me – Bruce, K1BG, or Skip, K1NKR.

Another activity NVARC participated in pre Covid is the Bromfield High School Science Fair. The Bromfield School is the public high school in Harvard, MA. I received a nice invite from Ellen Leicher who coordinates the activity annually. Because we have a special focus on what we judge, a list of entries will be provided to us in another week or so, and we will decide on what projects we want to judge. We usually like to see either a radio or an electro-magnetic content to the projects we judge. Again this year, Phil, W1PHE, will conduct a tour of Haystack Observatory for the winner (or winners). The activities will take place on Friday, March 3rd in the afternoon at the Bromfield School. After the fair, our judges will compare results, make decisions, and attend the evening awards ceremonies. Again, a handful of volunteers are needed to participate as judges. Let me know if you are interested.

As club president, the club constitution and by-laws compel me to select a "nomination committee" to go out and find candidates who are willing to run for office in 2023. In my opinion, the board of directors (meaning the officers

and directors at large) are in need of some new blood and leadership. I feel strongly – very strongly – that no one individual should have to serve in a position for more than two years. And it's been my experience that the longer a person serves in one elected position, the less likely it is that someone will volunteer to relieve them of that elected position. It results in a person being what I jokingly call "elected for life" – and this is not a good situation. We are constantly in need of new ideas and new energy. So with that, if you are interested in participating in the nomination committee, please contact me and let me know. Finally, I'm in the final stages of reserving the Pepperell Community Center for another Technician license class, to begin in late February or early March. It will run twice weekly for four weeks. Several people have volunteered to help, but we can always use a little more help. Let me know if you can make yourself available.

Remember, Short Subjects Night is our February meeting topic. Its success depends on YOU. I hope to see you there!

Best & 73
de Bruce, K1BG

Letters From Our Members

Tony, KX1G

NVARC member Tony DiCenzo, KX1G, who is spending his third winter down in Venice Florida, writes that while he is hindered from putting up an outside HF antenna by his home owners association, he is active in other ways. He has become the editor of the DX page in the monthly newsletter of the Tamiami ARC (TARC), an ARRL Special Services Club, which has lead to an invitation by the lo-

cal chapter of the QCWA to be the luncheon speaker on the topic of DX at their monthly meeting in March, and that has lead to the Tamiami club to extend a similar invitation. Tony is a member of both clubs, and also a member of the Sarasota Emergency Radio Club (SERC). He says he is helping SERC and Sarasota ARES (SRQARES) to connect with the 49 Community Emergency Response Teams (CERTs) that have sprouted up in Sara-

sota County. Tony says he is running for a seat on the HOA Board of Directors, which should help with his effort to get the HOA to allow antennas. Tony also mentioned he has purchased a 2 meter beam antenna that is integrated into an American Flag. The flag antenna was featured in the January issue of QST. HOAs are prohibited from preventing residents

to raise flags and flag poles.

Skip, K1NKR

After 63 years in the hobby (originally licensed on 11 February 1960), Skip K1NKR just used LoTW to achieve WAS and DXCC. "Now I'm finally a ham," he says.

Message from the Editor

Dear NVARC members,

Thank you to all who contributed to Signal in the past year. This year, I hope to see an increase in the feedback from the readership including those who are not the club's members. As a community newsletter, Signal relies on input from you. Send your articles and letters. Share your thoughts, ideas, and achievements related to Amateur radio. The regular submission deadline is the first Monday of the month, however, letters and short communications may be accepted for the publication in the current month issue, if received by 0000 UTC second Tuesday of the month.

de Vlad, W1MTI

NVARC's DXCC Standings



ARRL DXCC standings of NVARC members as of February 4, 2023. Includes members currently on the club's roster. K1BG, KX1G and N1SV are on the Honor Roll.

CALL	NAME	STANDING
K1BG	Bruce	346
KX1G	Tony	345
N1SV	Les	344
K1JKR	Ken	263
K1NS	Bill	229
W1MTI	Vlad	131
AB1XB	Bill	111
K1NKR	Skip	104
W1HBS	Harvey	103
KK1X	John	101

FROM THE SHACK

de JOHN, KK1X

9:1 UNUN

For Field Day 2022, we used two End-Fed Half-Wave (EFHW) antennas to good effect. I built one of them, as described in the June 2022 issue of the Signal (here). Further research indicated that a so-called “random wire” antenna might allow me to access the 160m band, assuming I have a stout tuner. I do.

The EFHW antenna has a characteristic impedance of 1.8 to 5 KOhms, give or take a really wide margin. For that antenna, I wound a 49:1 unun (not a balun - it's unbalanced to unbalanced). A “random wire” antenna has a characteristic impedance of 450 Ohms (says the Internet) and requires a 9:1 unun. Construction of this unun is exactly the same as for the 49:1 unun, but with a different transformer winding.

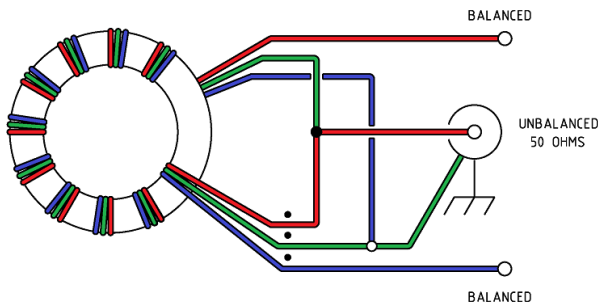


Image from vk6ysf.com

The internet provided a great deal of information (Palomar Engineers is quite generous with their knowledge), and I found one page in particular of great interest. AB3AP, Mike built some MatLab code to determine the proper lengths of “random” wires to work on various bands. The one trick is to avoid resonance on any band you intend to use. Based on this

code, Mike has published a table listing proper lengths of radiator wire for various combinations of bands. According to this table, I can work 160m with a 134' radiator. Peter, VK6YSF, maintains a page that details construction for most unun and balun types you might encounter, and that's where I found the winding pattern for this unun.



This is what my transformer looked like. I carefully kept track of the conductors so nothing was twisted up.

The only other difference between this construction and the EFHW construction is the use of a 17 foot counterpoise on this antenna versus the ground braid for the

EFHW I have made contacts on 160 using FT8, pushing about 40W out from my IC-7300, through a LDG Z-100Plus auto tuner.

PORTABLE POWER BOX

Lazy sot that I am, I've been watching YouTube videos entirely too much, but I was at least inspired to try my hand at Parks on the Air, or POTA, activations.



Most of you are familiar with POTA, or its predecessor, NPOTA, National Parks on the Air. I already had most of the gear I needed, but portable power was an issue. I've heard the stories of hapless hams running their car batteries down, and since I'm rather hapless at times myself, I didn't think I needed to attempt such risky business. I set forth to design a system that would suit my needs. I'm by no means an expert. This is just what I did, suboptimal as it might seem to you. The folks at Bioenno seem to have built themselves a great reputation in the battery community, so I decided to run with them, and purchased one of their 12Ah 12V Lithium Iron Phosphate batteries, the BLF-1212A. I purchased the "charger" for it as well. To me, it seems an awful lot like a 15 Volt 2 Ampere "wall wart", but I didn't have one in stock...

The battery charges through a coaxial connector, and its 12V output is via Anderson PowerPole. I purchased a plastic .30 cal ammo can from Harbor Freight for about \$7, and the battery is attached to the inside of the can with 3M DualLock fastener tape. The charger fits alongside the battery. The ammo can has a gasketed seal that I won't ever really trust, but boasts an inside lip $\frac{3}{4}$ inch tall (19mm) about $\frac{1}{4}$ inch (6mm) wide, just perfect for an inset panel.



There's the power. On to the distribution.

I used TinkerCAD to design a panel to fit the ammo can, which was then 3D printed. TinkerCAD is a free service from Autodesk, so it's (I'm told) quite like "real" CAD tools. I wouldn't know. I was a software engineer. It took a while, and a lot of test prints, to get it working correctly. Printing thin sample layers to validate hole placement and dimension was helpful in saving plastic.



I've found that the six PowerPole connectors are sufficient for my needs. It's enough to power the radio and the laptop (yes, a 12 Volt laptop!).



The USB charger outlet is sufficient to charge the phone, and I have plenty of excess capacity. The voltmeter was a lame attempt at tracking battery level, but I really need a more sophisticated tracker. The on-off switch was found at an auto parts store, and I might have found the fuse holder there, too.

The voltmeter and USB socket were purchased at one of the hamfests, likely Marlboro. The brackets that hold the PowerPole connectors onto the panel were also 3D printed. I found the design on Thingiverse, which made that part easy, too. The wiring is all chained point-to-point using crimped PowerPole contacts with 14 AWG stranded wire. I could have cut the wires a little longer, but that's just a design note for the next iteration. I'm pretty pleased with this end result, but I'm sure there's a better mousetrap waiting to be built.

NEXT GENERAL MEETING

The next General meeting will be held in person at the Pepperell Community Center, 2 Hollis St, Pepperell, MA 01463 on February 16, 2023 at 7:30pm. The doors will open at 7pm for socializing. We will hold our annual Short Subjects night.

MEMBERSHIP RENEWALS

Bruce, K1BG, recently sent out an email reminder to members who were behind on their dues. Many things changed during Covid, and it's taking a while for things to "get back to normal". Have a look in your inbox (or spam folder!) for Bruce's

email. If you didn't get one, you're all set! BTW, we are currently at 46 paid members, with 33 renewals outstanding.

THE TREASURER'S REPORT

Income for January 2023 was \$226 in membership fees. Expenses were \$6.78 in PayPal fees and \$106 for the Post Office box rental, leaving a net income of \$113.22.

Current balances:

General fund	\$2,870.53
Community fund	\$6,628.25

As of 2 February we have 46 members who are current with their dues and 33 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

February 2, 2023

Attendees:

Bruce, K1BG, John, K1JEB,
Ralph, KD1SM, Vlad, W1MTI

Call to Order: 7:30pm

Ralph, KD1SM presented Treasurer's report (see above). Thank you to the 11 members who sent dues this month after receiving the reminder email.

Vlad W1MTI is in need for members to submit articles to be posted on the Signal. He is also requesting feedback – comments, letters to the editor, etc.

February club meeting will be Short Subject Night. We need guest speakers going forward.

The NVARC Information Net on 2-meters is very going well. There are now on average between 5 to 12 check-ins on the NET.

Bruce K1BG is working with the new Pepperell Community Center administrator to schedule technician classes.

NVARC is still requesting volunteers to help with both the Thinking Day On The Air and the Bromfield High School Science Fair.

Bruce K1BG has requested opinions on whether NVARC should archive the club's documents in the ARDC/DLARC library.

Bruce, K1BG, is working on appointing the Nomination Committee for 2023 to develop a slate of officers for the April election.

Adjournment: 8:13pm

de John, K1JEB

NVARC's 2 METER NET

The NVARC Information Net is held Monday nights at 7:30pm, Eastern time on the 2m Pepperell repeater, N1MNX: 147.345MHz +100.

NVARC GENERAL 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.

Strays

An element never found alone,
I was used for cosmetics
In Egypt and Rome

One of the metalloids through
and through
A semiconductor at heart,
In electronics, oft used

With lead, I am known for my
hardness and strength
In batteries and bearings
My uses go on at length

But alas my friend, do not take
me by the hand
At best I am a headache,
So have your will planned

Lo, 'tis the ancient Antimony!
An element of Group 15!
With 6.697 grams per centimeter cubed as mine density!
With two S and three P electrons fused in the outer shell electron destiny!

Calendar

FEBRUARY

- 11 [CQ WW RTTY WPX Contest](#)
- 11/12 [Dutch PACC Contest](#)
- 15 [PODXS 070 Club Valentine Sprint](#)
- 18/19 [ARRL Inter. DX Contest, CW](#)
- 26/27 [North Carolina QSO Party](#)
- 27 [RSGB FT4 Contest](#)

MARCH

- 3 [QRP Fox Hunt](#)
 - 4/5 [ARRL Inter. DX Contest, SSB](#)
 - 4-12 [Novice Rig Roundup](#)
 - 5 [WAB 3.5 MHz Phone](#)
 - 11 [YB DX RTTY Contest](#)
 - 11/12 [SARL Field Day Contest](#)
 - 11/12 [South America 10 Meter Contest](#)
 - 13 [4 States QRP Group Second Sunday Sprint](#)
-



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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(+), 100Hz
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

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Have YOU Paid Your NVARC Dues?



See: <http://www.n1nc.org/MembersRoste>
for your renewal month.

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