Nashoba Valley Amateur Radio Club

NVARC Signal

VOL. XXXIV… No. 1 WWW.N1NC.ORG January 2026

In This Issue

VE Session at Grady Labs in Harvard following Bruce K1BG's class for the General license. Of nine candidates, seven earned General and two earned Amateur Extra licenses.

Next Meeting

This month's meeting will be held at 7:30 PM on January 15 2026 at the Pepperell Community Center at 4 Hollis Street in Pepperell Massachusetts.

Our January meeting will be Short Subjects night. Do you have a 10-20 minute presentation?

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 hope everyone had a great holiday season and is looking forward to a healthy & Happy New Year! Things were pretty much low key around here. I did manage to work a couple of new DXCC entities. Hong Kong on 30m and the United Nations HQ on 15m (sometimes trying to work the close in entities is considerably more difficult than the more distant ones due to the minimum required skip zone).

Congratulations to the nine students who successfully completed the recent General class that Bruce K1BG held and successfully upgraded to General. Two of these students also upgraded to Extra! Again, congratulations to all! As I'm writing this, Bruce is getting ready to start another CW academy class online. Bruce continues to hit it out of the park on the New Ham Development front.

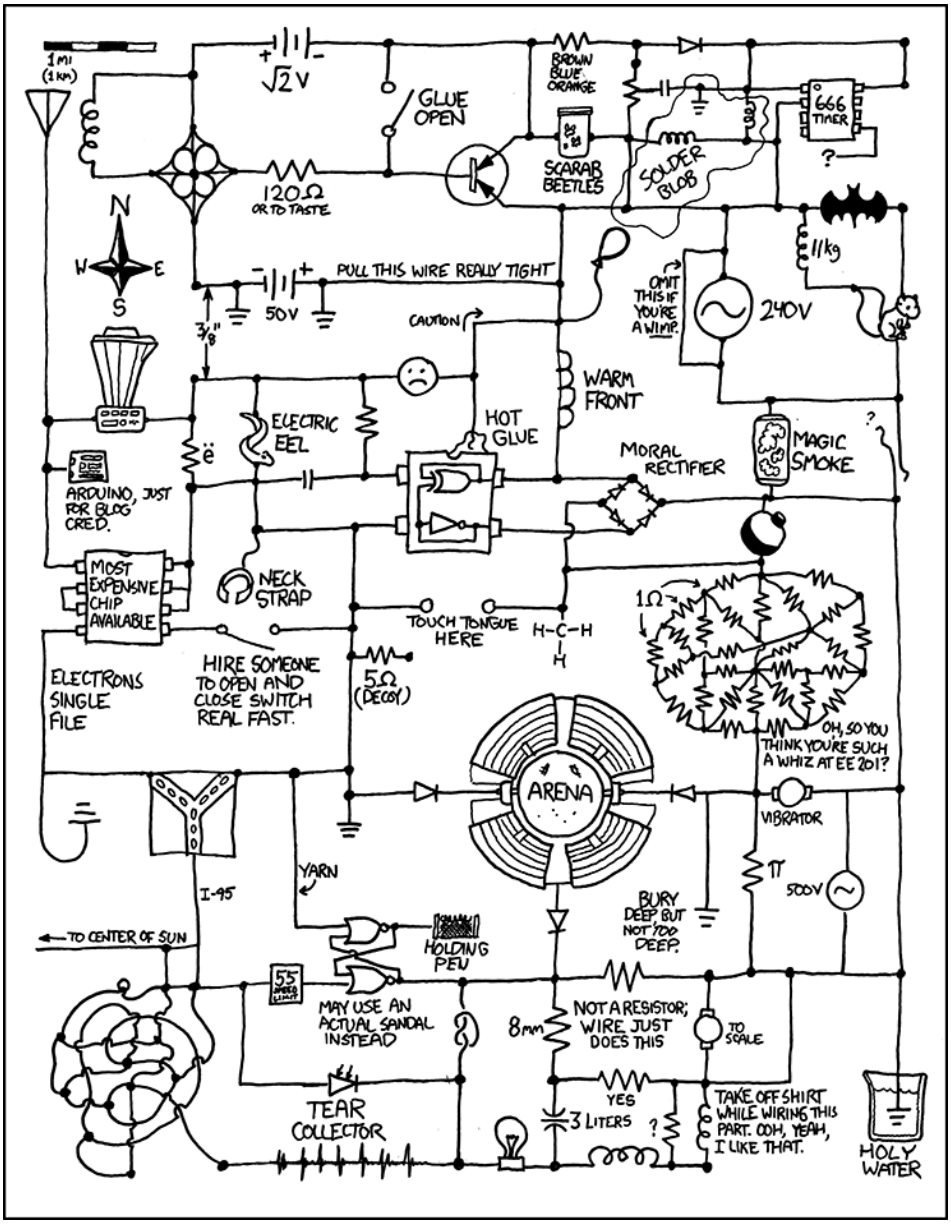
We have some really good presentations coming up. First this month is the annual "Short Subjects" night where members present on different topics of interest to them. These are presentations that typically run as long as maybe 15-20 minutes but don't have to be that long. This is another one of those interesting meetings that relies on our members to be successful. So, if you have a topic that excites you and you'd like to share it with others, we'd love to hear from you.

In February Jim AB1WQ will be presenting on 3D printing. It seems everywhere we turn these days someone has a 3D printed project enclosure, antenna insulator, or cable organizer. And with the cost of printers very affordable I'm running out of excuses for not getting involved. This is one of those topics that I've always wondered about but never seemed to have the time to investigate. So, I'm excited to hear more. And in March Mike WU2D and Mark W1QHQ will be here to talk about Spy Radios, how they work and their history.

President's Corner cont'd

From talking to John K1JEB, our Monday night 2M net is going well but we could always use more check ins. The net meets on the N1NC 147.345 MHz repeater which has an offset of +600 KHz and a PL of 100 Hz. After we close the net, a number of us QSY to 28.410 MHz at around 8:00 PM to welcome new hams on HF.

And just a reminder that the January VHF contest is the weekend of January 17-19 running from Friday afternoon at 2:00 PM local night to Sunday night at 11:00 PM. While most activity is on CW, SSB, & FT8, there are opportunities to work FM simplex contacts on 144.55 & 144.58 MHz. This ia a good opportunity to test out your VHF+ gear if you have any. I plan to make some noise on 6M - 1296 MHz. Here is a link for more information on this contest https://www.arrl.org/january-vhf.



https://imgs.xkcd.com/comics/circuit_diagram.png

Treasurer's Report
Ralph KD1SM

Income for December was $142.50 in membership fees. Expenses were $4.27 in PayPal fees leaving a net income of $138.23 for the month.

Current balances:

General fund	$3,367.33
Community fund	$7,243.25

As of 1 January we have 47 members who are current with their dues. Please remember when you are renewing that our membership term is now 1 January to 31 December. If you had renewed in 2025 and your anniversary month was later than January I will send you an email with the catch-up amount ($1.25/month) through December 2026.

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

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 Ralph for further information if you need it.

Board Meeting Report
John K1JEB

The Board had a discussion concerning past due membership dues.

The Board voted to waive past due dues prior to a member's anniversary month in 2025. Members will only be asked to pay 2026 dues plus $1.25/month for the remaining months of 2025 after their anniversary month.

A proposed vote passed to fund up to $100.00 for a replacement laminator for making Club Badges.

The January club meeting will be a Short Subjects Night.

Jim Wilber AB1WQ will be conducting a presentation on 3D Printing at the February club meeting.

On the March Club meeting will be a presentation on WW2 Spy Radios used by the French Resistance.

Bruce K1BG and Skip K1NKR are planning for the “Thinking Day on The Air” event to be held Saturday the 21st of February, 2026.

Bruce K1BG has so far 5 candidates for the CW Academy. The dates are currently TBD.

Projections
Skip K1NKR

Maps are curious things. They try to show you where things are, or how big areas are, and they're often wrong!

Take Greenland, for example. We're used to seeing it. We trust Wikipedia and it shows a massive, snowy island northeast of us that's two- to three-times the size of the US.

Yet, when we go to Google Earth, we can get a view from directly above the island that's good for displaying its real shape, size, and location. Greenland is smaller than the US and almost due north of us (actually at an azimuth of 20-26 degrees to the populated tip of the island, per QRZ.com and it extends northerly from that for everything else)! And it's tucked across the top of Canada.

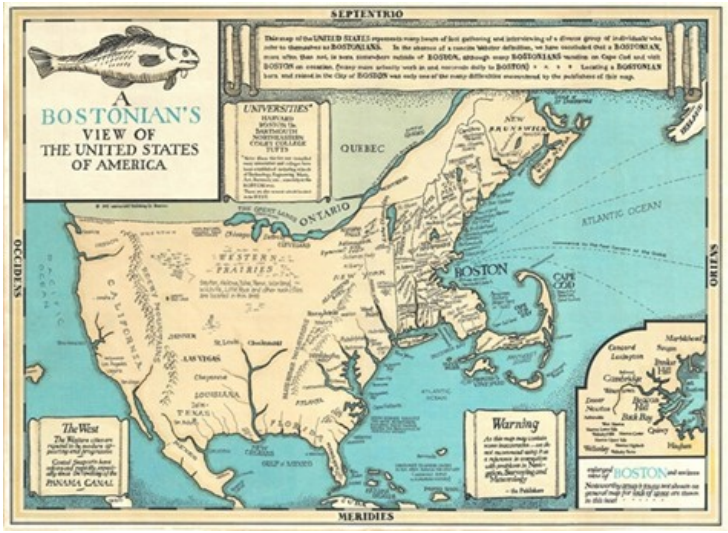
What makes all this happen? Well as Magellan found, it's hard to draw the entirety of a sphere on a flat piece of paper and not skew or stretch things. Peel an orange and squash it out flat and you'll see.

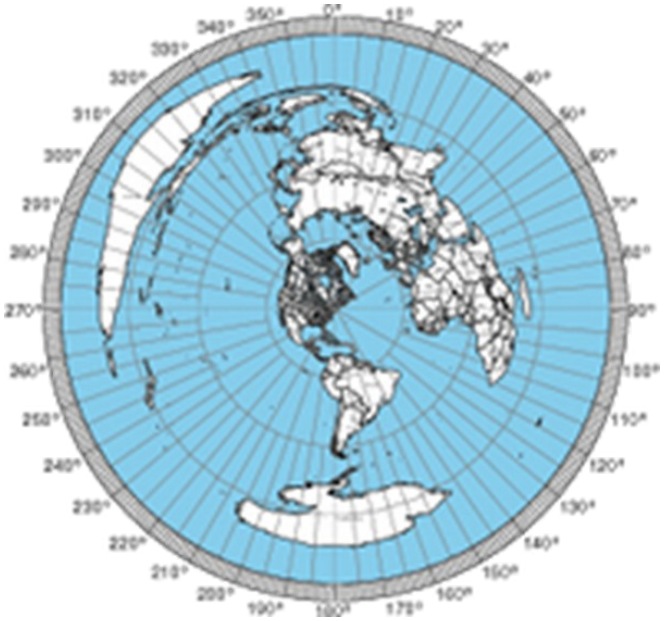
Projections cont'd

There are a number of ways to project maps: Albers, Cylindrical, Conformal, Conic, Gnomonic, etc. One or another is useful if you want to get some information on that DX you just heard.

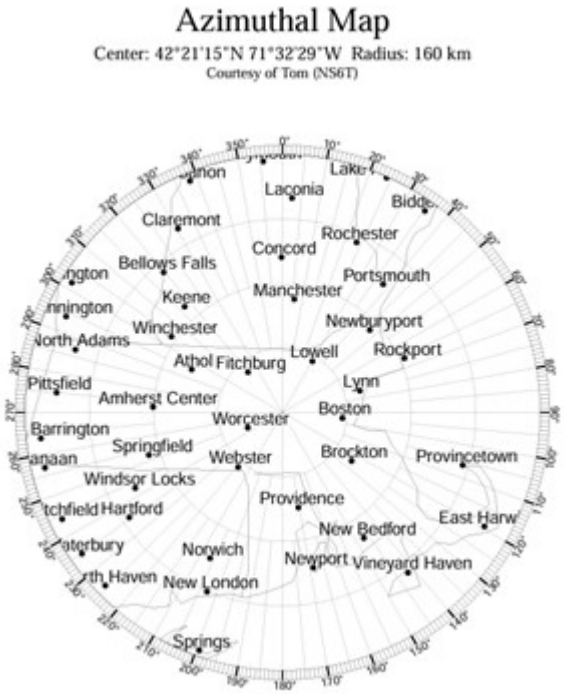
But what if you want to aim your antenna? What azimuth on that rotor dial do I set in? Europe, for instance, looks to be 90 degrees from us on a Mercator map. It actually occupies the region from about 43 to 63 degrees. That pointing error causes a significant loss for a three-element Yagi.

We can make the situation better by using an azimuthal map. We're intuitively familiar with azimuthal maps. We see "here" (close and big), then "out there," then "far-far away" (really small).





Kidding aside, an azimuthal map is a great asset in the hamshack. It gives you an entirely new perspective of what's out there. Unfortunately, by covering the whole world most versions of the az-map are of an inconvenient scale. NS6T has an excellent azimuthal map generator on line at https://ns6t.net/azimuth/azimuth.html which solves this problem.
The NS6T map generator first allows you to center the az-map on your exact location (using grid square, lat/long, or city/state). Then it allows you to specify the radial distance you want to cover. For a continental US map, set the distance to 4500km. For aiming towards Europe, set the distance to around 8000km. For local or VHF/UHF use, set the distance to 160km.



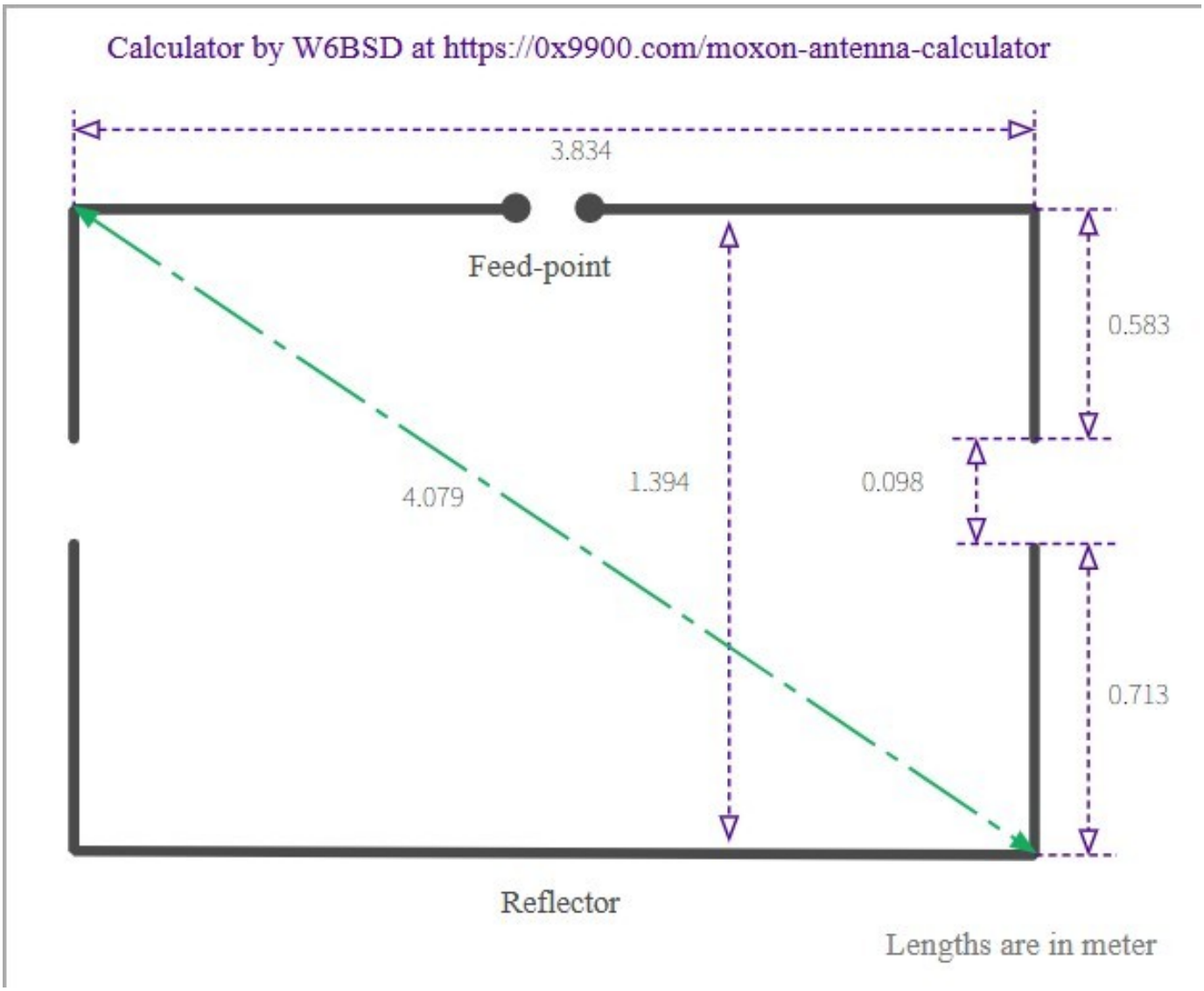
The generator allows printing in multiple page sizes. A letter size (8-1/2 x 11 inch) page is a useful tool to have at your operating position for quick look-ups. And if you select B6 (12.5x17.6cm) for a page size and print on clear plastic, the result can be trimmed to fit nicely in the 10.5cm diameter indicator screen of a Yaesu G-450 rotor controller.

NS6T's generator can be a bit addictive. By experimenting with the label options, you can increase information and/or reduce clutter. Have fun!

More Antenna Fun
John KK1X

Last month I presented an article on a vertical multi-band antenna I constructed for the ARRL Sweepstakes contest in November 2025. In December, the League sponsored the annual 10-meter contest, so I thought I'd take the opportunity to play with an antenna for this band. Antennas for 10 meters are relatively small. I opted to try a Moxon.

Rather than actually think about it much, I picked one of the many Moxon calculators available on the internet and let it do the thinking. I used my favorite orange silicone-insulated 18 gauge wire for this antenna as well, and ran through the calculations at https://0x9900.com/moxon-antenna-calculator/



A sane person might consider starting this project by constructing a frame, but not me! I opted to build the antenna first, then figure out a way to make it look like a rectangle.

The feed point was constructed of a small rectangle of (you guessed it) plastic cutting board. I bored a hole and countersink for the PL-259 connector, two sets of holes as strain relief for the conductors, and another mounting hole to support the weight of the connector and coax.

The wires were cut at the calculated lengths (3.834m + 2 * 0.583m driven) and (3.834m + 2 * 0.713m reflector) +/- 2mm. The driven element was divided into two sections and soldered to the PL-259. The wires were all marked at loop apexes to stay dimensionally true. Zip ties and glue-lined heat shrink were used to form the loops.

Corners of the Moxon were equipped with hanging loops formed from a pair of zip ties (below left):

I initially thought of using a frame of 1.5” PVC tubing, but found it to be too heavy, and opted instead to use four fishing poles I had on hand. I built a center hub from a piece of plywood and a number of U-bolts, along with another U-bolt and a 2x3 section to mount it to the mast. A section of fiberglass driveway marker supported the feed point.

The feed point coax-side view showing the strain relief.

The antenna ended up at about 12 feet high, mounted on a guyed PVC mast. The mast breaks 5 feet from the ground to allow rotation. The guy ropes were not sufficient to withstand winter winds, however...

This should be relatively easy to repair by removing the big section and replacing it with the next smaller section in the fishing pole.

Did it work? Yeah. Was it great? Not so much, but it was my first go at this antenna, and at a compromised height. Perhaps next time.

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