



NVARC

**Signal**



VOL. XXXIII... No. 12

WWW.N1NC.ORG

December 2024

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### Next Meeting

December's meeting will be held 7:30 PM on December 19, 2024 at the Pepperell Community Center at 4 Hollis Street in Pepperell Massachusetts.

This is our annual Show and Tell meeting. Bring your projects along to show off.



QSL Card sort underway at November meeting

### 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.

## President's Corner Bruce K1BG

It's December, and that means holiday season! It's getting colder, so hopefully your outside projects (like antennas) are completed. Gifts are being exchanged, so hopefully YOU will get that shiny new radio thingy that you have on your list. Get on the air and share your joy with other hams around the world. Life is good – having fun is better. Sharing the fun is better still.

As for getting on the air, this weekend is the annual ARRL 10 Meter Contest. For complete rules, go here: <https://www.arrl.org/10-meter>. It starts at 7PM local time on Friday and runs through 7PM Sunday. You will find an amazing number of stations participating (DX from around the world and all 50 states), making lots of contacts. The exchange is a signal report and your state, typically “Five Nine – Massachusetts” or “Five Nine – New Hampshire”. You will find me participating *casually* – making contacts between honey do's, a Friday holiday party, shopping, and things with the grandchildren over the weekend. Whether you operate seriously or casually, get on the air and see who you can put in the log. I find it a lot of fun, and I hope you do as well.

As for sharing fun, we are at the sunspot maximum RIGHT NOW. Conditions will not get better than this, with incredible openings on the higher frequency bands, particularly ten and even six meters. Even Technician Class licensees can expect worldwide communications on some days with modest equipment and antennas. Take advantage of the conditions and get on the air.

Speaking of Technician Class, NVARC's latest Technician licensing class is ending. This would not have been possible without the efforts of several people. First, John Grady and Liisa Marino of Grady Research. The Grady Research building (in Ayer) was used in the past for “Tech Night”, a monthly technical session held by club member Dan Pedtke, KW2T (who sadly became a silent key earlier this year). I asked John and Lisa if we could use the building for our classes, and they were happy to help us. John and Liisa have always been supporters of NVARC and Amateur Radio, so THANK YOU once again.

Les, N1SV, and Bob, N1DVC, helped me at every session. Their knowledge and experience provided students with excellent background and detail, and they patiently answered every question the students had.

Dan, K1RAU, called me at the beginning of the classes and asked if he could donate some radios for the students. Dan came through in a big way! 4 brand new Baofeng UV5Rs, (with extended battery, push-to-talk microphone, high performance antenna, and programming cable), and 4 brand new Retevis RT3S DMR radios. Kudos to Dan for his generosity and support.

And best of all, the students. Every student who stuck with the class and took the test passed. Welcome new hams Thea, KC1VSF, Mary, KC1VSQ, John, KC1VTD, Neil, KC1VUA, and Adam, KC1VVX. Another club member, Zack, KC1VUY, passed his test during this time, and started participating in the sessions. Please welcome these new hams at our club meetings and on-the-air. There are still several more students who will be taking the exam. I'll update you next month with news.



Jim, N8VIM, has been recording meetings for the club's YouTube page, <https://www.youtube.com/@nvarc>. Jim has been documenting club activities for several years now, and 87 videos are currently posted in the library (these are so much fun to watch - THANK YOU Jim). Jim's professional and personal life have gotten very busy lately, and he could use the support of a volunteer or two. Please contact him at [n8vim@charter.net](mailto:n8vim@charter.net) if you are interested in helping him out.

Before talking about the December meeting, I'd like to express my appreciation to the people who helped make the November QSL card sort a success. Jim, AB1WQ, did a great job with the pizza and soft drinks. Libby, KC1RKH, and Adam, KC1RVK, stayed late to make sure the Community Center was left in the same condition it was found. And of course, Eric Williams, KV1J, the incoming bureau manager who brings us the cards to sort. I'm looking forward to the November 2025 card sort.

NVARC is rebranding the December meeting as "Show-and-Tell" night. December is traditionally "Homebrew Night" where members show off projects (hardware and software) that they did themselves. Last year we tried "Boat Anchor Petting Zoo", where members brought in vintage gear for inspection. Why not combine the two? Bring something to the December meeting that you would like to talk about (and it's not limited to just things related to Amateur Radio). December is a very social meeting. Get there early, enjoy some coffee and doughnuts, and interact with other club members. I hope to see you there.

Merry Christmas and Happy Holidays!

Bruce, K1BG

Eric KV1J explaining the QSL Buro's operations



Patiently sorting cards, waiting for pizza

## Treasurer's Report Ralph KD1SM

Income for November was \$95 in membership fees. Expenses were \$127.73 for the November QSL Sort refreshments leaving a net expense of \$32.73 for the period.

Current balances:

General fund \$3,240.37

Community fund \$7,128.25

Special welcome to two new members: Kevin W1TEA and Peter WA1PWT. Both sent their applications in September and I'm late to acknowledge them.

As of 5 December we have 56 members who are current with their dues and 32 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. Special 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 note ARRL's instructions to enter your NVARC membership information. As an 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 KK1X (absent K1JEB)

Call to order 1730.

Publicity / Outreach

Signal - KK1X Les to have some content

Bruce suggests a new members column

Eliot W1MJ is rebuilding N1NC.org using Wordpress, and will be looking for content to keep the page "fresh"

FaceBook – K1BG – slow progress

YouTube – N8VIM – Jim needs help shooting content when he travels

Club Meetings/Guest Speakers

December - Show and Tell / Homebrew

January - Short Subjects night

Activities

Weekly Net – K1BG – not getting much participation

Repeater Status – N8VIM – new 440 repeater nearly ready for installation

License Classes – K1BG – Added two sessions for antenna building etc.

Other Topics (Open Discussion)

HR 4006 – K1BG – Bruce will be sending out a letter to our Senators

New Business

Annual Dues discussion ongoing. It's tough to find an equitable solution that's easy to manage. Dues are currently scattered throughout the year, making it a tough job for the Treasurer to keep track.

Holiday dinner – A Holiday/Christmas dinner was briefly considered, but being this late in the year the idea was tabled. Perhaps next year?

# Antenna Corner

## John KK1X

One of the antennas I've been using a lot (and described previously) is the MFJ-1979 17-foot telescoping whip. It's been used as a Ground Plane style antenna, either at ground level or slightly elevated on a tripod.

As your intrepid Newsletter Editor, I travel monthly to Ham Radio Outlet in Salem NH to deliver a fresh load of newsletters, the bulk of which actually disappear. I browse the aisles. That's what I do. I typically end up purchasing something too, because my wife lets me. In October I stumbled upon a fixture that converts a pair of ham-stick-like antennas into a dipole, essentials two CB-radio mirror mounts fed in opposition. I got another telescoping whip antenna, and it works. I've been out on 10 meters for POTA activations and get great coverage.

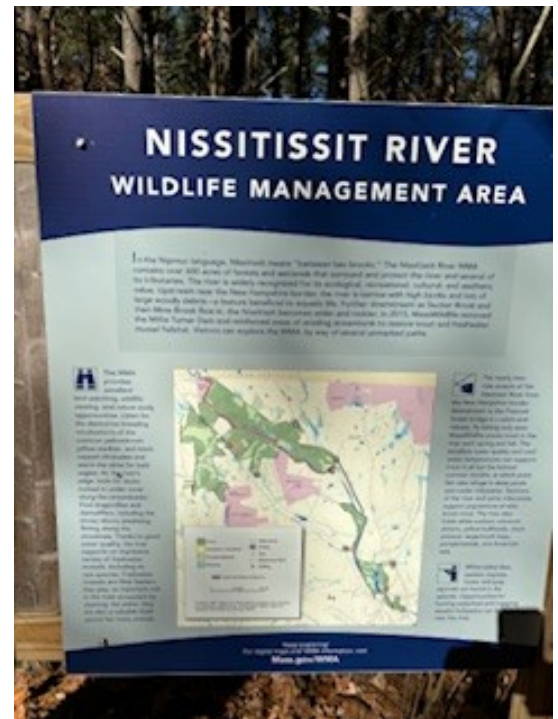


The map at left was about 50 QSOs on FT8 in early November, at Nissitissit Wildlife Management Area, from about 1420Z to 1700Z. I was parked about 5 feet below street level, and pushed this antenna up about 20 feet, so the antenna was at best about 15 feet above street level. It worked a treat. I think I made 52 contacts in all in just over two and a half hours.

This antenna sets up pretty quickly. The telescoping mast is placed into the drive-on mount. I removed two segments from the top of the mast, and protected it with a layer of electrical tape where the fixture is set. The coax is connected through a ferrite choke (built into the cable), and the elements are pulled out to 100" (FT8's 234/28.074 MHz = 100.02". I fudged.).



I have set it up as a 20m dipole. The elements drooped quite a lot. I think I'll try a pair of actual "ham-stick-like" elements for 40m without setting high expectations.



Fran Purcell



**Electronics Plus**

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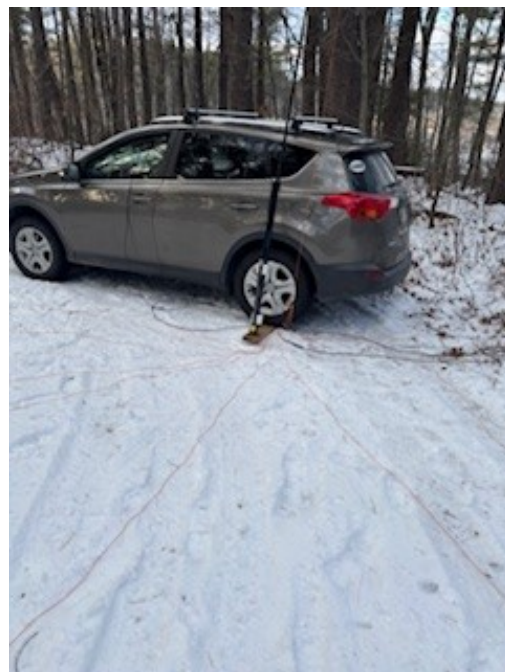
## Antenna Corner

Without changing to lighter antenna elements, I think a 10m dipole is the best I'm going to do with this arrangement. Hmm. I'll be going to HRO in a few days...

I had been playing with the concept of a "flying vertical", a quarter-wave vertical with tuned radials pulled up to the top of the mast. It worked OK for 10 as well as 20 meters, but pulling the tuned radials off to the sides was unwieldy (remember – I'm lazy). Then I had the brilliant idea of just making it a vertical dipole. I had a brain short for a couple of days at Elbow Meadow WMA in Dunstable. I could not figure out what was wrong with my antenna setup to save my little pea brain. It finally dawned on me that I wasn't *sufficiently* isolating the coax feed line from the elements of the vertical dipole, and it was causing all manner of weird power/SWR fluctuations. I try to be stupid so you don't have to...



That experiment morphed into just a simple quarter wave vertical, fed at ground level with a BNC-to-binding post connector. I have a mast that extends to about forty feet, so this works up to 40 meters. My feedline has an integral ferrite choke, which goes at the feedpoint end. The radials are all about 16.5 feet long. It was drilled into me that "that's the right length for 20 meters", but since the radials are laying on the ground, I don't find that it matters at all to have resonance on the ground.



Other than the slight bother of swapping elements to change bands, it's something worth keeping as a "go-to" antenna. It goes up easily. Conventional wisdom that a greater number of radials helps seems to be true, though I have not done anything science-y. In the above picture I have I think 10 laid out in essentially a semi-circle. I went around the car, but not under it (remember – I'm lazy...) I have vertical elements for 10 and 20 meters, and built one for 40 meters in the field with 26 gauge wire. The radials that I have work, and some of them even almost show up in the photo on the right. (The band-change problem is solved by the DX Commander vertical from Callum, M0MCX. )

## National Traffic System John KK1X

Some of you may be aware that I am the manager of the Central Massachusetts Two-Meter Traffic Net. This is a local net of the National Traffic System (NTS), and we attempt to operate the net at 9:00PM local time on the Paxton repeater (W1BIM – 146.97 PL 114.8) every night. The net is currently down to three operators, so coverage is kind of sparse.

I'm looking for individuals who would like to participate in the net, hopefully taking control of one night a week. Arguably this is a daunting prospect, giving up ten minutes of your time once a week.


If you have any interest in any aspect of NTS, please let me know.

# Made in New England Leo K1LK



The Lundquist Tool Manufacturing was located in Worcester Ma. The earliest information I could find was in the 1926 Radio Trade Catalogue. The two meters shown, one having a patent date of 1927, were in that catalogue. Early regenerative and farm radios used A filament and B plate batteries. The company manufactured Morse keys and stamped sheet metal parts for the war effort up until 1945. The contracts ended and at that time the company was sold. The new company does business as Lutco Co. and is still in business manufacturing precision ball bearings. The old building can be seen on the right on Rt. 290 West at exit 16.





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## Avoiding a Premature Obituary Skip K1NKR

Been catchin' up on my QSTs. I flip through each issue as soon as it comes in, then put it down as I return to "servicing interrupts." Later I go back and really read it cover to cover.

The "Letters from Our Members" in the November 2024 issue caught my eye. I guess it put me in a funk, too. Believing that "the amateur radio community can do better," a member suggested retiring the term *Elmer* in favor of *mentor*.

Pshaw!

I did the expected Google search and found that this travesty was also the subject of a 2017 (November at that) Reddit spew. Fortunately, Elmer survived that one.

Elmer is part of who we are. Unfortunately, during my early ham years I didn't have one. But I've had a few in the last couple of decades—all from here in the club. And those relationships made a difference in my current perspective.

Admittedly, the term *Elmer* does not go back to the origins of the hobby. It first appeared in a 1971 *QST* article by Rod Newkirk, W9BRD.(SK 2012, <https://www.arrl.org/news/former-how-s-dx-conductor-rod-newkirk-w9brd-sk>).

What's wrong with mentor? Probably nothing, except that it's generic. Good enough and vanilla enough for the general population. Politically correct, too, since it isn't gender specific. It meets all the needs and expectations currently appropriate for stumbling through the first quarter of the twenty-first century without insulting anyone.

But it's not us! The sub-language we use as hams identifies us and forms our specific culture. We speak of fists, and rigs, and lids. Anyone who cares about passing knowledge and experience on can be a mentor. Only special hams (of any gender) are true Elmers. The passionate ones.

We had the term "handle" co-opted during the CB craze of the 1970s. Will the use of Q Signals during phone QSOs be next? Or the term CW, which for us is a culturally shortened way of saying "a continuous wave signal interrupted in a fashion determined by the letters chosen and then expressed by the use of the International Morse Code." No more Elmers? Pshaw!

### Outgoing DX QDL Service

One of the benefits of being a NVARC member is that the club will forward DX QSL cards to the ARRL Outgoing Buro at club expense. Cards should be sorted by DXCC listing and proof of ARRL membership (e.g. QST mailing label) is required. Interest members should bring card to a meeting and give them to Rod, WA1TAC.



## Working POTA John KK1X

Whew. You only have to endure one more episode of this column, next month, covering my activities in December.

November was an interesting month. I didn't get to pop out into the field whenever I liked. I had (and still will have for some time) contractors working on the house. I like to have be around for questions. So my quests were fewer, but tended to be longer. I got out around 15 times, managing 771 contacts.

The first activation of the month was at the Nissitissit Wildlife Management Area in Pepperell. This WMA is pretty expansive, with a number of parking spots around its perimeter. While hunting is technically permitted, this WMA is primarily for the anglers, with a fly-fishing-only, catch-and-release area north of Prescott Street, and I guess what is termed "normal" fishing south of that. The first couple of spots were so nice I revisited them, and indeed the first eight activations of the month were at one or another of the parking spots at Nissitissit. I briefly considered doing the entire month in that one WMA, but thought better of it (a random car parked at the same spot day after day can look kind of creepy. I'm guessing... ) so I activated Ashby and Hunting Hills WMAs to round out the month's quota. I also had a failed activation (fewer than 10 QSOs) due to a brain short (see Antenna Corner). My last outing for the year was at one of the many Squannacook WMA entry points.

## New Hams John KK1X

At the December VE Session in Holden, three new Technician licenses were earned. One was a student of Bruce K1BG's ongoing class, one from Ray AA1SE's class that just completed, and one fellow traveled all the way from Wilbraham to take the test.

## N1NC Website Makeover Eliot, W1MJ

The NVARC web is undergoing a makeover using the popular WordPress content management system (CMS). This allows for posts and other updates to be done easily, using an interface similar to a word processor. WordPress takes care of generating the detailed HTML code, formatted appropriately per the size of the browser display. Eliot Mayer, W1MJ, is prototyping the new site. A preview is available at <https://new.n1nc.org/>. Eliot welcomes suggestions - email him at [eliotmayer@yahoo.com](mailto:eliotmayer@yahoo.com). A Zoom discussion will also be set up to discuss the site, to be announced via the NVARC email list.

# My 222 MHz KW Amplifier Project

## Les N1SV

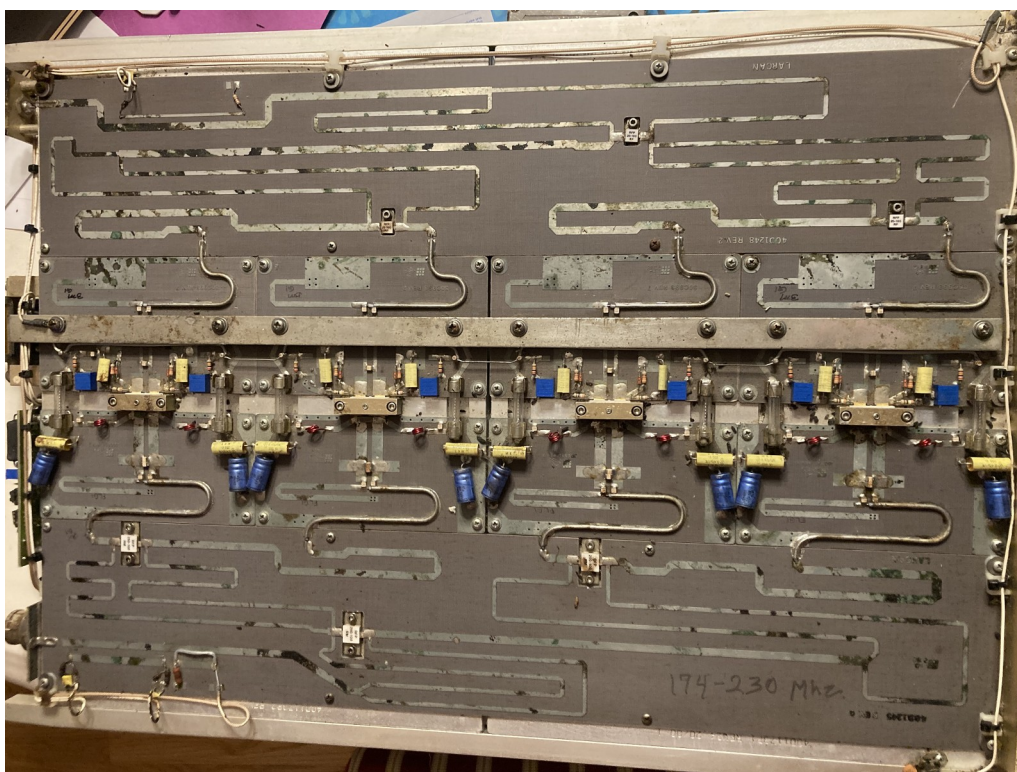
Since I'm unable to attend the December meeting, I thought I would describe my "Show & Tell" project here. Several years back I acquired a surplus KW power module and built it into a 222 MHz amplifier. Just to provide some background, Larkan was a Canadian company that made television transmitters from 1987 to the mid-2000s. They were one of the first companies to manufacture solid-state transmitters. The transmitters consisted of power modules whose output power ranged from 500w to 1500w each and were installed into large chassis that would combine them to achieve the desired output power level.



Larkan Television Transmitter

Some of these power modules entered the surplus market where hams modified them for use on the 6m, 2m, & 222 MHz bands. The power modules by themselves are not complete amplifiers and require all the typical support peripherals like a power supply, cooling fans, low-pass filtering, and T/R control. So, getting them on the air is not trivial. However, many hams have done this. My Larkan module is a 1000W version designed for TV channels 7-13 which had an upper frequency range of 216 MHz, relatively close to 222 MHz.

The power module is very large and heavy, consisting of a PC board mounted to a heat sink. Since they were plugged into a chassis, they have no bottom cover. So, the first order of business was to fabricate one for safety. I was very fortunate during this project to get a lot of assistance from the local VHF community. John Swinarski (K1OR) selling me a surplus HP 50 VDC / 30A power supply and a couple of T/R relays. He was also instrumental in helping to check the module out on the bench. Along the way Fred Stefanik (K1FMS) identified that the output matching network for each FET needed to be modified after I blew up one of those \$150 devices (ouch!).



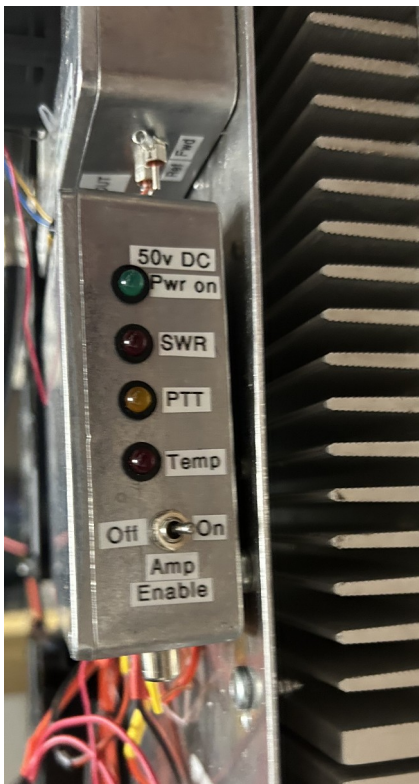
Larkan Power Module

## 222 MHz Amplifier



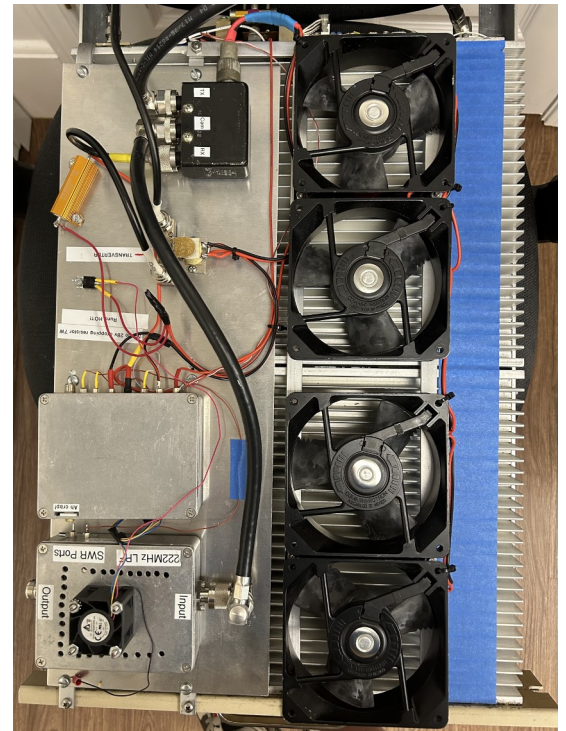
750 Watts output

Control Box



Once the module was working, I started mounting the peripherals like cooling fans and an FET switch for biasing the devices. As I began to wire everything up, I realized I had a considerable lack of knowledge building amplifiers. So, I reached out to my good friend Brian Justin (WA1ZMS) who agreed to finish the project. Brian is a prolific RF Engineer who in his spare time likes to build amplifiers and microwave gear. Brian lives in VA so when the amplifier was completed this spring, I had to figure out how to get it shipped up here. Luckily Dave Olean (K1WHS) who was driving to FL on vacation, agreed to pick it up on his way back home to ME.

The amplifier puts out about 700-800 W with about 12-15 W of drive. Four muffin fans provide good but noisy cooling. In the upper left are two T/R relays. One is a low power type for the input and the other a high power one for the output. In the lower left is a low pass filter in an enclosure with a small muffin fan on it. A control board is mounted in the enclosure toward the center left. The control board sequences the T/R relays, biases the FETs, and disables the amplifier if it overheats or the VSWR becomes too high.



Completed Amplifier (top view)

On the side of the control box is a switch to take the amplifier out of line and indicators for high VSWR & overtemperature faults. Ironically shortly after getting this amplifier on the air my aged 222 MHz antenna system developed a problem and needed to be replaced. So now with real power and a new antenna system, I can regularly make contacts with stations in PA at a range of 250 miles. I'm now looking forward to trying to make some meteor scatter contacts with this during the Geminids meteor shower that will be peaking on December 13.

## QSL Card Sort John KK1X



NVARC's annual QSL Card Sort night was in November this year. In past years we have sorted upwards of 15,000 cards in a night. With the advent of electronic QSLing (LotW, QRZ, &c), card volume is down somewhat. I suspect our count this year was on the order of 8,000 cards.

Pizza was served to fuel the activities. Thanks to Jim AB1WQ for managing the logistics. Thanks to Eric KV1J for bringing the cards from Marlboro.



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I'd have loved to fill it, but ran out of content. The newsletter is in constant need of articles.

You can see that a couple of photos and a short paragraph or two can fill up a page.

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

President: Bruce Blain K1BG  
Vice President: Les Peters N1SV  
Secretary: John Bielefeld K1JEB  
Treasurer: Ralph Swick KD1SM

Board Members:  
Fred Darling KB1RGT( 2024-2025)  
John Griswold KK1X (2024-2026)  
Jim Hein N8VIM (2024-2027)

N1NC Trustee: Bruce Blain K1BG

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

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147.345(+) PL100  
53.890(-) PL100

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

[editor@n1nc.org](mailto:editor@n1nc.org)

to reach the newsletter editor.

Editor: John Griswold KK1X  
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