



NVARC *Signal*



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Next Meeting

This month's meeting will be held 7:30 PM on March 19 2026 at the Pepperell Community Center at 4 Hollis Street in Pepperell Massachusetts.

Our guest speaker will be Tony K1KP on the development of the Aurora 500W SDR transceiver .



Club President Les N1SV awarding Presenter's Cup to Jim AB1WQ for his talk on 3D printing in February. N1SV photo.

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

As I write this, it's the first day of meteorological spring, however all the snow in my yard and the gigantic snowbank next to my garage reminds me that we have a long way to go before the winter season will be truly over.

I recently returned from a week in Barbados with the XYL where we were able to temporarily get a respite from winter. On a private car tour of the island, we passed several homes on the North side of the island where I could see one or more HF beam antennas, but we were unable to stop. In one rural area of the island, I noticed neighborhoods with a very large plastic drum the size of a shed with spigots. When I asked my guide about them, he said that homes in that area did not yet have any running water and that the government filled the drum periodically.

Last month I attended HamCation 2026 in Orlando, FL for the first time. While not on the same scale as the Dayton Hamvention that I've been to on multiple occasions, it was a great time. I saw a lot of people from up North, visited a lot of commercial vendors, and went to a handful of forums. More on HamCation 2026 in another separate article. [*p 17 - Ed*]

Last month Jim AB1WQ gave a great presentation on 3D printing that was very well attended. This month's guest speaker will be Tony Fisher, K1KP who will be talking about his journey developing the Aurora high efficiency HF transceiver for FlexRadio.

In April Tom W1PKX will provide presentation on his homebrew 40w high performance transceiver. And finally in May, Phil W1JPE will provide a presentation on HamSCI. We have some great meetings coming up so don't miss them.



(more) President's Corner
Les N1SV

I understand from Bruce K1BG that his CW academy online class is going very well with another Technicians license class planned to follow it at the Grady Research building in the April timeframe.

I know the Groton Road Race is coming up Sunday May 3rd. NVARC typically participates in providing communications for the race so if you're available please reach out to Ralph KD1SM if you're interested in helping out (ralph@kd1sm.net).

The Monday 2M net on the 147.345 N1NC repeater at 7:30 PM continues to be doing well thanks to John K1JEB being net control. If you're able to do so, I encourage those who can to check in.

And finally Bruce K1BG and a number of us NVARC members took part judging at the Bromfield Science Fair. This was the first time I did this, and it was an enlightening experience for me. There are some very bright High School students doing some very interesting work. One of the projects that caught my attention was a 9th grade student who demonstrated how to receive satellite signals and decode the telemetry including CW. He used an SDR, a vertical antenna along with satellite tracking software to accomplish this. I found him quite knowledgeable about the material including how he was able to decode TLE information. He even indicated an interest in trying to get his amateur radio license. [*I'm sure Bruce will nab him. - Ed*]

Treasurer's Report Ralph KD1SM

Current balances:

General fund	\$3,799.12
Community fund	\$7,243.25

As of 5 March we have 57 members who are current with their dues. NVARC dues are still a bargain at just \$15/year.

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

Please remember when you are renewing that our membership term for all members is now 1 January to 31 December. I have sent emails to everyone on our roster indicating the amount of your 2026 dues. In some cases that is less than the \$15 annual dues if your previous renewal was after January 2025. If you still owe dues for part of 2025 my email will have included the catch-up amount (\$1.25/month) for the remainder of 2025 plus the 2026 dues.

If you are in doubt about your dues status please send me (Ralph) an email and I will be happy to answer your questions.

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

Club meeting guest speaker for this month is Tony K1KP. He will be talking about developing the commercial Aurora 500-watt transceiver.

April's club meeting guest speaker is Tom W1PKX. He will be talking about the PKX40 high performance homebrew transceiver.

May's club meeting guest speaker is Phil W1PJE. He will be speaking about HamSCI.

Les N1SV reminded the board that club elections are this April. He is requesting for the creation of an Election Committee. So far two members have volunteered John KK1X and John K1JEB.

Zack KC1VUY (Our new Field Day Coordinator) and John K1JEB will be gearing up for NVARC Field Day.

Les N1SV has informed us that the CW Academy is doing well. There are plans to conduct a future Technician License class.

Bruce K1BG has compiled a list of all area non-ham GMRS licensees. A mailing to invite them to check out the club will be forthcoming. The Board authorized the expense of \$135 for materials and postage.

Ralph KD1SM, reminded the Board that the Groton Road Race is May 3rd, 2026. Details will be posted in the Signal. [*p 9 - Ed*]

Ralph KD1SM has renewed the club's three Repeaters with the Repeater Frequency Coordinators. He also updated the owner from N1MNX to NVARC and added Jim N8VIM as an alternate contact.



Meshtastic Beginner Ed KC1WQB

I just recently started playing with LoRa and Meshtastic. For whatever reason, this subject has been showing up in my Google newsfeed almost daily. After reading a few articles to get an understanding of what it is about (and how much it costs), I decided that this would make a good ‘waiting for Spring’ project.

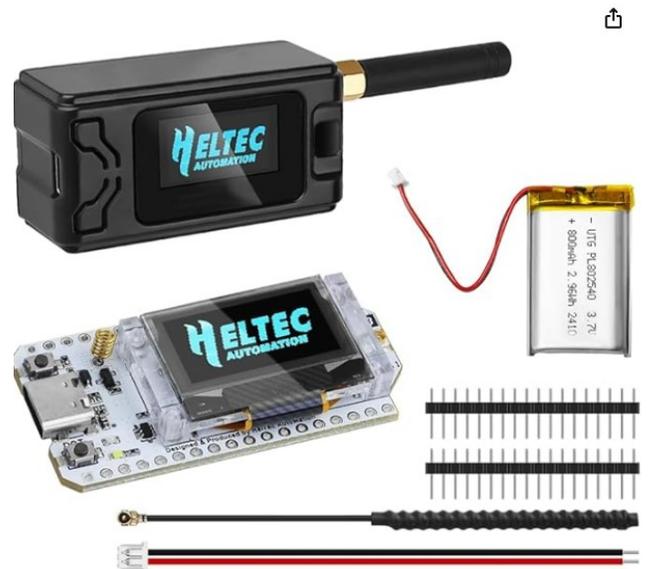
LoRa is short for Long Range and Meshtastic is a protocol for a mesh network. In the US LoRa operates on 915 MHz and does not require a license from the FCC. LoRa devices send short text messages to other LoRa devices within range. LoRa does not require Internet or Cell towers to communicate with other devices. It is considered an ‘off-grid’ system.

Meshtastic is a peer to peer networking protocol that builds a routing table of nearby devices as well as devices within 3 hops of the nearby devices. The Meshtastic client software is installed on your computer or cell phone and connects to the LoRa device via wifi, bluetooth or USB cable.

Now for the fun stuff. You can find a basic Lora device for \$35 or so on eBay, Etsy, Amazon or Aliexpress.

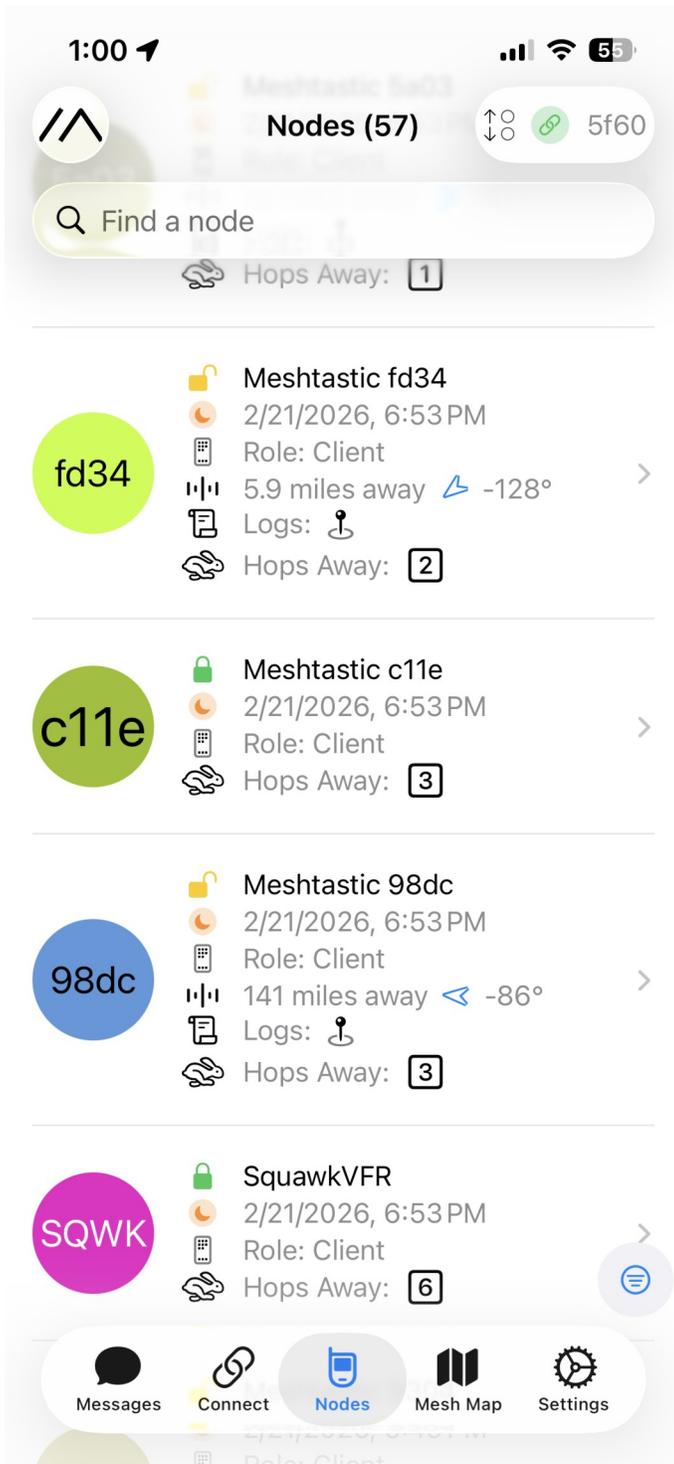
The Meshtastic software is free. After receiving your device, you flash the Meshtastic firmware from meshtastic.org using a web based tool via a USB cable.

The device will start transmitting immediately, so never power on your device without an antenna connected.

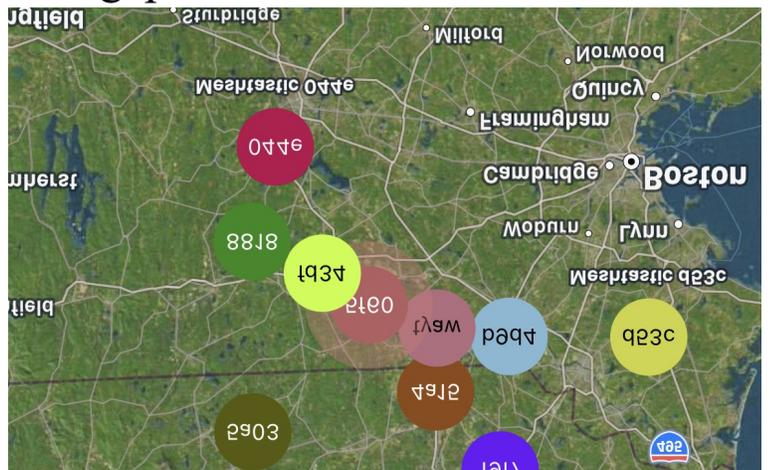


(more) Meshtastic Beginner Ed KC1WQB

Next, download the client app to your phone from the Google or Apple store. You can also use a computer – go to client.meshtastic.org and connect your device via USB. Once connected, you need to set your region to US and can accept the default settings or you can change the device name.



With a little luck, nearby nodes will start to show up in the nodes list and mesh map [left, below]. If like me, you don't find any local nodes near your home there is still hope. I drove to nearby Fort Devens, placed my LoRa device on the dashboard and several nodes became visible. I also drove to the local Walmart in Lunenburg, which is on top of a hill as well as being in a more densely populated area. Dozens of nodes started appearing. Remember that this is a mesh network, so the nodes that are visible to the local nodes also become available to you. Looking at the mesh map I could see nodes from as far away as Schenectady NY and Bridgeport Connecticut.



(more) Meshtastic Beginner
Ed KC1WQB

There is a default public channel used to send out test messages. I sent a test message and received a reply from a node in Connecticut. For non-public communications you can create private encrypted channels.

This article is intended to show just how easy it can be to get started with LoRa. There are many additional options not covered here. You can use your FCC callsign to identify your LoRa node. This grants you some additional privileges, but removes your access to encrypted channels. For more adventurous and technically inclined types, you can interface a Raspberry Pi to a LoRa hat to send automated alerts. There is also a competing protocol 'Meshcore' which offers higher performance. Meshcore requires defined routers/repeaters while Meshtastic is intended for ad-hoc networks. I'm not sure what comes next for me with LoRa, but it could be a good addition to your emergency communications toolbox.

Further reading:

<https://adrelien.com/meshtastic-the-complete-getting-started-guide/>

<https://meshtastic.org/docs/getting-started/>

**** 2026 Groton Road Race Seeks Amateur Radio Support in May ****

The Groton Road Race organizers are again requesting the assistance of the Amateur Radio community for the 2026 Race on Sunday May 3.

The Groton Road Race is a premier public event engaging over a thousand runners. NVARC and the ham community have been providing situational awareness, health and safety communication for this event for over three decades.

The course circles Groton Hill, starting and ending at the Groton Hill Music Center. This is the fourth year the Race has followed this course.

The planned event schedule this year is similar to 2025; the two main races start shortly after 10am. The communications support that we provide is expected to start around 9am and we should be done shortly after 1pm.

The Groton Road Race continues to be a major event for Amateur Radio in North Central Massachusetts. Those of you who have joined us in previous years know that the runners sincerely appreciate our presence. Many tell us so as they run past. This event is so large that several Police Departments and other public safety organizations from other communities come to assist the Groton PD. The Groton Police Department specifically looks to Amateur Radio for our added communications support.

Contributing to the public good is one of the reasons Amateur Radio exists. Our public service events are a key opportunity for us to show our colors, volunteer our skills and equipment, and demonstrate why it is in the public's interest to continue to allocate precious RF spectrum to our the Amateur Radio Service.

**** 2026 Groton Road Race Seeks Amateur Radio Support in May ****

The Groton Road Race is a low-stress event and a great way to gain more experience with the public service aspect of amateur radio. Please consider joining us on May 3rd; let me know by email.

If you are a new Ham or know of another Ham who is interested in helping at these events but unsure of what is expected or what equipment may be needed, please do not hesitate to introduce yourself (or them) to me.

The Groton Road Race Committee and the Groton Police Department repeatedly praise and express their appreciation for our assistance in providing communications for this event for many years. I do hope you will be able to join us this year; please let me know.

Thanks and 73,

-Ralph KD1SM

<mailto:ralph@kd1sm.net> or <mailto:kd1sm@arrl.net>

[1] <http://www.n1nc.org/Events/>

[2] <http://grotonroadrace.com/>

[3] <https://grotonhill.org/>

Thinking Day On The Air Bruce K1BG

On Sunday, February 23rd, the Nashoba Valley Amateur Radio Club once again took part in “Thinking Day on the Air” (TDOTA). TDOTA is an activity held in conjunction with World Thinking Day, an annual event sponsored by the World Association of Girl Guides and Girl Scouts. This year, NVARC was hosted by the Lunenburg Girl Scouts at Camp Green Eyrie in Harvard.

In addition to the advance preparation—scouting the site, setting up antennas, and organizing materials—we arranged six tables in the camp’s large dining hall. Each station introduced the girls to a different aspect of communications in general and Amateur Radio in particular.

One table focused on time zones and maps, covering topics such as GMT, distances, and directions. QSL cards from far-off locations were displayed, and the girls enjoyed finding those countries on globes and maps.

Another table introduced phonetics and explained why they are essential when conveying important information. The girls learned the NATO phonetic alphabet and practiced spelling their names using phonetics.

(more) Thinking Day On The Air
Bruce K1BG

Morse code was demonstrated at a third table. Each participant had a hand key and buzzer, and everyone learned how to send their names in Morse. As in past TDOTA events, the Morse table proved to be one of the most popular.

Two additional tables gave the scouts the opportunity to experience Amateur Radio firsthand. Many of them got on the air and spoke with operators in various locations—using the phonetics they had just learned to give their names.



The final table was the scouts craft table where the girls made bead necklaces and bracelets that spelled out their names in Morse code, something for the scouts to take with them to remember the event.

K1BG photos

Setting up the Thinkers

It was an exciting and rewarding day for everyone involved. I'd like to thank the following volunteers for their time and enthusiasm: Adam – KC1RVK, Bob – N1DVC, Kira – KC1YLO, Libby – KC1RKH, Mary – KC1VSQ, Mindy – KM1NDY, and Skip – K1NKR. I hope we'll have the opportunity to participate again in future years.

If you're interested in helping out next time, please let me know.



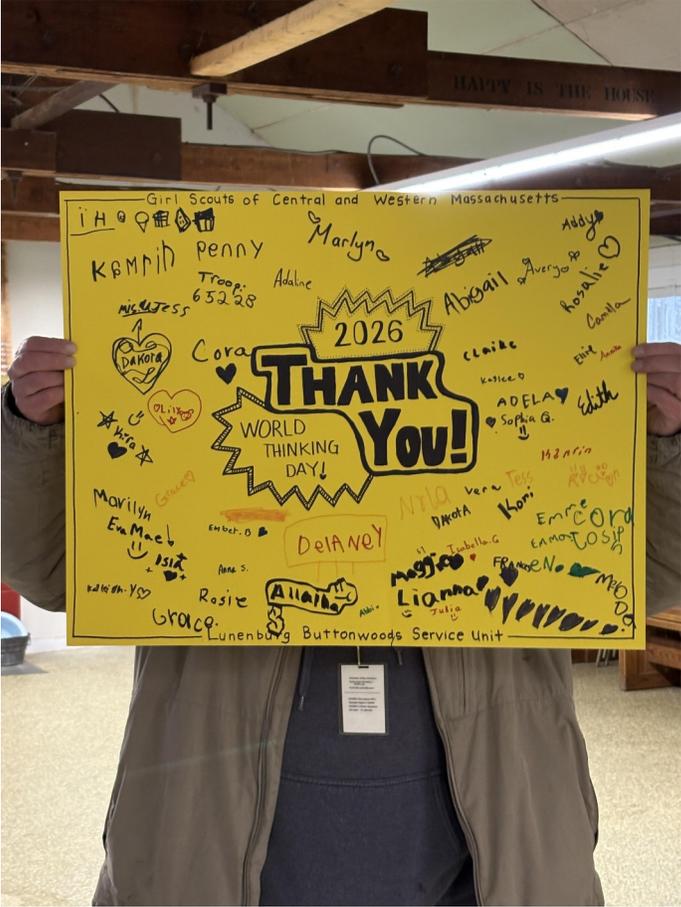
(more) Thinking Day On The Air
Bruce K1BG



(more) Setup

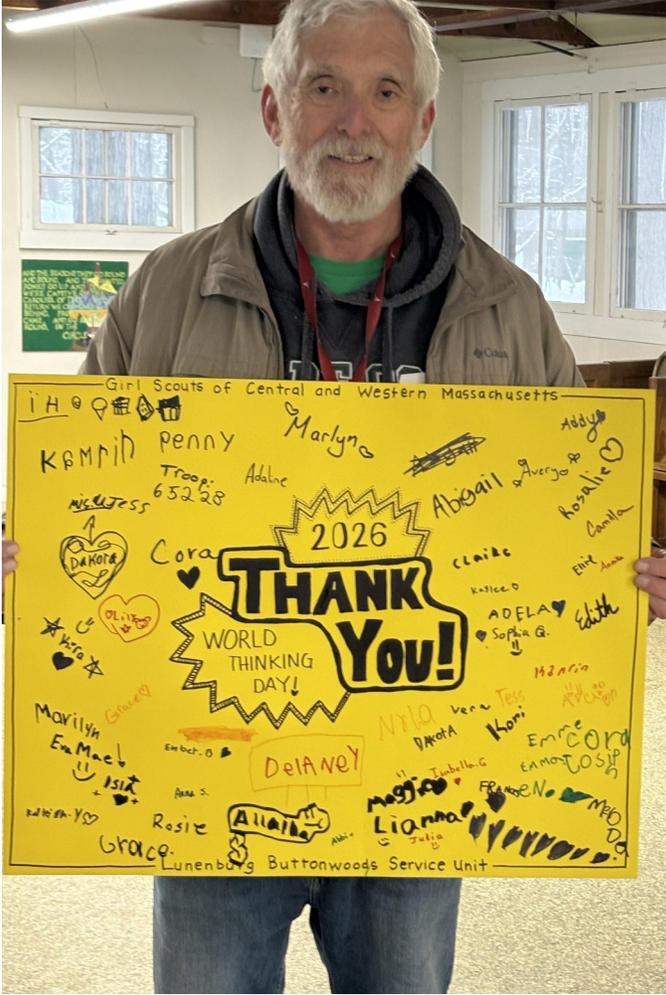


Morse Code Table



Who is this guy?

K1BG photos



Bruce K1BG at the heart of it all...

Bromfield Science Fair
Bruce K1BG

One of the community events that NVARC participates in annually is the Bromfield School Science Fair. The Bromfield School is the public middle / high school in Harvard, Massachusetts. Students in grades 8 through 12 participate in the science fair. This year 116 students presented 78 projects on a wide variety of subjects.

Judging is done by both faculty and community organizations. NVARC judges prefer to judge projects broadly related to electro-magnetics, but it's not always easy to narrow it down to just those projects. This year we judged 7 projects and awarded 4 of them NVARC "Youth Achievement Awards". These were:

Cooper Baron - Signals From the Sky: Picking Up and Decoding Satellite Signals

Logan Charland - Experimental Determination of Stall Characteristics in 3d Printed Airfoils

Gwyneth Poutasse & Sophia Pierce - The Super Ultrasonic Levitator

Jacob Dangel & Anir AitDowd – The WiFi Deadzone Map

The award winners will receive an RTL-SDR kit for further experimentation and a personal tour of MIT Haystack Observatory conducted by Phil Erickson, W1PJE.

I'd like to thank the following people who volunteered to serve as judges for the event:

Dennis – K1LGQ, Jim – AB1WQ, John – KK1X, Les – N1SV, and Phil – W1PJE.

I love doing this event. If you would like to participate in 2027, please reach out to me and let me know.

6M Delta Loop Jamie K1AUN

Editor's Note: Jamie is a relatively new ham and has recently started to be come more active, and here he outlines one of the antennas he has built.

K1AUN photo

Jamie writes:

This 6m Delta Loop has been my most ambitious antenna project yet. It's obviously constructed from PVC, speaker wire, RG58, zip ties, and an LDG 1:1 unun. It's electrically sound and I got the SWR remarkably

close to 1:1 for 6m but I wasn't able to raise any of the 6m repeaters that were supposed to be on the air from my home. Maybe I'll need to take it mobile or portable when the weather warms up. I'd love to hear from club members who work 6m.



For those lamenting that Jamie did not include measurements, you can calculate the length in feet of the loop by dividing 1005 by the frequency in MHz.

1005/50.1 yields a wire of 20.06 feet, or 20 feet $\frac{3}{4}$ inch (or 6.1m).

Also, a 4:1 balun is commonly used in a delta loop, perhaps with a 1:1 unun to provide CMC suppression.

-Ed.

2026 Hamcation Les N1SV

HamCation is one of the world's largest amateur radio conventions and includes forums, commercial vendors, and a large flea market. It's held each February in Orlando, FL at the Central Florida Fairgrounds and serves as the ARRL Southeastern Division Convention. After hearing about this event for a number of years, I decided to check it out for myself.

The event was held February 13-15 with most activities occurring Friday and Saturday. When I arrived midday on Friday I immediately bumped into a bunch of folks from back here. This included NVARC club members Charlie AB1ZN, Dennis K1LGQ, & Bob W1XP. I found a large number of commercial vendors in the East, West & North Halls. I spoke with numerous vendors including Elecraft, Flex Radio, & Green Heron Engineering to name just a few. Conspicuously missing was Kenwood.



WA6HHQ trying to talk me into buying a new expensive transceiver

(more) 2026 Hamcation
Les N1SV



WA4MCMKits booth

While most of the vendors were in the EastWest & North halls, WA4MCMKits was in a pop-up booth between the halls and the flea market. I spoke with Don WA4MCK about his new product, the PSR-100, a portable satellite antenna system designed for antennas like the portable Arrow satellite antenna that I have. There was a scale model of a satellite antenna at his booth that was tracking the ISS which seemed to work very well. Most of the mechanical parts are 3D printed and the electrical parts are all on a single PCB. The system claims to interface with all major satellite tracking programs like SatPC32. The system mounts on a standard tripod. This kit can be ordered from <https://wa4mcmkits.com/> for \$320 plus shipping. I may have to purchase one of these this spring if it works as well as the manufacturer claims.

Friday evening, I attended the annual contest dinner sponsored by the Florida Contest Group. I sat with Ed K1EP, Fred K2TR, and Ann WA1S, the W1S card sorter for the incoming W1 QSL Buro. It was great to catch up with everyone including the keynote speaker Dave KM3T. The door prizes that I unfortunately did not win were a new ICOM 7610 and an ICOM 7300. The \$35 ticket included a buffet, drinks, and a door prize ticket. All in all, it was a pretty good value.

(more) 2026 Hamcation Les N1SV

One thing I noticed about the Central Florida Fairgrounds was that there were no accommodations in the area, so the three hotels noted on the HamCation website were all about 30 minutes away from the fairgrounds with traffic between each being very congested.

Throughout the day on Saturday, I attended several different forums including, Adventures in software defined radios, the ARRL membership forum, Flex Radio – the Aurora transceiver, and HamSCI: Ham Radio Science Citizen Investigation. All forums were presented in one of three canvas tents set up in the pavilion area. The tents were equipped with very large blowers to cool the interior. While the large blowers were effective in doing that, they also made it difficult to hear some of the presenters. The forums were at the far end of the fairgrounds, so golf cart shuttles were utilized to transport attendees between the commercial buildings and the forums.



Forums Pavilion

N1SV photo

During one of my trips through the commercial buildings, I visited the HamSCI booth and spoke with Bob W1XP. I also stopped by the FreeDV booth as I had remembered that John K1JEB had been using this open-source HF digital voice software. There was also a SWAPs building which was an air-conditioned flea market style building with a mix of mostly ham radio related items mixed in with well almost anything inside.

(more) 2026 Hamcation
Les N1SV



N1SV photo

Bob W1XP and others
manning the HamSCI booth

The flea market area was quite widespread over the fairground's interior. I found a lot of items similar to what is found at our local flea markets up north. I did find a man with a fetish for restoring Hammarlund SP-600 receivers. He had apparently 14 of them excess of his needs in various states of restoration. I had a good discussion with him about these boat anchor receivers used by the military between approximately 1951 – 1972.



Collector of
Hammarlund SP-600
receivers

N1SV photo

As I wandered around the flea market, I noticed a bunch of VHF / UHF beam antennas on a hydraulic mast. As I got closer, I realized it was someone with a portable station. As it turned out it was Jeff WB8BYJ from EM73 in GA with his well-outfitted high-power VHF/UHF station.

(more) 2026 Hamcation
Les N1SV



WB8LYJ Portable Station

N1SV photo

Saturday evening, I attended the ARRL banquet at the Rosen Plaza. Bob NQ1R was the guest speaker with awards given out for Premier Educator & Supporter of Youth (awarded to Carole WB2MGP), Carole Perry Educator (awarded to Dr. Nathaniel W2NAF), Gordon West Ambassador of the year (awarded to Tony KD8RTT), and Amateur Radio Hero (awarded to Ambarish VU2JFA) awards. Apparently, this banquet was the 1st held in the past eighteen years and while a little pricey was very good. So, I had a good time and am glad I finally got to attend HamCation.

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 repeaters:
442.900(+) PL100
147.345(+) PL100
53.890(-) PL100
GMRS 462.725 PL 100

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
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