Nashoba Valley Amateur Radio Club

NVARC Signal

ARRL AFFILIATED CLUB

VOL. XXXIII… No. 8 WWW.N1NC.ORG August 2025

In This Issue

Next Meeting

The next meeting will be held in September. Adrian KO8STA will be talking about his upcoming DXpedition to Bouvet Island.

Past President and N1NC Trustee Bruce K1BG, passed up breakfast on Saturday for THIS?

Weekly 2-meter Net

Summer schedule for the NVARC Information Net is 8:00 PM local, using the 147.345 N1NC repeater, PL 100.

An informal net on 28.400(+/-) may follow the VHF net.

President's Corner
Les N1SV

As I write this, we're into the dog days of summer with hot and humid weather upon us. During this time, we tend to get some significant thunderstorms. So don't forget to unplug your antennas ahead of any of these. While I've never experienced a lightning strike myself, I know others that have. And it can be an expensive and time-consuming process to make repairs. I know some folks have chosen to install lightning arrestors in their coax lines however I don't have any experience with them. It would be good to hear from some of our members that have used them on their effectiveness.

By the time you read this we will either have had or are about to have our NVARC summer BBQ / picnic. Thanks to John K1JEB for hosting this year's event. Like our weekly Saturday breakfast at Tiny's in Ayer, this is another great opportunity to meet informally, relax and enjoy everyone's company. It was suggested by one of our members that we consider combining our summer BBQ with Field Day. While I've never considered this, I'd like to know how other members feel about it.

We've had good participation on the weekly Monday night 2M NVARC Information net that's been meeting at 8:00 PM throughout the summer. Just a reminder that starting on Monday September 22nd we move the start time back to 7:30 PM.

While I've gotten some antenna work done this summer, I've had to take a pause recently as I recover from hand surgery. During this time, I've started experimenting with a new HT that I purchased, the Quenshang UV-K6. Like the Baofeng UV5-R, the UV-K6 is a cheap 5W Chinese dual band clone.

But this one has several different firmware and hardware modifications that people have created. Right now, I'm using the EZGUMER 0.22 firmware version which adds some interesting features. I'd like to hear from other members on their experiences with either the Quanshen or Baofeng HTs.

I'm looking forward to NVARC meetings starting back up on September 18th. September's guest speaker will be Adrian KO8SCA and his remote presentation on his upcoming 3Y0K DXpedition to Bouvet Island in February of 2026. This is a major DXpedition to the #10 most wanted DXCC entity worldwide. For more information on his upcoming DXpedition visit https://3y0k.com/ .

Treasurer's Report
Ralph KD1SM

The Treasurer's report was unavailable at "press time". Yes, I'm rocking my inner Jimmy Olson.

Board Meeting Report
John K1JEB

[Note – this is the report for the July meeting, held after the last newsletter was released – Ed]

Jim Hein N8VIM has has graciously donated the fuel used with his generator on Field Day.

John K1JEB has discussed the cost of mailing the 'Worked All MA Counties' Certificates to foreign qualified Ham Operators. It was suggested that a notice be added to the rules that the cost should be told to the recipient prior to mailing the Certificate.

The club should reimburse the expenses for the maintenance/administration of the club's website and domain. Also to have John KK1X be the back up administrator for Ralph KD1SM.

The 2 meter NET is still doing well.

Bruce K1BG is working on possibly awarding a Field Day certificates to the youth visitors at Field Day that got on the air.

John K1JEB is planing to conduct the club picnic on August 9th.

Zack KC1VUY achieved 156 phone contacts on Field Day!

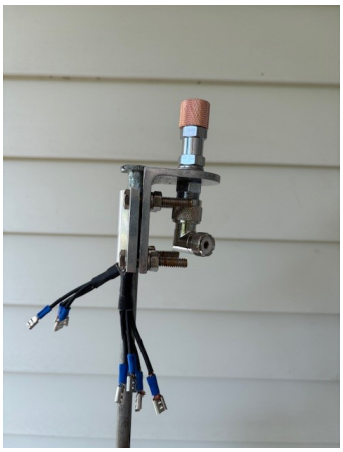
Zack KC1VUY has coordinated a guest speaker for the September Club Meeting. Adrian KO8STA will be talking about his upcoming DX expedition to Bouvet Island.

Bruce K1BG is planning to conduct both another Technician Class and another Morse Code class some time in the fall.

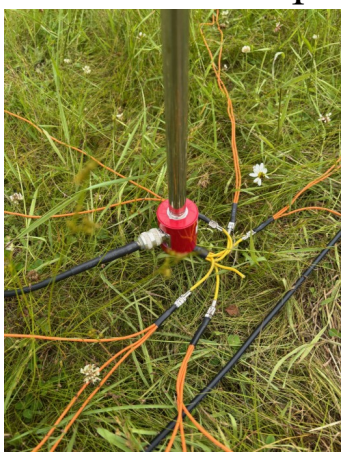
Working POTA
John KK1X

I watched a YouTube video recently (writing this on July 4, 2025) of a purportedly licensed radio amateur comparing two antennas - the so-called "POTA Performer" and 51 foot "random" wire with a 9:1 balun. His setup used no tuner, his test was to compare the number of contacts made. While the test performed might provide *some* indication of relative performance, the setup was way out of line. If one were to read anything about "random" (technically just non-resonant) wires, the very first paragraph will reveal that a tuner MUST BE USED. Period. Full stop. No kidding around. Not having a tuner in the setup completely (IMHO) ruined his test. Not so surprisingly, the "POTA Performer" won hands down.

I wanted to see how the AliExpress antenna I got for $20 a few months ago stacked up against a similar but home-brewed system. The home-brewed solution is a truck-stop CB antenna mount, the two-way kind that also clamps vertically. That is clamped to a landscaping nail I got at Lowe's for a buck. They are a foot long and galvanized. Several ring terminals and spade receptacles make grounding harnesses for the radials. The antenna radiators are ~17' telescoping whips, unbranded.



Antenna A



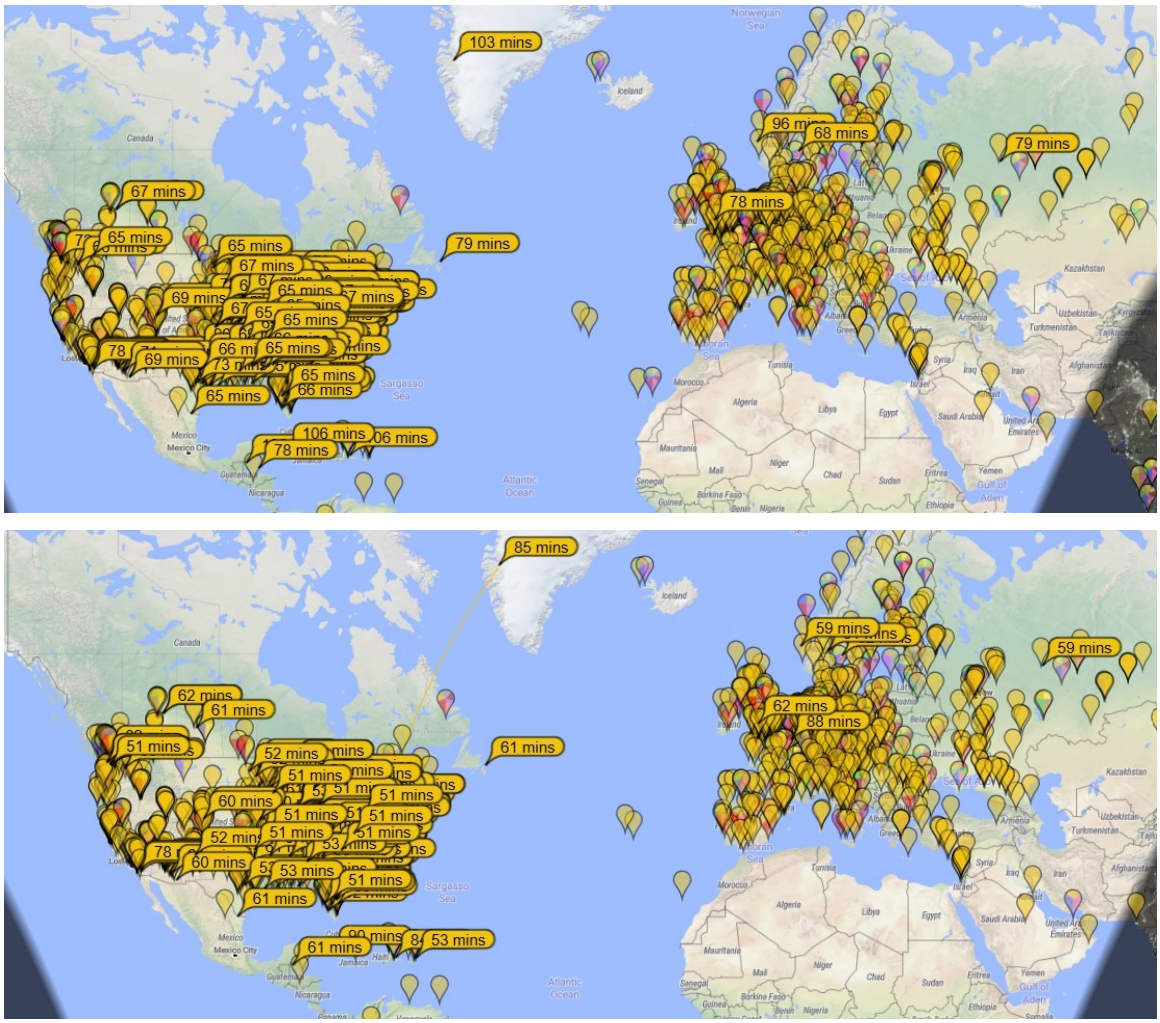
Antenna B

Electrically the two antennas were essentially identical, but was there a performance difference? My setup was, I opine, a bit more equitable than the other bloke's, but I doubt I'll get that NSF grant...

The antennas were set up about 50 feet from one another at Pearl Hill State Park in Townsend MA. July 4 at 0800 found a pretty quiet park. RG-8X coax runs of 50 and 75 feet connected the antennas. I didn't compensate and honestly can't recall which antenna got which coax. Each antenna got six radials. Each antenna was extended to achieve minimum SWR at 14.074 MHz (FT8) using a RigExpert AA55 Zoom meter. Antenna A came in at 1.23:1, Antenna B at 1.41:1. I let the tuner in the KX-3 figure out the rest.

I started off calling "CQ POTA KK1X/P FN32" for 15 minutes on one antenna, and then "CQ POTA KK1X FN32" for another 15on the other. That cycle was repeated once for an hour of operating time. Almost. Something jiggled and a fuse was blown with two minutes to go in the last cycle, so the AliExpress antenna got shortchanged on time. Seventeen contacts were almost evenly distributed across the hour I operated.

Results? I used PSKReporter, a trusted tool, to make the comparison. PSKReporter sorts the KK1X and KK1X/P calls into different bins so I was able to see where I was heard under each call. As anticipated, there's very little difference between the antennas. It's of course interesting to note that the "homebrewed" version cost ~$15 for the base (CB mount, spike, terminals) but the matching antenna cost IIRC about $30. The AliExpress version - mount, 10 radials, and the telescoping whip, was $20.



The top picture is Antenna A, the bottom Antenna B.
Do you see a difference?

Additional POTA adventures continued throughout July, albeit at a slower pace than last year, including outings at two new parks for me – Greycourt SP in Methuen and Maudslay SP in Newburyport. I did 13 outings (one a two-fer so I had 14 “activations”). Pearl Hill SP is one of my favorites, as is Leominster State Forest.

Most of my activities were using a 17-foot vertical whip, with or without a base loading coil for 40m. I experimented with the coil, originally wound on a small poly core, encased in a 1.5” PVC pipe, and the SWR was a horrible 3.6:1 on 40m (7.074MHz). I had used 18AWG stranded wire for the coil. I rebuilt it using 18AWG solid enameled transformer wire over the 1.5 PVC, and the SWR came down to 2.5:1. Treks to Otter River SF and Dunn SP on July 24 & 25 showed SWR of 3.1 and 3.0 with 15 radials.

I removed the coil and measured 1.36:1 at 14.074. On a whim, I started removing radials and testing the SWR, and I was surprised to find that the SWR improved (to 1.05:1 with 2 radials) as the radials count dropped. I’m still puzzling over that one. Does anybody know why?

I rounded out the month with trips to Leominster State Forest, Greycourt State Park, Maudslay State Park, and Willard Brook State Forest. In 13 outings I made just over 300 contacts. I usually hang around for an hour or so per activation.

Field Day 2025 Report
John K1JEB

This was my second Field Day event as Field Day Chairman.
It was a really fun event! It was the highlight event of the club year.

I am elated for all the support I got from veteran NVARC Members who have participated in NVARC past Field Day events. Everything went according to plan, and the team performed as we all planned.

I want to thank all the great Station Captains: For HF: Bruce Blain K1BG and John Griswold KK1X, for the VHF/UHF: Les Peters N1SV and for the GOTA: John Bielefeld K1JEB (myself). What a team!

I want to thank Jim Hein N8VIM for all the infrastructure support for electrical power and the ethernet infrastructure.

I want to thank Bruce Blain for being the N1MM Logger guy.

I want to thank Charlie Pentedemos AB1ZN and his wonderful wife Judy for the great food, chips, and snacks. The Crock Pot sausages were amazing.

I also want to thank John Griswold KK1X and his wife for the terrific homemade cookies and the two containers of lemonade and ice water. [John's wife Peggy had nothing to do with the cookies… Ed]

Jim Wilber AB1WQ loaned us a nice big picnic table and the street signs. I want to thank Leo Hunter K1LK for bringing the large food canopy.

The two end-fed half-wave (EFHW) antennas were held aloft by a military-grade mast system provided by a member whose name I didn't catch – my apologies. The EFHW antennas performed admirably as they have in the past.

On 6 meters Les Peters N1SV did quite well operating FT-8 with his Kenwood TS-2000 Radio.

Eliot Mayer W1MJ supervising the FD Fox Hunt which was a lot of fun.

If there is anyone I missed please accept my apologies – there were a lot of helpers this year!

In conclusion I thought Field Day was a blast! Everything went very well. It was hot but doable and sunny most of the time.

Thanks everyone that participated and volunteered on FD 2025 to make FD 2025 special.

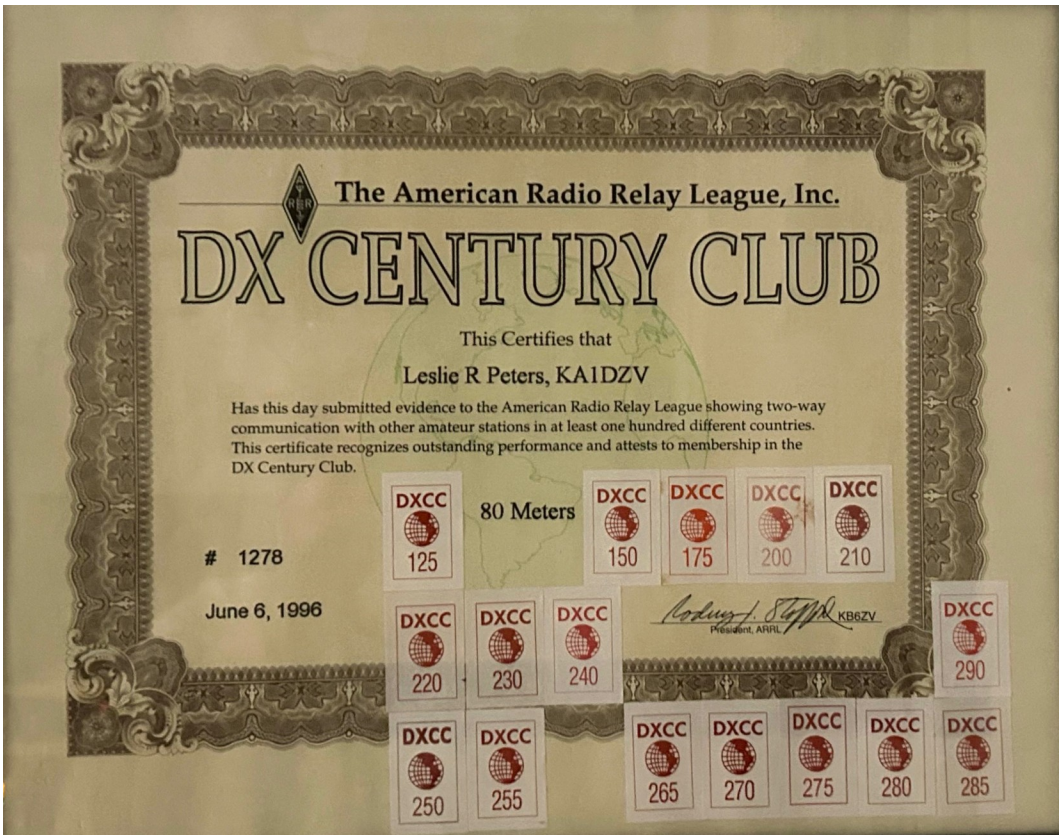
John Bielefeld K1EB

Free to Good Home:

Restoration Project - E F Johnson Viking 2 Transmitter, circa 1955. 160 to 10 meter CW & AM transmitter, 150 watts output with a pair of 6146 tubes. Requires external VFO or crystals. Transmitter is complete with some wear. It deserves to be restored for an excellent, classic rig and not destroyed for parts. Pick up only - heavy. Contact Rod, WA1TAC

DXer's Notebook
Les N1SV

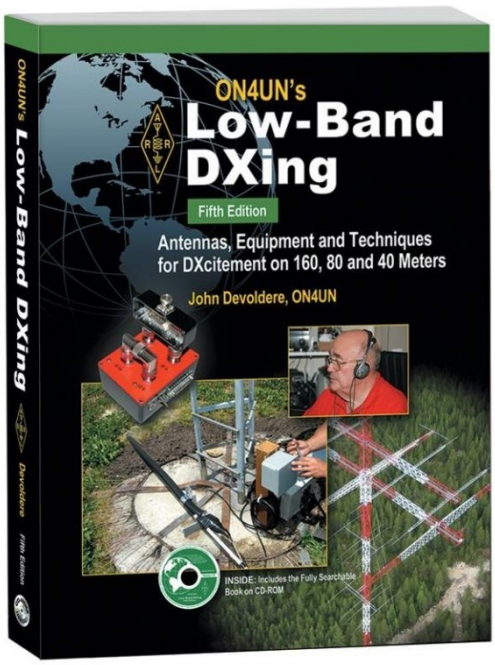
In this final installment of the DXer's Notebook, I'd like to focus on DXing on the 40m band and bands below it. While low-band DXing is not particularly popular right now, considering where we are in the sunspot cycle, its day will come again as we march toward the bottom of the cycle. Low-band DXing can be challenging but also thrilling in pushing the boundaries of what's possible. I've been DXing on 80m for more than 40 years so I've seen the bottom of sunspot cycle three times so far. One of my greatest accomplishments in DXing has been reaching the 300 countries worked and confirmed milestone on 80m. But you don't have to go this crazy to have a lot of fun DXing on the low-bands.



There are a number of challenges to low-band DXing. A limiting factor is being able to hear distant stations due to high natural interference (QRN) levels. In the summertime local and not so local lightning produce static crashes that can be S9+ in your receiver, making it impossible to hear anything. Also, distant low-band signals are much weaker so stations install special directional low noise receiving antennas to pull in those weak ones. The most popular receiving antennas are called beverage antennas made out of wire and which can be quite long.

Transmit antennas are much larger at these lower frequencies. An 80m dipole is more than 133-feet long and on 160m it's 260-feet long. The general rule of thumb of putting a horizontal antenna up at a minimum of a half wavelength above ground for a low take-off angle becomes unrealistic (except for 40m). Because of this, antennas for 80m and below tend to be vertically polarized and ground mounted. Vertical antennas or a form of them either by themselves or in arrays to add directivity are most common. Because many stations are limited by space constraints, low-band DXing is all about compromise. On 80m I use an array of four shortened vertical antennas (each ~34-feet high) called a four-square array. However, on 160m this is unrealistic for most including myself, so I use a single inverted-L antenna (a form of a vertical with a portion of the top bent in a horizontal direction). The inverted-L is a good basic antenna and is responsible for my almost 200 countries worked on 160m.

Low-Band Dxing 5th Edition



John Devoldere ON4UN (SK) published the book low-band DXing, considered to be the bible on low-band DXing techniques. For those interested in low-band DXing this is an essential read as it provides critical in-depth information about propagation, antennas, equipment, and operating techniques. I attribute much of my success on the low-bands to information found in this book.

The low-bands are active for long distant communications at night. From local sunset the bands open toward the East where communications are possible until dawn occurs at the Eastern terminating point of the path. Contacts can routinely be made with Europe in this direction. As sunset continues to move to the West of us, the bands open to South and West. When sunset finally occurs in the Pacific and beyond, communications to those areas may be possible until our sunrise.

Propagation differs both for where in the sunspot cycle we are as well as the season. The bottom of the sunspot cycle is the best for the low-bands while where we are right now is relatively poor. Winter is the best time of the year for low-band communications due to the reduced number of static crashes in the Northern hemisphere while summer is the worst. Of course, while winter may be the best time for those in North America it's also the worst for those in South America where it's their summertime. So, you need to consider not just where we are but where you want to communicate to. For that reason, the spring and fall equinox may be a better time to work South America and our Winter a better time to work long East/West paths. One of the very interesting things about low-band propagation is something called Greyline. Greyline is that time that occurs at daily sunset or sunrise when we are in the transition between day and night or vice versa. During these times radio waves that are directed toward the setting or rising sun are temporarily bent at lower angles then normal when entering the ionosphere. This allows these signals to propagate much farther than normal. A real-time Greyline map like https://dx.qsl.net/propagation/greyline.html is helpful.

When I started low-band DXing my activity was almost exclusively on SSB. However, I soon realized that much of the rare and/or long-haul DX was being worked on CW. So out of necessity I starting operating more and more in the CW portions of the band. These days it seems FT8 has become the go to mode for many low-band DX contacts. While I have not worked a lot of FT8 low-band contacts, I'm sure as we continue to get closer to the sunspot cycle minimum, I will experience more of it. FT8 allows more modest station to enjoy DXing overall and I'm sure this will ring true for the low-bands.

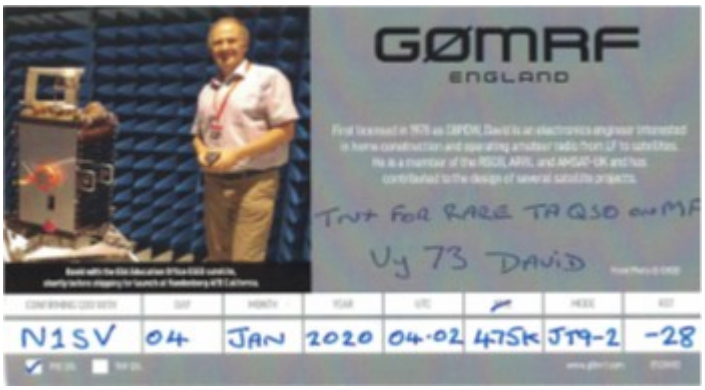
DXing on the 630m and 2200m bands is possible but rare and probably impossible for where we are in the current sunspot cycle. At the bottom of the last sunspot cycle I built a variometer (adjustable inductor) and impedance transformer and used them to tune my 160m Inverted-L to work on the 630m band.

630m Impedance Transformer & Variometer

The impedance transformer is housed in the Rubbermaid container on the left while the variometer is constructed out of an old pail on the right (160m feed point is behind). During weekends in the winter, I would go out and adjust everything for a minimum SWR at the desired frequency of 475 KHz using my trusty NanoVNA and hope its resonant frequency wouldn't drift to much over the evening (the 2:1 SWR bandwidth of the antenna is roughly ~6 KHz).

With a legal effective radiated power limit of only 5W, 630m is truly a QRP band. My 630m setup has worked well allowing me to communicate with stations via JT9 or FTS4W modes out to the North American west Coast and into the Caribbean on good nights. And on several occasions, I've been able to work into Europe. While I've tried to become active on the 2200m band, I've yet to be successful at it. When we get closer to the bottom of the sunspot cycle you may want to investigate the low-bands, they can be very rewarding.

QSL Gallery



630m QSL from G0MRF

Campbell Island is an uninhabited subantarctic island approximately 660 KM South of New Zealand's South Island. In 2012 the Hellenic Amateur Radio Association of Australia activated this island. Before the DXpedition started the DX community was informed that per the licensing authority, all operators could not stay on the island overnight and would therefore have to return to the chartered vessel This meant no possibility of any low-band contacts. However, when the vessel arrived the authorities changed their minds allowing a small group to stay overnight to operate the low-bands. The available operating window to work ZL9HR on the low-bands was approximately 3 hrs long here (time from their sunset to our sunrise). I tried every day to hear them on 80m hearing them only on two mornings. On the first morning I heard them they were on SSB and the pileup was totally out of control with only a handful of the biggest of the big stations getting through before our sunrise. On the second to last morning of the DXPedition, they came out of the noise on CW approximately 20 minutes before my sunrise and I was able to work them with only one other station calling them. On the last day of the DXPedition I tried to hear them again and they were not on 80m. The take away here is that persistence and luck sometimes pay off.

HamX - *The Northeast* HamXposition

August 21 - 24, 2025

ARRL New England Division Convention

The Northeast's largest gathering of radio amateurs, featuring in-person experts presenting on timely topics, trends and technologies

Thursday Night Comedy Kick-Off

Featuring Comedian Juston McKinney
Thursday, August 21, 2025

Friday Night DX/Contest Banquet sponsored by: DX ENGINEERING

Featuring Ned Stearns, AA7A
Friday, August 22, 2025

Convention Keynote Address

Featuring Thomas Witherspoon, K4SWL
Saturday Morning, August 23, 2025

Saturday Grand Banquet Presentation

Featuring Nathaniel A. Frissell, W2NAF
Saturday Evening, August 23, 2025

Over $14,000 in prizes * Large Outdoor Flea Market * W1XPO GOTA Station

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Lido Radio • Gold Medal Ideas • Scanner Master • plus many more!

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Vice President: Zack Harrison KC1VUY
Secretary: John Bielefeld K1JEVB
Treasurer: Ralph Swick KD1SM

Board Members:
John Griswold KK1X (2024-2026)
Jim Hein N8VIM (2024-2027)
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