



Nashoba Valley
Amateur Radio Club

SIGNAL

A club since 1992



Since 1993



Since 1996

de N1NC

April 2019

Volume 28 Number 4

This is what a newsletter with no editor looks like.

This Month's Meeting

Well, it's April. Election time!

Well, it's April. Let's get Field Day prepared.

No Joke. It's April. Come along to the meeting!

Terry Stader, KA8SCP, will join us to speak on Emergency Communications. Terry, a member of PART of Westford, is involved in EMASS RACES. He's a D-STAR coordinator for numerous repeaters, the



ARRL EMA District Emergency Coordinator, and the MEMA Region One Communications/RACES Officer.

After all, it's April. And that's always been democracy and public service month on the NVARC calendar.

Last Month's Meeting



Another NVARC speaker gets mugged

(KD1SM photo)

Fred Hopengarten, K1VR, our newly-elected ARRL New England Division Director, joined us this month. Fred principally discussed antenna zoning (his specialty) and current ARRL matters (his new job).

He also used the visit to get acquainted with NVARC (and *vice versa*).

In addition, Bruce, K1BG, recapped the club's participation in the recent science fair at the Bromfield School in Harvard MA.



(KD1SM photo)

The President's Corner

This month is NVARC elections. Members interested in participating in the elections for President, Vice President, Treasurer, Secretary and one Board Member should contact one of the officers. Last call for will be at the meeting and then elections will be held.

This will be the last issue of the *Signal* until a new editor is found. Skip K1NKR felt two years was an appropriate commitment and we thank him for his service. Having been the editor for over twenty years, I certainly believe I have done my time in that position. So, it is time for a new person to guide the *Signal*.

Last month club members, led by Bruce K1BG, participated in the Harvard Bromfield School science fair. With the connections developed there, Bruce is going to explore possible interest in the ARISS program of students talking to the astronauts on the International Space Station. Our last involvement with the program was in November 2005 for the Hawthorne Brook Middle School in Townsend. It is a significant effort, but schools approved in the current round of applications (open till May 14th) will have contacts scheduled between January and June 2020 so there is time to prepare. The early preparations will take half a dozen people and the actual event twice that many. One issue is that

the contacts are scheduled during school time, which means weekdays.



For those not familiar with what it takes, there are two articles in the Who We Are section of the N1NC web page that I created with the help of some of the participants. The general audience version is a couple of pages and there is a more detailed twenty-one-page paper with the details of our successful contact. There is additional information on the ARISS web site at <http://www.ariss.org/hosting-an-ariss-contact-in-the-us.html>. To prepare we need to set up the satellite stations in advance, so the opportunity exists to help build and then operate the station.

At the April Board meeting we approved a budget for Field Day. Because of the amount, I will bring it up for member approval at the regular meeting. We still need a volunteer to lead the Field Day effort.

We continue to seek presenters or programs of interest for our regular meetings. If you see or hear of something the would be of interest to the members let one of the officers know.

de Stan KD1LE

Editor's Note

Well, this is it. My last issue of *Signal*. I can't say it hasn't been fun. I got to sit in on a lot of Board meetings and not be responsible for representation, execution, or decisionmaking—just observation. It's been a good way to keep up on the pulse of the club. And the club is just ticking away FB.

I have no concerns for the future life of the *Signal*. I think back over most of the last fifteen-plus years and can see the typical Board meeting: all the officers and board members sitting around Stan's table for an hour-plus on the first Thursday of the

month watching him prep and edit the month's newsletter. If nobody else volunteers to edit—and despite what he says—I'm sure Stan will pick it back up. After all, he carries almost everything else in the club.

I've joined the Algonquin ARC down here in Marlborough. They meet the second Thursday of the month. A nice bunch of hams, and the AARC's "personality" and program interests complement those of NVARC well. NVARC's home, though. See you Thursday, and each third Thursday of the month for the foreseeable future.

de Skip, K1NKR

It's About Time

The European Union recently voted to eliminate Daylight Saving Time in Europe effective 2021. See <https://www.rte.ie/news/europe/2019/0326/103868-9-eu-daylight-savings/> for more information. (Truth be told, this will be an "opt in by country" action.) Fortunately, even voluntary unanimity like this is unlikely to occur here in the US.

Still, all this makes one consider standards. As engineers are accustomed to say, "Standards are great; everyone should have one of his own." Island America (aka "the great-again USA, USA, USA...Hoo-rah") is fortunate to have inches, feet, yards, and miles while the poor rest of the world only has meters. We have ounces pounds, and tons; the world is stuck with grams. Admittedly though, they have "tonnes," one thousand kilograms—but that's a mere even-multiple of grams. Poor folks! No imagination.

We had NTSC television and the rest of the world had PAL. Now our digital TVs have ATSC and (most) of the rest of the world has DVB.

It's time we asserted our independence and dominance on the last front: time. The Final Frontier (Star Trek) had its own time system, why shouldn't we? Larsen E.Rapp, WIOU, who was oft published in various Spring issues of QST during the

1950s and 1960s, has proposed an American system of time that is offset in phase and frequency (i.e., interval) from that of the rest of the world. In the Rapp system, the time epoch begins separately for each Amateur licensee at the moment his (or her, or its in the case of organizations) initial license was first entered into the FCC database. So American time phase is the difference between AD 0.0 and one's licensing date, ensuring the independence and individuality of US hams. As for interval, we know for certain that we are "swifter" than all others. So Rapp proposes a US standard interval, called the Looflirpa, that is 5/9ths the duration of the world standard.

For those who say that the new system will make QSLing difficult, consider this. The paper QSL, "the final courtesy of a QSO," is becoming more and more obsolete with the advent of electronic logging tied in to various logging databases. Computer power will fix everything and automatically do the translation between the US standard and the lesser standards of the world. Besides, what need is there for courtesy when logging is merely a matter of collecting awards and certificates?

de Roger Abbot, WA1SEC

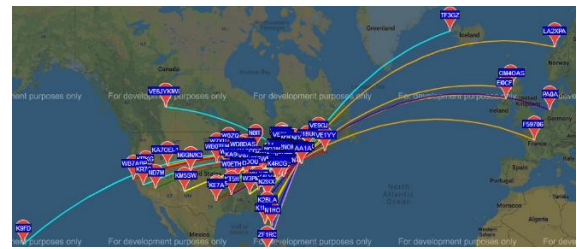
Adapting a 160m Inverted-L Antenna for 630m

Epilogue

By Les Peters, N1SV

(All photos and artwork by the author)

In Les' Winter article series, he introduced us to the "joy" of adapting an antenna system for use on a new band. Here, he concludes, showing evidence that ours is truly "a learning hobby."



N1SV WSPR Decodes 1/12/19

What I learned my first season on 630m

Last winter I started listening to the 630m band (472-479 kHz) and became intrigued with how far away you could hear stations and wondered how difficult it might be to convert my 160m inverted-L to work on 630m. What follows is a synopsis of lessons learned over the first season of having done just that.

One of the things you realize right away about operating on 630m is the FCC power limit of 5 watts EIRP (effective isotropic radiated power) and how you need to analyze your antenna system in order to calculate how much power you can legally drive your antenna system with. For those stations like myself that are trying to make an antenna meant for a different band work at 630m we have to use more power than those stations with a more efficient antenna system.

If 160m is a band of compromise then 630m is a band of even more compromises. A full-size quarter wavelength vertical for 472 kHz is about 500 feet tall. (I'm not aware of anyone who has been crazy enough to do this yet). So many stations seem to use some form of a shortened vertical either capacitively loaded with wires at the top or inductively loaded using a loading coil at the bottom. I decided to try base loading my 160m inverted-L and found constructing the bucket variometer easier than I had originally expected thanks to some excellent online information. The impedance transformer however was a little trickier as my first version was inadvertently wired as a step-up rather than a step-down transformer.

As I had expected trying to initially tune the bucket variometer and find the tap on the impedance transformer that produced

the lowest SWR was little tricky (the 2:1 SWR bandwidth is about 8 kHz). I also noticed that over the winter the tap that produced the lowest SWR for 474.2 kHz would move indicating to me that the ground losses might have changed over time. One of the things I realized in hindsight was that with my 630m antenna being an add-on to my 160m system that you couldn't switch bands back and forth very quickly. It required me to have to remove the variometer and impedance transformer to use 160m or install said equipment and then adjust things to use 630m. And at night or in wet weather this turned out to be a real pain. Going forward I need to find a way of adding remote band switching to make this easier. And along the same lines the adjustment of the variometer is very touchy and at present must be done prior to using the antenna each evening as it shifts 1-2 khz overnight and 5 kHz or more if it rains. I need to investigate adding some form of remote control so that I can adjust it in the shack when needed.

All of my 630m operation has occurred on weekends typically installing and adjusting the variometer and impedance transformer outside on a Friday afternoon and then removing it on Sunday. W1XP was my first contact using the ~1 milliwatt from my barefoot K3S. Since then I've acquired a 100 watt solid state power amp and have worked stations from as far away as Washington state and the Cayman Islands. In total this winter I've worked 41 unique stations in 20 states using JT9 and I've even been heard in Western Europe when transmitting using WSPR or JT9-5. Most activity is found from after local dusk thru 9-10 PM. So just because you're at the bottom of the sunspot cycle doesn't mean you can't still have fun. I'm looking forward to working to improve my antenna system this summer and giving it another try next winter!

New England QSO Party

New England QSO Party - May 4th and 5th

The NEQP is a great time to check out antenna systems and offers a moderately paced opportunity to work new states and countries. You'll find a wide variety of participants, from newcomers to experienced contesters, all interested in making contacts with New England stations.

We're working to make sure that all of the New England counties are active again this year and would appreciate your help. Get on for at least an hour or two and join in on the fun. Please let me know if you can put in any time at all so we can work on activity from the rarest counties. Will you be QRV? Let us know which county you'll be on from with a message to info@neqp.org

Oh yes, the NEQP is also lots of fun when mobile. Every time you cross a county line the action starts over again. It's amazing what a 100w radio and mobile whip can do.

The QSO Party is 20 hours long overall, in two sections with a civilized break for sleep Saturday night. It goes from 4pm Saturday until 1am Sunday, then 9am Sunday until 8pm Sunday. Operate on CW, SSB and digital modes on 80-40-20-15-10 meters. For each QSO you'll give your callsign, a signal report and your county/state. Top scorers can earn a plaque and everyone who makes 25 QSOs and sends in a log will get a certificate.

Last year we had logs from 166 New England stations and 387 more from around the country and world.

The full NEQP rules are here: <http://www.neqp.org/rules.html>. The 2018 results are posted (and the results since 2002 are also available) at <http://www.neqp.org/results.html>.

It's just a few weeks until the 2019 NEQP. Please make some QSOs even if you don't want to send in a log.

73 de Tom, K1KI

Strays

Today the HF digital voice application of choice is [FreeDV](#). If you hear buzzing signals at 14.236 MHz, chances are it's a [FreeDV](#) QSO.



If your radio system (e.g., ECHOLink, DMR, C4FM, Fusion) needs the Internet to work, did you really need to bother having the radio part after all?



The software defined radio experimenters among us might want to take a look at: <http://www.newsvhf.com/newsletter/2019/news1903.pdf>



"Covering the Rules on Calling CQ" is the focus of the new (April 4) episode of the "[So Now What?](#)" podcast for Amateur Radio newcomers. If you're a newly licensed Amateur Radio operator, chances are you have lots of questions. This bi-weekly podcast has answers! "So Now What?" offers insights from those who've been just where you are now. New episodes will be posted every other Thursday, alternating new-episode weeks with the "[ARRL The Doctor is In](#)" podcast.

A Gathering of...

Dayton Hamvention® and 2019 ARRL National Convention

Make your plans now to attend the worldwide gathering of Amateur Radio enthusiasts and friends at Dayton Hamvention®, host of the 2019 ARRL National Convention.

Theme: Mentoring the Next Generation

Discover opportunities to lead new and inexperienced radio amateurs to become more active, involved, and engaged. Experience the very best of ham radio!

Same Convention, New Name

The 2019 ARRL New England Division Convention (now branded as "Northeast HamXposition @Boxboro") web site is now live, at <https://hamxposition.org>. Don't worry, though, the old "boxboro.org" address still works, too.

Sign-ups for speakers and volunteers are now available, as are applications for commercial, non-profit, and club vendor tables. Ticket pre-orders will be available in early June.

The three-day convention is held September 6-8, 2019 at the Boxboro Regency Hotel and Conference Center (formerly the Boxboro Holiday Inn), 242 Adams Place, Boxborough, MA 01719.

Correcting History (from far away)

Just a quick correction to the march Groton Road Race story.

We, NVARC, et.al., were there from the first running of the Groton Road Race. I still remember Kevin Molloy calling me one evening, and saying, "We are thinking of organizing a fun run, can you help". It all started from that one phone call.

Glad to see it is still going. One of the things I miss about being involved in Amateur Radio. Sadly such activities don't

happen here in the old world. Different rules on "3rd party traffic. (Mad contesters here though.)

73 de Erik, ES5RV/KA1RV

Beatitudes

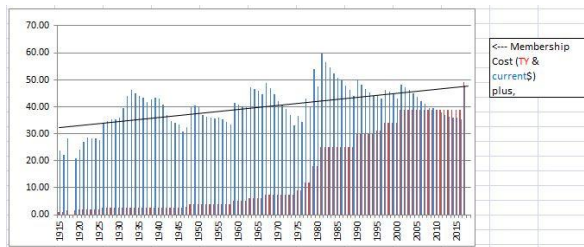
Blessed are the meek for they shall inherit the world (or what's left of it).

Blessed are those who are hard of hearing for they shall live in a world of peace and quiet.

Blessed are the open minded for those poor folk shall lose every argument.

Blessed are those who will not listen for they shall always be right.

Comments around the room at a recent meeting prompt reprinting this article from the March 2018 *Signal*.



ARRL membership costs
Red = current dollars
Blue = inflation value of dollars

QST has been published since December 1915, with only an eighteen-month period of non-publication due to World War I. QST subscription is included in ARRL membership. As of December 2017, 1206 issues of QST had been published totaling 190,025 pages.

In the early years Hiram Percy Maxim and Clarence D. Tuska distributed free QSTs to solicit membership in the newly-formed American Radio Relay League. Throughout nearly a century, the cost of ARRL membership and a QST subscription has ranged from \$1.00 to \$49.00 in "then-year" dollars. This equates to equivalent current dollar costs of from \$24.20 to \$49.00 per year. The most relatively expensive year was 1981, when that year's \$25.00 dues would have had a current dollar cost of \$72.33!

A linear regression trend line shows that *dues seem to be raised after they have fallen significantly behind inflation.* Had the best-fit purchasing power trend line over the lifetime of publication been followed, ARRL membership would cost \$49.00 today. (It does.)

The period of 2001 to 2016 (15 years), when dues were \$39.00, is the second longest period in the life of the League without a dues increase. Dues were \$2.50 from 1926 to 1946 (21 years) and \$4.00 from 1948 to 1958 (11 years).

The prices in this updated article were recalculated to reflect the current values for January 2019 and were based on the Bureau of Labor Statistics' consumer price index (CPI) Inflation Calculator.

Treasurer's Report

Income for January was \$15 from membership renewals and \$10 from PowerPole connector sales. We had no expenses for the month, leaving an income for the month of \$25.

Current balances:

General fund	\$2,796.11
Community fund	\$5,311.52

As of 4 March, we have 42 members who are current with their dues and 22 renewals outstanding. ***[This is the usual low for membership and high for renewals. April is traditionally the club's renewal month. Ed]*** Thank you to those of you who hand in your dues before I come to you. Please check your renewal status on the roster circulated at the monthly meeting or ask me.

As noted in the January Signal, those of you who have been receiving mailed hardcopy newsletters must inform me if you wish the Club to continue mailing the paper copy to you. If you tell me nothing then we will not be mailing the Signal to you. This change was directed by the Board in order to save the Club some postage expense.

[Along this line, the publisher (KD1SM) will be on a business trip during the printing cycle this month. Electronic copies will go

out on time; paper copies will be delayed. EDJ

If you are joining ARRL or renewing your membership please consider me letting me send in the paperwork for you. The Club will buy the stamp and will get a commission from ARRL. ARRL membership checks should be made payable to NVARC. I deduct the Club commission before forwarding your paperwork to Newington. As a Special Service Club, the ARRL expects a majority of Club members to also be ARRL members.

de Ralph KD1SM

Board Meeting Notes

Board meeting 4/4/19

Attending: Stan KD1LE, Jim N8VIM, John KK1X, Ralph KD1SM, Ed N1FYK, Jim AB1WQ, Bruce K1BG. Observing: K1NKR.

- April elections - John, Ralph, Jim, Stan and Jim are willing to stay in office.
- May board meeting conflicts with CERT orientation. We'll move meeting to 6PM.
- NEARFest on May 3 & 4. Townsend canoe race on May 4.
- Field Day budget \$450 total. We will institute a \$5 meal fee this year to improve planning and variety. Extra fee goes back into the food fund for Field Day.
- Need to make 40- and 80-meter dipoles for Field Day. John supplying wire. Club to provide baluns. Bruce to build.
- Discussion of Club providing satellite link for a local school - it's a fair amount of work, lots of scheduling with NASA, time frame January-June, and equipment.
- Discussion of a Tech-in-a-day for the Girl Scouts. Bruce taking the lead.
- Harry Chase slated for May presentation. Need meeting topics for April, June, September, October.

Respectfully submitted,

de John KK1X

Club Services

Special Interest Groups and Tech Nights. Occasionally, members with particular interests (e.g., Arduinos, moonbounce, etc.) will get together and Elmer each other or work on a joint project. Keep an eye on the Reflector for information and scheduling.

NVARC Website

www.N1NC.org. One of our two public faces to the world (the other is the *Signal*), the website has historical and informative information as well as data like the constitution, the library and property lists, and the newsletter archive.

- The ARRL website is at <http://www.arrl.org/>.
- The new Eastern Massachusetts ARRL Section website at <https://ema.arrl.org/>.
- The WMA Section website is at <http://wma.arrl.org/>
- The NH Section website is at <http://www.nharrrl.org/>.
- The Billerica ARS now has a new and much improved website at <https://www.w1hh.org/>.

Three years ago we announced plans for an enlarged and style-updated NVARC website. We just needed a volunteer to take on the project. We still do. And as of this issue we have no *Signal* editor, either. So much for news, information, history, and our face to the world

Calendar

April

13 Seacoast Amateur Radio Flea Market (Port City ARC), Portsmouth NH See www.W1WQM.org

15 Boston Marathon

20 [North Carolina State Convention](#), Raleigh, NC

27-28 [VHF Super Conference](#), Sterling, Virginia

28 Groton Road Race (NVARC activity)

May

4 Squannacook River Race (NVARC activity)

17-19 [Hamvention -- ARRL National Convention](#),
Xenia, OH
18 Antique Radio Flea Market, Brookline NH
June (Already? Wow!
18 Antique Radio Flea Market, Brookline NH
22-23 Field Day

Upcoming Operating Activities
2019

Canadian NPOTA (all year!)

April

27-28 FreeDV HF Digital Voice QSO Party
(<https://freedv.org/> <http://www.areg.org.au>)

May

4, 5 New England QSO Party
5 Indy Car Grand Prix. See www.w9ims.org

June

8-10 VHF QSO Party
15 Kids Day
22-23 Field Day

Are you a "contest nut?" See
<http://www.arrl.org/contest-calendar> (Contest
Corral) for month-by-month listings of both
ARRL and non-ARRL contests.

Advertisers

Yes, we can accommodate advertisers.

*And all this space (and more) could be
yours if you volunteered an article!*



**Nashoba Valley
Amateur Radio Club**

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<http://www.n1nc.org/>

President: Stan Pozerski, KD1LE

Vice President: Jim Hein, N8VIM

Secretary: John Griswold, KK1X

Treasurer: Ralph Swick, KD1SM

Board Members:

Jim Wilber, AB1WQ, 2016-2019

Ed Snapp, N1YFK, 2017-2020

Bruce Blain, K1BG, 2018-2021

Property Master: John Griswold, KK1X

Librarian: Peter Nordberg, N1ZRG

Emergency Coordinator: [open]

N1NC Trustee: Bruce Blain, K1BG

Join NVARC! Annual membership dues are
\$15; \$20 for a family.

Meetings are held on the 3rd Thursday of the
month at 7:30 p.m. in the Pepperell Community
Center.

Contact us on the N1MNX repeater.

442.900 (+), 100Hz

147.345 (+), 100 Hz

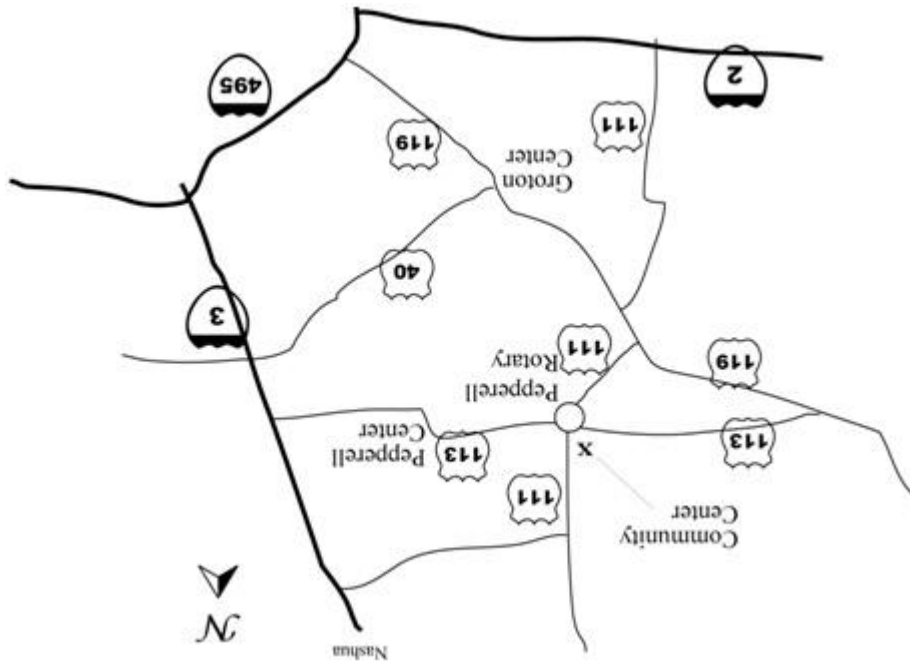
53.890 (-), 100Hz

This newsletter is published monthly. Submis-
sions, corrections and inquiries should be di-
rected to the newsletter editor. Articles and
graphics in most PC-compatible formats are
OK.

Editor: Skip Youngberg, K1NKR

[Editorship open, post 17 April]

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