



Nashoba Valley
Amateur Radio Club

SIGNAL

A club since 1992



Since 1993



Since 1996

de N1NC

July 2016

Volume 25 Number 7



CQ Field Day de N1NC

W2IRY photo

This Month's Meeting

NVARC meetings go on hiatus for the months of July and August—so you can go on vacation. There are still activities, though.

- Saturday breakfasts at Tiny's in Ayer continue.
- Tech Night (2nd Thursdays) continue.
- There's opportunity for informal National Parks on the Air activations by NVARC members using the N1NC callsign.

- AND, mark your calendar for Sunday the 14th of August!. Gene WW4EN will again be hosting the annual NVARC picnic at his QTH. (www.grz.com/db/ww4en) Watch the NVARC reflector for details.

The President's Corner

With most of my time spent in the FD recovery mode (that and new counter tops and kitchen fixtures) I haven't been able to keep up so I'm sitting by the roadside in Winchen-

don at the Mass State Triathlon (where I'm working on the road course) writing this column.

Field Day weather, though warm, was much nicer than last year and made everything more enjoyable. After a little more than a week of clean up all but the Black Box has been cleaned, fixed, rolled, or whatever term applies to each item. I still need a hand getting the Black Box put away.

Now that Field Day (FD) is in the history books, we look forward to other summer activities.

Yesterday [9 July] I attended the ARRL New England Division Cabinet Meeting in Nashua, NH. The Division Director Tom Frenaye K1KI hosted the meeting. Skip K1NKR, Ralph KD1SM and I attended the meeting.

The Cabinet Meeting happens the weekend before the ARRL Board of Directors Meeting and is used to collect information from the division staff, state staff, and club presidents that should be addressed by the League, or specifically by the ARRL Board of Directors. This can be anything from legislative action, enforcement, or policy to the price of shipping from the ARRL store.

Tom also brings information in. One thing to report is that the Amateur Radio Parity Bill has made good progress. It has 126 Co-sponsors in the House and is near to point of House-Senate negotiations to reconcile bills. Tom suggested we all contact our Congressional Representatives to ask for their support. The House bill is H1301 and the Senate bill is S1685. The only real problem facing our legislation is that there is little of anything being accomplished with Congress in its current state.

Skip was going to talk a bit on the ARRL's Girl Scout Radio and Wireless Technology Patch and on Thinking Day on the Air (TDOTA) but he had to leave before our time came up so I stood in for him. The subject fit in very well as there are always discussions about where do we find new hams and how do we interest our youth. In a busy meeting like this a few minutes is all you get. We were looking at a five minute slot but I think I stretched it to ten minutes. There was quite a bit of interest that should translate into Skip

et al making a few of the longer presentations at clubs. There was also acknowledgement that this was a significant new area that should be pursued and that NVARC had done a good thing. But we already knew that and we had had fun doing it!

Many things are discussed at these meeting but one thing that always comes up is New Ham statistics. So below is that data.

New licensees in New England

<u>2016</u>	<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>	<u>Jun</u>
CT	19	25	33	22	31	11
EMA	25	21	27	26	47	31
ME	0	27	17	17	11	11
NH	7	14	44	20	17	19
RI	2	5	1	4	7	12
VT	2	12	10	7	8	2
WMA	3	9	13	6	31	5
Tech	48	93	121	90	131	76
Gen	7	13	21	11	17	10
Adv	0	1	0	0	0	0
Extra	4	6	3	1	4	5
Total	59	113	145	102	152	91

Around data like the above are discussions on many related topics like licensing, spectrum privileges, mentoring—you name it.

Important issues that come up are addressed at the ARRL Board Meeting and will eventually show up in QST.

Now as we transition into summer some members' thoughts might shift to National Parks on the Air (NPOTA). We will set up the process for using the club call sign (N1NC) for park activations. Since Bruce K1BG is the call sign trustee, the requests will go through him. But these activations need to have the logs submitted to the ARRL via Log Book of the World so a published process is required. We will publish it as soon as we define it.

Wishing all a great summer.

73, Stan KD1LE

Last Month's Meeting

This year is the centennial of the US National Park System. At the June meeting, Phil Lupsiewicz, the ranger in charge of media and communications for Lowell and Minute Man National Historical Parks, gave us

an insider's overview of our great national resource.



KD1SM photo

Following Phil's talk, Dennis Egan W1UE explained the technology and operation of remotely-controlled Amateur Radio stations.

Twenty-four members attended. At about 50% of paid membership, that's about average for NVARC—and a better participation rate than the average club!

News and Happenings

Field Day

Another NVARC Field Day is in the books! True to the weather forecast, we had two magnificent days in a row out in the orchard—sunny and in the 80s, with t-shirts, transceivers, cables, and antennas in every direction. The memories of last year's cold and rainy FD-2015 have been vanquished!



All who attended the group meals saw the enormous contribution made by Leo K1LK in preparing Saturday's dinner—heaps of deli-

cious barbecued chicken, corn, potato salad, and coleslaw. Then he did the same thing the next morning at 8:00am: this time with scrambled eggs, bacon, sausage, and English muffins. Bob AB1CV provided tableware implements, AND cookies, AND lemonade.

Field Day veterans and former coordinators Bruce K1BG and John KK1X, captains of Stations #1 and #2, respectively, made major contributions. Such was the expertise of these two that I didn't need to do or know more than that they were providing these stations. They just made it happen. Thanks, guys.

"Captain Bill" AB1XB did an excellent first-timer's job of pulling together the various pieces of Station #3, our walk-up-and-operate station which covered HF, VHF, and UHF DATV.



And of course, under the heading of vital year-in and year-out contributions are the infrastructure provided by Stan KD1LE and Jim N8VIM. Stan's (and the Tower Consortium's) crank-up trailer tower is the unmistakable signature of an NVARC operating event. And we would have "powerless" without Jim's generator. Plus, Stan's antenna patch box and Bruce's antenna switcher under N1MM control put the antenna connections where they need to be.



Perhaps the only photo of Ralph ever captured.

Key early-morning tower trailer setup support was provided by Ralph KD1SM, Rod WA1TAC, Greg WY1X (and Tom and Sarah), Jesse W1DEA, Creamer W2IRY, George KB1HFT, and Peter N1ZRG. And key early-morning support for tuning and standing up the R7 antenna was provided by Bill AB1XB, Tim KB1ZVR, Chuck WA1RCH, Michael NC1V, and Charlie AB1ZN.

"Old reliable" worked into the night after we had worked out that MOV-protected plug strips were tripping the GFCI-protected distribution system.



Operating? Plenty of voice and CW. And, significantly, plenty of "junior ops" getting indoctrinated into Amateur Radio. There was even a "QSO tag team" going on in one tent.



Stay tuned to the NVARC Reflector for some summary stats and comparison to our 2015 performance.

de Jim AB1WQ

(FD photos by various members)

[Editor's note: Data that Tom K1KI presented at his New England Division Cabinet Meeting showed that FD participation has been on a gradual rise since 2002. That's good. One interesting (maybe troubling?) statistic, though, is that club operation at Emergency Operations Centers is rising but club operation in the field is sliding by roughly the same amount. EOC operations require less effort, but provide less socializing and publicity for clubs.]

Tech Night

In one of the club's most "high enthusiasm" activities in recent memory, Tech Nights for the DIY Oscilloscope project were held in May and June 2016. Here are some summary thoughts (minus some short report text that was published last month).

I first thought of the project during a Board meeting early in the year. I had read an article in January QST about this kit during a flight to Denver for work and most of the Board thought it would be a good idea. But one person at the meeting, W1XP, said "No!" Perplexed, I asked why not, and he replied "I already have one!" (I guess that was a good recommendation.) I found more information about the kit, and on April 8th I emailed the Board with the information, saying that "I am thinking about leading this project."

Well, thinking became doing and I put together an email for the NVARC list and sent it on April 23rd. I expected only about a half dozen people would be interested enough to build anything without a clear "use case" for it. Boy was I wrong! Twenty-seven people signed up! I had thought, "What have I gotten myself into this time?!"

The DSO138 was designed as a training oscilloscope kit. It contains only the basic oscilloscope functions with no fancy features. Simplicity in structure and ease in assembly/operation are among the main targets of the design. For these reasons, the DSO138 uses mostly through-hole parts. The heart of DSO138 is a Cortex-M3 ARM processor (STM32F103C8) and it uses a

2.4-inch TFT LCD (320 X 240 dot-matrix, 262K colors) as its display element—displaying nice, clear waveforms. Detailed assembly instructions are provided in combination with a troubleshooting guide and schematic. *[But there are no assembly instructions for the case! Ed]* Source codes are also available to allow user to add their own features.

Tech Night arrived and overall, everyone had a great night. Yet most of the kits were not completed on the first night.

Anyone who wants to get another kit can go to the Banggood website and order one each of:

<http://www.banggood.com/DSO138-DIY-Digital-Oscilloscope-Kit-SMD-Soldered-13803K-Version-p-984002.html>

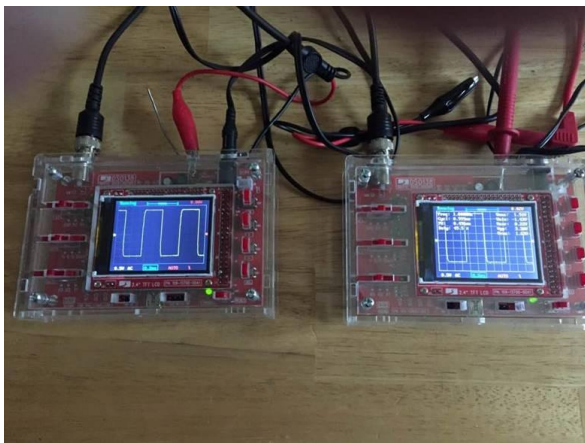
<http://www.banggood.com/Transparent-Acrylic-Sheet-Housing-Case-For-DSO138-Oscilloscope-p-1034768.html>

de Jim N8VIM

(from a 12 June e-mail)

Hi everyone!

Kayla and I completed our Oscilloscope Project this weekend! I included a picture of the end result of our projects. I would have posted pictures to Facebook but the club doesn't have a Facebook page!



W1DEA/W2IRY photo

Mine is on the left and Kayla's is on the right. We can't figure out why she has the extra info on her screen and how to turn it on/off. *[Solved later. Ed]* Also, if you are building one you might want to go through the alignment before you put it together because once it is in the case you can't get to the alignment controls.

Thanks again to Jim for putting a great Tech Night together for the club!

de Jesse W1DEA

DATV at Field Day

History was made during FD-2016. We know of no other Amateur digital television in the entire Northeastern US. NVARC and the Nashua Area Radio Club established a 70cm DATV link. Here's what Nashua saw:



AB1QB photo

There's even a video of our video! Check out

https://www.dropbox.com/sh/ox9ojl8xaj87tte/AAAJ0gJB0Ewi7zw_S7rmAe1ea/AB1OC-AB1QB/Video?dl=0&preview=Video+Jun+26%2C+12+50+51+PM.mov

de Skip K1NKR

Editor's Note

We live in an intensely communications-dense, historic part of the country. Here are some Yankee Magazine inspired summer touring activities. (If you believe, like I do, that the sea is New England's "seventh state," I highly recommend the May/June 2014 Yankee issue for more tour ideas.)

- Chatham Marconi Maritime Center, Cape Cod. (Fabulous.) Info and directions at www.chathammarconi.org.
- Telstar Earth Station, Andover ME. (Drive by, no tours.) (www.wikipedia.org/wiki/Andover_Earth_Station).
- Site of Fessenden's Christmas message, Hull MA. (Only a guy anchor remains.) (<http://www.ohio.edu/people/postr/mrt/Cmas1906.htm>).

- Highland Museum, Cape Cod. (Great!) (<http://trurohistoricalsociety.org/highlandhouse>).
- MIT Museum, Cambridge MA. (<http://web.mit.edu/museum>).
- French Cable Station Museum, Cape Cod. (www.frenchcablestationmuseum.org).
- Haystack Radiotelescope, Westford MA. (You need a friend to get in here. Maybe it's time for another club tour.) (www.haystack.mit.edu).
- 1000-foot Navy VLF Towers, Cutler ME. (drive by, but impressive.) (www.navy-radio.com/commsta/cutler.htm).
- Mount Washington. (www.mountwashington.org).
- Antique Wireless Association museum, Bloomfield NY. (A long trip, but exceptional.) (www.antiquewireless.org).
- Marion/Mattapoisett Marconi site, Marion MA. (Conservation land.) (<http://sippicanlandtrust.org/wp-content/uploads/radiotower.pdf>).
- New England Wireless and Steam Museum, East Greenwich RI. (Randomly open, since it's all-volunteer—but impressive!) (www.newsm.org).
- Vintage Radio and Communications Museum of Connecticut, Windsor CT. (www.vrcmct.org).
- Former LORAN site, Nantucket MA. (another “just be there and enjoy the scenery” location.) (www.wikipedia.org/wiki/LORAN-C_transmitter_Nantucket).
- Cape Cod National Seashore headquarters museum, Wellfleet MA. (Well worth it.) (www.nps.gov/caco/index.htm).
- Wellfleet Marconi site, Wellfleet MA. (Part of the National Seashore.) (www.wikipedia.org/wiki/Marconi_Wireless_Station_Site_South_Wellfleet_Massachusetts).
- Hammond Castle Museum, Gloucester MA. (Great for the family.) (www.hammondcastle.org).

Some of these are full-blown tourist attractions and some are just unmarked stops on the road. Don't just visit museums. Walk the walk. Breathe in the community as well as the history. Stop for a beer and a lobster roll. When we reconvene in September (or maybe during the January “Short Subjects” meeting), tell us about your discoveries.

73, Skip K1NKR

Public Service

Here's a possible article topic.

On the Air

NPOTA

We've talked about it at Tiny's and at meetings; this is the centennial of the National Park Service and Amateur Radio is a part of it. You can activate a park on your own, but NVARC recommends using the club callsign to make it a summer club activity.

Just driving into a NPS parking lot and operating “mobile at rest” requires no coordination. If you intend to set anything up, the rangers request that you coordinate with them (mostly for public safety reasons). A larger (e.g., tent and generator) operation requires a special use permit.

A club procedure for using N1NC will be published soon, but expect it to be about as simple as: 1) formally request the callsign use from the trustee, 2) within the limits of your own license have fun on the air and log your contacts, 3) provide an electronic copy of your log to the trustee ASAP after completing your activation. More than one separate activation at a time (different people at different places on the same day, for instance) is OK.

SOTA

One more possible summer activity, this one from a post on the Nashua Area RC website:

“On Saturday, as I was heading home from a workshop in Portland, ME I heard a cq from KB1RJD on the VHF National Calling Frequency for Summits on the Air from Mount Washington. I tried to call back but they could not get the last letter of my call sign, so I could not log the QSO. After getting home I looked up more information on Summits on the Air and it sounded like a lot of fun - plus I had just purchased a new VHF/UHF 5 element Elk yagi.

“Sunday morning, Abby (KC1FFX) and I headed up to Pack Monadnock (W1/HA-041) with the ELK yagi and a 5 watt HT on battery power. Let me tell you, we had a blast! I had my IC-7100 with me and a buddy pole, but we had some much fun on 2 meters that we

never got to setting it up. It was a gorgeous day and we made contacts as far away as Plymouth, MA and Madison, NH! We're already looking forward to our next SOTA activation.

"I'd love to hear from others that have tried SOTA before."

73, Jamey KC1ENX and Abby KC1FFX

Contesting

Submitting your contest score is a good way to "claim your mark" in the fame column. *(Who knows, you might even pick up a certificate. The Signal editor took Rhode Island with 624 points as a kid and was the high scorer in all of Canada once with 4 QSOs! Both just because he bothered to submit logs.)* Did you know, though, that if submissions note your club affiliation NVARC gets "fame points" too?

One important thing: the club name has to be exact for the contest robot to recognize it. We're the Nashoba Valley Amateur Radio Club, not Nashoba Valley ARC or NVARC.

The Technical Corner

Here's another possible article topic!

Hints and Kinks

Here's yet another possible article topic!



No. Resistance is futile. Submit an article.

Strays

Can you guess the common (to us hams) hobby-related "words" that include these sequences intact?

- _ S T
- _ R R _
- _ V A _ _
- _ I P O _ _
- _ N T E _ _ _
- _ A N D H _ _ _
- _ A T E L _ _ _ _
- _ _ _ E D I T _ _ _
- _ _ _ N S C E _ _ _ _

(Answers in next month's Signal.)



ANNIVERSARY (...or is it adversary?)

On 28 July 1866 the Metric system became legal in the US. In 1968, Congress authorized the U.S. Metric Study, and the final report of the study concluded that the U.S. would eventually join the rest of the world in the use of the metric system of measurement. Congress passed the Metric Conversion Act of 1975 "to coordinate and plan the increasing use of the metric system in the United States." Nevertheless, the United States is one of only three countries (with Myanmar (Burma) and Liberia) that have not adopted the metric system as their official system of weights and measures. Bottom line, we Americans have been behind the Metric system every inch of the way (and we're apparently in good company).

So how long is a half-wave dipole for twenty meters? Don't think ten meters! Those are "world" units of measure. It's 10 yards, 2 feet, 9-3/4 inches (minus a smidge). And don't you forget it; the FCC tests use "American" units of measure.

Treasurer's Report

Income for June was \$45 from membership fees, a \$20 donation from a generous member, \$2.13 in bank interest, and \$42 from the May meeting book raffle. Expenses were \$18.80 for newsletter postage.

If you have receipts for approved Field Day expenses, please get them to me this month.

Current balances:

General fund \$3,205.13

Community fund \$4,886.41

As of 7 July we have 49 members who are current with their dues and 11 renewals outstanding. Thank you to those of you who hand in your dues before Ralph comes to you. Please check your renewal status on the roster circulated at the monthly meeting or ask Ralph.

If you are joining ARRL or renewing your membership please consider letting Ralph 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; Ralph deducts the Club commission before forwarding your paperwork to Newington. As an Special Service Club, the ARRL expects a majority of Club members to also be ARRL members.

de Ralph KD1SM

Board Meeting Notes

Board meeting 7/7/2016

Attending: Stan KD1LE, Jim AB1WQ, Jim N8VIM, John KK1X, Ralph KD1SM, Rod WA1TAC. Observing: Mike KB8ZHK, Skip K1NKR

No Field Day budgeting [invoice] info.

Division cabinet meeting in Nashua (Stan, Ralph, Skip attending).

Jim Wilber has already gotten FD pins - list being vetted.

FD lessons learned: Need supervision of "walk-up" station. Missing signage, media, info tent from Field Day. Note in station cap-tain notes - no MOV in power strips.

John to order 5 more Arduino kits.

John transferred N1NC logs to Bruce.

Respectfully submitted,

de John KK1X

Club Services

Repeater

While not exactly a club service, we're fortunate to have the use of club member Dave Peabody's N1MNX repeater system as a primary means of on-the-air intercommunication. The repeater system, located on the Heald Street hill in Pepperell, operates on 6m, 2m, and 70cm and is collocated with an APRS digipeater. Club members provide most of the ongoing technical support to the system.

Picnic

The NVARC picnic is the social highlight of the summer (post-Field Day). Hosting rotates, based on who volunteers. For the past two years, Gene WW4EN has hosted at his very impressive QTH. Members bring their own meat for barbequing, plus deserts. Families are invited and there's even more getting-to-know-you than a breakfast at Tiny's.

Calendar

Upcoming Events

July

17 Flea at MIT

August

20 Windsor Hamfest, Windsor ME

21 Flea at MIT

28 NoBARC Hamfest, Adams MA

September

9-11 N E Division Convention, Boxboro MA

18 Flea at MIT

24 NE Antique RC Flea Market & Training Session, Brookline NH

October

14-15 NEAR-Fest XX, Deerfield NH

16 Flea at MIT

Upcoming Operating Activities

July

9-10 IARU World Championship

August

- 6-7 August UHF Contest
- 20-21 10 GHz & Up (Round 1)
- 21 Rookie Roundup RTTY

September

- 10-12 September VHF Contest
- 17-19 10 GHz & Up (Round 2)
- 24-25 EME 2.3 GHz & Up

October

- 17-21 School Club Roundup
- 22-23 EME 50-1296 MHz

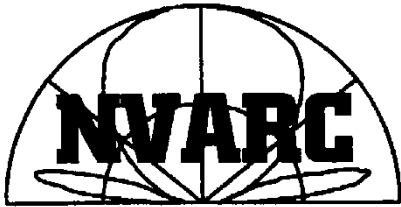
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Amateur Radio Club**

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Treasurer: Ralph Swick KD1SM

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- Rod Hersh WA1TAC, 2015-2018
- Jim Wilber AB1WQ, 2016-2019

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W1ESR

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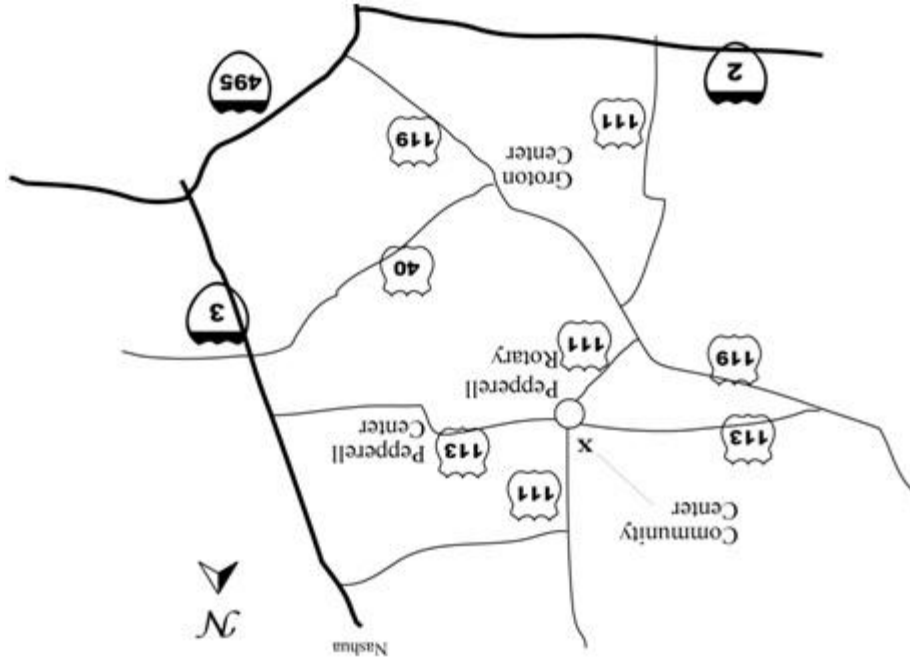
Join NVARC! Annual membership dues are \$15; \$20 for a family.

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. Submissions, corrections and inquiries should be directed to the newsletter editor. Articles and graphics in most PC-compatible formats are OK.

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