



SIGNAL

A club since 1992



Since 1993



Since 1996

de N1NC

October 2017

Volume 26 Number 10

This Month's Meeting

QSL. QSL. QSL, OM. How high can you count? (More importantly, can you read European calligraphy?) Typically, NVARC sorts about 17,000 incoming cards for the W1 QSL Bureau at our October meeting.



K1NKR photo

The October QSL Sort is probably the most social meeting we have. Come on along!

Pizza follows the sort.

The President's Corner

Another Boxboro is in the books. All in all things went pretty well. The most noticeable thing was the flea market was small and has been shrinking for quite a few events—possibly as a result of on-line selling and trading on a variety of web sites. NVARC was well represented in the list of presentations with several on HF propagation and on entry licensing requirements.

The regular meetings and Tech Night (TN) resumed in September. Our meeting programs are set into early 2018, which is nice. Tech Night goes from month to month as topics and projects change or are identified. We still need someone to coordinate (*just coordinate; not do*) the activities.

September TN included several topics that were announced on the email list, including my thoughts on lightning protection, spurred by a presentation at Boxboro. Bob W1XP talked about the difference between Antenna Analyzers (AA) and Vector Network Analyzers (VNA) spurred by advertisers' marketing descriptions. He also threw in a little on Time Domain Reflectometers (TDR).

After I initiated the morning Arduino Group several members indicated they were interested but couldn't make a daytime meeting. I indicated in the Tech Night announcement that we would discuss the possibility of an evening session at TN. We had that discussion and there was no interest in the evening option among those who showed up.

I have heard discussions related to electric vehicles (EV) about the dearth of charging stations. Apparently, Tesla just opened a high charge-rate station in Boston, which was publicized as if it were the first. It was the first Tesla station in Boston though they do have four others in the Boston Area. I did a little research on the subject. A comparison between gas stations and EV charging stations isn't really an apples to apples compar-



ison, mostly because of charging time. But we need to use some reference to compare their availability.

Currently there are 35 gas stations listed in the city of Boston and the number is shrinking rapidly. The latest data I could find on EV charging stations was from 2012 and it listed 92 public EV charging stations in Boston.

Massachusetts has gone from three public EV charging sites in 2010 to nearly 600 in early 2017. There are also many private



charging sites at companies, and of course home charging stations. There are plans and programs by many organizations to install chargers.

Nissan in association with EvGo is installing 50 high speed charging stations along I-95 at nine sites between Boston and Washington DC. The chargers will be capable of charging at multiple rates. Cars with high rate charge capability will charge to 80% in 30 minutes—not as fast as a gas station fill up, but time for a pit stop and coffee.

The Mass DOT, also working with EvGo, is installing EV charging stations at the Mass Pike service plazas. They are currently available at Framingham and Lee areas. These charging stations are currently free to use.

Stations are also springing up at places like Dunkin Donuts, various restaurants, and other businesses. The need is driven to support the 300,000 EV vehicles that are possible if the adoption of EV vehicles meets expectations.

Upcoming next week is Jamboree on the Air. We are supporting our sister club, MARA (the Montachusett Amateur Radio Association) at the Boy Scouts' Lancaster MA location. The initial concept was only to provide a radio presence. As a result of my discussions with MARA, they have broadened it to be more like our Girl Scout TDOTA events, with things like Morse Code, phonetics, and world time. We are also supplying the antenna systems up to coax to the radi-

os. Right now I have a minimum number of people to do tower set up and one or two activities. I would like to do all the above mentioned ones and add a Radio Direction Finding activity. But I will need a few more helpers. JOTA is the 21st and we intend to operate from 9 to 3. So if you can help it would be appreciated. It doesn't take an all-day commitment. Helping with set up or take down or some time staffing one of the activity tables is fine.

73, Stan KD1LE

News and Happenings

IARU President: Traditional Aspects of Ham Radio May Not Be Attractive to Newcomers (ARRL News, 9/28/2017)

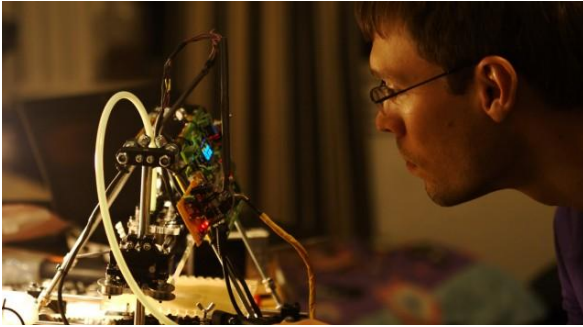
The 24th General Conference of International Amateur Radio Union Region 1 (IARU-R1) convened September 17 – 23 in Landslut, Germany, with representatives of 40 member-societies present and another 13 represented by proxy. IARU President Tim Ellam, VE6SH/G4HUA, welcomed the attendees, urging them to reflect upon what will attract the majority of young people into Amateur Radio, “and what our mutual expectations should be.” Ellam said his personal observation is that, while some younger people are interested in the more traditional aspects of Amateur Radio, many are only interested in ham radio as an adjunct to other possibly unrelated interests.

“I applaud the excellent work that has been undertaken in this region through the Youngsters on the Air (YOTA) program.” Tim said, crediting the hard work of IARU Region 1 Youth Working Group Chair Lisa Leenders, PA2LS. YOTA's summer Amateur Radio camps have attracted young hams from around the world; this year's was held in the UK.

“Our ambition should be to embrace these individuals in their activities and accept that some of the more traditional aspects of the hobby will hold little interest to them, and indeed may no longer be relevant,” he continued. “That is not to say that some are not enthused with what we all hold as the core of our hobby, such as contesting or op-

erating generally. I fear, though, that we need to look at what will attract the new generations to Amateur Radio and make sure we promote Amateur Radio as meeting their needs, rather than promoting the historical view of what Amateur Radio has to offer.”

(Emphasis mine. Ed. The message is clear. We need to recruit today's new members appealing their frame of mind, not ours. Otherwise, we aren't recruiting anybody. The love of the hobby for its own sake may well come later.)



Source: extremetech.com

Delegates to the plenary adopted a proposal that all IARU bodies and member-societies use every opportunity to exert pressure on national regulators to implement all the recommendations that protect the amateur bands.

They also approved initiating a simple noise-measuring campaign among Region 1 member-societies, giving IARU the ability to offer an independent opinion on the noise situation in the bands and the trends over time. Brendan Minish, EI6IZ, was appointed to chair the Noise Measuring Campaign Sub-Working Group.

Region 1's highest recognition, the Roy Stevens, G2BVN, Memorial Trophy, was conferred upon Colin Thomas, G3PSM, for his outstanding contribution to Amateur Radio and the work of the IARU over several decades.

A new Executive Committee was elected during the General Conference's Final Plenary. Chosen to serve as EC officers for 2017 to 2020 were President Don Beattie, G3BJ; Vice President Faisal Al-Ajmi, 9K2RR; Secretary Hans Blondeel Timmerman, PB2T, and Treasurer Andreas Thiemann, HB9JOE. EC members will be Sylvain Azarian, F4GKR; Alessandro Carletti, IV3KKW; Mats Espling, SM6EAN; Joerg Jaehrig, DJ3HW, and Oliver Tabakovski,

Z32TO. Their terms will begin on October 31.

The Deutsche Amateur Radio Club (DARC) was the host for the conference, which is held every 3 years. The full **Conference Report** is available on the IARU Region 1 website. The 25th IARU Region 1 General Conference will take place in September 2020 in Novi Sad, Serbia.



September 25th Arduino Group Meeting (AGM)

Stan KD1LE opened the session with a show and tell on his Arduino computerized Halloween Pumpkin which was just a fun spinoff of the learning from the sessions so far. The pumpkin has 8x8 LED matrices for eyes that "look" around. Stan explained that this was phase one and that he would be adding an MP3 shield that he had on order. The MP3 shield allows the playing of MP3 files when requested by the Arduino. Stan demonstrated some of the sound clips he had collected. His goal is to use an IR motion detector monitored by the Arduino to trigger a Halloween sound. He made a quantity error when ordering the IR motion detector so he passed out a free motion detector to each attendee.

During the AGM Bill AB1XB presented on the application of interrupts for the Arduino and the implications and complications they introduce. He distributed a primer on the use of interrupts.

George KB1HFT showed his thermocouple temperature monitor and display that now has a Wi-Fi leaf. When completed, it will send the temperature reading of his silver melting crucible to his cell phone (eliminating the danger inherent in having wires dangling from a 2000-degree crucible).

The small group setting is working very well and allows for time to deal with everything from Windows issues, to programming, to the bits and pieces of the hardware we are using. So far, everyone's project has a different goal.

de Stan KD1LE

Editor's Note

Let me tell you a story.

Sometimes I discover untapped skills and knowledge and all is well. Usually though, I face everything new, whether it's a challenge or an opportunity, as a test. Prepared or otherwise, I either pass or fail. I really don't know how to ask for help. It's a character flaw.

I got into this situation recently while participating in NVARC's Arduino interest group. I couldn't get something to work. And I didn't know why. And I didn't know what I didn't know in order to find out why. And I didn't know how to ask for help.

Then Bill, AB1XB, Elmered me. He could have said, "Here's what your problem is" and just fixed it. (Lots of Elmers help that way.) And I would have learned nothing. Instead, he said, "Let's figure it out." We worked together, discovering and fixing a couple of errors and including a library reference that I had omitted. I learned. I've since finished a project that would have terminally stalled if it weren't for Bill's stepping in when I didn't even know what help to ask for.

There's a theme across each month's issue of *Signal*. As I've said repeatedly, NVARC is a multi-interest, multi-service club. K1BG wrote about CW last month. We highlight Tech Night, and the Homebrew Night and Short Subjects Night meetings. W1XP often contributes articles on various technical subjects. One month K1LGQ described QRP portable operation. This month K1YOW writes about digital modes. Each of our authors is an Elmer. But Bill's recent Elmering still echoes in my mind. The club is full of Elmers. We're fortunate that way.

Thanks, guys.

73, Skip K1NKR

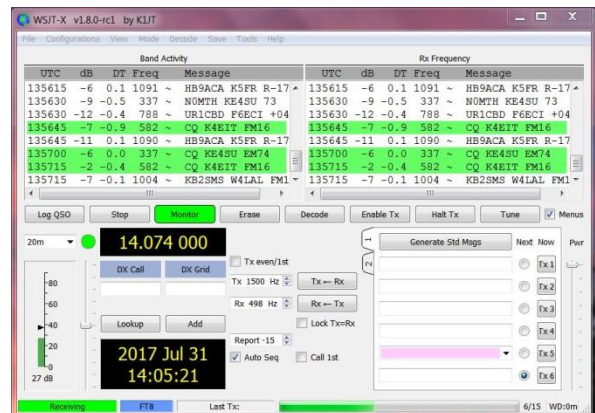
On the Air

Digital Modes General Interest/General News

After seeing my various updates via the reflector on digital happenings, Skip asked me to put together a short write-up. [And perhaps

this will become a recurring, if not regular column. Ed]

There has been a major shift in the digital modes with the new K1JT FT8 mode. FT8 was designed with a shorter 15 second cycle time than the previous JT65 and JT9 modes with their one minute cycle times. This makes FT8 ideal for 6 and 10 meter sporadic-E conditions, where things can be somewhat flaky. FT8 has been a game changer for 6M and 10M sporadic-E contacts. It is now rare that you hear anyone on 6M SSB or CW these days. [This was a big complaint during the September VHF contest. Ed] Yet if you leave the rig on 50.313 MHz just listening all day to the FT8 signals and uploading what you hear to PSK Reporter, you will see some 6m sporadic-E every day. Using FT8 on 10m, one can work TE (Trans Equatorial) paths way down into South America almost every day as well. The TE path on 10m seems to set up very nicely almost daily when the evening terminator is around an hour or so East of us here in New England.



FT8. Source: ARRL.org

Now, what we did not see coming was how FT8 took off in popularity on 160m through 12m, in addition to what we expected on 10m and 6m. Hindsight is great, and it makes perfect sense. FT8 with its 15 second cycle time, thus allowing for one minute or so confirmed contacts, is ideal for the radio sport, DXCC, WAS, and contest folks. Once they saw what FT8 could do: fast QSOs and very low signal to noise contacts—those folks hit the ground running. I monitor various digital mode Internet groups and Face Book pages, and folks are getting their DXCCs and WAS awards in weeks to a few months rather than in years. Or, I see

pleas with folks asking for RI, ND, SD, HI, etc. states to get on the air or to upload their LoTW logs.

For those not familiar with the K1JT modes, they are not rag chew modes. They are weak signal modes where you can pass the essentials of a QSO: call, location (grid square), signal (S/N) report, RRR, and 73—and some very limited 13-character free-form text. “Weak signal” modes like JT65 and JT9 can decode signals down to 30 dB below the noise and the version of FT8 in the current RC2 WSJT-X software is decoding down to -28 dB or so. In addition, they can decode many stations in crowded pass bands: on the order up to thirty JT65 signals and maybe around twenty FT8 signals. *[The bandwidth occupied by multiple digital signals is the same as one 3 kHz audio signal. Ed]*

Hopefully this information will be useful. And as always, feel free to ask questions.

73, Joe. K1YOW

[Note: The digital modes are not a substitute for conventional ones—although they do generally preclude Part 97.1(e) ragchewing. On the other hand, they add to the bag of capabilities that we Radio Amateurs have and enhance our ability to fulfill 97.1(b) and (c). Next month: Getting on using the digital modes. Stay tuned! And follow Joe’s postings on the NVARC Reflector. Ed]

Strays

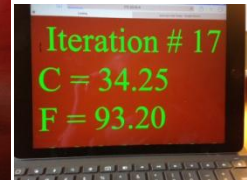
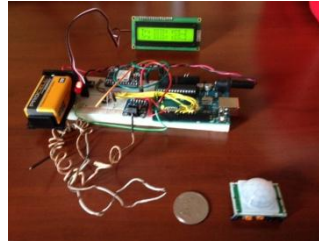
If all this Arduino stuff offends you, look at it as a learning experience. My project is to resurrect a homebrew circa-1967 monimatch-style SWR sensor. I knew, but had forgotten, that they are more and more sensitive as frequency increases. It saturated at 7V output with only a couple of watts at 2m. Now the project is an “HF SWR Display.” Hey, you learn—sometimes decades later.

de Skip K1NKR

Stan’s Arduino project: “I’m gonna need a bigger pumpkin.” (Ask him about it.)

You CAN Take It with You...

“What to do while your wife visits her 3 sisters in Syracuse. All lovelies, but I beat a retreat back to the motel room & the Arduino thermo Wi-Fi project.”



de George KB1HFT

Treasurer’s Report

Income for September was \$60 from membership fees, \$57 from the meeting raffle, and \$4 from ARRL membership renewals. Expenses were \$21.95 for the outgoing QSL Bureau, leaving a net income of \$99.05 for the month.

Andy KA1GTT, our September presenter, generously made a donation to the Community Fund. Thank you, Andy!

Current balances:

General fund \$2,769.90

Community fund \$5,061.52

The Community Fund balance in this report is a corrected figure from previous reports regarding the disbursement for the Pepperell Recreation Department donation.

As of 5 October, we have 33 members who are current with their dues and 29 renewals outstanding. 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.

If you are joining ARRL or renewing your membership, please consider 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 10/5/2017

Attending: Stan KD1LE, Jim N8VIM, John KK1X, Ralph KD1SM, Rod WA1TAC, Ed N1YFK.

- October meeting is our typical card sort night. Eric is lined up.
- Rod to speak in November.
- Homebrew in December.
- Short Subjects in January.
- Girls Scouts heating up for February.
- \$90 budget for pizza & soda for the card sort.

Respectfully submitted,
de John KK1X

Club Services

Newsletter. The monthly *Signal* is the club's record communications. It's archived on the NVARC website (www.n1nc.org) and serves as the historical archive of the club's interests and activities. Most distribution is electronic, a notice referring addressees to the archive. About thirty copies per month are printed for those who can't, or prefer not to, access the archive and for distribution to the public at HRO and Electronics Plus.

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. More than occasionally—usually the second Thursday evening of the month—Tech Night at the Community Center will concentrate on a subject of interest. Keep an eye on the Reflector for information and scheduling.

Repeater. The Pepperell repeater is not actually a club asset. It belongs to member Dave, N1MNX, who has always graciously made it available for our use and for which we provide maintenance. The repeater has 6m (53.890 MHz), 2m (147.345 MHz), and 70cm (442.900 MHz) capability and a battery back-up. Look up Dave's entry on www.QRZ.com and his webpage at www.n1mnx.com for technical information.

Calendar

Upcoming Events

October

- 13/14 NEARfest, Deerfield NH
- 15 Flea at MIT, Cambridge
- 21 NEARC Antiques, Brookline NH

November

- 4 Falmouth ARA flea, Bourne MA

December

- 2 Vintage Radio & Communications Museum flea, Windsor CT

Upcoming Operating Activities

October

- 16-20 School Club Roundup

November

- 4/5 EME 50-1296
- 4-6 CW Sweepstakes
- 18-20 Phone Sweepstakes

December

- 1-3 160 Meter Contest
- 9/10 10 Meter Contest
- 17 Rookie Roundup CW

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.

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Nashoba Valley Amateur Radio Club

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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.

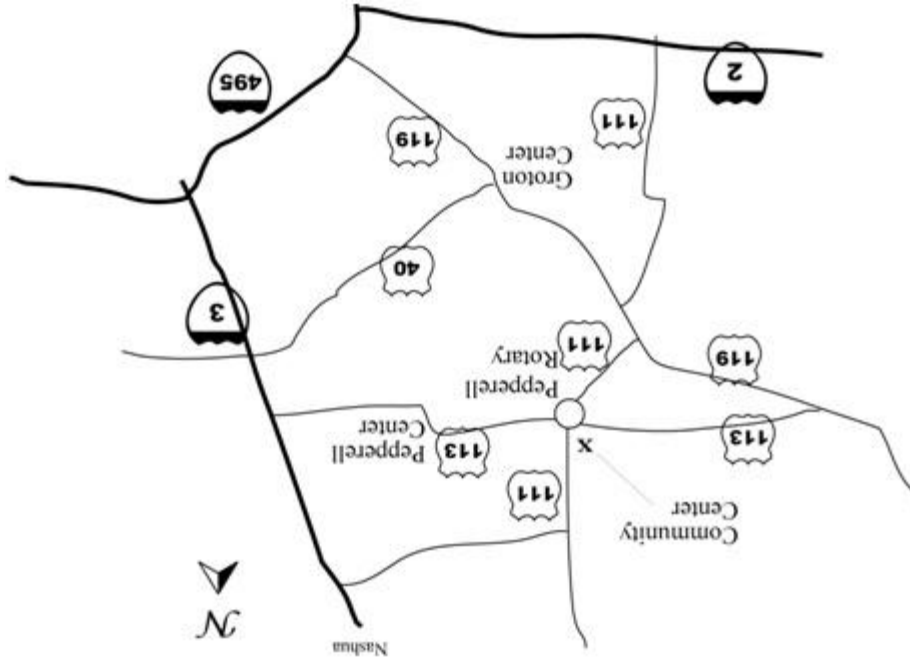
442.900 (+), 100Hz

147.345 (+), 100 Hz

53.890 (-), 100Hz

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

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