



SIGNAL

A club since 1992



Since 1993



Since 1996

de N1NC

August 2018

Volume 27 Number 8

This Month's Meeting

It's summer. No July and August meetings.

We hope you enjoyed the NVARC picnic, though. (It will have been held before this issue of the *Signal* went out.)

The NVARC "program year" commences next month. In September we expect to have Rob Macedo, KD1CY (the new Eastern Massachusetts Section Emergency coordinator), join us to speak about SKYWARN.

News and Happenings

NVARC Summer Picnic

Heat (oppressive), humidity (oppressive), and hams (probably not so oppressive). That's the quick rundown of the 2018 NVARC picnic.



K1NKR photos

Fifteen members, spouses, and family members gathered at K1NKR's QTH on Saturday the 5th for the annual affair. Thanks to

the weather—and the host not taking things as seriously as the prior three years' host—turnout was a bit down.

Just to keep the day technical, Skip and Jim N8VIM started experimenting with interfacing Jim's drone video with the DATV station.



IEEE Symposium (Boston)

Dan, KW2T, was among the Amateurs representing EMA and the ARRL at the International Symposium on Antennas and Propagation in July. (See <https://2018apsursi.org/AmateurRadio.asp> and <http://www.arrl.org/news/arrl-represented-at-ieee-symposium-in-boston>.)

Field Day

Here's the breakdown from Field Day, courtesy Jim, AB1WQ. We entered as 2A. (Total QSOs were: CW 818 Digital 0 Phone 310.)

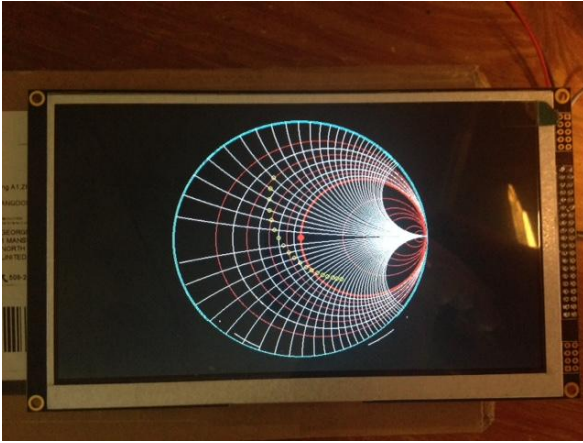
QSO Points:	CW	1636
	Digital	0
	Phone	310

100% Emergency power	200
Public Location	100
Public Information Table	100
W1AW FD Message	100
Visit by elected official	100
Youth participation	20
Submitted via the Web	50

Claimed Score 3,892

Arduino Group Fallout

In case you thought the Arduino Group were "just programming," here's an example of how one member's project returned him to appreciating "the beauty of Smith charts."



KB1HFT photo

This display is being driven by a sketch I wrote in C++, running on an Arduino MEGA2560 Pro Mini. My original code calculated the circles and arcs that make up the Smith chart's grid as well as the yellow impedance points of an inductance being swept through a range of frequencies.

Porting the code from driving the original 4" TFT display to driving this new 7" display was straightforward. But getting the new display to even light up was a big challenge! I still have some cleanup to do. (What IS that stray arc to the northwest?)

As many of yuns know, I have been intrigued by the Smith chart ever since EE undergraduate times when I had no idea what it was or how to use it. Only recently have I begun to see the beauty of Smith charts when used for antenna system analysis. To explore them more deeply, I thought that designing a Ham Shack tool (hopefully a multi-purpose one) would be an interesting exercise. Now it's time for me (with a little help from my friends) to get to designing & prototyping the Analog stuff: the Forward & Reflected detectors, *etc.* And, oh yes, it would be good to come up with a product & project plan! You know, a formal definition of: (1) what use it would be and to whom, (2) the potential market for an instrument with impedance calculating capability ($R \pm jX$) & Smith chart display, (3) the current market competition for such a device, and currently available features and prices, (4) what its

user interface's I/O would be, (5) portability(?), (5) potential price point, etc., etc.

73, George KB1HFT

Boxboro!



New England's premier Amateur Radio convention will be held September 7, 8, and 9 at the Boxboro Regency Hotel & Conference Center (Formerly the Boxboro Holiday Inn). See <http://boxboro.org> for ticket and program information.

The President's Corner

It is August already and the summer is moving along. Not that I'm wishing it away, but August weather is not my favorite. We caught a break for the club cookout and though it was hot the trees in Skip's yard provided good shade and made things quite comfortable. There was a good turnout, plenty of food and chat.

Boxboro is coming up in just over a month and I hope to see a lot of you there. If you are going to attend, check out the forum schedule. The detailed forum abstracts aren't available yet, but the titles will give you a start for planning. The Boxboro committee is looking for volunteers to help at the convention. If you have some down time think about volunteering some time. You can do it in two-hour blocks on the website. If you volunteer for two hours you can get a free lunch meal.

We have been working to keep the club meeting program schedule filled and are in pretty good shape at the moment. But we need continuous input and help to find presentations that will be of interest to the

membership. If you see one that you think would be of interest or think of a topic that we could work with, let us know.

The Arduino Group continues to meet and a half dozen antenna analyzers have been built, though not all have been packaged. The group has evolved to be much more than just building an existing design. Both hardware and software have been improved from the original QST article and we continue to explore ways to improve them. While they all run the same software, several variations have been built to test ideas about what will work the best—or maybe if it really matters for what we normally do, tune an antenna. We plan to do comparative antenna measurements on a set of antennas. Testing with resistance load “standards” only takes you so far.

Stay safe, and hope to see you all at the September meeting.

de Stan KD1LE

Editor’s Note

My intent for the July issue was to have had a dialog—pro-and con—regarding how the digital modes, specifically FT8, have changed the hobby. That was all preempted by Field Day news and a plethora of other news and happenings. Well, here it is. Maybe we can have more special-topic *Sigs*. I’m open to requests or suggestions.

de Skip, K1NKR

Dialog: The Digital Domain

“Siri, activate the rig and conduct a digital operating session this weekend. Concentrate on DXCC and print me the certificate Monday morning.”

Things have changed since you were first licensed, haven’t they? Are things as “bad” as the above vignette implies or is this the dawn of a new era of “continuation and extension of the amateur’s proven ability to contribute to the advancement of the radio art?” But does minimal-content QSOing portend the loss of “the amateur’s unique ability to enhance international goodwill?”

Here are a few people’s thoughts (*some edited for readability*):

“FT8 was designed to replace JT65 on the VHF bands to improve the shorter and more flaky sporadic E seen on 10m, 6m, and sometimes on 2m using a shorter cycle time. What we didn’t see coming was its fast adoption on the HF bands by folks chasing certificates and contests. No problem with that—use it or lose it; the more the merrier.

“FT8 has been a real game changer on the VHF bands. We are making contacts that we did not think possible on a solar cycle bottom. I have worked EU, islands off NW Africa, South America. Modes have been extended Es and TEP and unknown.

“Another reason FT8 is popular on the HF bands is because for many other modes QSOs like CW, RTTY, etc. many exchanges were [already] just the signal report, QTH, and a TNX & 73 and PSE QSL. Basically, that is what FT8 gives you—signal report, grid square, QTH, and a 73.

“Another reason for the popularity of JT8 is that you do not need to know the other person’s language nor any Q codes (*i.e.*, no need for QTH, QRS, etc.).

“[A further] reason is that because FT8 (and the other JT modes) use standard frequencies and those frequencies are like calling/activity frequencies you can quite easily walk the bands and see what bands are open and where the MUF is. I can leave the rig on 50.313 MHz all day, and then check PSK Reporter and see who I heard and what the propagation was doing and then use DXmaps and weather tools to do research into various propagation modes.

“FT8 will not replace the “QSO” digital modes like PSK, MFSK, OLIVIA, etc. But, many RTTY QSOs are like I mentioned above: very short exchanges of reports, QTH, PSE QSL and 73. Now, FT8 does that very well.

“What I like about ham radio is that there are many facets to the hobby. The rag chewers will use one set of modes; the certificate chasers will use another set of modes; the contesters will use everything, the researchers will use anything.”
de K1YOW

“DX chasers are loving the weak signal performance of FT-8 and other JT modes working signals not audible.”
73, Jerry, K0CQ

“The digital modes are destroying traditional VHF/UHF weak signal SSB/CW work.’ It absolutely is [true]. In the process [though], it is attracting a lot of new ops. Like it or not, it isn’t going anywhere and the WSJT modes may very well keep the hobby alive.

“I talk with a lot of young hams, high school and college age. They live in apartments, dorms, their parent’s houses, condos. They CAN’T set up beams and towers. Often they operate portable in a park. They have little budget. They are also very comfortable on computers, and many of them seem to be mic shy. This is the next generation of hams. Some go to the big contest setups. (One I speak to regularly was

at W2SZ this weekend.) Some make roving attempts. Some of them do [attempt to] learn CW and/or operate phone. [But the] digital modes are the only things keeping many of them interested in the hobby. In fact, I know of a couple who have been turned away from the hobby because so many older hams blast the digital operators as "destroying ham radio." We talk about FT8 and JT65 as destroying the hobby, when in fact it may be the thing that keeps it alive.

"I hope not too many of the older ops don't get driven off by the newer modes. I also really prefer SSB and CW (as bad as my CW is), but I don't mind FT8, JT65, MSK144, and the other digital modes a whole lot. (While roving, that is. If I hadn't fried my digital interface and have been too lazy to fix it, I'd be using them as well at home). It would be a real shame if [potential Elmers] like [callsign omitted] get driven away and aren't available to mentor the younger crowd. There's a huge body of material that [these] operators have accumulated over decades, and a lot of it is difficult to digest. We need the existing generations of hams to hammer that knowledge into the brains of the newer generations. We should be talking about how to teach the FT8-only operator when to use it, and how SSB can be just as effective at times, and how to improve their station. We need to learn how to coexist with the FT8 crowd, to get them more involved, not tell them how they are destroying the hobby.

"That said, I do hope there are still stations to work out there in SSB and CW. I suspect there will be, just far fewer."
73, Sean WA1TE

"It's good to see all the posts questioning the value of FT8.

"Taylor and Franke made a neat accomplishment with this variation on their JT series. The users can't claim the same. There should be no claim to fame for making thousands of contacts when the computer is doing most of the contacting.

"If you want propagation info, WSPR and other tools are better.

"Personally, I hope FT8 use is just a fad that will slowly fade away and the users will find other tools with more communications value."
Rich, W2RG

Strays

"They say that nothing is impossible, but I do nothing every day."

Winnie the Pooh



A link to *A Field Guide to Simple HF Dipoles* (<http://www.dtic.mil/dtic/tr/fulltext/u2/684938.pdf>) was posted to reddit recently, and I liked this document so much that I thought I

would share it with you. It was originally written for the military, but is now available for free from the Defense Technical Information Center. *via Dan Romanchik, KB6NU*

Incident Command System Form 205

I participated in the communications team for a Triathlon in May and when I reviewed the instruction package, it dawned on me that more and more events are managed using at least some of the principles of the Incident Command System (ICS). The ARRL Emergency Communications Course, Amateur Radio Emergency Service (ARES), and some other organizations such as the Military Auxiliary Radio Service (MARS) require certain ICS courses. Another aspect of ICS is a standardized form set. The Triathlon as well as the Boston Marathon use many of the ICS principles and forms because they are multi-agency activities. At the Triathlon, we had Amateurs, the Department of Conservation and Recreation (DCR), and two towns' ambulance services. In these events, everyone needed to know what frequencies were being used for what purpose.

This is where the ICS 205 form comes in.

INCIDENT RADIO COMMUNICATIONS PLAN (ICS 205)

1. Incident Name:		2. Date/Time Prepared: Date: _____ Time: _____		3. Operational Period: Date From: _____ Date To: _____ Time From: _____ Time To: _____						
4. Basic Radio Channel Use:										
Zone Gr.	Ch #	Function	Channel Name/Trunked Radio System/Talkgroup	Assignment	RX Freq N or W	RX Tone/NAC	TX Freq N or W	TX Tone/NAC	Mode (A, D, or M)	Remarks
5. Special Instructions:										
6. Prepared by (Communications Unit Leader): Name: _____ Signature: _____										
ICS 205		IAP Page _____		Date/Time: _____						

(See https://www.fema.gov/media-library-data/20130726-1922-25045-3243/ics_forms_205.pdf for a PDF of the form and detailed instructions.)

The heading sections 1, 2, 3 are straightforward. The Basic Radio Channel Use rows are where we look for the information to program our radios. The first five columns define a channel, its use, and who is using it. A channel could be a repeater, a simplex frequency, or a trunked system. For us the

next five columns are the important ones for our radio setup. It is important to note the sixth column, RX Freq, and the eighth column, TX Freq, are given from the perspective of the mobile or portable user. They are not the repeater input and output frequency even though the channel may be describing a repeater. These blocks also indicate whether it is Narrow band or Wide band by an N or W. In both cases the next column defines the access coding required, whether it is for Continuous Tone Coded Squelch System (CTCSS), Digital Code System (DCS), or trunked system Network Access Code (NAC). As you know, most of our Amateur repeaters are CTCSS, though the Southborough repeater uses DCS.

de Stan, KD1LE

Treasurer's Report

Income for July was \$60 from membership fees. Expenses were \$20 for newsletter postage and \$311.46 for Field Day, leaving a net expense of \$271.46 for the month.

Current balances:

General fund \$2,794.88

Community fund \$5,061.52

I believe that all Field Day expenses that were planned to be submitted have been reimbursed now. If you have approved Field Day expenses that you have not submitted to either Jim Wilber, AB1WQ, or to me please do so by the September meeting.

As of 2 August, we have 47 members who are current with their dues and 18 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.

de Ralph KD1SM

Board Meeting Notes

Board meeting 8/2/2018

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

- Cabinet meeting at Boxboro - lots of FD groups operated only on Saturday (only).
- Current balances per Treasurer's report.
- What is the future of the repeaters? Dave has not let us know of any succession plans. Stan suggests building maintenance for the repeater site, not that it's a club [owned] resource.
- Stan met with Dave Corsey who took over as [Peperell] EM director. Dave wants to understand about RACES etc., wants to start a CERT team, wants to work with surrounding towns.
- Missed the deadline for a Boxboro ad - try again next year? Volunteers needed at Boxboro.

Respectfully submitted,

de John KK1X

Club Services

Free Postage...

If you are joining ARRL or renewing your membership please consider letting Ralph, KD1LE, 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 a Special Service Club, the ARRL expects a majority of Club members to also be ARRL members.

Calendar

August

18-19 Huntsville Hamfest and Southeastern Division Convention, Huntsville AL

19 NoBARC Hamfest, Adams MA

19 Flea at MIT

September

7-9 Boxboro

16 Flea at MIT

20 First NVARC meeting of the year!

October

12-13 NEARfest, Deerfield NH

21 Flea at MIT

Upcoming Operating Activities

2018

International Grid Chase (all year!)

Science Milestones event (all year!)

August

18-19 10 GHz & Up – Round 1
19 Rookie Roundup – RTTY

September

8-10 September VHF Contest
15-16 10 GHz & Up – Round 2
29-30 EME Contest, 2.3+GHz

October

15-19 School Club Roundup
27-28 EME Contest, 50-1296MHz

November

3-5 November Sweepstakes -- CW
17-19 November Sweepstakes -- Phone
24-25 EME Contest, 50-1296MHz
30-2DEC 160 Meter Contest

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

FOR SALE

This space available for members' use.

A Final Thought



Via VA7DXX

...Try getting away with that one nowadays, especially at home!



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

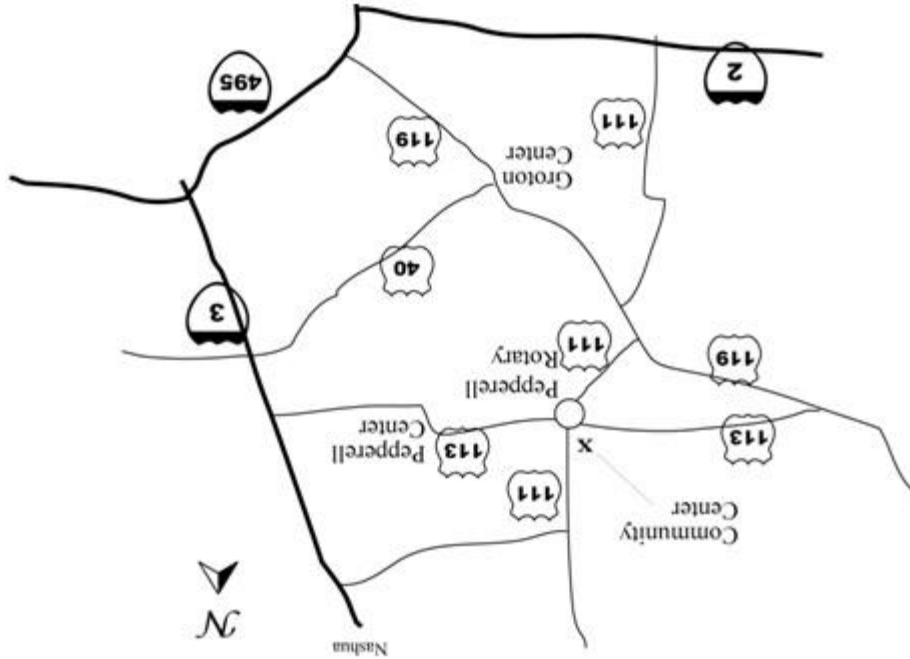
147.345 (+), 100 Hz

53.890 (-), 100Hz

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

Editor: Skip Youngberg, K1NKR

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