



SIGNAL

A club since 1992



Since 1993



Since 1996

de N1NC

May 2017

Volume 26 Number 5

Pepperell MA, 20 April 2017. The Nashoba Valley ARC (NVARC) was hosted for its April meeting by member Dr Phil Erickson, W1PJE, at the MIT Haystack Observatory. Highlights of the meeting included a talk on E-skip by club member Joe Dzekevich, K1YOW, discussions with 25 visiting students from the University of Pennsylvania, and a short review of the Haystack mission.

Also at the meeting Dr Erickson and club president Stan Pozerski, KD1LE, announced a new cooperative arrangement between NVARC and Haystack which will encompass (among other things yet to be proposed) mutual outreach to youth, the possibility of joint EME activities, and the conduct of "HamSCI" experiments.

This Month's Meeting

Entertainment or training? Education or entertainment? Dale AF1T, of the Contoocook Valley Radio Club, will visit this month and present his "Classic Antennas" show-and-tell. Classic Antennas is the second of his antenna talks, so there will be new information. But who knows, the pickle antenna may show up again.

The President's Corner

As we approach the summer meeting break I'd like to encourage the members to "get out and operate". Last year there was impetus from National Parks on the Air but there isn't any broad based activity for this year. That doesn't mean we should do nothing. Get together with a few members and create a "special event" of your own. They can be an opportunity to showcase Amateur Radio. But, there is no reason one person can't pack up the gear just for the fun of it, head out the Mohawk Trail, and operate from a picnic table somewhere. It can both be a challenge and rewarding to see what you can do with a small amount of equipment. Not to mention that any of these activities are learning experi-

ences benefit both you and the Club when it comes to larger undertakings like Field Day.

Tech Night runs through the summer so we need to keep ideas coming that can be developed into activities. A couple of suggestions have been made but it can take time to put a particular activity together for an evening's program. The more ideas we have in the pipeline the better.

I attended the MARA club meeting in April which was a QSL sort for the W1 Incoming Bureau. It was well attended and they sorted about 13,000 cards—not quite as many as we do but still a great service to the W1 community. Eric KV1J (*front right, white shirt*), who manages the Bureau administration and Pre-Sort functions has moved the pre-sorting to a club



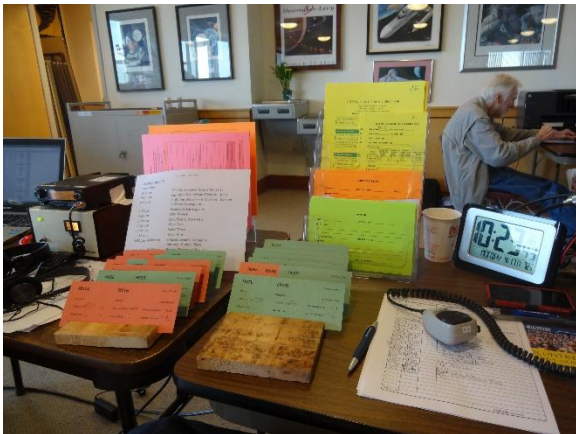
based system. It saves a lot of money over shipping the cards around and he gets them processed in big chunks. See also Gary K1YTS

(front center) and John KK1X (left center). You can see that the NVARC sorting boxes made the trip also.

Another Boston Marathon has come and gone. I was at my regular post (for the past few years) at one of the Net Control Operations Centers (NCOC's).



These days the operation is run in a very controlled way under the Incident Command System (ICS). This has brought a lot of structure to the activity. It also brings in a lot of paper.



There is a form for everything. Not in any particular order there is a form for the station log (under the mic), medical supply requests, medical transport request, for a question, for information, hydration station report for tracking opening/closing and water consumption and hams assigned, medical station for opening/closing and hams assigned and tracking the number treated. There is also a card for each ham for logging the stations arrival and closing time and what their primary and secondary radio channels are. After being there a few years I brought along the desk-top organizer and the custom boards I made to hold up the ham cards. The picture above is of my station arrangement.

Recently Skip K1NKR had a need to look for some equipment and the destination was You-Do-It Electronics. I hadn't been there in 20 years

so I tagged along. It was a blast from the past. Not much has changed, which I hope means people are still building stuff.



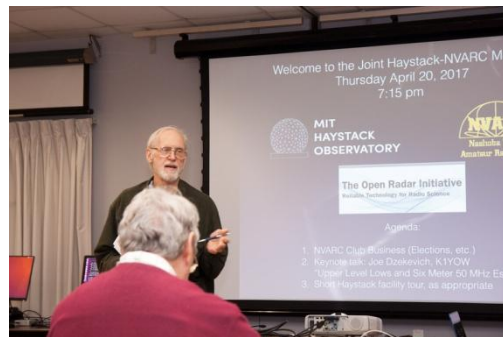
All photos courtesy KD1LE.
73, Stan KD1LE

Editor's Note

Sometimes you beg for input; sometimes there's plenty. Thanks to the contributors (and the fact that we're in a very active club season). I even had to reduce the type font size.

73, Skip K1NKR

Last Month's Meeting



Stan KD1LE opens the joint meeting. MIT photo



Sorry, Joe. Even an offer of two beers wasn't enough not to print this unflattering picture.

MIT photo



MIT-Haystack research staff were active meeting participants also. *MIT photo*

News and Happenings

Field Day

FD planning has begun. I'm coordinating, and Skip K1NKR and Ed N1YFK are assisting. Right now, we're looking for Station captains. Any takers?

de Jim AB1WQ

Observed

Two antennas (antennae?) met on a roof. They fell in love and got married. The ceremony wasn't much, but the reception was excellent.

Another Observation

...or lack thereof. Gene WW4EN got plenty of credit for his support of TDOTA but always had his picture taken from the back side. That's not his best side—as seen here:



Public Service

Groton Road Race

Thank you all for contributing to a safe and fun event. Race Director Ryan McMeniman sends you his many thanks on behalf of the Squannacook River Runners.

Please know that your time and skills are greatly appreciated by all the race committee and participants. A special note: our crew this year had four new volunteers. I hope that you will all (new and "experienced") will join us next year

I will be debriefing with the race committee and Groton PD in the next couple of weeks. If you have anything you want me to know, whether for that briefing or not, please send me an email before you forget.

de Ralph KD1SM

Another Public Service Event

NVARC supported the Townsend Lions Club Canoe Race April 22nd. We set up a net control and tracked the canoes along the course from a number of checkpoints. That way we could account for all the canoeists and know where to look if they went astray. About a dozen hams participate in this annual event.

Yet More Public Service

On April 30th NVARC supported the Groton Police Department for the 26th annual Groton Road Race. We provided communications for the organizers, the management of parking, and the course for safety and road openings and closings. Because it took about 35 hams we appreciate the support we got from other area clubs.

On the Air

From: Dick Bean via NEWSVHF
To: NEWS Group
Subj: [NEWSVHF] New 6 Meter Beacon in Ireland
Date: Sun, May 7, 2017 10:23 pm

The following news item was in the weekly bulletin I received today (5/7) from the Irish Radio Transmitters Society:

"EI0SIX is now QRV from Enniskerry County Wicklow. QRG is 50.005, set your dial on USB to 50.004.2 and listen for tones using PI4 software available free from OZ2M website. Beacon TX period is first 60 secs of every 5 min time slot. CW is the towards the end of

the period. Please spot if you hear it. Thanks to Tony EI7BMB for this piece of news."

73,

Dick,, K1HC/EI2HC



ONE Last Good Question

What a difference 90 days can make! It wasn't that long ago we were looking out our windows and pleading with the snow gods to give us a break, and finally our cries were heard. The temperatures, the blue skies, the winds have all been recently favorable and we can't even remember what it was like with four-foot levels of bleached, hard bursts, hoarfrosts in our front yards and drifts even higher. Well, we would much prefer to forget last winter than try to remember forging paths to the house garage, the grocery stores, to work or simply just getting our mail in the front yard--but look at it now. The sun is higher in the sky, the temps are thirty to forty degrees warmer than before, and the winds have shifted a bit for us to say, "We're in pig (*HAM*) heaven!"

What does all this lead up to, you say? It is nature calling us to get out of the stale-air shack and into our "get-off-our-fanny" modes... including hiking, camping, biking and just plan QRP along the mountain paths. Yes, it's the call of the CONTINUOUS WAVE!

I have been waiting all winter for the warmer spring months so I could pack my QRP gear into my knapsack, charge up the ole gel-cell, and retune my throw-up dipoles to GET ON THE AIR. I have a small 7-amp gel-cell—which is pretty much all anyone needs—and thin copper wire to fling onto the nearest tree limb to get the RF into the ionosphere. A quick and grubby antenna tuner will certainly do the job. Plus, its pocket size which means not a lot of space occupied in the QRP bag. Overall, it's pretty easy and if you're thinking you have to do a lot to visit Mother Nature's playground in her best, you're wrong. Outdoor operating is now easier than it has ever been, and I am going to tell you why.

First off, operating QRP means you take the least favorable weight, carry less with you, and enjoy what you have. Five watts or less is pretty slim-pickings and to throw an antenna into a tree is the least of your hardships, but getting outside into the woods, the parks, even the BACK YARD is going to be your toughest struggle. Where can I go? Who can I go with? How much gear do I need? Do I need to bring food, coffee, or snacks where I am headed? OH COME ON! We're talk-

ing simply getting outside and into the sun and on the air!

I have built over two dozen QRP transceivers and hung perhaps as many antennas in the trickiest trees around. What you need is simply a low power rig that can be easily driven by six or eight double-AA batteries. Or even a Lithium alone will get you on the air and you're in business. Have you checked the pages of CQ magazine or QST to see who is selling QRP transceivers? Or better and easier, 'Google' QRP kits on your computer and you'll find a utopia in front of you. Come on. The longer, brighter sunshine days are here and you need to get moving before that cool breeze from the north comes visiting again. (Not to worry, it'll be a while.) So warm up the soldering iron and burn some rosin. Just target the "al fresco" rig and get moving. By the way, bring your key, paper and chronographic meter as well.

What does it take to get you moving? Okay, let's suppose someone offered you fifty dollars to join him on a hike. Now, you're outdoors and you're loving it. Well, tell yourself that simply taking your gear to the woods is worth more than fifty dollars and look how much you saved. Think mind relaxing thoughts, of soothing, refreshing sunshine and the thrill of working QSOs anywhere someone can hear you. Now—doesn't this bring a little excitement to your hard pressed schedule? YES IT DOES! Now get moving!

de Dennis, K1LGQ

The Technical Corner

LED Lighting

LED lighting has become more available and popular recently and some members have demonstrated conversions of convention lighting fixtures at Home Brew Night. I recently got involved in replacing some failed under-cabinet fluorescent light fixtures and decided to significantly improve the lighting in the kitchen for the XYL. (Always good to keep the XYL happy.) So I looked into the various LED lighting options available. You can buy pre-made fixtures, LED strips that come in a variety of lengths, LED bulbs, and what you have probably seen as LED rope.

I was looking at putting lighting under about twenty linear feet of cabinets. That is a lot of fixtures—which aren't cheap—so I went with the simple LED strips. They are available in colors and several "temperatures" of white. The XYL was interested in the white, which was available from this vendor as "cool" 10000K and 6500K,

“natural” 4500K and 4000K, and “warm” 3250K and 3000K. They are also available in colors and—yes—variable color. The LED strips generally run on 12 volts or 24 volts but some are designed to be dimmable. Vendors offer other equipment such as power supplies, controllers, remote switches, solderless connectors, jumpers, right angle connectors, *etc.*

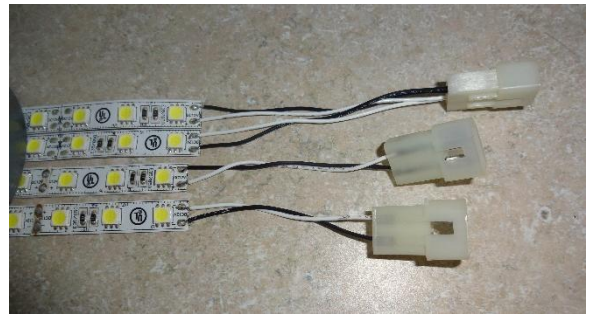
The LED strips come in a range of lengths that I suspect are metric (when are we ever going to change over?), so they come in odd increments of 1.64, 3.28, and 16.4 feet.



The longer strips come on a reel. **KD1LE photo**

The strip can be cut with scissors at two inch increments leaving solder pads on both edges. You can see from the picture the strip originally comes with a short cable and connectors on both ends, which I didn't use.

The strips can be mounted using aluminum channel, which costs almost as much as the LEDs, or directly mounted using the double-sided tape already on the strip. I chose to use the tape solution, which worked fine in my case. One challenge is connecting the strips. The lands on a flexible strip are not what you want to tug on. I had originally thought of cutting them to fit, mounting them, and then soldering them back in series with short jumpers between cabinets. I had second thoughts about soldering upside down to mounted strips, so I took a different approach. I cut my strips to the length necessary for each cabinet size and put a short, wired connector on each. In a few places, I paralleled the strips for more intense lighting and wired them to the same connector as shown in the top pair below. (Vendors do have other types, some of which are multiple LEDs wide.) This way I could run the wires to the power supply through holes under and between cabinets and mount the strips one at a time as the project progressed. I ran all the wires, installed the wire molding and installed the connectors before I installed the LED strips.



I should have put a penny or ruler in the picture, but the connectors are the old ARES standard Molex power connectors and the leads are about three inches long for size reference. **KD1LE photo**



K1LED KD1LE photo

Above is what one half of the counter space looked like before the project started. It doesn't look dark but remember it is a flash picture of an off white counter and white backsplash. Below is the counter with the new lighting.



(The mirror lying over the dishwasher was the technique I used to see how I was placing the LED strips. Once you stick them on there is no moving them and, since they are a flat strip, they don't flex. So you want to make sure you place them properly—once!) **KD1LE photo**

In the picture above, the left end has a single LED strip over the toaster. The XYL does a lot of work and wanted the most light over the sink and on either side, so I doubled the strips there. I found they were quite bright and leaving a few inches of space on the ends didn't compromise the illumination.

The LED strips I used were about 600 lumens *per foot*. There are eighteen LEDs per foot on the product I purchased and they consume about 4 watts per foot. For comparison, an 18-watt fluorescent appliance fixture provides about 1000 lumens.

I won't say this was cheap lighting, but the XYL is worth it. After installing the LEDs and then turning them off I realized how little light there had been in some areas of the kitchen because the windows and the ceiling light are actually behind you.

You can wire up pretty much anything from two inches to thirty-two feet (two strings in series) but vendors warn that there will be voltage drop in very long strings resulting in brightness and color differences. Because I wanted to be able to proceed a piece at a time I chose to wire each strip or pair of strips back to the power source so they would be useable from the time the first strip was mounted. I used self-stick plastic wire mold to run the wires under the cabinets and the power supply in each case is in the corner behind the microwave. It would have eliminated some work and reduced the number of connections to use the longest strip possible, but that would have meant installing everything all at once. In the case of the cabinets, I wanted everything to be hidden and to do that would have meant drilling or cutting some pretty large holes to feed the strip through. (Yes, there are two microwaves, and when entertaining we use a third that lives on the porch.)

After completing the work I realized this wasn't just a kitchen thing and was equally applicable to any ham shack, so I decided to describe the project.

73, Stan KD1LE

By the way, the LED strips are sold as "12 volt," as are the power supplies, but I was thinking about using them around the shack where they would be powered by my battery system. The question that brings up was "what is the usable voltage range and especially the maximum voltage for the LEDs?" When my battery charger is on, the voltage in my system could be as high as 14.5 volts. So, I contacted the vendor who responded that the strips are designed for automo-

tive use and have a voltage range of 10.5 to 14.8 volts.

Hints and Kinks

A New Use for Your Wife's Jewelry

From Sea Technology magazine (February 2017)

"Tourmaline is a naturally occurring piezoelectric material in nature [Pardon the redundancy. I'm just quoting the original. *Ed*], and when used in underwater sensing an electrical charge is generated with a magnitude depending on the hydrostatic pressure applied to it and the area over which this pressure acts. Tourmaline responds to hydrostatic pressure if electrodes are applied to its z-axis direction. By contrast, quartz does not possess a hydrostatic response on its x-, y-, or z-axes. It is this unique property of tourmaline that makes it suitable for measuring underwater explosions."

Yes, but what about the other explosions that occur when the XYL finds her tourmaline ring soldered into some circuit on your workbench?

Treasurer's Report

Income for April was \$185 from membership fees (including a long-term renewal) and \$15 from Signal advertising. There were no expenses recorded in April leaving a net income of \$200.00 for the month.

A correction to last month's report: newsletter postage is \$19.60 per month, not the (old rate of) \$18.80 reported.

Current balances:

General fund \$3,124.92

Community fund \$5,136.41

As of 4 May we have 41 members who are current with their dues and 20 renewals outstanding. Thank you to those of you who hand in your dues 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

A Board meeting was held on 5/4/2017

Calendar

Upcoming Events

May

- 5/6 NEARfest, Deerfield NH (You missed it.)
21 Flea at MIT, Cambridge

June

- 3 NEARC Antiques, Brookline NH
18 Flea at MIT, Cambridge
24/25 **Field Day**

July

- 16 Flea at MIT

August

- 20 Flea at MIT
27 NoBARC Hamfest, Adams MA

Upcoming Operating Activities

May

- 6/7 New England QSO Party (Did you op?)

June

- 10-12 ARRL VHF contest
18 Kids Day
24/25 **Field Day**

July

- 8/9 IARU World Championship

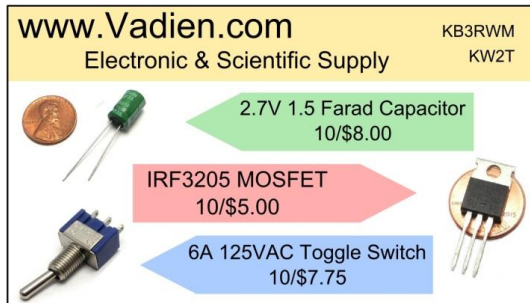
August

- 5/6 August UHF Contest
19/20 10 GHz & Up (Round 1)
20 Rookie Roundup RTTY

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

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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.

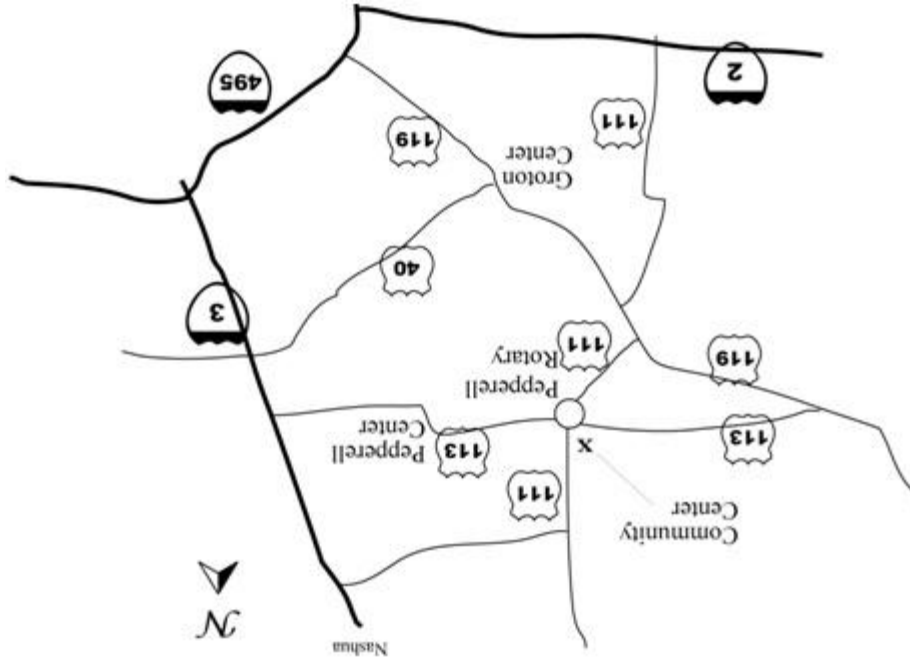
442.900 (+), 100Hz

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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