NVARC
Nashoba Valley
Amateur Radio Club

SIGNAL

SPECIAL SERVICE CLUB
ARRL

de N1NC

June 2014 Volume 23 Number 6

This Month's Meeting

June's meeting will theme "It's About Time." Our guest speaker will be Leon Poirier, of Chelmsford. Leon is a retired scientist with an interest in sundials—what kinds there are, how to make them, how to read them, and what this solar and astronomical time thing is all about.

The meeting will be held in the Library, NOT the Community Center.

QST, QST, QST*!*

Because of a scheduling conflict the Community Center will not be available to us for June's meeting. As usual, though, the Town of Pepperell has been helpful and hospitable to us.

THE 19 JUNE MEETING WILL BE HELD AT THE LAWRENCE LIBRARY.

We've met there before. It's just up the road from our usual meeting place. Head West from the rotary and go about half a mile. The library is on the left. For those of you with GPS-enabled vehicles or smart phones, the Lawrence Library is at 15 Main Street, Pepperell MA.

Remember, THE 19 JUNE MEETING WILL BE HELD AT THE LAWRENCE LIBRARY.

Last Month's Meeting

May's meeting feature speaker was Layne, AE1N, describing a single antenna that covers eleven bands. He took on the research, design, construction, and testing of the antenna last year and has given talks on it recently at other clubs. Layne is currently both the membership chairman and the newsletter editor of the Nashua Area Radio Club.

Photo courtesy of Larry W1ESR

After the presentation Layne accepted the NVARC mug. He later exercised his other option of one year's membership in NVARC.

Photo courtesy of Larry W1ESR

In attendance
Jean K1AVM, Bruce K1BG, Dennis K1LGQ, Skip K1NKR, Gary K1YTS, Wolf KA1VOU, Ken KB1UVP, Greg KB1WAQ & Tom, Stan KD1LE, Ralph KD1SM,

John KK1X, Dan KW2T, Les N1SV, Ed N1YFK, Peter N1ZRG, Jim N8VIM, Dennis W1UE, Bob W1XP, Rod WA1TAC

President's Corner

de Skip, K1NKR

If you remember using it, it's not old. Funny thing about perspective. Consider RCA-style connectors. They date to, what, the nineteen-forties? And we still use them. Does that mean the forties weren't so long ago?

Yet, if you find someone else's old parts, they're antiques. The back shelf in my workshop includes a few boxes of equipment and parts I inherited from my grand-uncle W1JP (originally 1JP). Most date from—guess what—the forties! And they're old, especially the equipment. A lot of that stuff is homebrew stuff was used for the War Emergency Radio Service on the 56 and 112 MHz ham bands. Crude stuff by today's standards; state of the art back then.

In those days, and well up into the fifties and sixties, Amateurs typically built everything in their stations. Nowadays, few of us would even think of trying that. Do changing times make us all "appliance operators?" Probably not. It's all a matter of perspective. Excluding the power amplifier, there's now more communications capability in a rig the size of a paperback novel than ever could have been imagined those decades ago in a whole basement full of homebrew equipment.

The old guys pretty much just had CW and AM phone. What have we got? (I won't try to fill the page with a mode list but my logging program has thirty-two selections for "mode.")

The old guys had a power supply, a receiver, a transmitter, maybe a modulator, and a wire antenna. We've got all that (with the receiver and transmitter/modulator typically all in one box), plus multiple antennas, antenna and rotor controls, speech processors, and a computer for logging, station management, Internet QRZ access, and digital mode demodulation. Oh, and maybe a mobile station, too. And an HT.

The equipment to do all this is complex, miniaturized, and full of components with obscure sixteen digit part numbers. And an occasional RCA connector to balance off the DIN jacks and USB ports.

Where does that leave us? Are we really doomed to be appliance operators? I think not. It's all a matter of perspective. If you think about it, today's homebrew QRP rig or station interface is about as complicated as yesterday's Heathkit rig. What's happened is that we've changed our perspectives from being just circuits guys to including systems engineering in our experience base. Knowing what we want to do leads us to imaginative station configurations, to creative interfacing, to figuring out how to avoid COM port conflicts. We've taken those little $17 computer dongle receivers, interfaced them to the station receiver's IF and to the computer, and turned them into band scopes to vastly increase our "spectrum situation awareness." Now pouncing on the DX—or pouncing into a pile-up split at just the right time—is much more a today's skill instead of a yesterday's luck situation. The forties may or may not have been a long time ago, but the twenty-first century ain't too bad a time to be hamming in.

And unless we get absent minded, we still know which end of a soldering iron to pick up.

May Treasurers Report

Income for May was $20 in membership renewals and $25 from PowerPole connector sales. We had no expenses recorded this month leaving a net income for May of $45.00.

Current balances:

General fund	$2,854.33
Community fund	$4,836.41

The Spectrum Defense Fund Matching Gift Program has collected $55 thus far. NVARC will match up to $250 in total gifts received by Field Day.

As of 5 June we have 43 members who are current with their dues and 20 renewals outstanding. 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.

Ralph KD1SM

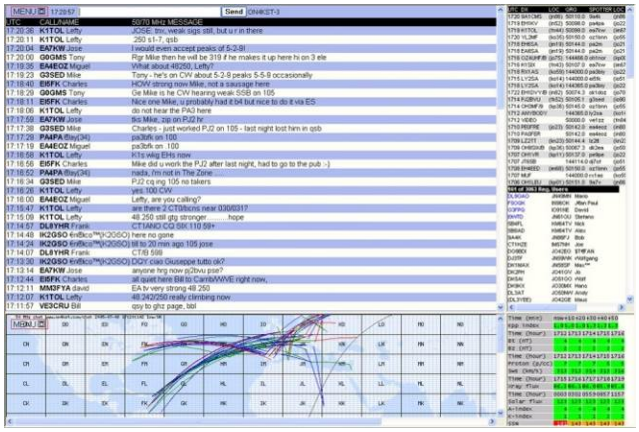
DXing – Some Recent Trends

In this the final installment of the series on DXing, I wanted to discuss some trends in recent years related to DXing. The common theme in most of these is improvements by way of the internet making it easier for us to work DX.

Software Defined Radios (SDR)

While Software Defined Radios are nothing new, the recent proliferation of inexpensive SDRs to the market, like the DVB dongle shown above, have now made it possible for nearly any ham to start to experiment with SDRs for $20 or less. SDRs can be quite useful for DXers as they can provide a visual representation of a slice of a band in real-time. This can allow us to view both sides of a DX pileup at the same time. Thanks to software applications like CW Skimmer we can even decode multiple stations transmissions simultaneously to more easily identify a DX stations operating pattern.

Another trend in the last several years is the Reverse Beacon Network (RBN). Stations with an SDR and an antenna can monitor a portion of a band and report the stations they hear on CW along with their associated signal strengths to a central server. This allows the reverse beacon network to provide a real-time indication of band openings. I have participated in RBN using my SDR-IR from time to time. For more information on the RBN project including its features see their website at http://www.reversebeacon.net



Ham Radio Internet Chat Rooms

Internet chat rooms provide a meeting place for people with common interests in specialized areas of amateur radio. Stations from all over the world can exchange information and ideas and even schedule contacts in real-time. One of the more popular chat rooms is the series of ten chat rooms that ON4KST has at (http://www.on4kst.com/chat/start.php). These include rooms for "Low band" and "50 / 70 MHz" enthusiasts. I have been participating in the "Low Band" and "50 / 70 MHz" ones for the past several years. It's because of the "Low Band" chat room that I have been able to work my first VU (India) and HS (Thailand) stations on 80m. While the chat rooms are free registration is required in order to participate in them. For meteor scatter enthusiasts the Ping Jockey chat room (http://www.pingjockey.net/ provides a place for stations wanting to schedule meteor scatter contacts using high speed digital modes like JT65 in real-time.

Online QSL Request Services

It used to be that only the large high profile DXpeditions would utilize an Online QSL Request Service (OQRS) due to the logistics involved. But these days even the smaller DXpeditions and the individual DX stations themselves have gotten onto the bandwagon. For those like myself who enjoy collecting QSL cards this can save a lot of money in postage getting your QSL request to the DX station. It also ensures that the funds required for return postage get safely to their final destination. I even have implemented an OQRS starting last year for my VP9 (Bermuda) QSOs. The concept is simple I have an online log search on my webpage. I ask

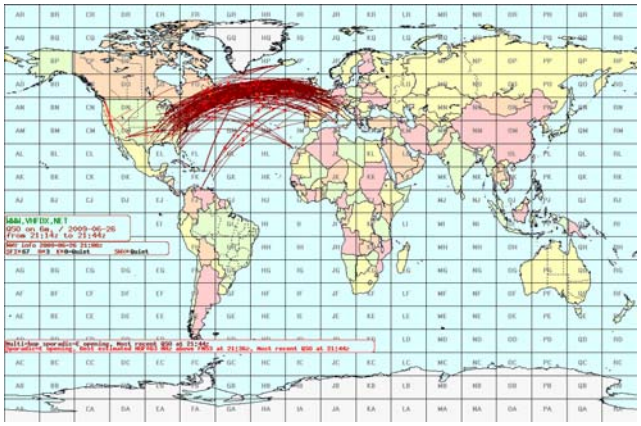
stations to first make sure they are in my log and then send me $2 via PayPal with the QSO details and their mailing address. So far it's worked out pretty well.

Clublog

Clublog (http://www.clublog.org is a web based application that analyzes log files uploaded from amateur radio stations all over the world. It provides various reports as well as the ability to search thousands of uploaded logs. Recently Clublog implemented their own OQRS feature. Once a station has successfully searched a log they can then request a QSL card be sent direct or via the buro from the DX station. The DX station sets up their account with how much money they need to return a direct QSL and then provides an e-mail address where the PayPal funds are to be sent to. I really like Clublog they continue to evolve adding new useful features.

CLUBLOG Log search for FT5ZM

A couple of years ago I stumbled onto the www.dxmaps.com website. This site takes all of the packet cluster spots from around the world and displays them on maps using the grid square info for as specific band. This provides a real –time representation of band openings. This can be quite useful on the VHF bands in tracking a sporadic-E opening as it progresses.



Real time HF & VHF Propagation Maps

The screenshot above shows a multi-hop sporadic-E opening on 6m between the US East coast and Western Europe. Even if the opening hasn't extended to your specific location yet you can still tell where it's active and can therefore be ready when conditions change.

Global QSL (http://www.globalqsl.com)

Global QSL is a service that allows you to upload your log and design a QSL card online and then send the completed QSLs to various buros around the world. The service permits you to upload multiple photos and design professionally looking one sided or two sided color cards. The service costs about $0.106 per card including shipment to all QSL buros worldwide. While the service seems the most value to those with a high volume of QSOs like contesters, it may also be useful for Field Day or other events where you want to send QSLs to all stations you worked. I made some rough calculations based on having made 1000 contacts. After figuring the cost of QSL printing and the outgoing buro including shipping it's actually significantly cheaper to use GlobalQSL.

Remote Control Stations

One of the areas of our hobby that seems to be growing in recent years is the use of the internet to remotely control ones station. This allows those who either have zoning restrictions, a poor location or just the inability to set up an optimum station to have access to one. I have talked to several different European stations that were remotely controlled. One of them told me that because he works in a city with a high noise level that he couldn't setup a station so he has one at his summer home that he remotely controls.

Most new transceivers and even some other equipment like antenna rotators and linear amplifiers now have serial communications interfaces on them making them well suited for this use. Many people already have a computer set up in their shack either for logging or for digital communications like PSK31. So adding remote control does not require a lot of extra work. There are a number of different sources for software to remotely control your station including Ham Radio Deluxe, TRX Manager, and the W4MQ Internet Remoting Toolkit (http://www.w4mq.com/). Numerous articles have been written on the subject and the ARRL even has a book "Remote Operating for Amateur Radio" available as well.

Screenshot of W4MQ software package

And for those who want the experience of operating from a top-notch station W2RE and WW2DX started a business providing remote access to some of these stations in the Northeast for fee (http://www.remotehamradio.com).

Les Peters, N1SV

June Board Meeting Notes

Treasurer's report
Books needed for raffle
Field Day - allocate funds for Portalet - Planning on ad hoc if any Field Day effort
Jim out of town so no power/networking available.
Presentation about Arduino/Raspberry Pi?

John Griswold KK1X

2013/2014 NVARC Lantern Battery Challenge Soapbox Comments

Dennis Marandos - K1LGQ

When the Lantern Battery Contest began, I was eager to jump right into it with both eyes open. I set up my ICOM IC-703 QRP rig on the back deck table and connected my Cushcraft R7 to the output and finally the DC plug to my battery supply. It didn't

take long to figure out that I was drawing over an amp on transmit and about 300 mills on receive to say "this contest is over in one day!" My radio was a battery-pig so I put everything back into the closet and had to rethink.

I have several one-band QRP radios but they just didn't cut it and I sat in wonderment of what to do next. I had in the back of my mind to build another QRP radio, which I had my eye on for many, many months, so I sent out my check, crossed my fingers and waited for a NEW QRP kit to come in the mail. Eventually, a bag of parts appeared on my door step late December and was perhaps a little something from Santa. Too much was going on at that time so I began kitting in January.

It wasn't till the third week of January I finished all the connections, placed all the toroids, resistors, capacitors, and switches onto the printed board and was ready for some serious contesting. Alas, as much as great intentions are made, I had one "bug" which wasn't going away too soon and prevented me from getting on the air. I had to rewind one of the duplex (double winding) toroids to get'er done, but it wasn't just a quick fix. A lot of "WTF" comments were made, but victory was mine and I saw progress. Finally, I was ready to pump some RF into the air and connected my R7 vertical to the output.

The most power output I had was 4 watts which very soon drifted to 3 watts in a matter of days with constant use. The receiver worked well and I could hear many stations, however, not all of them could hear me.
With a little tweaking of my antenna tuner, I squeezed out all the RF I could and did work fifty and more stations on three bands. The transceiver is a QRP kit called PFR-3A. The letters stand for "Portable Field Radio - 3 Bands." It was designed by another QRPer in New Hampshire - Steve Weber who lives in Randolph, NH. Steve - KD1JV gave me some building hints and the kit went together well, except for one toroid. I blame the manual for it was NOT written well, but that is another story for later. (Ask me!) After a third winding-try, it worked perfectly.

That's my soap box for the Lantern Battery Contest and I have to say that this contest with big, duty-cycle batteries pushing the current made it very easy to stay on the air for a while. Smaller double AA batteries would have a short current span and poop out in a matter of days, whereas the lantern batteries lasted for four to six weeks. Thanks to the new QRP rig (PFR-3A), instead of that guzzling ICOM IC-703, I certainly had a great deal of fun working stations across the country and would do it again. You know, it was a cold, long winter and this contest was just what I truly needed! Half the fun was making the rig and the other half was using it. Thank yooooooooooooou! Amen.

Dennis Marandos - K1LGQ
11 South Main Street
Brookline, NH 03033

Tower Tools

A few weeks ago Les N1SV and I were talking about some upcoming tower work he was planning, specifically a rotator replacement. He was thinking about two “tools” that would make the work easier and had done some searching but couldn’t find a source. We chatted for a bit discussing the requirements and I decided I would give it some thought and build something to try when he was ready.

The first requirement was a fixture to “lock” the mast in place so it would not rotate while the rotator was being replaced. There can be quite a bit of torque on the mast depending on the antenna wind load and the actual wind. The fixture is not intended to support the mast and antennas which are supported by the thrust bearing but to keep the mast centered and fixed in direction.

Above is the fixture built and used for the rotator replacement. While the device worked as planned a couple of issues were identified. The fixture had many loose parts with two U-bolts, nuts, and closing plates as well as two sets of saddle clamps. So one improvement was to capture the closing plates and saddle clamps to the angle iron. The second issue was the angle iron ends being a bump hazard so they were protected with rubber cushions.

The fixture rests on the Z braces and is clamped to one tower leg. The saddles are self-centering because the U-bolts are set in slots.

The other item was for convenience. When hoisting the normally used tool bucket or other small items the person on the tower hooks a pulley on the tower as seen above which the ground crew pulls against to raise the item. Since the pulley is against the tower the person on the tower must hold the “up” rope away from the tower using a foot or hand to keep the item from catching and banging against each rung on the way up or down.

The solution was an outrigger that is secured to one tower leg and is grooved to match the rung that it sits on both of which keep it from moving. It is not intended to support heavy loads but things like a tool bucket or rotator.

Stan KD1LE

NVARC Property List

NVARC Property List
5/9/2014

Call	Name	Count	Property Description
KD1LE	Stan Pozerski	15	Trash stabbers
KD1LE	Stan Pozerski	32	Safety Vests
KD1LE	Stan Pozerski	20	Pair Cotton Gloves
KD1LE	Stan Pozerski	1	Card sorting letters
KD1LE	Stan Pozerski	3	5' brown folding tables
KD1SM	Ralph Swick	1	Swingline M711 Stapler
KD1SM	Ralph Swick	1	NVARC banner 3'x5'
KD1SM	Ralph Swick	1	Trash stabbers
KK1X	John Griswold	1	Badge laminator
WA1TAC	Rod Hersh	1	Kenwood TS-451 transceiver SN 61000025
N1ZRG	Peter Nordberg	1	Cushcraft R-7 antenna
WA1TAC	Rod Hersh	1	Astron RS-35M power supply SN 9506184
N1ZRG	Peter Nordberg	2	MFJ MFJ557 Code Practice Oscillators
KD1LE	Stan Pozerski	1	MFJ MFJ557 Code Practice Oscillator
K1NKR	Skip Youngberg	1	Projection screen

73,
John KK1X

Meeting Coffee “Bar”

Many thanks to Ed Snapp, N1YFK, for his rejuvenating the coffee "bar" at the last two meetings. There's been an incremental increase in socializing, and that's what we meet for.

Don’t forget to leave a donation if you partake.

Strays

MORSE CODE ‘SOS’

The “SOS” in Morse code does not, as is popularly believed, stand for “save our ship.” The letters S-O-S were chosen in 1910 as the distress call to replace the previously used C-Q-D because the pattern of three short, three long, three short letters was more easily distinguishable against background noise. CQ originated from the “sécu” in the French word “sécurité” (security) followed by D, which signaled distress. (source: IEEE History Center article "Did You Know? Historical ‘Facts’ That Are Not True")

Now, if you thought that was interesting look forward to an upcoming *Signal* article by this month’s speaker. Leon Poirier, an engineering professor and world traveler, investigated the origins of “SOS” and has an interesting perspective on it. It’s got to be true: it *didn’t* come from the Internet!

NVARC Club Net

The NVARC Club Net meet’s every Monday evening at 8 PM on the 442.900 Pepperell repeater.

Stop in and bring your input and questions.

The net is in need of a regular Net Control Station (NCS).

Recently participants talked about the upcoming WRTC, search for June meeting location, SDR dongle projects and trouble shooting. Also local interference location and signal identification.

Recent attendees were

Jim N8VIM, Stan KD1LE, Skip K1NKR, Larry W1ESR, Les N1SV, Bruce K1BG, George KB1HFT, Dave N1MNX

Upcoming Contests

Jul
12-13 IARU HF World Championship & WRTC2014
Aug
2-3 UHF Contest
16-17 10 GHZ & Up Round 1
17 Rookie Roundup RTTY
Sep
13-15 Sep VHF
20-21 10 GHz & Up Round 2

Flea Markets/Hamfests

Jul
17 ARRL National Convention (Hartford CT)
20 MIT Flea (Cambridge)
Aug
9 Three Rivers Hamfest (Milo ME)
17 MIT Flea (Cambridge)
Sep
12 CT State Convention (Nutmeg Hamfest)
21 MIT Flea (Cambridge)

Your Article

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Nashoba Valley Amateur Radio Club

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http://www.n1nc.org/

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Vice President: Jim Hein N8VIM
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Rod Hersh WA1TAC 2012-2015
Bob Reif: W1XP 2013-2016

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PIO: Roland Guilmet NR1G
Librarian: Peter Nordberg N1ZRG
Property Master: John Griswold KK1X
N1NC Trustee: Bruce Blain K1BG
Annual membership dues are $15; $20 for a family
Meetings are held on the 3rd Thursday of the month
7:30 p.m. - Pepperell Community Ctr.
Talk-in 146.490 simplex
442.900 + 100Hz Repeater battery power
147.345 + 100 Hz Repeater
53.890 – 100Hz Repeater battery power
This newsletter is published monthly. Submissions, corrections and inquiries should be directed to the newsletter editor. Articles and graphics in most IBM-PC formats are OK.

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