



The SPARC

Amateur Radio - Communicating Worldwide for A Century
Newsletter of the Boston Amateur Radio Club
Serving Hams in the Greater Boston Area
July 2015 - VOLUME 27, NUMBER 7
www.barc.org - w1bos@arrl.net



Message from the President – Joe Harris, N1QD

Greetings!

This is my first President's Message, so I'd like to take some time to introduce myself to the membership. I was originally licensed in October 2002 as KB1IXK. Almost immediately after earning my Technician class, I began studying for General, while also learning CW thanks to Gordon West's 5 WPM code tapes. I upgraded to General the following March, passing Elements 1 and 3 at a BARC VE session. A few years later I found myself with some time on my hands, and devoured the Element 4 study guide over the course of a few weeks. I passed my Extra at Boxboro 2006, and applied for a 1x2 the day my upgrade appeared in the FCC ULS. N1QD was issued to me that September, and I don't intend to change my call again!

One of the best aspects of ham radio is the various facets to the hobby. Over the years, I've seen my interests develop and mature. I was originally a repeater junkie, mainly hanging out on 145.23. In addition to traditional VHF/UHF FM, I have also tried to be active on some of the more exotic bands and modes. There is a thriving local community on 902 MHz, particularly on 900 Thursdays. I had been curious about digital voice modes for several years, but hesitated to pull the trigger. About a year and a half ago, I began reading about Digital Mobile Radio (DMR), and got really interested. I have been active in DMR for about a year now, and it has been a blast! It truly has renewed my love for VHF/UHF chatter, and I haven't been this active on repeaters in years. As an apartment dweller, the lion's share of my initial HF operations was at Field Day and Skywarn Recognition Day. I wasn't really motivated to get on the air much more than that until I discovered contesting. I sat in at the Yankee Clipper Contest Club meeting at Boxboro one year, and I was hooked! I joined YCCC that afternoon, and I have been active (mainly as a guest op at the mighty K1KP station) ever since! RTTY contesting is likely my true love, but I still enjoy CW and phone, too!



I joined the Boston Amateur Radio Club a few months after I was licensed. I began attending meetings the next spring, but it wasn't until the next June that I truly felt like part of the group. Field Day is what sealed the deal for me. The experience on HF was wonderful, the exposure to hams with a varied background and skill set was awesome, and the fact that they were so accepting of a new member was great! That weekend up on the hill at Larz Anderson Park sold me on BARC, and now FD is one of my annual highlights! Over the years, BARC has done a lot for me. I'm honored to be your President, and I hope that I can give back half as much as what this club has given to me.

BARC General Meeting

Thursday, September 17, 2015 at 7:30pm

There are no general meetings during July and August. BARC's next general meeting will be held on Thursday, September 27, at 7:30 pm at Brookline Police Headquarters in Brookline Village. The speaker and program will be announced.

Repeaters: 145.230 (-) CTCSS 88.5

Simplex: 147.420

443.550 (+) CTCSS 110.9



Field Day, the ARRL's annual communications exercise, takes place annually during the fourth full weekend of June. This year, it took place on the 27th and 28th. The Bare Cove Fire Museum in Hingham graciously agreed to host our Field Day again this year, and we are grateful for their continued hospitality. We operated as a 3A station, a club station running with three transceivers on emergency power plus an additional VHF transceiver.

We had a successful operation, making over 400 contacts in the twenty-four hours of operating time we had. Stay tuned for a complete recap in a future edition of the SPARC.

UHF Repeater Update

BARC's UHF repeater has been on the air for close to a year and a half now. In that time, it has not been particularly active. In an effort to boost traffic and interest, the club voted at the June business meeting to transition the repeater to digital, running DMR (also called MOTOTRBO). The club's repeater is DMR-capable, though it has been running in analog mode since it was put into service in early 2014. The transition is underway but not yet complete. Once the repeater has been reprogrammed to DMR, we will connect to the DMR-MARC network via the New England Digital Emergency network, a group founded by Bill Barber, NE1B. Bill was the club's guest speaker at the May general meeting. Once the transition is complete, users will be able to have QSOs locally, within the region, or across the nation. More details will be available over the summer, and will be published in upcoming issues of the SPARC. Up-to-the-moment details will be posted to the yahoo group as soon as they are available, so see the post elsewhere in the SPARC for information on joining the group. Joe Harris, N1QD, the repeater trustee, can be reached via email at <n1qd@n1qd.org> to answer any immediate questions you may have. For more information about DMR, read on.

BARC's Online Discussion Group – Joe Harris, N1QD

BARC has an online forum at Yahoo groups. The Yahoo group serves as a sounding board for members to post their suggestions and comments, and is intended to foster discussion. The group can also be used to share photographs from club events! Come visit us at: <<https://groups.yahoo.com/neo/groups/bostonARC/info>>.

Getting Started with DMR – Joe Chapman, NV1W

With the BARC UHF repeater set to be converted to DMR sometime soon, I thought I'd share my experiences getting started with the mode.

First of all, the various digital modes use different codecs (the software or hardware component that converts between audio and digital data) and protocols (the computerspeak that's required to set up, control, and tear down two-way

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communications between two radios). Having an HT that speaks a digital mode like P25 or DSTAR does not mean that you can use it for DMR.

The good news is that DMR is not tied to a specific manufacturer (like DSTAR is with Icom) or ludicrously complicated (like P25). The bad news is that transceivers aimed at the amateur market are only starting to appear, though many hams are using reconfigured commercial radios. One major drag is there aren't any dual-band radios available, because in the commercial world there isn't any call for them.

I don't know anything about base station rigs (because I'm out of space on my desk) or mobile rigs (because my car is a bicycle). I'm currently using two handhelds from Connect Systems in California, the CS750 and CS751 (\$239 each; <www.connectsystems.com>). I'll write up a review of these in a future issue of the SPARC, for now I'll just talk about how I use them.

DMR is most commonly used in the 440 MHz band. Here in New England, because of power restrictions in that band imposed by PAVE PAWS, a Cold War-era nuclear attack early warning system, DMR is more common on 2 meters. The BARC UHF repeater will be great for city dwellers (like yours truly) and visitors.

Just like a regular FM repeater, DMR repeaters use a frequency pair and (mostly) follow standard offsets. Access control, like PL/CTCSS or DCS in the FM world, is done using a "color code", which despite the name is a small integer.

Each repeater has two time slots, which allows two conversations to proceed on the same frequency simultaneously. The DMR protocol switches back and forth between the two slots every 30 milliseconds, and when it decodes the digital data that you're receiving, it glues it back together into a continuous stream of audio.

There will also be several different "talk groups" or channels defined on a repeater. Many of these are bridged into a network—for example, the New England channel retransmits on all the networked DMR repeaters in New England (and New Brunswick). Each channel is assigned to one of the two time slots; in the New England DMR-MARC network, New England, Region, Statewide, and Local channels live in the second time slot. Many radios can be programmed with a "receive group" so if you're listening to one channel you can also hear calls from other channels in the time slot.

Practically speaking, once you have your rig programmed, you don't have to worry too much about all this, in much the same way that you don't have to worry about PL once you get it set up right. All you have to do is switch to a channel like "Malden Region North", which selects the Region North (VT/NH/ME/MA/RI) channel on the Malden VHF machine. Then squeeze PTT and have a QSO.

The first step is to obtain a USER ID. Go to <www.dmr-marc.net>, click "Contact Us" and follow the link that says "I'd like a USER ID for my radio". Your ID, once assigned, will be published in the on-line database. I periodically load the latest New England data into my contact lists, so when Bill Barber, digital ID 3133001, transmits it appears on my display as "NE1B Bill".

Which brings us to programming, everyone's favorite VHF/UHF activity. The programming utilities tend to be written for commercial users than amateurs; for example, they don't know anything about band plans or standard offsets so you have to apply those yourself. Hams also have a lot more contacts and channels than commercial users, so tools for managing large lists aren't really there. I find myself exporting data to Excel, editing it, and then importing it an awful lot.

A hunk of configuration data, which is to say frequencies, channels, contact lists, and even the tones that get played when you turn your HT on, is called a "code plug". As DMR has become more popular, hams have begun to share code plugs, so you might not even have to do much programming aside from setting your own ID.

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What I did to get started was buy a CS701 from N1QD, who had it all programmed and even named the radio "NV1W Joe" and set up my ID. The alternative procedure, which I had to follow for UHF, was to set up radio information (name, ID), and then program in all the digital channels for a nearby repeater. I also set up a few analog repeaters and the national UHF FM call frequency. Finally I loaded in all the contacts for New England from the DMR-MARC website; I used a script written in Python, but you could also do the same thing with Excel. The Connect Systems programming software is close enough to Motorola's that you can use instructions that have been written up for that platform as a guide.

For testing, you can just listen on a promising channel (like Region North or MA statewide). The DMR machines are reasonably active and the community is helpful. Most repeaters will support one or more test channels such as Parrot (replays what it hears) or the NorCal audio test website. You can also go to <<http://www.nedecn.org>>, click "DMR Repeater" and then either the Last Heard or the Live Monitor pages and see whether you appear.

Finally, there are several networks of linked repeaters. In New England, the largest is the New England Digital Emergency Communications Network <<http://www.nedecn.org>> to which the BARC UHF machine will eventually be linked. There's another network called EWARN <<http://www.ewarn.club>> which aims to provide a range of repeaters using several digital modes. In Connecticut there's a large network of UHF repeaters maintained as part of Connecticut ARES.

More information on DMR can be found at <<http://www.dmr-marc.net>>. See in particular the "Amateur Radio Guide to DMR" which you can access via a link on the right side of the main page.

BARC Elections – Joe Chapman, NV1W

At the June business meeting, the following officers were elected for the 2015–2016 season:

President: Joe Harris, N1QD
Vice President: Mark Duff, KB1EKN
Secretary: Joe Chapman, NV1W
Treasurer: Jim Clogher, N1ICN

Thanks to Hank, K1QK, for being the Nominating Committee again this year.

Boxboro 2015 – Joe Harris, N1QD

Next month marks the return of the ARRL New England Convention, better known as Boxboro! The convention runs August 21–23 at the Holiday Inn in Boxborough, MA. The hotel is located at 242 Adams Place, near the intersections of Routes 111 and 495. This is the first convention in three years, as the 2014 convention was substituted with the ARRL Centennial show in Hartford. Boxboro has been home to informative panels, a great flea market, commercial vendors, and the W1A special event station. Highlights this year include keynotes from Jeff Jolie NM1Y at the Friday night DXCC dinner and Gordon West WB6NOA at the Saturday evening banquet. Tickets are available at <www.boxboro.org>.

BARC Meeting Calendar for 2015

Unless otherwise noted, all meetings will take place at the Brookline Police Headquarters; the map is later in this newsletter.

General Meetings

September 17 Thu 7:30 pm
October 15 Thu 7:30 pm
November 19 Thu 7:30 pm

VE Sessions

July 13 Mon 7:30 pm

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October 12 Mon 7:30 pm

Business Meetings

September 3 Thu 7:30 pm

December 3 Thu 7:30 pm

BARC Badges! -- Joe Chapman, NV1W

Rick, NV5A, the Sign Man of Baton Rouge, is now offering BARC badges. They're full-color plastic badges with our logo and your call sign and first name, at a basic price of \$11.50 for a badge with a safety pin fastener. Rick was a great help in designing a badge for us, and he does good work and ships promptly.

See our listing on the Sign Man's web site: <www.thesignman.com/clubs/boston.html> for details and fastener options.



BARC Net Preamble

The control operator for the BARC Net is Joe, W1JJF. He rarely misses a net, but when he does any ham can take up the position and run the net. To assist you in opening and closing the net The BARC Net Preamble is printed below. Do not be afraid to step up and take the challenge.

Is there any further business for the repeater before we begin the Boston Amateur Radio Club Net? This is <<YOUR CALL>>. Calling the Boston Amateur Radio Club Net. This is <<YOUR CALL>>, my name is <<YOUR NAME>> and I am located in <<YOUR TOWN>>. This net meets each Monday evening at 9 pm Eastern Time on the 145.230 Boston repeater, PL 88.5. This net is an informal round table discussion concerning matters of interest to the members of the Boston Amateur Radio Club and the Boston Amateur Radio community in general. When checking into the net, please say, "this is" and drop your carrier to check on doubling. Then give your call sign, name and location. All amateurs are welcome to join the net. Any check-in's for the Boston Amateur Radio Club Net please call now.

[Compile the list of the check-in's and proceed with the net.]

Is there any further business for the net before I close? Hearing nothing, this is <<YOUR CALL>> closing tonight's session of the Boston Amateur Radio Club Net. I would like to thank everyone who participated in the net and those who stood by while I ran the net. The Boston Amateur Radio Club Net will return next Monday evening at 9 pm Eastern Time. This is <<YOUR CALL>> returning the repeater to general amateur use. 73.



**The Clay Center Observatory
Welcomes BARC members**

www.claycenter.org

Public Astronomy Nights, Astronomy Day Events,
Amateur Radio Classes, Amateur Radio Youth Club,
Community and Adult Education, Weather Festival,
Science Lecture Series, Educational Outreach

20 Newton St., Brookline, near Larz Anderson Park



I See the Future

13 Jul	BARC VE Session
19 Jul	MIT Flea (Cambridge)
16 Aug	MIT Flea (Cambridge)
21–23 Aug	ARRL New England Convention (Boxboro)

▲ Note change from usual date and/or location

(Rp) = BARC Repeater likely to be used

As you might expect, there are many more events (public service, hamfests, flea markets, etc.) taking place—some only peripheral to ham radio. For information on these, covering much of the Northeast, the “Ham - Electronic Flea Market” and the “PSLIST” lists tell the story. Of course, if you know of an event that would be of interest to the readers, please let the Editor know.

Got a Story? Why Not Share It? -- Joe Chapman, NV1W

We are always looking for articles for the newsletter. I have reserved this space for your articles, tips, how-tos, or other ham related information. Send your submissions to the Editor, Joe, NV1W, at <nv1w@arrl.net>.

Articles for the August issue must be received by August 8.

Businesses Can Advertise Here

The SPARC accepts commercial advertisements. BARC encourages monthly promotion of your products and services which would be of interest to hundreds of our members and others interested in the Amateur Radio Service.

The rates for display advertising are:

1 col × 2 in. (business card)	\$15 per issue
1 col × 2 in. (business card)	\$75 per 6 consecutive months
1 col × 2 in. (business card)	\$125 per 12 consecutive months
1 col × 4 in. (1/2 column)	\$30 per issue
1 col × 9.5 in. (full column)	\$60 per issue

Originals of ads must be presented to the Editor in MS Word or .jpg format to print 1:1. Other composition will be at extra cost. We will be glad to quote other ad sizes and durations. Members are urged to seek prospective advertisers who are appropriate to our readers. For additional information, contact Joe Chapman, NV1W, at 617.267.6349 or <nv1w@arrl.net>; or Bob Salow, WA1IDA, at <wa1ida@arrl.net> or 508.650.9440.

Photo credits: p. 1: Elaine Chase, N1GTB; p. 2: Greg Bennett, KC1CIC.

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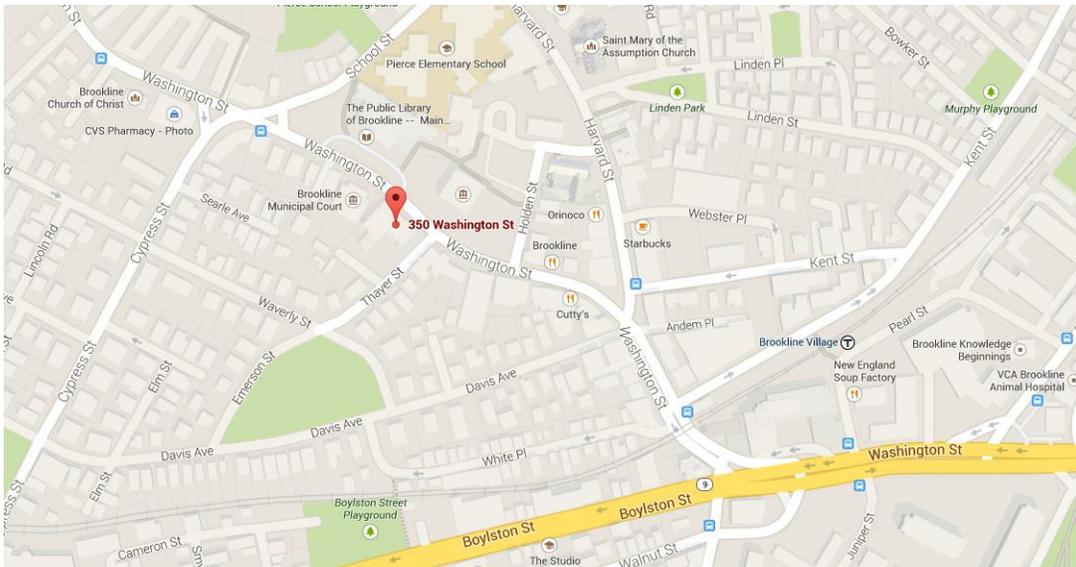
Quarterly Business Meetings -- Bob Salow, WA1DA

As the Bylaws require, BARC has Business meetings quarterly. Unless circumstances warrant, BARC Business meetings will be held on the first Thursdays of December, March, June, and September. The next such meeting will be on **3 September 2015** at the Brookline Police headquarters. All members are urged to attend and participate in club affairs. This is where club functions are discussed and decided, and your help is needed to guide us.

A short opening period of each General meeting will continue to be used to bring any immediate business matters to everyone's attention.

To provide continuity of club business between meetings we also have a virtual business meeting via an email list. Any member interested in the affairs of the club can ask to be on this virtual meeting list – just give your name, call and your email address to President Joe Harris, N1QD.

Area Map for the Brookline Police Headquarters, 350 Washington Street, Brookline MA



BARC Volunteer Exam Sessions

The Boston Amateur Radio Club schedule has been revised to suit the needs and interests of the applicants and examiners. **The 2014 exam session schedule is shown elsewhere in this newsletter issue.** Generally, sessions are held at Brookline Police Headquarters, 350 Washington St in the Community Room (across from the information desk). A map is shown above.

We give all exams (Technician, General, and Extra). *Testing is by reservation only.* Please bring the following with you:

- Your current license and a photocopy for the ARRL, if you are upgrading
- Any CSEs you are claiming, and a photocopy of them
- Valid ID (picture ID preferred)
- A pen and a calculator (if you want to)
- **\$15.00** (good for all the tests you take at that session, except for retests)

Note: Written tests can be taken sequentially at the same session for the same \$15 fee. The needed FCC forms will be provided.

To reserve a seat or for further information, contact:

Jim Clogher, N1ICN, <n1icn@arrrl.net> or Linda Blair, NA1I, <na1i@arrrl.net>.

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Your Personal Ad Could Have Been Here

Are you a depressed BARC member because you have a treasure you must turn to cash? Cheer up, Bunky! *The SPARC* will run your (non-business) ad for free. Of course, a 10% donation if you sell it will be cheerfully accepted. Just send your ad to the Editor, Joe Chapman, at <nv1w@arrl.net>.

BARC Officers and Staff

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The Boston Amateur Radio Club is a non-commercial association of persons interested in the Amateur Radio Service. The Club is organized for the promotion of interest in Amateur Radio communication and education, for the establishment of emergency communications in the event of disasters or other emergencies, for the advancement of the radio art and the public welfare, for the representation of the radio amateur in legislative and regulatory matters, and for the maintenance of collegiality and a high standard of conduct.

The Club is open to all persons interested in Amateur Radio without regard to race, color, religion, creed, national origin, gender, disability, or sexual preference. Our General and Business meeting locations are handicap accessible. Other meeting and activity locations may be handicap accessible by arrangement.

The Club is an ARRL-affiliated Special Service Club, and is a member of the Council of Eastern Massachusetts Amateur Radio Clubs (CEMARC) and the New England Spectrum Management Council (NESMC). The Club is also an associate member of the Courage HandiHams system.

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Greater Boston Net Directory

Daily 7 pm	MARI (Mass/Rhode Island CW Net) (NTS)	3.565
Daily 8 pm	Eastern Mass 2M Traffic Net (NTS)	145.230 (PL 88.5)
Daily 8 pm	Slow Speed CW Net	28.160
First Mon 8:30 pm	EMA Section ARES Net	146.610 and all MMRA links
Mon 9 pm	BARC Club Net	145.230 (PL 88.5)
Tue 8 pm	MMRA Club Net	146.610 and all MMRA links
Wed 8 pm	Wellesley Amateur Radio Society Net	147.030; 444.600 (PL 88.5)
Wed 9 pm	Waltham Wranglers Swap Net	146.640 (PL 136.5)
Fri 10 pm	Heavy Hitters Traffic Net (NTS)	MMRA-linked repeaters: 146.610, 146.670, 146.715, 146.820, and all 222 and 440 repeaters
Sat 9 am	Northeast SATERN Net	7.265
Sun 9:30 am	Yankee SSB Net	50.275
Sun 8 pm	Algonquin Amateur Radio Club Net	446.675 (PL 88.5)
Sun 8:30 pm	NSRA Net (with Newsline)	145.470 (PL 136.5)
Sun 9 pm	CAARAnet	145.130 (PL 107.2)

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