



The SPARC

Amateur Radio - Communicating Worldwide for A Century

Newsletter of the Boston Amateur Radio Club

Serving Hams in the Greater Boston Area

March 2016 - VOLUME 28, NUMBER 3

www.barc.org - w1bos@arrl.net



Message from the President – Joe Harris, N1QD



It's been a bit more than a week now since the club's new DMR repeater went on the air. Since then, it's been given a thorough workout by many area DMR users. I'm proud of the club for this accomplishment; it goes to show what a group of people can accomplish when they put their minds together! Thanks go out to MrMike W1RC, of NEAR-Fest, for offering BARC the fundraising challenge. Thanks are also due to all club members that donated to the December fundraiser: Brett Smith AB1RL, Blake Haskell K1BTH, Robert DiLibero K1OP, Bob Phinney K5TEC, Mark Duff KB1EKN, David Jones KB1ZOE, Stephen Jamison

KC1SJ, Jim Clogher N1ICN, Ralph Devlin N1LAH, Paul Katz N1LRT, Joe Harris N1QD, Joe Chapman NV1W, Robert Freed W1RJF, and Bill Moynihan WA1ZKH.

Joe Harris, N1QD

In this Issue of *The SPARC*

- BARC Breakfast
- April Public Service Events
- Repeater update and DMR Information
- Equipment Review: AspectSolar EnergyBar 250
- 2016 meeting and VE session dates



BARC General Meeting Thursday, March 17, 2016 at 7:30pm

The March General Meeting will be held on Thursday, March 17, at 7:30 p.m. at Eastern Bank in Jamaica Plain. A map for this meeting location, which will replace Brookline Police Headquarters in the months that facility is unavailable, can be found in this issue of *The SPARC*.

The March meeting will be an Anderson Powerpole workshop; see below for details.

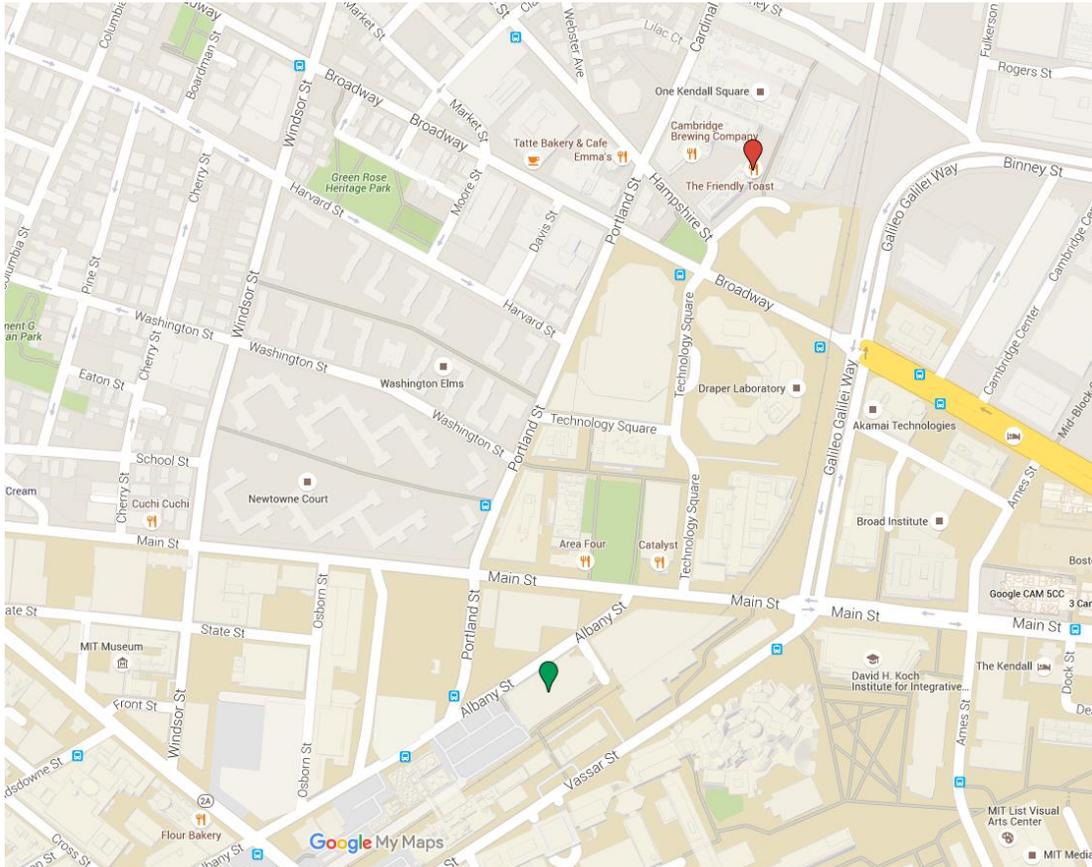
Repeaters: 145.230 (-) CTCSS 88.5

Simplex: 147.420

449.175 (-) DMR CC1

BARC Breakfast – Joe Harris, N1QD

The BARC Breakfast returns this spring! Starting on April 17th, the club will hold their monthly breakfast on the third Sunday of the month, coinciding with the MIT Flea Market. We will descend upon The Friendly Toast, located at 1 Kendall Square in Cambridge at 8 a.m. sharp. 1 Kendall Square is a group of buildings bordered by Hampshire St., Binney St., and Cardinal Medeiros Ave. The restaurant is a short walk from the flea site, and there is plenty of on-street parking. See the area map for details.



Red pin is the Friendly Toast. Green Pin is the Albany Street Garage, home of the MIT Flea Market.

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>.

Minutes of the March, 2016, Business Meeting – Mark Duff, KB1EKN

The quarterly business meeting of the Boston Amateur Radio Club was held on March 3, 2014 at the Eastern Bank Conference room, 687 Centre St., Jamaica Plain.

President Joe Harris called the meeting to order at 1940 hrs. Members present were the following: Joe Harris N1QD (President), Mark Duff KB1EKN (Vice President), Linda Blair NA1I, Jim Clogher N1ICN (Treasurer), Nathaniel Vishner KB1QHX, and Dan Dahlberg KC1AXR.

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The following was discussed:

The minutes of the December meeting were accepted by voice vote.

The treasurer's reports were read and accepted with the following balances: Checking Account, \$2,892.74; Savings/Repeater Account, \$1,120.00.

President Harris gave a brief update on upcoming public service events.

A general discussion took place in regard to future meetings:

- The March meeting to be held at the Eastern Bank Community Room and will consist of an Anderson Powerpole workshop.
- The April Meeting will feature a DMR Presentation at the Clay Center. If the weather permits, the Clay Center Amateur Radio Club will be attempting an Earth-Moon-Earth demonstration that evening.
- The May meeting returns to Brookline Police HQ and will feature Brett AB1RL giving a public service presentation.

A discussion was held regarding the upcoming election of officers to be held in June.

It was decided that there will be a BARC breakfast on Sunday, April 17 at 0800, to coincide with the MIT flea market. The flea is located a short walk from the restaurant making it convenient for members to attend both the breakfast and the flea market.

President Harris reported that \$1,965.00 was raised in donations towards the purchase of the UHF DMR Repeater. This included a \$500.00 donation from the Nearfest Organization.

The NEAR-Fest Organization has requested a letter from BARC confirming that we received their donation and that the funds were spent as requested.

A discussion took place on a possible weekly net on the DMR Repeater.

It was voted to grant to Dave KM3T a two year membership in recognition of his donation of equipment and time assistance necessary for the installation and operation of the club's DMR repeater.

There was a general discussion for the benefit of the members present on DMR talk groups.

Pres. Harris and V.P. Duff led a general discussion on the status of the 145.230 repeater which is still not functioning as it should. Both will continue to work on it as time permits.

It was agreed to hold Field Day at the Bare Cove Fire Museum in Hingham as we have done for the last several years.

It was voted to purchase a 6m filter to be used at Field Day and as needed. With the purchase of the 6m filter, the club will own filters for 6, 10, 15, 20, 40, and 80.

President Harris has been contacted by a club member interested in helping to update and maintain the website. Initial discussions are underway.

The meeting adjourned at 2140 hrs.

Equipment Review: AspectSolar EnergyBar 250 – Joe Chapman, NV1W

I have been putting together a portable station with the idea of activating some local sites for National Parks on the Air. This year-long event has been organized by the ARRL to mark the centennial of the National Park system; hams are invited to set up a portable station at their favorite park or historical site and operate special-event style. Many of the NPOTA activations I've heard so far this year have generated healthy pileups. More information on the NPOTA program can be found at <https://npota.arrl.org/>.

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While I normally operate QRP, it seems polite to use a little more juice for this event, so I'm hoping to use at least 50 watts. Either a generator or a power supply running off mains power are impractical for most sites, so that means a battery of some sort. Since I don't have a car or a lot of space at home, an automotive battery is out. In a recent issue of *QST* I found a note from a ham with similar requirements that mentioned the EnergyBar 250.



The specs: it's an LiFePO4 (Lithium Iron Phosphate) battery pack providing 20 aH at 12.8 volts. AspectSolar claims these batteries are lighter, safer, and longer-lasting than other technologies and that they will hold a charge rather than bleed off if you forget to attend to them until your power goes out. It's about the size of a

flute case and weighs 8 lbs, right on the border between portable and luggable. The EnergyBar is a bright Fluke orange—I don't know why Fluke hasn't sued them yet, but it will coordinate nicely with your multimeter and telephone buttset.

AspectSolar says the thing is reasonably water- and weather-proof and it comes with a neoprene zipper case. Also in the package is an AC charger.

Output is, ugh, an automotive cigarette lighter socket. There are also a few USB sockets and a 120/240 volt inverter output with a separate power switch. I have a cigarette-lighter-to-Anderson powerpole adapter to convert the output to something more reasonable (some other models do have Powerpole outputs).

No complaints so far with charging the battery or running a KX3 and KXPA100 amplifier cranked up about half way, and the power capacity seems to be as advertised. The whole setup plus a Buddipole will fit on a bicycle. I'm considering pairing it with an MFJ-4403 voltage conditioner (basically a four farad capacitor that should allow me to run higher power on modes that have a lower duty-cycle).

Other accessories include a fairly expensive 60 watt solar panel which charges the battery in 7–10 hours, which might be enough to stretch your operating time into most of a day, and an automotive cigarette lighter charger.

Less than a month after I bought mine, the price went up considerably! I'm not sure I'd have bought one at the current price, but there you are.

EnergyBar 250 LiFePO4 battery pack. AspectSolar, 1724 Majestic Drive #103, Lafayette, CO 80026, 1-877-717-7778, <http://www.aspectsolar.com>. \$460.

March General Meeting – Joe Harris, N1QD

The Boston Amateur Radio Club's March general meeting is a social gathering and will feature an Anderson Powerpole workshop. Need to learn how to install Powerpoles? Bring your cables and connectors; the club will be bringing in the Powerpole crimping tool and the know-how! Join us Thursday March 17 at 7:30pm at the Eastern Bank community room, 687 Centre St., Jamaica Plain.

April Public Service Events – Brett Smith, AB1RL

April is always the big kick-off month for BARC's public service season. There are four events you can help with:

- MS Walk Boston: Sunday, April 3
- BAA 5K: Saturday, April 16 (volunteer registration closed on February 9)
- Boston Marathon: Monday, April 18 (volunteer registration closed on February 9)
- Run of the Charles: Sunday, April 24

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If you're interested in helping at any of the club's public service events, or have any questions, please contact me at ab1rl@arrl.net.

New Members! – *Joe Chapman, NV1W*

A belated welcome to Scott Gaudet, KC1EXS, of Weymouth. Scott joined the club at the holiday party in January.

A friendly reminder to everyone who hasn't yet renewed for 2016: the grace period for renewals ends on March 31st.

Repeater Update – *Joe Harris, N1QD*

On February 26, Joe N1QD and Mark KB1EKN were joined by Dave KM3T for a visit to the BARC repeater site. On the agenda was a duplexer swap for 145.230 and the installation of the new 449.175 DMR repeater. All work was completed in a few hours, and the team was finished by early afternoon.

The 145.230 repeater is still suffering from desense on weak signals, so further investigation is required. Signs point to either the feedline or the antenna.

The 449.175 DMR repeater is on the air! This machine is linked to the New England TRBO network. More details are available in this issue of the SPARC!

Boston's DMR Gateway to the World – *Joe Harris, N1QD*

The fruits of December's fundraiser have finally paid off! The club's new Digital Mobile Radio (DMR) repeater is now on the air on 449.175(-), CC1. TS1 and TS2 are linked to New England Digital Emergency Communications Network, with TG paths for local, regional, national, and worldwide communications.

Wait, what's all that alphabet soup? CC? TS? TG? Here are some important details for using the new DMR machine:

Color Code (CC): Color Code is similar to PL on an analog FM repeater. There are 16 codes available, numbered 0–15. If your radio is not programmed with the correct CC, you will not be able to access the repeater, nor will you hear any audio! The W1BOS repeater uses CC1.

Time Slot (TS): DMR uses Time Division Multiple Access (TDMA), similar to GSM cell phones. This means that a single repeater allows two channels to be accessed, essentially at the same time. In our network, TS1 is typically where wide-area communications are held, with regional and local chatter living on TS2.

Talk Group (TG): Time Slots are divided into Talk Groups. Think of a Talk Group as a room where you are having a conversation. The TG you pick will determine how large the room is. For example, you could use the Local TG and have a QSO with another user on our repeater. Next is Massachusetts Statewide, which will also key up every other DMR repeater on our network located in Massachusetts. As of this writing, that includes repeaters in Malden, Southborough, Marblehead, Reading, Chelmsford, Eastham, and Northampton. Both of these TGs are on TS2. A commonly used TS1 Talk Group is North America, which will key up repeaters across the United States and Canada. Talk Groups are programmed by number. For example, Local is TG9.

User ID: Talk groups are not the only things identified by number. Individual users also have ID numbers. Before using the DMR network, you must get a User ID to program into your radio. Users IDs are available at <http://dmr-marc.net/contact.html>, just fill out the form and the ID team will provide you with a number shortly. That number is used to identify a user on the network. It is also displayed on other radios when you are transmitting. If you want to have names and call signs show up on the screen instead, you can program your friends' user ID numbers into your radio's Contact List.

Here are the basic Talk Groups available on the W1BOS 449.175 DMR repeater:

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Talk Group	Number	Time Slot	Availability
Local	9	2	FT
MA Statewide	3125	2	FT
Region North (MA-NH-ME-VT)	8	2	FT
New England Wide	3181	2	FT
Northeast US	3172	1	FT
North America	3	1	FT
Worldwide English	13	1	PTT
Worldwide	1	1	PTT

Full-Time (FT) Talk Groups are “always on”, whereas Push-To-Talk (PTT) Talk Groups are only active for a few minutes after a user has keyed them up locally.

This is a brief overview of the system and the network our repeater is connected to. More details are available at <http://www.nedecn.org> and <http://www.dmr-marc.net>.

For a more in-depth read on DMR, John W2XAB has published the excellent Amateur Radio Guide to Digital Mobile Radio, available at http://www.trbo.org/docs/Amateur_Radio_Guide_to_DMR.pdf.

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: <http://www.thesignman.com/clubs/boston.html> for details and fastener options.



BARC Meeting Calendar for 2015 and 2016

Unless otherwise noted, all meetings will take place at the Brookline Police Headquarters. A map for the new Eastern Bank substitute meeting location can be found below.

General Meetings

- March 17 2016 Thu 7:30 pm *(at Eastern Bank, Jamaica Plain)*
- April 21 2016 Thu 7:30 pm *(at Clay Center, Brookline)*
- May 19 2016 Thu 7:30 pm
- June 16 2016 Thu 7:30 pm — Elections
- September 15 2016 Thu 7:30 pm
- October 20 2016 Thu 7:30 pm
- November 17 2016 Thu 7:30 pm

VE Sessions

- April 11 2016 Mon 7:45 pm *(note time change)*
- July 11 2016 Mon 7:30 pm
- October 10 2016 Mon 7:30 pm

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Business Meetings

June 2	2016	Thu	7:30 pm
September 1	2016	Thu	7:30 pm
December 1	2016	Thu	7:30 pm

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.



I See the Future

- 13 Mar North American Sprint, RTTY
- 17 Mar ▲ BARC General Meeting**, Eastern Bank, Jamaica Plain
- 3 Apr MS Walk Boston (Rp)
- 11 Apr **▲ BARC VE Session**, Brookline Police HQ, 7:45 p.m.
- 16 Apr BAA 5K (Rp)
- 17 Apr BARC Breakfast, The Friendly Toast, Cambridge, 8:00 a.m.**
- 17 Apr ARRL Rookie Roundup, SSB
- 17 Apr Flea at MIT, Cambridge
- 18 Apr Boston Marathon (Rp)
- 21 Apr ▲ BARC General Meeting**, Clay Center, Brookline
- 24 Apr Run of the Charles (Rp)

▲ 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”

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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.

See Yourself in Print! (well, PDF) – Joe Chapman, NV1W

We are always looking for articles for the newsletter. I have reserved this space for your articles, reviews, tips, how-tos, hints, kinks, photos, schematics, or other ham related information. Photos of you operating or your shack are especially welcome! Send your submissions to the Editor, Joe, NV1W, at nv1w@arrl.net.

Articles for the April issue must be received by April 9.



**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



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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 x 2 in. (business card)	\$15 per issue
1 col x 2 in. (business card)	\$75 per 6 consecutive months
1 col x 2 in. (business card)	\$125 per 12 consecutive months
1 col x 4 in. (½ column)	\$30 per issue
1 col x 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.

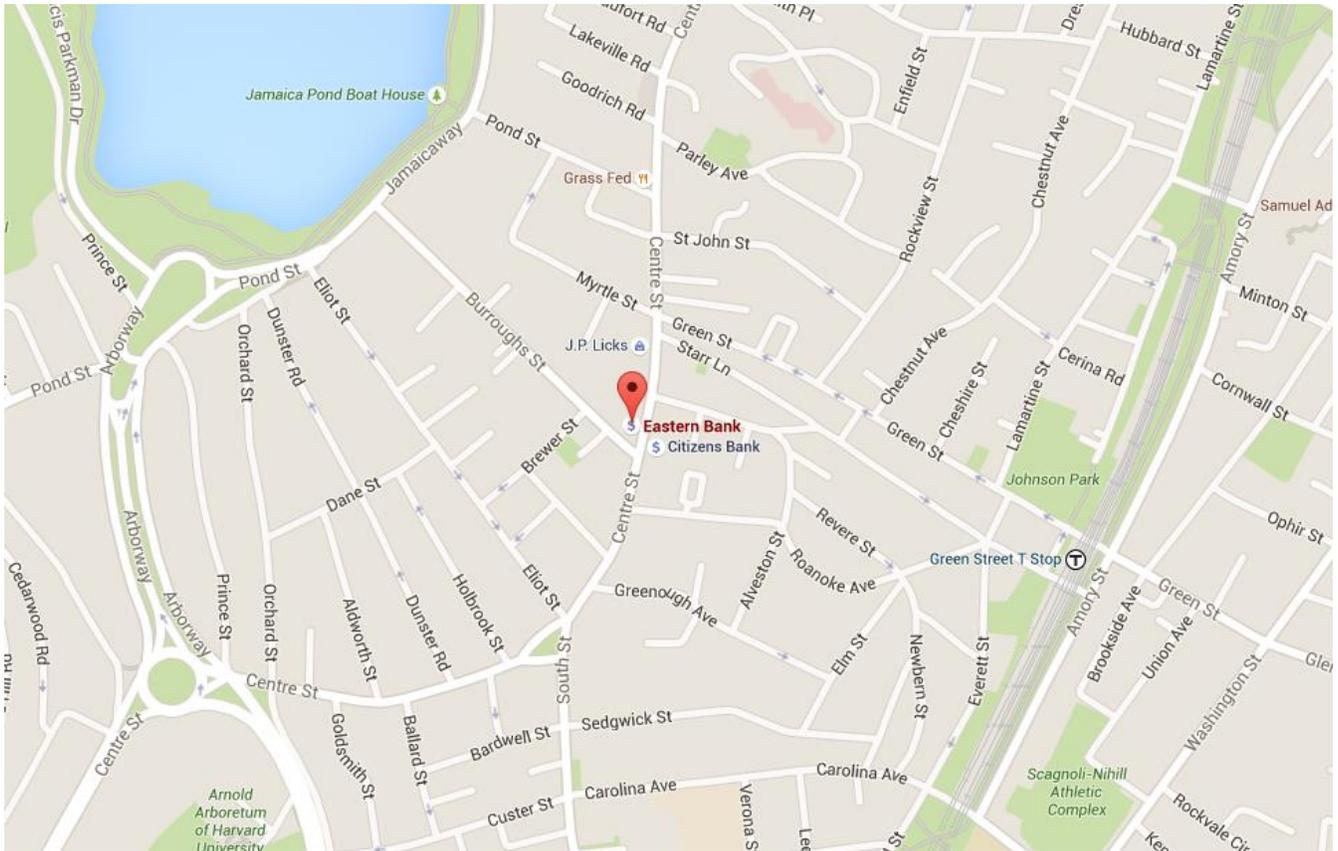
Quarterly Business Meetings – Bob Salow, WA1IDA

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 **2 June 2016** at 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 Eastern Bank, 687 Centre Street, Jamaica Plain 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 2016 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).

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 CSCEs 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@arrl.net, or Linda Blair, NA1I, na1i@arrl.net.

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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Newsletter Editor: Joe Chapman, NV1W
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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)
Mon Wed 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
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)
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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Simplex: 147.420

449.175 (-) DMR CC1