



The SPARC

Amateur Radio - Communicating Worldwide for A Century

Newsletter of the Boston Amateur Radio Club

Serving Hams in the Greater Boston Area

September 2016 - VOLUME 28, NUMBER 9

www.barc.org - w1bos@arrl.net



Message from the President – Joe Harris, N1QD



The Boston Amateur Radio Club has joined Facebook! BARC is adding social media as another method of outreach and communications, both to members and potential members! The BARC Facebook page is located at www.facebook.com/w1bos and will be used as another means to foster dialog in the local ham radio community. In addition to posting meeting notices and general club information, the site can be used for things like sharing event photos. I have enlisted social media veteran Geri Duff KB1ISG to help administer the site. Thank you Geri for your assistance!

If you have suggestions for information to share on our Facebook page, please contact Geri or me.

Joe Harris, N1QD

In this Issue of *The SPARC*

- An introduction to JT-65
- Review: the TPE LiFePO4 Battery
- New England DMR Picnic
- Bruce Alexander, KA1IG (SK)
- 2016 meeting and VE session dates



BARC General Meeting

Thursday, September 15, 2016 at 7:45 pm

The next General Meeting will be held on Thursday, September 15, at 7:45 pm (*note time change*) in the Community Room at Brookline Police Headquarters.

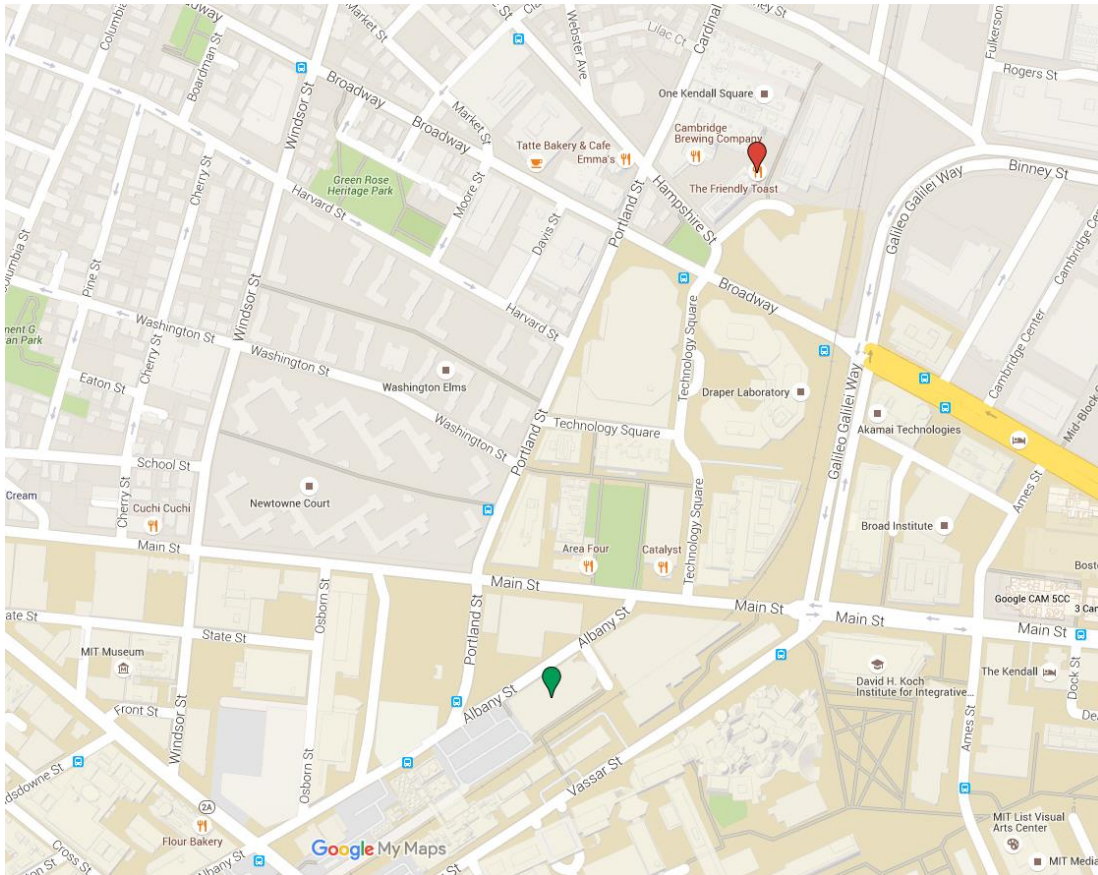
Repeaters: 145.230 (-) CTCSS 88.5

Simplex: 147.420

449.175 (-) DMR CC1

BARC Breakfast – Joe Harris, N1QD

BARC holds its monthly breakfast on the third Sunday of the month, coinciding with the MIT Flea Market. We descend upon The Friendly Toast, located at 1 Kendall Square in Cambridge at 8AM sharp. This month's breakfast will be held on the 18th. 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>.

An Introduction to JT-65 – Greg Bennett, KC1CIC

Since getting back in to radio what is new to me are all of the HF digital modes. They simply didn't exist in the world without home computers. Now we have RTTY, PSK-31, Olivia and many others to work with. One of my favorite digital modes and the one different from all the rest is JT-65.

JT-65 is known as a "weak signal" digital mode. It is a mode that was adapted from EME or Earth-Moon-Earth signal work by Joe Taylor, K1JT, in 2003. With JT-65 you can receive signals that are many decibels below the noise floor. I have sat in

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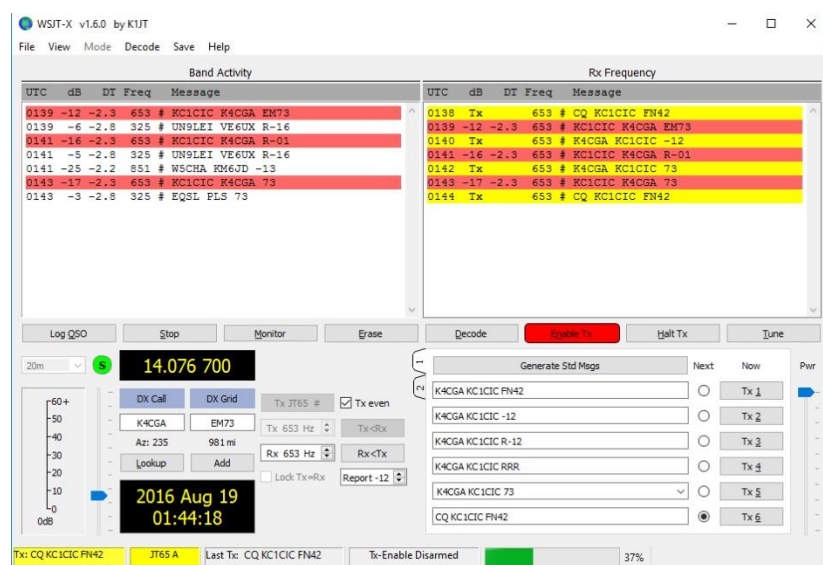
449.175 (-) DMR CC1

front of my radio on several occasions “talking” with a station that has a signal level that doesn’t even register on the S-meter!

The standard JT-65 QSO consists of a simple exchange of callsigns, signal reports, and locations. There is no “chatting” involved. But where those signals come from can be pretty impressive. Like so many things in life there are trade-offs. JT-65 as a protocol is very limited in the number of characters it can handle. But, the number of characters includes room for a lot of error control so the signal gets through.

JT-65 is a fantastic mode for QRP (low power) stations. Output power is typically anywhere from 1 to 10 watts. Stations that use 25 or 30 watts are considered “high power” stations and actually interrupt other stations using lower power. JT-65 is also great for those less than perfect antennas we like to string up.

There are two very important aspects of JT-65 to be aware of. When you transmit with JT-65 the transmission lasts a full 47 seconds at the power level you have set. You need to make sure you don’t overdrive or overheat your transmitter. The second consideration is your computer clock. It must be synchronized with an external time source such as NTP, Network Time Protocol. All Windows computers have the ability to do that. You don’t have to maintain an Internet connection while using JT-65 but you must sync your clock prior to using the software. Being within 0.5 seconds is the goal.



Why do I like JT-65? For one, once you are set up it is very easy to operate. The other is that contacts are frequent. I also like the sound of the signal. It has a musical quality to it that is enjoyable to listen to. The LNR Trail Friendly antenna that I reviewed in an earlier article works great for this mode.

The software to use is free. The two most popular packages are WSTJ-x and JT65-HF. I use WSJT-x simply because I found that software first. Many find JT65-HF an easier program to use. As always there are tradeoffs. The picture shows me having a QSO with K4CGA in Georgia. So give JT-65 a try—I think you will enjoy it!

To learn more about JT-65 go to this link: <http://physics.princeton.edu/pulsar/k1jt/>.

To download WSJT-x go here: <http://physics.princeton.edu/pulsar/k1jt/wsjsx.html>.

To download JT65-HF go here: <http://jt65-hf.com/downloads/>.

New England DMR Picnic – Joe Harris, N1QD

On September 17, Jim AE1C and Jim KX1M will be hosting the 3rd annual DMR picnic at the Hopkinton State Park. For the past two years, DMR enthusiasts have traveled from across New England to this picnic for an eyeball QSO, or for some hands-on assistance with codeplug programming. KX1M has been gathering a food list. Contact him at kx1m@arrl.net for more details.

BARC September General Meeting – Joe Harris, N1QD

BARC's return from summer vacation happens on September 15th at 7:45pm! We will be meeting in the Community Room at the Brookline Police HQ, 350 Washington St, Brookline.

This is a purely social meeting with no featured speaker. Members are encouraged to bring new gear for show and tell, or a ham radio related question that you want to bounce off the club!

TPE LiFePO4 Battery – Greg Bennett, KC1CIC



When we talk about running our rigs on battery power we usually think of a typical car or marine battery. We also usually think in terms of emergency power so the bigger the better. These batteries are quite capable of running our rigs for many hours, days even depending on what you buy and how much you are willing to spend.

But, what if you want to operate outdoors for just an hour or two from a hill or other special location? Hauling a battery that weighs 40 pounds or more can really take the fun out of it. That was the dilemma that sent me searching for something more suitable.

What I found was a TPE Lithium Phosphate Motorcycle battery. The battery is available in ranges from 4–20Ah. I purchased the 20Ah to be used with my FT-991. At just under 4 pounds this little battery offers impressive performance. Its operating tempura range is 14–131 degrees F. The life expectation of the battery is 5 to 8 years which is nearly double the life of a lead-acid battery. I shot the picture using a computer mouse as a reference to show you how small the battery is.

What is the difference between Lithium and Lithium Phosphate batteries? Cost, materials, and size are the key areas. Lithium Phosphate batteries contain more energy in a given size because of the materials used but, at an increased cost. Also, Lithium Phosphate batteries can be manufactured in a far wider range of sizes and shapes than a Lithium Ion battery can.

I have used the TPE battery to power my FT-991 at 100 watts USB Phone and it did not struggle to keep up. Of course on battery it is a good idea to operate less than that. For a more realistic test I set the radio to 25 watts and used the digital mode JT-65 to stress-test the battery. With JT-65 you transmit for 48 seconds and listen for 72 seconds. So this would test the battery under a fairly heavy load. After three tests the battery was averaging 100 minutes before the radio powered off. To be conservative say 90 minutes or one hour and 30 minutes of intense operating. Using lower power and CW or voice you could expect at least 2 hours of operating time. That meets my expectations.



To charge the battery you need a battery charger. The manufacturer states that you can use a regular charger. I bought one specific to the task. It is microprocessor controlled and silent.

So, if you are looking for a lightweight power source to operate your radio, or QRP rig I could highly recommend the TPE LiFePO4 Battery. You can refer to the links below for more information on these products.

TPE Lithium Motorcycle Battery. Available from Amazon at <https://www.amazon.com/TPE-Lithium-Motorcycle-Battery-YTX20L-BS/dp/B01FS4IKUE>. \$149.99.

BC1204LFP LIFEPO4 VMAX TANKS 12V 3.3 Amp 4-Stage Smart Lithium Iron Phosphate Battery Charger and Maintainer. Available from Amazon at <https://www.amazon.com/dp/B01DS57358>. \$31.99.

Minutes from the September, 2016 Business Meeting – Joe Chapman, NV1W

The Boston Amateur Radio Club held a quarterly business meeting on Thursday, September 1 at 7:30 pm at Brookline Police Headquarters in Brookline. Attendees: KB1EKN, KB1ISG, KC1AXR, KO4W, N1ICN, N1QD, NA1I, NV1W, WA1IDA. The meeting was called to order by President Joe Harris, N1QD, at 7:40 pm.

The minutes of the June, 2016, Business Meeting were approved.

Officer reports:

- Joe, N1QD (President) reported that he has been looking for speakers for meetings. He was unable to make the summer's ARRL New England Division Cabinet Meeting due to family obligations.
- Jim, N1ICN (Treasurer) reported that we have \$1100.59 in the savings account (repeater fund) and \$2265.86 in the checking account. This does not include most of the Field Day expenses.
- Joe, NV1W (Secretary) reported that we picked up two renewals over the summer as well as one new member who joined at the June VE session.

Committee reports:

- Bob, WA1IDA (for the Public Service Committee), noted that the last event was the Finish at the Fifty in July, and that AB1RL felt a sufficient number of volunteers had signed up. The next event will be the BAA Half Marathon in October.
- Mark, KB1EKN (Vice President and Repeater Committee) reported on a recent trip to work on the VHF repeater with Dave Capone and his son, who have a commercial tower business. Three problems with the VHF antenna were found and fixed. There are still problems on receive. We are currently using a temporary 4-can duplexer while the 6-can duplexer is in the shop being retuned. A discussion was held on other options we might explore.

N1QD asked whether we should attempt to contact users of the UHF DMR repeater who are not members of the club to ask whether they might wish to join or otherwise support the repeater. A motion to (a) have N1QD and NV1W write a friendly letter to these hams and (b) offer them membership through the end of 2017 at the current single-year rate of \$25/\$12.50 was made and passed.

N1QD noted that Field Day statistics have been published in the SPARC, and that we made a good number of QSOs despite the poor band conditions on Saturday. KB1EKN reported that we spent \$635 on Field Day, which includes the purchase of a 6 meter filter for \$85. This includes \$360 for food, \$90 for Field Day pins, and an anticipated \$100 donation to the Bare Cove Fire Museum. A motion to make a \$100 donation to the Bare Cove Fire Museum as a thank-you for hosting us was made and approved. It was decided to table discussion about no longer purchasing Field Day pins until the Spring.

Blake, K1BTH, has already been in contact with the Stockyard concerning the Holiday Party. It was noted that the majority of attendees at last year's party preferred the January date. A straw poll will be taken at the September General Meeting.

A discussion was held about possible speakers for upcoming General Meetings.

Discussions were held concerning the website and social media. N1QD has set up a Facebook page for the club, and will grab the @W1BOS Twitter handle.

The meeting was adjourned at 9:27 pm.

The Bruce I Knew – Bob Salow, WA1IDA

I had known Bruce Alexander, KA1IG, ex-WA1GQE, for over 30 years. He had been blind almost since birth, but he grew into a superbly able adult. No disability, only ability. He had the interest and enthusiasm to drive a car. Not seeing where he was going did limit his trips—just stay out of his way (in an empty parking lot).

I met him in the Red Cross radio room controlling a net, his guide dog at his feet. He knew every street in the Boston area and could direct hams wherever they needed to be posted. Ham public service was his specialty. He made arrangements with the served agency, coordinated and assigned the hams, and ran Net Control to make it happen.

Bruce was a friend to many. Sometimes abrasive, he had managerial skills that got others to do things to his satisfaction. He was a business man, but took an interest in community affairs to complement his own needs and interests. He was the Chair of the North Attleborough Commission on Disability, a former member of the Board of Directors of the ARC of Bristol County, Chair of the Attleboro/Taunton area GATRA Consumer Advisory Committee, and a member of the Sturdy Memorial Hospital Amateur Radio Club. Perhaps his greatest failing was that he was an ardent Yankees fan.

He joined the American Red Cross Amateur Radio Club (ARCARC), the earlier incarnation of the Boston Amateur Radio Club (BARC), in its formative years. Soon after, he moved to North Attleborough and joined the Sturdy Memorial Hospital ARC. For the many years since, he continued to listen to the Boston repeater.

Bruce was schooled at the Perkins School in Watertown where he learned not only life skills, but also ham radio. He graduated from Western New England University. Bruce crossed the street and traveled the T with confidence, but occasionally his guide dog had to block his path if danger was near.

He died in early August at age 65, and was buried in his hometown of West Stockbridge. He leaves his wife and three children. Many of the older hams in BARC will certainly miss him.

Call for Volunteer Examiners – The BARC VE Team

BARC could use some more Volunteer Examiners (VEs) for our exam sessions. Recently we had to scramble again to get the required three VEs for an exam session. If any unforeseen situation arises and a VE is not able to make a session we would be forced to cancel the test.

There are some BARC members who are qualified VEs that have not been participating in the testing. We urge these VEs to become active. If you can spare one night every couple of months please come to a session.

We can also surely use additional VEs. The test procedure for qualification is simple. Materials are available from the ARRL and the examination is an open book test. Hams with General and Amateur Extra class licenses are eligible to become VEs, though only Extras can administer tests for General and Amateur Extra licenses. If you would like to become a VE and help with testing please contact Linda, NA1I, or Jim, N1ICN.

BARC Meeting Calendar for 2016

Unless otherwise noted, all meetings will take place at the Brookline Police Headquarters.

General Meetings

September 15	2016	Thu	7:45 pm
October 20	2016	Thu	7:30 pm
November 17	2016	Thu	7:30 pm

VE Sessions

October 10	2016	Mon	7:30 pm
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Business Meetings

December 1 2016 Thu 7:30 pm

BARC Net Preamble

The control operator for the BARC Net is Joe, W1JF. 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

9–11 September	ARRL New England Convention, Boxboro
9 September	SKYWARN Training (at the Boxboro Convention), 1–4 pm
10–12 September	ARRL September VHF Contest
11 September	North American Sprint, CW
15 September	BARC General Meeting, Brookline Police Headquarters, Brookline, 7:45 pm ▲
17 September	New England DMR Picnic, Hopkinton
17–18 September	New Hampshire QSO Party
18 September	BARC Breakfast, The Friendly Toast, Cambridge, 8:00 am
18 September	Flea at MIT, Cambridge
18 September	North American Sprint, RTTY
24–25 September	Maine QSO Party
9 October	BAA Half Marathon (Rp)
10 October	BARC VE Session, Brookline Police Headquarters, Brookline, 7:30 pm
20 October	BARC General Meeting, Brookline Police Headquarters, Brookline, 7:30 pm

▲ **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”

145.230 (-) CTCSS 88.5

Simplex: 147.420

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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@arri.net.

Thanks to Greg, KC1CIC, and Bob, WA1IDA, for their contributions this month. Articles for the October issue must be received by October 8.



**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



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. (½ 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@arri.net.

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 **1 December 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.

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.



KC1CIC and the Beam of the Woods.



All ready in case six meters really heats up.

BARC Officers and Staff

President: Joe Harris, N1QD

781.844.8684; n1qd@n1qd.org

Vice President: Mark Duff, KB1EKN

781.749.7664; emgmt@comcast.net

Secretary: Joe Chapman, NV1W

617.267.6349; nv1w@arrl.net

Treasurer: Jim Clogher, N1ICN,

617.908.5019; n1icn@arrl.net

Volunteer Exams:

Jim Clogher, N1ICN, n1icn@arrl.net

Linda Blair, NA1I, na1i@arrl.net

Public Service Coordinator: Brett Smith, AB1RL

859.466.5915; ab1rl@arrl.net

Public Information Officer:

Geri Duff, KB1ISG

781.749.7664; geriduff52@juno.com

Membership Services: Linda Blair, NA1I

617.500.4406; na1i@arrl.net

Newsletter Editor: Joe Chapman, NV1W

617.267.6349; nv1w@arrl.net

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 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)