The Minuteman Repeater Association

A non-profit organization providing communications infrastructure and volunteers for community and emergency events.

The Minuteman

Volume 47, Number 1 September 2017

There is no *Membership Meeting* planned for this month

KG1H & N1NVK in the MMRA Room

Winners of the MMRA Raffle:

IC-2730A	W1DYJ	Larry
FT-65R	KA1U	Steve
Repeater Directory	K1WVU	Bob

Results of Annual Meeting Vote:

President:	Dave, KG1H
Vice-President:	John, WA1MDD
Treasurer:	Kevin, K1KWP
Secretary:	John, W1JMC
Clerk:	open (YOU could do this…)
Director >> 2019:	Bob, K1IW
Director >> 2019:	Roger, WA1NVC

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About the Minuteman Repeater Association

The Minuteman Repeater Association (MMRA) is dedicated to Amateur Radio and public service. The MMRA maintains a large system of repeaters in Eastern Massachusetts.

The MMRA meets (usually) on the 3rd Wednesday of each month from September to June. Meeting times, locations, and talk-in frequency vary and are announced in this newsletter and on weekly nets. Meetings are open to all interested parties. Guest speakers and programs of general interest occur in September, November, January, March, and May. The intervening meetings are also open to all members and are for general business.

The Minuteman newsletter is Emailed one week before each general interest meeting. Members are encouraged to submit articles which can be sent to the editor at newsletter@mmra.org. The deadline for articles is the last Friday of the month preceding the meeting.

Each Tuesday evening at 8PM the MMRA links most of the repeaters for an open net. The topic is "Technical Information and Other Stuff". Join us!

Membership in the MMRA is open to all radio amateurs. Annual dues are $25 per individual or $35 per family. See our website for details.

Email to the club leadership should be sent to contact@mmra.org. The MMRA maintains a web site at: http://www.mmra.org/

An email distribution list for club members named "MMRA" is at: http://groups.yahoo.com/

You can also follow us on twitter @mmraham and like us on Facebook: https://www.facebook.com/mmraham.

MMRA QRM Policy

MMRA members and all other operators are strongly encouraged to report repeater activity that does not abide by Part 97 rules or accepted amateur radio practice to the board of directors at contact@mmra.org or via other means.

The most effective way (and probably the only effective way) to deal with an individual causing QRM is to NOT engage that individual on the air. Please include the time and date of any incident. Measures are being taken to make audio recordings of repeater activity.

Repeater and Frequency Information

Band	XMTR Location	Freq	PL	Call	Linking To Hub 1	Linking To Hub 2
MMRA Voice Repeaters						
10m	Marlboro East	29.680	131.8	W1MRA	PTL	PTL
6m	Marlboro East	53.810	71.9	W1BRI	PTL	PTL
	Rmt receive Marlboro West: PL=100					
	Rmt receive Hopkinton: PL=173.8					
2m	Brookline	145.160	na	K1MRA	D-Star	
	Belmont	145.430	146.2	KC1CLA	PTL	FTL: DARI
	Mendon	146.610		K1KWP	FTL	PTL
	Quincy	146.670		W1BRI	PTL	PTL
	North Reading	146.715		KC1US	PTL	PTL
	Weston	146.790		N1BE	PTL	PTL
	Boston	146.820		K1BOS	FTL	PTL
	Remote receive in Brookline Boston: PL = 127.3					
	Marlborough	147.270	146.2	W1MRA	PTL	PTL
1¼m	Hopkinton	223.940	103.5	KB1LOY	PTL	FTL
	Quincy	224.400		N1KUG	PTL	FTL
	Weston	224.700		N1NOM	PTL	FTL
	Marlborough	224.880		W1MRA	PTL	FTL
70cm	Lowell	442.250	88.5	K1LVF	FTL	PTL: 446.775
	Weston *	442.700		KG1H	Network Hub 2 (PTL to Hub 1)	
	North Reading	446.775		W1DYJ	FTL	PTL
	Marlborough	448.225	na	W1MRA	D-Star	
	Marlborough	449.575	88.5	W1BRI	PTL	PTL
	Marlborough *	449.925		W1MRA	Network Hub 1	
33cm	Boston *	927.0625	D244	K1RJZ	PTL	PTL
	Marlborough *	927.700		W1MRA	PTL	PTL
	PL out = 131.8					
Marlborough		144.390	none	W1MRA	APRS Digipeater	
???		145.630	146.2	W1MRA	Fox Box	
*Internet	HUB1– 449.925: IRLP node 4133 / Echolink node 4133					
	HUB2 – 442.700: IRLP node 4136; Connected to 220 Reflector 9124 on Tuesdays					
	927.0625: IRLP 4977		Normally linked to the NE900 Reflector, 9125. Linked to MMRA via IRLP for the TIAOS net. Normally linked			
	927.700: IRLP 4978					

Notes: FTL = Full Time Linked (or default state) PTL = Part Time Linked (on schedule or demand)

MMRA Work Parties at Quincy and North Reading
Bob DeMattia ~ K1IW

Since last May, MMRA held two work parties - one in Quincy and the other in North Reading. In Quincy, we repaired the damaged entryway door and installed the cellular-radio based internet connection. In North Reading, we reinstalled the 2m antenna a bit higher, shored up the UHF link antenna, and also installed the cellular-radio based internet connections. We also replaced the failed link radio and upgraded the controller to an SCOM 7330

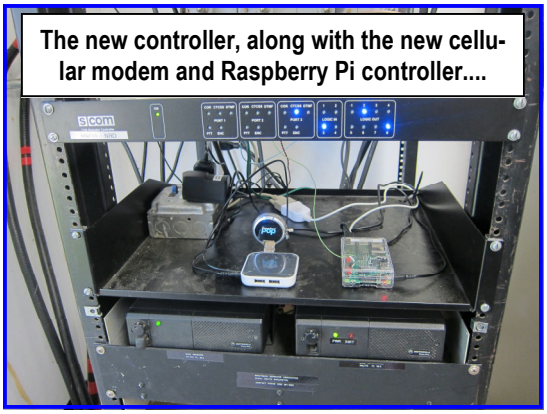
Helping out in Quincy were Bryan Cerqua W1BRI, John Spencer WA1MDD, Clark Conti N1NVK, and James Lee N1DDK. (Sorry, no photos for Quincy).

WA1MDD, N1UEC, KB1MBG, W0ZIO, KC1US, and K1IW met at the North Reading repeater site to finish some long-needed tasks:

- N1UEC & W0ZIO went up the tower and remounted the VHF antenna and UHF link antenna. The VHF antenna now sits above the cat walk railing. The link antenna is now properly transitioned from a small mast to a larger one.
- On the ground, KB1MBG assisted the climbers, while the rest of us worked on installing the new 7330 controller, Raspberry Pi/Internet hookup, and repair of the link radio.
- All of this was completed except for the link radio, which was beyond repair. Despite our best efforts, it was still 5KHz off frequency. The radio was subsequently replaced on a later visit to the site.

110 feet, straight up...

The North Reading crew, minus K1IW who is the photographer...



The new controller, along with the new cellular modem and Raspberry Pi controller....

The Amateur's Code

The Radio Amateur is:

CONSIDERATE...never knowingly operates in such a way as to lessen the pleasure of others.

LOYAL...offers loyalty, encouragement and support to other amateurs, local clubs, and the American Radio Relay League, through which Amateur Radio in the United States is represented nationally and internationally.

PROGRESSIVE...with knowledge abreast of science, a well-built and efficient station and operation above reproach.

FRIENDLY...slow and patient operating when requested; friendly advice and counsel to the beginner; kindly assistance, cooperation and consideration for the interests of others. These are the hallmarks of the amateur spirit.

BALANCED...radio is an avocation, never interfering with duties owed to family, job, school or community.

PATRIOTIC...station and skill always ready for service to country and community.

Paul M. Segal, W9EEA, 1928

June Business Meeting

James Lee, N1DDK

In attendance: Dave KG1H, John WA1MDD, Kevin K1KWP, Bob K1IW, Brian W1BRI, Clark N1NVK, Ken KA1GFN, Deb N1NVJ and James N1DDK

Dave brought the meeting to order at: 19:00

Kevin gave the treasurers report.

Bob reported on recent work parties,

Quincy: Bob, James, Clark and John helped.

North Reading, Bob emailed the list earlier. Link radio was not repairable, was replaced. Bob will bill for the replacement radio.

The board discussed various options for the budget.

Clark made a motion to bring an expenditure of up to $2000 to the membership for replacement of 449.925 hub1 before it fails. Seconded by James.

Passed without objection.

Discussion about Belmont and possible DMR at Weston. Are we annoying Bears. Discussion of polling the membership for interests again.

Bob made a motion for $50 for paint and equipment to re-coat the door at Slygo. Second by Dave. John will run the work party to do the paint.

Passed unanimously

Discussion of ad space at the Boxboro convection. Should be a good ad listing the reporters or a map or something.

Kevin made a motion for a color advertisement $75 in the brochure, John second. W1DYJ to make the ad copy. *(Editors note: I accepted this task and probably would have agreed if I was present.)*

Passed without objection.

Booth volunteers were wrangled.

Discussion about the banquet.

Discussion of the DX engineering presentation. Dave will ask them to move to March or may if needed.

Dave Closed the meeting at 20:17

Next MMRA Business Meeting:
Wednesday 18 October, 7 PM

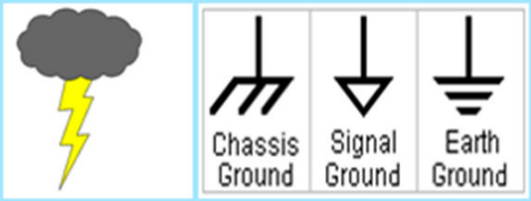
Location: TBD

May Membership (and Annual) Meeting Presentation

Truths & Myths about Station Grounding

Neil Goodell ~ AE1P (These are just a few of Neil's slides.)

GROUNDS & GROUNDING SYSTEMS



by Neil Goodell, AE1P .... N.H. Master Lic # 10409M

After antennas, station grounding is probably the most discussed subject in amateur radio and it is also the one replete with the most misconceptions. The first thing to know is that there are three functions served by grounding in ham shacks:

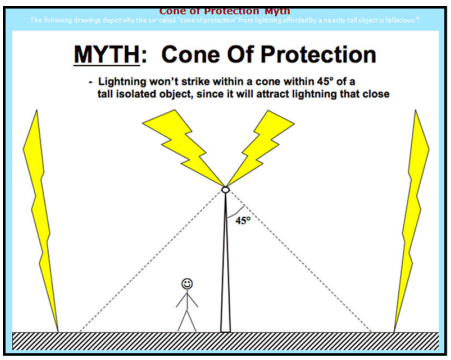
What are the three main types of grounding?

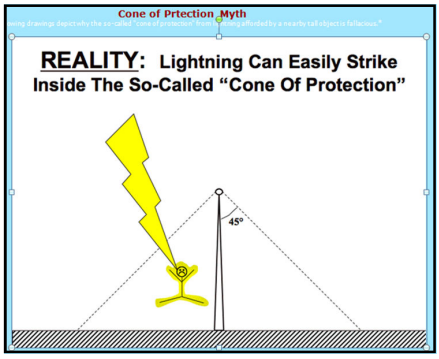
The three main types are:

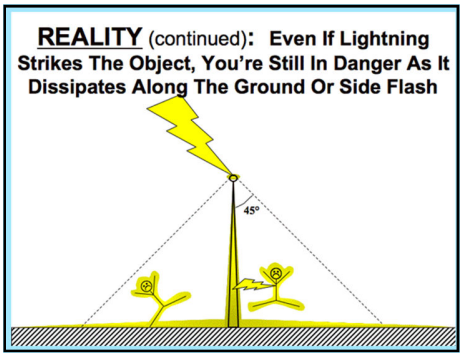
- EQUIPMENT GROUNDING (NEC) (SAFETY)
- LIGHTNING/SURGE GROUNDING
- RF & SYSTEM GROUNDING

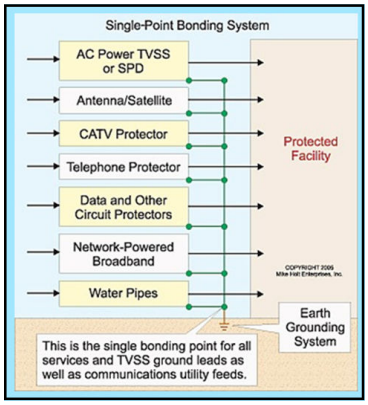
Reasons for Grounding a Radio Station

- Minimize touch potential.
- Equalize potential differences to prevent or mitigate unwanted coupling, instability, radiation, etc.
- Prevent damage to the station from lightning discharges.

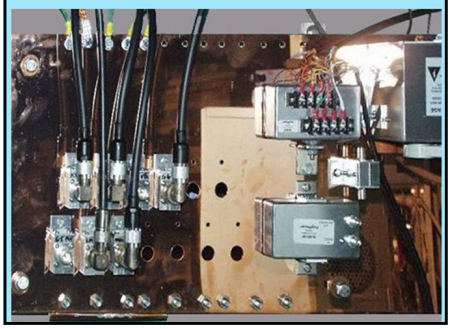








Single point ground inside radio room (K5GS image)



Again, Why do we Ground??

1. Electrical Safety
2. Stray RF Suppression (or simply RF Grounding)
3. Lightning Protection.

Early Ham History – Part 1

From W1DYJ: I recently obtained an ARRL Handbook from 1962, the year I was first licensed. The first few pages are a wonderful, short history of the early years of Ham radio. I hope you enjoy reading this as much as I did. It is in 5 parts.

Here is Part 1: *1900 through WW1*

Amateur radio is a scientific hobby, a means of gaining personal skill in the fascinating art of electronics and an opportunity to communicate with fellow citizens by private short-wave radio. Scattered over the globe are over 250,000 amateur radio operators who perform a service defined in international law as one of "self-training, intercommunication and technical investigations carried on by . . . duly authorized persons interested in radio technique solely with a personal aim and without pecuniary interest."

From a humble beginning at the turn of the century, amateur radio has grown to become an established institution. Today the American followers of amateur radio number over 200,000, trained communicators from whose ranks will come the professional communications specialists and executives of tomorrow—just as many of today's radio leaders were first attracted to radio by their early interest in amateur radio communication. A powerful and prosperous organization now provides a bond between amateurs and protects their interests; an internationally respected magazine is published solely for their benefit. The military services seek the cooperation of the amateur in developing communications reserves. Amateur radio supports a manufacturing industry which, by the very demands of amateurs for the latest and best equipment, is always up-to-date in its designs and production techniques—in itself a national asset. Amateurs have won the gratitude of the nation for their heroic performances in times of natural disaster; traditional amateur skills in emergency communication are also the stand-by system for the nation's civil defense. Amateur radio is, indeed, a magnificently useful institution.

Although as old as the art of radio itself, amateur radio did not always enjoy such prestige. Its first enthusiasts were private citizens of an experimental turn of mind whose imaginations went wild when Marconi first proved that messages actually could be sent by wireless. They set about learning enough about the new scientific marvel to build homemade spark transmitters. By 1912 there were numerous Government and commercial stations, and hundreds of amateurs; regulation was needed, so laws, licenses and wavelength specifications appeared. There was then no amateur organization nor spokesman. The official viewpoint toward amateurs was something like this:

> *"Amateurs ? . . . Oh, yes. . . . Well, stick 'em on 200 meters and below; they'll never get out of their backyards with that."*

But as the years rolled on, amateurs found out how, and DX (distance) jumped from local to 500-mile and even occasional 1000-mile two-way contacts. Because all long-distance messages had to be relayed, relaying developed into a fine art— an ability that was to prove invaluable when the Government suddenly called hundreds of skilled amateurs into war service in 1917. Meanwhile U.S. amateurs began to wonder if there were amateurs in other countries across the seas and if, some day, we might not span the Atlantic on 200 meters.

Next time Part 2: *The Birth of the ARRL*

Upcoming MMRA Meetings

Note: Meeting locations are subject to change. Consult the MMRA website for the most up-to-date information.

Wednesday, 20 Sept ~ No Membership Meeting Scheduled

Wednesday, 18 Oct ~ Business Meeting
Location: New England Air Gun (NEAG), Hudson

Wednesday, 15 Nov ~ Membership Meeting
Topic: Astronomy! Radio! Cubes in Space!
Host: K5TEC, Bob Phinney
Location: Clay Center, Brookline

Wednesday, 20 Dec ~ Business Meeting
Location: NEAG (Hudson)

Wednesday, 17 Jan ~ Membership Meeting
Topic: PiPtr Project Update, N1DDK, James Lee
Location: Northborough Library

Wednesday, 21 Feb ~ Business Meeting
Location: NEAG (Hudson)

Wednesday, 21 Mar ~ Membership Meeting
Topic: DX Engineering Presentation (via Skype)
Location: TBD

Wednesday, 18 April ~ Business Meeting
Location: NEAG (Hudson)

Wednesday, 16 May ~ Annual Meeting
Topic: Some Useful Antenna Structures, W1DYJ, Larry Banks
Location: Campion Center, Weston

Wednesday, 20 June ~ Business Meeting
Location: NEAG (Hudson)

Don't Forget! Join Us.

Every Tuesday @ 8 PM
Technical, Informational and Other Stuff Net

The MMRA's repeaters are linked Tuesday nights for the TIOS Net. Keep up with what's happening in the MMRA and ask your ham related questions.

Net Control Operators:

Week 1	**WA1JIM**	**Jimmy Devaire**
Week 2	**W1DYJ**	**Larry Banks**
Week 3	**KC1CLA**	**Ed Curley**
Week 4	**K1KWP**	**Kevin Paetzold**
Week 5	**KB1OQA**	**Tom Turner**

To connect using Echolink / IRLP during the Net:

- **Echolink Conference *NEW-ENG2***
- **IRLP node 4133**

Previous issues of the MMRA Newsletter are available at:
www.mmra.org ➔ Newsletter Archive (on the left)

MMRA Leaders

Officers

President	David Wolfe	KG1H
Vice President	John Spencer	WA1MDD
Secretary	John McGovern	W1JMC
Treasurer	Kevin Paetzold	K1KWP
Clerk	open	
* Technical Officer	Bryan Cerqua	W1BRI

Board of Directors

Director »2018	Clark Conti	N1NVK
Director »2018	James Lee	N1DDK
Director »2019	Bob DeMattia	K1IW
Director »2019	Roger Coulson	WA1NVC

Repeater Trustees

* Belmont 145.430	Ed Curley	KC1CLA
* Boston 146.820	John Mullaney	K1BOS
* Brookline Rcv 146.82	Bob Phinney	K5TEC
* Boston 927.0625	Rick Zach	K1RJZ
* Hopkinton 223.940	James Cahill	KB1LOY
* Hopkinton 449.575	Bryan Cerqua	W1BRI
* Lowell 442.250	Vince De La Flor	K1LVF
* Marlborough 53.810, Quincy 146.670;	Bryan Cerqua	W1BRI
* Marlborough: 29.68, 144.390, 147.270, 224.880, 448.225, 449.925, 927.700 — all as W1MRA	Bill Northup	N1QPR
* Mendon 146.610	Kevin Paetzold	K1KWP
* N. Reading 146.715	Bruce Pigott	KC1US
* N. Reading 446.775	Larry Banks	W1DYJ
* Quincy 224.400	Bill Dunn	N1KUG
* Weston 146.790	Bob Evans	N1BE
* Weston 224.700	Eddie Mulhern	N1NOM
* Weston 442.700	David Wolfe	KG1H

Additional, non-Voting

* Newsletter Editor	Larry Banks	W1DYJ
* Emerg. Coord.	Kevin Paetzold	K1KWP
* Pub. Serv. Coord.	David Wolfe	KG1H
* VEC Liaison	Bill Wade	K1IJ
* Net Manager	Larry Banks	W1DYJ
* Web Page Editor	Bob DeMattia	K1IW

* Appointed

MMRA VE Sessions

Third Saturday
9 AM at the Marlboro Public Library

Contact: Bill Wade, K1IJ 781-891-9079
Evenings 6 - 10 PM Weekends 8 AM to 10 PM.
Accredited by the ARRL VEC

There is no
Membership Meeting
planned for this month

Calendar of Ham Radio Flea Markets

For more information: http://mit.edu/w1gsl/Public/ne-fleas

16 Sep	Alexander ME	StCVARC @ElSch
16 Sep	Lincoln RI	RIAFMRS @KoC
17 Sep	Cambridge MA	Flea at MIT
1 Oct	Fishkill, NY	MBARC @Down St Corr
8 Oct	Queens NY	HoSARC
13-14 Oct	**Deerfield NH**	**NEARFest XXII @FG**
15 Oct	Cambridge MA	Flea at MIT
21 Oct	Brookline NH	NEARC Antique@EvntCr
21 Oct	Accord NY	OMARC @JrHS
22 Oct	Meriden CT	Nutmeg@Sheraton
28 Oct	Gales Ferry CT	TCARC @FireCo
29 Oct	Hicksville NY	LIMARC @LeviitHall
11 Nov	Bourne MA	FARA @UpperCC VoTech
2 Dec	Windsor CT	VR+C Mus 115 Pierson LN

THE MINUTEMAN REPEATER ASSOCIATION

MMRA
P.O. Box 669
Stow, MA. 01775-0669

Email: contact@mmra.org

WE'RE ON THE WEB
HTTP://WWW.MMRA.ORG/