Minuteman Repeater Association

The Minuteman

The Minuteman Repeater Association is a non-profit organization providing communications infrastructure and volunteers for community and emergency events.

Membership Meeting: Wednesday, 15 January 2025 ~7:30 - 9:30 pm

Andy's Ham Radio Linux
Andy Stewart - KB1OIQ

This is a Hybrid meeting: Marlborough Central Fire Station + ZOOM

(Directions to Marlborough Central Fire Station on Page 5)

Members: log into your account on MMRA.ORG to obtain the ZOOM info.

Non-members: send an email to contact@mmra to request the ZOOM info.

Andy Stewart (KB1OIQ) will give a talk about a popular software collection called "Andy's Ham Radio Linux" (AHRL). In its latest version, AHRL has been tested on several flavors of Debian, Ubuntu, and Raspberry Pi OS. AHRL is installed on top of whatever Linux you're already running. It provides over 80 ham radio programs which are all Free Software, Open Source Software, or equivalently licensed. Andy will discuss the changes to the most recent version, and will also give a high level overview of the available programs.

Andy has been licensed since 2007, and now holds an Amateur Extra license. Andy is a retired computer engineer, having retired in August 2024.

MMRA Elmer Forum

New or prospective hams:
Join us to ask questions about ham radio!

Experienced hams: join us to provide answers.

The 2nd Wednesday of the month: 1/8, 2/12 , 3/12

ZOOM: 876 8326 0138

Passcode: elmer

See Page 3 & 4

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President's Corner ~ David Hornbaker, N1DCH

Happy New Year!

Have you made any Ham related New Year's Resolutions? Mine are to complete my first CW QSO and to do more POTA activations (maybe even a CW one).

The **January Elmer forum** will be held on Wednesday, January 8 at 7:30 PM. Please see the Elmer section below for Zoom meeting information

Join us for the January 15, 2025, **membership meeting** at Marlborough Central Fire Station. Andy Stewart— KB1OIQ will be discussing: "Andy's Ham Radio Linux (AHRL)". AHRL is a collection of amateur radio Linux tools. If you cannot make it to Marlborough, this is a hybrid meeting, and the Zoom meeting information is available on the website (www.mmra.org). You must be logged into the website to view the information.

The Minuteman Repeater Association will have a table at the **Algonquin Flea** on February 15. Please stop by and say hi.   The Flea market is held at the 1Lt. Charles W. Whitcomb School, 25 Union St, Marlborough, MA
    https://www.bing.com/maps?q=25+Union+St%2c+Marlborough%2c+MA+01752&FORM=HDRSC4

Join us Tuesday nights at 8:00 PM for our weekly Technical Information and Other Stuff (TIaOS) net. There will be a lively discussion on all sorts of HAM issues, including equipment, antennas, software, repeaters, and other stuff. The main purpose is to test our ability to link up the repeaters in case of an emergency, or to support some event like a marathon.   You can also join via EchoLink if your radio is a little under the weather (or in my case, too lazy to walk down to the shack). See below for more information.

You can find out more information about how and when the repeaters are linked on the website
    (https://www.mmra.org/repeaters/repeater_linking.html).

Please remember to keep your profile up to date. (https://www.mmra.org) especially if your email changes. Note that if your callsign changes, send email to contact@mmra.org and we will update your callsign in the database.

Renewals may be done on the website, or you can mail your renewal to Minuteman Repeater Association, PO Box 669, Stow, MA 01775-0669. Please allow 7 days for us to process your renewal. Please allow 14 days for renewals that are mailed.

The MMRA VE team is looking for additional volunteers. Information on becoming an ARRL-VEC accredited VE is available on the ARRL website https://www.arrl.org/volunteer-examiners. There is an open book test for certification. You do not need to hold an Amateur Extra license to volunteer. For more information contact Ron Rothman WO1E wo1e@mmra.org or ve@mmra.org.

Upcoming MMRA VE sessions:

The January VE Session will be held on Saturday, January 18th at 9:15 AM, at the Marlborough Public Library, Meeting Room 2,Marlborough, MA:
    https://www.bing.com/maps?q=22+Witherbee+Street+Marlborough%2C+MA+01752&PC=U531&FORM=ANCMS9

The February VE session will be at the Algonquin Flea Market, Saturday, February 15th at 9:00 AM. The Flea

President's Corner ~ David Hornbaker, N1DCH

market is held at the 1Lt. Charles W. Whitcomb School, 25 Union St, Marlborough, MA:
  https://www.bing.com/maps?q=25+Union+St%2c+Marlborough%2c+MA+01752&FORM=HDRSC4

Walk-ins are welcome.

Please remember to bring a State ID, your FRN, and if upgrading, a copy of your current license (from FCC website) or proof of license from ARRL or QRZ website. For more information, contact Ron – WO1E at ve@mmra.org or wo1e@mmra.org.

Net Control Operators wanted! Interested in becoming a control operator for the TIaOS net? Larry is looking for a back-up operator. Contact Larry Banks – W1DYJ w1dyj@mmra.org.

Do you know someone that has passed the Technician test (element 2) in the last year? They are eligible for free membership in MMRA. Have them send email to contact@mmra.org requesting membership. The club secretary will contact them with details on how to qualify.

73 — Dave – N1DCH

MMRA Elmer(ing) ~ Kevin Paetzold, K1KWP

In the November newsletter it was announced that the MMRA will be hosting an Elmering/Mentoring session.   The intention is to give new or prospective hams a place to get questions answered, how to use their ham radio license, getting on the air, getting their license, info about local ham resources, and programming their radio. This is purposely being held on zoom so that unlicensed people can participate as well as the multimedia aspect of zoom vs. just a repeater contact.

I have heard members state that they do not think they are qualified to be an Elmer. That is completely wrong. If you have a license and have been on the air then you are certainly able to mentor other hams. The experience of new hams is just as important as people who have been licensed for decades. For example I bought most of my radios >20 years ago and I am not the best person to give advice on new equipment.

The first official session was held on Dec 11. There were 14 attendees and the session lasted a good 90 minutes. I want to thank all those who have supported this effort and made themselves available to staff the sessions.

I encourage all members to seriously consider supporting and attending the Elmer Forum. A website with a "flyer" giving info on this is available at mmra.org/elmerforum.   The plan is the 2nd Wednesday of each month at 7:30 PM.   The next one is Wednesday Jan 8 at 730PM which will happen before this newsletter issue was published.. Additional sessions are February 12, March 12, and April 9.   The zoom information is available at mmra.org/elmerforum/elmer_zoominfo.txt

73, K1KWP

MMRA Elmer(ing) Forum

Do you have questions or are you looking for advice or input on:

- how to use your ham radio license?
- buying equipment
- info about local ham resources
- new operator questions not listed above
- getting on the air
- getting your License
- programming your radio

To assist in a bright future for HAM radio the **MMRA** hosts a forum on ZOOM to help answer questions like those above. Everyone is invited whether licensed or not. You do not need to be a member of the **MMRA.**

Whether you have been licensed for weeks or for years you may be able to help answer questions from others.

When: **Second Wednesday of each Month at 7:30PM**

upcoming dates: December 11,24 January 8,25 February 12,25 March 12,25

Where: ZOOM Meeting ID: 876 8326 0138   Passcode: elmer

full zoom invite info at mmra.org/elmerforum/elmer_zoominfo.txt

Members on the forum will also be listening on a MMRA repeater near you.

mmra.org
mmra.org/repeaters/status.html
mmra.org/repeaters/repeater_index_by_frequency.htm

The MMRA offers free memberships to anyone passing the element 2 (technician) exam in the last 365 days. Send email to contact@mmra.org for more info. VE testing schedule available at mmra.org/exam.html.

revised: 20241229

Treasurer's Report ~ Kevin Paetzold, K1KWP

The MMRA receives donations each year.   On behalf of the club I would like to acknowledge and thank the following members who have donated since my list in the November newsletter: **KC1POR** and **KC1VNA.**

So far 236 members have either renewed or recently joined since September 1, 2024 when the new membership year (2024-2025) started.   This is the same number as the 2023-2024 year.   However as of this writing 60 members who entered grace period on September 1 have not yet renewed and will have expired on January 1.   This also means that 60 members are new either paid or free new hams.

We have three repeaters (Quincy, Belmont, Billerica) which we will need to relocate before very long. We will likely have significant costs associated with each these repeater re-locations if/when they actually happen:

- Quincy will likely require new shelter, antennas?, quantum unit of commercial antenna climber
- Belmont likely requires antenna(s), quantum unit of commercial antenna climber
- Billerica quantum unit of commercial antenna climber

I previously forecast that I could easily see this being $10000 of spending.   Because the membership approved $3000 spending for Billerica at the November meeting **I can now see this being $13000 in spending** for the three sites.   It may not all happen in the same year but we need to prepare for this.

In addition as of this writing the 146.82 repeater is essentially off the air with a new problem which is not yet completely diagnosed. If this requires antenna system repair that is likely another quantum unit of commercial antenna climber ($3000).

73, **K1KWP**

Directions to:
Marlborough Central Fire Station, 215 Maple St (RT 85), Marlborough, MA
Enter through the side classroom door.

HAM RADIO

AMATEUR RADIO

HAM RADIO
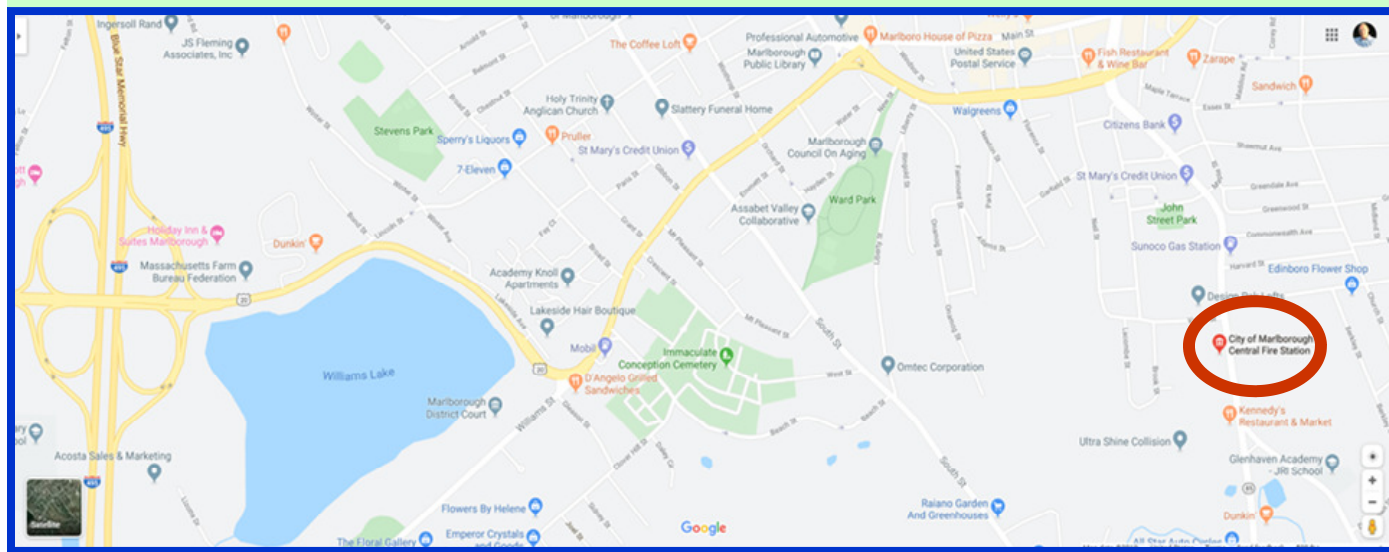
Algonquin Amateur Radio Club
Marlborough, MA
FLEA MARKET
Saturday, February 15, 2025

$200
Cash Door Prize!
To be awarded at 11:30
Must be present
to win

Marlborough 1Lt Charles W. Whitcomb School
(formerly Intermediate/Middle School)
25 Union St. or
off Bolton St. (Rt. 85)
Marlborough, Massachusetts

6 ft. Tables (round and rectangular)
Tables are $25.00 each if purchased by
February 7, 2025 ($30.00 each accepted
at the door if tables or spaces are
available, no guarantees)
Tables include vendor admission for one
person.

SETUP TIME: 6:30 AM
For more information email:
fleamarket@n1em.org

Talk In: N1EM/R 446.675 - (pl 88.5)
Updates will be on our web at:
http://n1em.org

- - --

Time: 9:00 AM to 12:00 Noon
General Admission: $5.00
VEC Exams: 9:00 AM
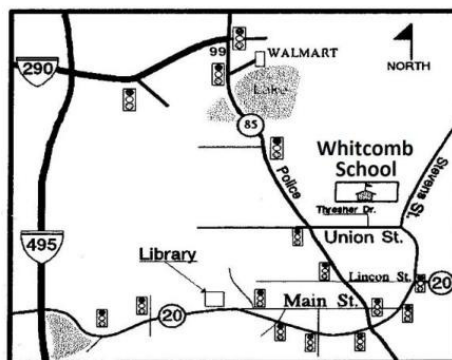
Send This Form For Table
Reservations with Check Payable to:
AARC, PO Box 258, Marlborough, MA 01752 ($25.00 each table due by February 7)
Name:_____ Call:_____
Address:_____ No. Tables:_____
City:_____ State:_____ Zip:_____
Telephone:_(_____)_____ Amount Enclosed: $_____.00
Email:_____

20 November 2024 Membership Meeting ~ Minutes

MMRA Membership Meeting – November 20, 2024-<u>Called to order @ 7: 53 PM)</u> © 2024, MMRA

(Note: Due to a technical difficulty getting the internet for our Zoom attendees the start time was delayed)

Repeater Status Report: Bob DeMattia, K1IW

    Quincy 2m .67 Repeater: No further progress to report.

    (Formally) the Belmont Repeater 145.43: No further progress to report.

    Billerica 147.12: Awaiting confirmation for a new site.

    Weston 2m -Visting site on November 26th to hopefully resolve issues with 2m antenna.

    Burlington – Link radio is not functional.

    All other Repeaters: Functioning normally.

Vote to Approve Billerica Moving Expenses – Before a motion was made, the new location is near the water tower with 3 coax cables not in use that are available for the MMRA to use. The site appears clean from the outside. There are 3 iterations of repeaters along with cabinets, desks and other things that we will need a work party to gather up for disposal. A 6m repeater was taken down at that location. Also, according to Roger, this site has a generator and electricity is provided without cost to the MMRA. Bob adds that we have used this same climber in the past and must have 2 months' lead time before scheduling his part.

The expense breakdown is as follows:

Climber	$2,100
Second Antenna	$ 600
U-Haul & Misc Parts	$ 300

Dave made a motion to approve up to a $3,000 to move the Billerica Repeater to this new site. Seconded by Larry and the motion passed with a unanimous vote

MMRA Elmer Forum: Kevin, K1KWP – Zoom Sessions

The official start for these monthly coaching sessions **starts on Wednesday, December 11, 2024 at 7:30 PM** and will continue on the 2nd Wednesday of each month thereafter.

We had an unofficial Elmer Forum start on November13th with 2 new Hams participating along with 4-5 of us acting as Elmers. For this practice Elmer Forum session, many questions were asked and answered. We expect these coaching sessions will grow with more participants.

This is an opportunity to learn about the most suitable equipment to buy without breaking your budget, how to program your radios, where and when you can get on the air and so much more.

Exam Session

    Saturday, December 21, 2024, at 9:15 AM

    Marlborough Public Library, David Meeting Room, 18 Witherbee Street, Marlborough, MA 01752

    Please tell your friends, who are interested in taking tests, that they must have photo IDs and FRNs

    Copy of license required if upgrading (or proof from the ARRL or QRZ)

    Note: SS#s, are no longer accepted by the FCC. Everyone must have an FRN

20 November 2024 Membership Meeting ~ Continued

Upcoming Meetings

    December 11, 2024, 7:30 PM

        Elmer Forum   Zoom Only

    December 18, 2024, 7:30 PM

        Business Meeting   Zoom Only

    January 8, 2025

        Elmer Forum   Zoom Only

    January 15, 2025

        Membership Meeting

        Location Marlborough Central Fire Station Training Room

        Speaker TBD

    Tuesday night 8:00 PM (year-round)

        Technical, information and Other Stuff Net

        MMRA Linked Repeaters

The meeting ended informally at 8:15 PM.

Presentation by Dave Hornbaker: N1DCH - "Programming Your Radio with CHIRP" David's interest in radio began as a youngster when he hung around his Uncle Myron Hornbaker's shack – W0GFU (SK) in Fowler, Kansas. In 1975 he earned a First-Class Radiotelephone Operator License **(**now General Radiotelephone Operator License). At a local telephone company David installed IMTS Telephones in automobiles. Later he worked for Wichita, KS television station – KAKE-TV as a master control operator. David has worked in the Computer Industry for over 40 years. He owns and is President of DCH Consulting Services, an Information Technology Company, has a Master of Science, Information Technology Degree from the University of Massachusetts and is President of the MMRA.

CHIRP is free, open-source software for programming many radios from various manufacturers. This software is available on Windows, MacOS and Linux. There are two versions of CHIRP: Next and Legacy. Next is the newest version and Legacy is the older version. To download CHIRP go to https://chirpmyradio.com/projects/chirp/wiki/ . Dave described the installation process on the three operating systems. Once installed and the unique cable that connects to a specific radio is in place, the first task is download the contents of what is on the radio to a computer file. The file received is either a clone file or a live file. The difference between these two types of files is the clone file is a static copy of the contents of the radio that can be edited and uploaded later back to the radio versus a live clone file that can be edited on the fly instantaneously to the radio. One other thing to note on the cable that connects from the computer to the radio is using a high-quality cable that has the 2303 or fai chipset for data transfers. Check https://chirpmyradio.com/projects/chirp/wiki/CableGuide . Reliable sites for locating Repeaters are as follows: https://www.nerepeaters.com/ and https://amateur-radio.net/chirp/

Meeting Attendees at Central Marlborough Fire Station Training Room:

David Hornbaker, N1DCH; Larry Banks, W1DYJ; Ken Horton, KA1GFN; Deb Horton, N1NVJ; Stephen Babbitt, KC1LPZ; Kevin Paetzold, K1KWP; Tom Sullivan, KC1VHD; Glenn Ghidaleson, WA2KRS; Michael J Burnell, KC1RSV; Eric Williams, KV1J

Zoom Meeting Attendees:

Roger Coulson, WA1NVC; Ken Peluso, KC1PFS; Joe Fratto K1UN; John Lemone, KC1T; Francisco Oliveira, KC1EV; Jonathan Traum, K1BTZ; James Mullally, AC1TB; Jennifer Lockfort, KC1VQV

Meeting Adjourned at 9:20 PM

Respectfully Submitted by Stephen M Babbitt, KC1LPZ, Clerk

20 November 2024 Membership Meeting ~ Continued

Slides from the Presentation

Programming Your Radio with CHIRP

David Hornbaker – N1DCH
November 20th, 2024

What is CHIRP?

- Free, open-source software for programming radios.
- Supports numerous radio models.
- Available on Windows, MacOS, Linux
- CHIRP-next vs CHIRP-legacy
  - CHIRP-next is the current version – this is the recommended version
  - CHIRP-legacy is the old version
    - May support some radios not yet ported/working in CHIRP-next
- Next and legacy cannot be installed on the same machine

- https://chirpmyradio.com/projects/chirp/wiki/Download#

Installing CHIRP

- Windows
  - Installed vs In-Place installation
  - Installed: download and run the chirp-next-<date>-installer.exe
  - In-place: download chirp-next-<date>-win64-zip and unzip
  - Legacy
    - Installed: download and run chirp-legacy-<date>-installer.exe
    - In-Place: download chirp-legacy-<date>-win32.zip and unzip
  - chirp-next and chirp-legacy cannot be installed on the same machine
    - Install one and use in-place for the other or use in-place for both(separate folders)
  - Put in-place on a thumb drive for a portable CHIRP experience

Installing CHIRP

- Linux
  - Install KB1OIQ – Andy's Ham Radio Linux Files
    - https://sourceforge.net/projects/kb1oiq-andysham/
  - Install the Windows version using wine
  - Follow the instruction Running Chirp on Linux
- MacOS
  - https://chirpmyradio.com/projects/chirp/wiki/MacOS_Tips

Slides from the Presentation ~ Continued

Choosing a Cable

- The best cables have the FTDI chip set
- RT systems cables are also good, but the RT systems driver must be installed
- Prolific chipset will work if, it is not a counterfeit
  - Most counterfeit cables have chips that claim to be PL-2303
  - Updates may "break" counterfeit cables
- Windows, MacOS, Linux have FTDI, and Prolific drivers
- Beware of counterfeit cables, there are lots of clones that do not work (poor quality, have bad or unsigned drivers).
- https://chirpmyradio.com/projects/chirp/wiki/CableGuide

Programming Modes

- Clone Mode
  - The radio's memories are downloaded or uploaded, all at once, in a single clone operation. An image of this type of radio can be downloaded to include: all settings, memories, VFO state, etc. The radio enters mode (or must be put into) a special mode of operation for communicating with the PC and is typically power cycled after completion of a transfer. Changes to the memories are made against a saved image and then are uploaded to the radio.
- Live Mode
  - The radio remains on and active during communication with the computer. Memories are transferred, one at a time, from the radio to the computer or from the computer to the radio. Changes to memories are made in real time against the radio as they are entered by the user. An image of this type of radio cannot be saved to disk in the same way that a clone-mode radio can. Store memories by exporting them to a CSV file.
- Most radios work in clone mode. Kenwood TH-D72 & TH-D74 can do either mode
- Icom IC-7300 and the IC-7100 are live mode radios

Memory Columns

Heading	Description
Loc	Location or channel number
Frequency	Receive frequency
Name	Alphanumeric label for the channel
Tone Mode	None: no tone; Tone: Transmitted tone; squelch open, TSQL: Tone transmitted; Receive squelch tone, DTCS: Digital PL; Cross: tone usage governed by Cross Mode column
Tone	Transmitted CTCSS tone
ToneSQL	Transmitted CTCSS tone and Received tone squelch (same tone)

Memory Columns

Heading	Description
DTCS Code	Transmitted digital PL
DTCS RX Code	Received digital PL
DTCS Pol	Set polarity of transmitted and received digital PL
Duplex	(none): Simplex; + or -: Offset (positive or negative); Split: Offset has absolute transmit frequency; Off: Transmission disabled
Offset	Offset in Megahertz of transmit frequency or absolute frequency
Mode	FM, NFM, WFM, AM, DV, DN, USB/LSB
Tune Step	Tune step to channelize receive frequency

11/20/2024   Program Your Radio with CHIRP   10

Slides from the Presentation ~ Continued

Repeater Sources

- Available in CHIRP
  - RadioReference.com (requires premium subscription)
  - Repeaterbook.com (free)
  - DMR-MARC (didn't seem to work)
  - przemienniki.net (Europe only)
  - Stock Config files (CSV files that ship with CHIRP)
    - Marine, Aviation, GMRS, MURS, Railroad
- External sites
  - https://www.nerepeaters.com/
  - https://amateur-radio.net/chirp/ Will generate a CHIRP .csv file

Using Clone Mode
Step 1: Download contents from the radio

1. Best practices:
   - Unplug cable when done with the upload/download
   - Power off when connecting/disconnecting cable
2. Start CHIRP and click the Radio menu and choose Download from radio
3. The Clone window opens
4. Select the serial port you intend to use from the Port drop-down menu
5. Select the correct Vendor and (if necessary) the appropriate Model
6. Click OK to start the download process. Clone-mode radios will display a progress bar indicating how much of the image has been downloaded.
7. Live-mode radios will immediately jump to the memory editor and begin to populate it with memories as they are downloaded from the radio.

Using Clone Mode
Step 2: Make changes

1. Once the radio contents are displayed in the memory editor, proceed to make changes.
2. This may include manual edits or importing memories from other sources. If using a clone-mode radio, save an .img file of the radio before and after changes are made.
3. Live mode radio users will note that changes immediately take effect in the radio and do not need to proceed to Step 3.

Step 3: Upload changes back to the radio

1. Once all the edits are made, upload the image back to the radio. With the image open, go to the Radio menu and choose Upload To Radio.
2. Verify Vendor, Model, and Port are correct.
3. Click Ok
4. Clone mode radios only

Baofeng UV5R/UV82

Many radios are clones of the UV5R. Baofeng, Btech, Radioddity all have various models that are derived from the UV5R. This includes GMRS, FRS, and MURS radios as well as some triband radios. There are many different firmware versions. Experimentation may be needed to find the correct driver. Even though the UV-5XR3 is in a Baofeng case, it only works with the Radioddity driver.

Note for Yaesu radios:

There are a series of steps that must be followed in order for most Yaesu radios to be properly cloned. The above process is still accurate, but keep in mind the following:
- The radio should already be in clone mode before clicking the OK button to initiate the download (step 1.6 above).
- After clicking the OK button (step 1.6 above), press the button on the radio that initiates the clone transmission. This is usually indicated on the screen by *Clone TX* or similar
- Like the download procedure, the upload procedure must follow a particular sequence. Make sure that the radio is in clone mode and waiting for an incoming clone transmission. This is usually indicated on the screen by *Clone Wait* or *Clone RX*.

18 December 2024 Business Meeting ~ Minutes

MMRA Business Meeting - December 18, 2024-Called to order @ 7: 31 PM © 2024, MMRA

Repeater Status Report: **Bob DeMattia, K1IW**

- **Belmont: 145.43:** Ed, KC1CLA, has has contacted them during the last month and they have not responded. The plan is to move 145.43 to Burlington.
- **Billerica 147.12**: Bob has been in contact with the Town Manager, currently awaiting an approval.
    - o If Billerica site becomes available, move 147.12 and 224.88 to the new Billerica site.
    - o If the Billerica site is not available, the repeater will move 147.12 to Burlington.
- **Boston 146.82:** Power output has dropped – K1BOS is investigating. He has tightened all connections with no improvement. He will return with a Wattmeter.
- **Boston 927.0625:** The new Boston 900 Repeater has been built by WA1NVC. It is in burn-in testing.
- **Burlington 224.88:** The Burlington (link radio needs repair. (TX no power) Bob will fix it once we figure out the Billerica situation.
- **Lowell 442.250:** The Lowell link radio needs repair (TX low power). The link still works through North Reading, so there is no immediate need to make the trip to repair it.
- **Marlborough 449.925:** Hub1 link radio needs repair (TX low power and TX audio needs PL filter). The link radio is in Bob's garage for repairs.
- **Marlborough 927.700:** WA1NVC discussing upgrade.
- **Marlborough West** – While many may not have noticed, the anemometer at Marlborough West is fixed.
- **Quincy 146.67:** With no word – letter or phone call – from the Mayor's Office - the current plan looks likely to move 146.67 to Marlborough East.
- **All other Repeaters**: Functioning normally.

Allowing Members to Look Up Members: Kevin, K1KWP

- Should members be allowed to look up members on the MMRA Website?
- Should members be able to determine the membership status of another member (Active, Grace, Expired or Non-Member)?

The discussion varied. Roger suggested we keep it simple to name and callsign. Membership status ranged from member to non-member all the way from member to membership in the grace period (September 1st to December 31st) to recently expired membership from January 1st onward to one year or longer. No decision on this subject was made at tonight's meeting other than investigating it further before any formal motion is made.

18 December 2024 Business Meeting ~ Continued

MMRA Elmer Forum: Kevin, K1KWP

These Elmering sessions are on Zoom to both licensed and unlicensed Hams on the 2nd Wednesday of each month. November 13, 2024, was our initial informal Elmer Meeting Event, which was attended by a few people. On December 11, 2024, our first formal Elmer Session, was attended by 14 people, with one who was not licensed yet. We had several questions asked from recent new Hams. Many questions about licensing and upgrading, several questions on VHF/UHF and even more HF related questions.

One comment Kevin saw in the zoom chat section said, "I have learned more about ham radio from the MMRA than from the ARRL." We had some attendees that found round zero (from November) interesting enough that they came to this December forum and plan to come to the next in January.

Social media: Dave, N1DCH
- We have 915 followers on Facebook
- Should we have regular posts:
    - Announcements
    - Meetings
    - Elmer Forum
    - TIaOS Net
    - VE Sessions
    - Other events, e.g. Ham Exposition, Algonquin Flea Market
- Should we add other Social Media? Return to X (Twitter) other Social Media Sites?

Tonight's discussion includes putting some of our presentations on YouTube to draw attention to the MMRA and Amateur Radio. Other social media sites where younger people are active received discussion. Updating our events was discussed with K8ZBE offering to assist in some of the updating.

Algonquin Flea: Saturday, February 15, 2025
- Place: 117 Charles W Whitcomb School (Marlborough Middle School)
- Doors open at 9:00 AM
- Setup available 6:30 AM
- MMRA VE Team providing VE testing
    At tonight's meeting we discussed staffing our table(s) and what items we will be selling.
- Exam Session
    - Saturday, January 18, 2025, at 9:15 AM
    - Marlborough Public Library, David Meeting Room, 18 Witherbee Street, Marlborough, MA 01752
- Please tell your friends, who are interested in taking tests, that they must have photo IDs and FRNs (and please obtain your FRN # from the FCC Website prior to arrival).
    - Copy of license required if upgrading (or proof from the ARRL or QRZ)
    - Note: SS#s, are no longer accepted by the FCC. Everyone must have an FRN.

Upcoming Meetings
- January 8, 2025 7:30 PM
    - Elmer Forum
    - Zoom Only (Open to all)
    - Meeting Id – 876 8326 0138   o Passcode – elmer

18 December 2024 Business Meeting ~ Continued

• January 15, 2025, 7:30 PM Membership Meeting
  o Andy's Ham Radio Linux
  o Speaker: Andy Stewart -KB1OIQ
  o Marlborough Central Fire Station + ZOOM
• February 12, 2025 7:30 PM
  o Elmer Forum
  o Zoom Only (Open to all)
  o Meeting Id – 876 8326 0138   o Passcode – elmer
• February 19, 2025 7:30 PM
  o Business Meeting
  o Zoom
• Tuesday night 8:00 PM (year-round)
  o Technical, information and Other Stuff Net
  o MMRA Linked Repeaters

Newsletter

Information to Larry, W1DYJ   Email W1DYJ@mmra.org
January Edition Deadline: Friday, December 27, 2024

Meeting Attendees:

David Hornbaker, N1DCH;: Larry Banks, W1DYJ; Kevin W Paetzold, K1KWP; Stephen Babbitt, KC1LPZ;
Ken Horton, KA1GFN; Joe Weisse, W1HAI; Roger Coulson, WA1NVC; John Spencer, WA1MDD;
Bob DeMattia, K1IW; Steve Umans, K8ZBE; Joe Fratto, K1UN; John Mullaney, K1BOS; Bill Dunn, N1DDK,
Mike Rioux, W1USN; Stephen Contrado, KC1VJH; Larry Vidoli W1LSV; Tom Sullivan, KC1VHD

Meeting Adjourned at 8:46 PM

Respectfully Submitted by Stephen M Babbitt, KC1LPZ, Clerk

Repeater Updates

Billerica Antenna Repaired

Thanks to the efforts of
  Bruce KC1US
  John W1NI
  Kevin KB1KTR
  Kevin K1KWP
  Kimberly KB1KYS
  Mike W1USN
The Billerica antenna is now vertical again. The old and unused 6m antenna was also taken down. Getting people to help on a workday can be a challenge, so many thanks to these volunteers for taking time out of their day to help out!

73, Bob, K1IW

Boston 900 MHz Quantar

Here is the Boston 900 MHz Quantar. It has been completely aligned, programmed, tested on the test pair, and will be burned in for a week or two.

You will notice a red circle. I have added a V.24 interface board and cover plate with cutouts for the jacks. This will allow us to do P25 networking, if we want to, at some time in the future.

73 -- Roger Coulson, WA1NVC

Upcoming MMRA Meetings

Meetings usually start at 7:30 PM
Meeting locations and times are subject to change.
Consult the MMRA website for the most up-to-date information.

ZOOM Teleconference login info is available
once you log into your account on MMRA.ORG

Non-members: if you wish to attend, email contact@mmra.org.

Elmer Forums — ZOOM only — 2/12, 3/12 —

January 20, 2025: Membership Meeting
  Andy's Ham Radio Linux –
  Speaker: Andy Stewart -KB1OIQ
  Marlborough Central Fire Station
February 18, 2025: Business Meeting — Zoom
March 19, 2025: Membership Meeting
  Speaker: TBD
  Location: TBD
April 16, 2025: Business Meeting — Zoom
May 21, 2025: Annual Meeting & Elections
  Speaker: TBD
  Location: TBD
June 18, 2025: Business Meeting — Zoom

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 W1DYJ   **Larry Banks**
  Week 2 K1BTZ   **Jonathan Traum**
  Week 3 KC1CLA   **Ed Curley**
  Week 4 K1KWP   **Kevin Paetzold**
  Week 5 KB1OQA   **Tom Turner**
  To connect using Echolink during the Net:
  Echolink Conference *NEW-ENG2*

NOTE: we need another NC to be available as a substitute.
If you are interested, email W1DYJ@mmra.org

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 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: send 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.

Contact information is listed on the top of the last page of this newsletter.

No part of this newsletter can be copied or posted elsewhere without prior approval from the club.

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 with that individual on the air. Please include the time and date of any incident.

Repeater and Frequency Information

Band	XMTR Location	Freq	PL	Call	Linking To: Hub 1	Hub 2
10m	Marlboro East	29.680	131.8	W1MRA	???	???
			Linked to 146.79: 9am-3pm every day			
6m	Marlboro East *Remote receive Marlboro West: PL=100*	53.810	71.9	W1BRI	PTL	PTL
2m	Brookline	145.160	na	K1MRA	D-Star (REF050C)	
	Belmont	145.430		KC1CLA	Off the air	
	Mendon	146.610	146.2	K1KWP	FTL	PTL
	Quincy	146.670		W1BRI	FTL	PTL
	North Reading	146.715		KC1US	FTL	PTL
	Weston	146.790		W1HAI	PTL	PTL
					Linked to 29.68: 9am-3pm every day	
	Boston	146.820		K1BOS	FTL	PTL
	Billerica *Output tone = 162.2*	147.120		W1DC	PTL	PTL
	Marlborough	147.270		W1MRA	PTL	PTL
1.25m	Marlborough	223.940	103.5	W1MRA	FTL	PTL
	Quincy	224.400		N1KUG	FTL	PTL
	Weston	224.700		N1NOM	PTL	PTL
	Burlington	224.880		KC1US	FTL	PTL
70cm	Lowell	442.250	88.5	K5TEC	FTL	PTL: 446.775
	Weston *	442.700	88.5	N1DCH	Network Hub 2 (PTL to Hub 1)	
	North Reading *System Fusion*	446.775	88.5 Linked 71.9 Local	W1DYJ	FTL [88.5]	PTL [88.5]
	Hopkinton *System Fusion*	447.775	88.5 Linked 71.9 Local	W1BRI	FTL [88.5]	PTL [88.5]
	Marlborough	449.575	na	W1MRA	D-Star (REF050C)	
	Marlborough *	449.925	88.5	W1MRA	Network Hub 1	
33cm	Boston *	927.0625	D244	KK1RZ	PTL	PTL
	Marlborough * *PL out = 131.8*	927.700		W1MRA	PTL	PTL
	Marlborough	144.390	none	W1MRA	APRS Digipeater	
	???	145.630	146.2	W1MRA	Fox Box	

*Internet		
HUB1— 449.925: IRLP node 4133 / Echolink node 4133 Connected to Echolink NEWENG2 conference (9127) for TIAOS net.	
HUB2 — 442.700: IRLP node 4136 / Echolink node 4136 Connected to 220 Reflector 9124 on Tuesdays	
927.0625: IRLP 4977	Normally linked to the NE900 Reflector, 9125. Linked to MMRA via "NEW-ENG2" node 9127 for the TIAOS net. Normally linked together.
927.700: IRLP 4978	

Notes: FTL = Full Time Linked (or default state)   PTL = Part Time Linked (on schedule or demand)
Note — a repeater can be linked to only one Hub at a time, however the two hubs can also be linked together.

Contacting the MMRA

Members: join **mmra@groups.io** to receive member emails.
You must be approved by the moderator.
Officers: contact@mmra.org
Control Ops: control-ops@mmra.org

http://www.mmra.org/

https://www.facebook.com/mmraham

MMRA VE SESSIONS
Check out **https://www.mmra.org/exam.html** or email *ve@mmra.org*

Ask your friends to become a member Just let them know that it is not fully automated. Although they can log into the MMRA website immediately, they need to be manually processed. This could take up to a week.

If you haven't updated your MMRA profile in a while, now is the time!   Log into < **MMRA.ORG** > to do so.

Previous issues of the MMRA Newsletter are available at: **MMRA Newsletter Archive**. They are also available at DLARC: **https://archive.org/details/minuteman-repeater-association**

Nets, etc., on the MMRA System

MMRA Technical Information and Other Stuff Net
Our weekly club net on most of the MMRA repeaters, Tuesday night at 8:00 pm local.

Heavy Hitters Traffic Net
This ARRL NTS net is active on our repeaters Sunday to Friday evenings from 9:45—11 PM and Saturday from 10-11.

Coast Guard Net
Sundays at 11:00 AM local.

ARES Net
First Monday at 8:30 PM local.

ARRL Audio News
Sundays at 7 PM local
< https://www.mmra.org/repeaters/repeater_linking.html >

Get connected on the MMRA Repeater System ~ Dave Hornbaker N1DCH

What is the best way to get connected on the MMRA repeater system? Try announcing yourself! Just say your call sign followed by "listening".   If you want, you can include the last 3 digits of the repeater frequency. For example, "N1DCH listening" or maybe "N1DCH listening on 925", you may very well get a response. Try to connect by announcing yourself several times.

Most of the time, Marlborough Hub1 (449.925) is linked to the following repeaters, Boston (146.820), North Reading (446.775 *and* 146.715), Mendon (146.610), Lowell (442.250), Hopkinton (448.225) and Quincy (146.67.) Remember that when the repeaters are linked, you need to wait two or three seconds after you key up and before you speak. This is especially important on the TIaOS net on Tuesday when most of the repeaters are linked.

You can also link (and delink) the repeaters yourself. See the information you received when you became a member, or check the User Control Codes once you log into the MMRA website.

Try one of the non-linked repeaters too. There are Hams monitoring them as well. For more information on the repeater network and how it is linked at various times, check out https://mmra.org/repeaters/repeater_linking.html.