Minuteman Repeater Association

The Minuteman

Volume 50 Number 4 March 2021

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

Wednesday, 17 March 2021 ~ Membership Meeting ~ 7:30—9:30 pm

Programming with CHIRP
Dave Hornbaker , N1DCH

Location: ***ZOOM — Members: login to the MMRA Webpage for the link***
Non-members: send an email to contact@mmra.org

David, N1DCH, will discuss programming radios with Chirp. Chirp is a free, open-source tool to program radios. Currently, Chirp supports around 330 radios. Dave will discuss installation, choosing the proper cable, importing and exporting data, and will program several radios. If you would like to follow along, Chirp can be downloaded from https://chirp.danplanet.com/projects/chirp/wiki/Home.

David's interest in radio began when he was a kid and hung around the shack of his uncle Myron Hornbaker, W0GFU (SK), Fowler, Kansas. He got his First-Class Radiotelephone License in 1975 (now, General Radiotelephone Operator License). He was employed by a local telephone company as an installer of IMTS telephones in automobiles. Later, he went to work for Wichita, Kansas 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. He has a Master of Science, Information Technology, University of Massachusetts Lowell.

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About the Minuteman Repeater Association

MMRA Control Operators Responsibilities

https://www.mmra.org/MMRACOPolicy-March2019.pdf

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.

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.

Repeater and Frequency Information

Band	XMTR Location	Freq	PL	Call	Linking To: Hub 1	Hub 2
10m	Marlboro East	29.680	131.8	W1MRA	PTL	PTL
			Linked to 146.79: 9am-3pm every day			
6m	Marlboro East	53.810	71.9	W1BRI	PTL	PTL
	Remote receive Marlboro West: PL=100					
2m	Brookline	145.160	na	K1MRA	D-Star (REF050C)	
	Belmont	145.430	146.2	KC1CLA	PTL	FTL: DARI
	Mendon	146.610		K1KWP	FTL	PTL
	Quincy	146.670		W1BRI	PTL	PTL
	Nth Reading	146.715		KC1US	PTL	PTL
	Weston	146.790		N1BE	PTL	PTL
				Linked to 29.68: 9am-3pm every day		
	Boston	146.820		K1BOS	FTL	PTL
	Remote receive in Brookline Boston: PL = 127.3					
	Marlborough	147.270	146.2	W1MRA	PTL	PTL
1¼m	Marlborough	223.940	103.5	W1MRA	PTL	PTL
	Quincy	224.400		N1KUG	PTL	PTL
	Weston	224.700		N1NOM	PTL	PTL
	Burlington	224.880		KC1US	PTL	PTL
70cm	Lowell	442.250	88.5	W1MRA	FTL	PTL: 446.775
	Weston *	442.700		N1DCH	Network Hub 2 (PTL to Hub 1)	
	Nth Reading *System Fusion*	446.775	88.5 Linked 71.9 Local	W1DYJ	FTL [88.5]	PTL [88.5]
	Marlborough	448.225	na	W1MRA	D-Star (REF050C)	
	Hopkinton *System Fusion*	449.575	88.5 Linked 71.9 Local	W1BRI	FTL [88.5]	PTL [88.5]
	Marlborough *	449.925	88.5	W1MRA	Network Hub 1	
33cm	Boston *	927.0625	D244	K1RJZ	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

927.700: IRLP 4978

Normally linked to the NE900 Reflector, 9125. Linked to MMRA via "NEWENG2" node 9127 for the TIAOS net. Normally linked together.

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.

President's Corner ~ David Hornbaker, N1DCH

This is the Minuteman Repeater Association's fiftieth anniversary. The MMRA was formed in 1971, no one is quite sure of when, but we assume in the summer since our membership year starts in August. We are looking into some sort of celebration, but that will depend on COVID-19 and what the state will allow, stay tuned for details.

I would like to thank Mark Wyle – KC1OOB who has designed our new logo, Bob DeMattia – K1IW who has redesigned https://www.mmra.org to incorporate the new logo, and Larry Banks – W1DYJ who updated this newsletters masthead, all to reflect this anniversary year.

If you have any old photos or even a tale or two, please send them to newsletter@mmra.org. Please limit photo size to a max of 1000 pixels in the largest dimension. Also, if anyone has a old newsletter that is missing from the archive https://www.mmra.org/newsltrs/index.html, please let us know so we can arrange to have it scanned and added to the archive.

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).

MMRA will continue to have virtual meetings due to the ongoing COVID-19 pandemic.

Due to COVID-19, we do not have access to some repeater sites. Repairs that cannot be done remotely have been put on hold. Currently this is preventing replacing a crystal on 224.880 in Burlington and repairing the link radio in Belmont.

Please remember to keep your profile up to date, 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.

73 — Dave – N1DCH

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.

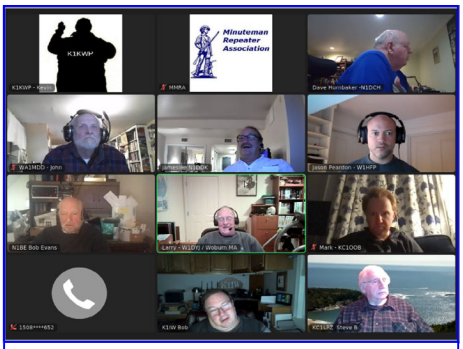
PATRIOTIC...station and skill always ready for service to country and community.

Paul M. Segal, W9EEA, 1928

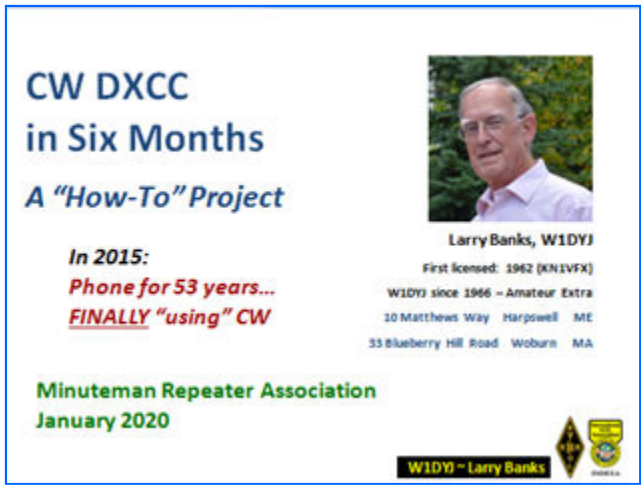
20 January 2021 Membership Meeting
CW DXCC in Six Months ~ Larry Banks, W1DYJ

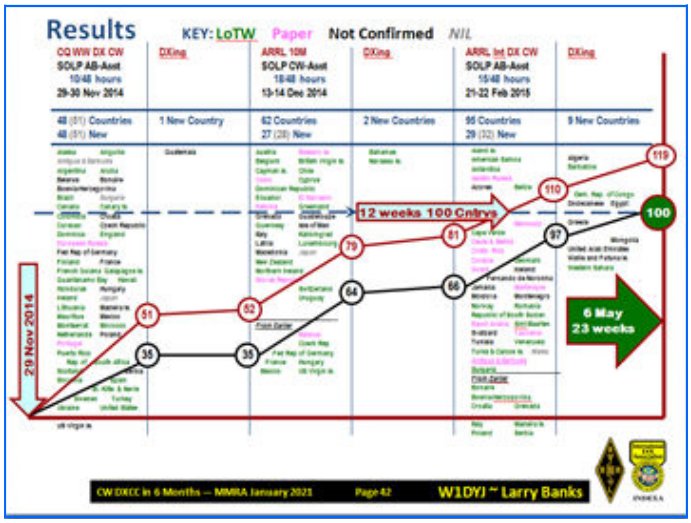
There was no business to conduct at the January Membership Meeting so, after introductions (some of whom are shown to the right) we launched into the presentation. A few slides are below.

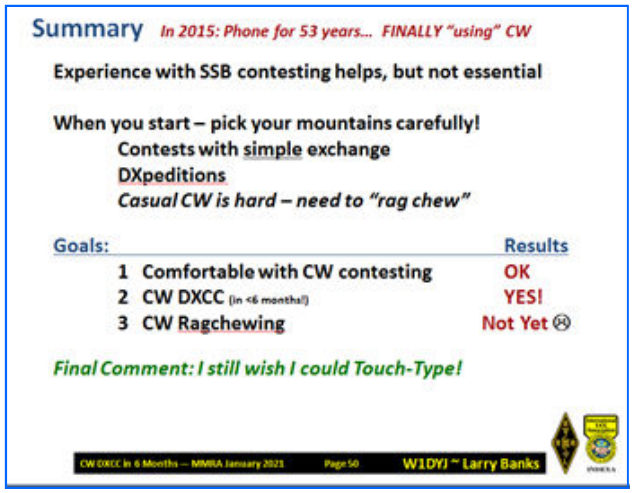
Note that this is available in whole at <https://www.gsl.net/w1dyj/ >

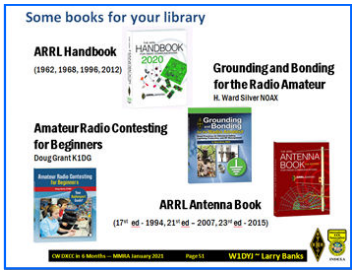


K1KWP Screen Grab









Happy 50th Birthday to the MMRA
Kevin Paetzold ~ K1KWP

The MMRA was incorporated in 1971. Sometime this year is the 50th anniversary of the club. Fifty years is a significant accomplishment and it seems we need to commemorate this.

A Picnic:

At the time of this writing in March the COVID virus seems to be receding and there is some hope that we might be able to have an actual in person social event (outside) sometime this summer. The last MMRA picnic that I am aware of was in 2007. Fouirteen years seems long enough for another picnic.

The 2007 picnic was held at a park in Newton. This was a great location because parking was free, picnic tables/grills were available, the park had equipment to entertain youngsters (for those with kids). We do not have a location (or a date) for this picnic and the member who made the park in Newton available is no longer in the club.

It would be great if a member (or members) could help identify and obtain access to a place for an MMRA picnic to take place in the later summer or early fall.

An ideal location would:

- be somewhat centrally located in the MMRA coverage area to hopefully be convenient (not far) for members.
- not require members to individually pay for parking (an issue at state parks). The MMRA could contribute reasonable required funds to secure a location.
- allow or has barbecue grills etc.…

It would be good to publicize this event in the upcoming May newsletter if possible. If you have any ideas or proposals for a picnic please let us know. Email ideas to the board at "contact at mmra.org" or to the "mmra at groups.io" list .

Newsletter Articles:

Fifty years is a long time. Although I have been in the club for more than 20 years there are many past members, contributors, and elected officers that I never knew. We are inviting all members past and present to share any thoughts, photos, and recollections about the club and its history and/or your interest/history with the club. Some ideas:

When did you first join?	Why did you join?
Why do you still support the MMRA?	What repeaters do you use?
Work parties you were a part of?	Have you held elective office?
Reflections on the 50 years of the MMRA	Notable QSOs on the MMRA system.

Did the MMRA play a role in you getting licensed?

Submissions can be sent to "newsletter at mmra.org" or to "contact at mmra.org" I intend to write something myself for this in upcoming newsletter.

Happy 50th, K1KWP — Continued

March 23rd Tuesday night net:

Since I am one of the rotating net controls for the TIAOS net it is my intent that the discussion subject for the Tuesday March 23rd 8PM net will be MMRA 50 years and any thoughts and reflections on the MMRA. Please join us for that net.

Foxhunting and Fox Box:

The MMRA had a long history of foxhunting with both live foxes and with the Fox Box. The Fox Box has not really been used much since the incident after 9/11 (where the bomb squad was involved). It is proposed that we have a 50th anniversary Fox Hunt and also try to place the Fox Box.

Any thoughts or ideas that you have to are very welcome.

Please send any input or ideas that you have related to the 50th anniversary commemoration. Stay tuned for more information and announcements. Because of the fluid situation with the Virus it is likely we may need to do some planning after the May newsletter comes out and during the summer when we do not usually have meetings.

Treasurer's Report ~ Kevin Paetzold, K1KWP

The MMRA receives a significant amount of donations each year. On behalf of the club I would like to thank people below who donated since my list in the previous newsletter: **KQ1V**, **W1HAI**, **KC1APU.** Hopefully I did not leave anyone off (and if I did I am sorry).

Dues collected so far for this membership year are $6245.00. This is an increase of $430 from the previous year. 245 members have paid dues so far this membership year.

Earlier in 2021 Verizon actions resulted in the DSL line at MRW going away and being replaced with FIOS. The DSL line was costing about $34/month. The FIOS line is costing about $40/month.

Given all the fixed costs that I am aware of and the spending which is already approved (that I am aware of) we may end this year in black by $1500. Of course there are likely to be various surprises that will result in more spending.

The previous 3 membership years were also in the black. However keep in mind that we have some years where we have large expenditures resulted in the club being in the red for $5K, $7K, $3K. Often the club's largest expenses are antenna projects which usually require professional/insured climbers.

Share a Shack! →→ now including *Share your History!*

Editor's Note: **Well, there were no SHACK inputs this time :(BUT...**

As you know, I have been soliciting inputs to the newsletter to *share your shack*. With our 50th anniversary this year, we will be adding your remembrances of early MMRA history. So *let me know*. Send your photos/text to newsletter@mmra.org. (Please reduce your photos to 1000 pixels max.) This feature will appear *based on your input!* Larry, W1DYJ

Interview with Phil Temples, K9HI
ARRL New England Vice Director

Thanks to the Maine Telegraph, the newsletter of the Maine ARRL Section

The Maine Telegraph spoke recently with the newly appointed New England Division Vice Director Phil Temples, K9HI, of Watertown, Massachusetts. Phil has been licensed for fifty years. He's been actively involved in ARRL field organization roles for awhile, serving as the Eastern MA Section Manager for three terms. He's currently one of the EMA Assistant Section Managers. The interviewer is ARRL Maine Assistant Section Manager Cory Golob, KU1U.

- ***MT: How do you see your new role as the Vice Director?***

K9HI: That's a good question, Cory. As the newest addition to the ARRL Board of Directors with just one week under my belt, I still have my "training wheels" on and coming up to speed with the various committees and individuals who comprise them. I'll attend my first board meeting on January 15-17, 2021 (hopefully, in-person, depending on COVID restrictions).

My current duties, as described in Articles 5 and 7 of the Articles of Association require me to assume the duties of the Directorship at any time. So that means I receive all pertinent information that Director Hopengarten (K1VR) receives. Of course, I'm a non-voting member of the Board.

Going forward, I hope to make the rounds of the various radio club meetings (especially the "virtual" ones) and introduce myself and even make presentations.

At the outset, I set a goal for myself to construct a New England Division website. None has existed—at least, no "dedicated" site. One of the Boston area clubs used to maintain a page devoted to the New England Division under the previous director, Tom Frenaye. I'm pleased to announce the website is now up and running, at https://nediv.arrl.org .

- ***MT: What is your background, both professionally and in Amateur Radio?***

K9HI: I have a B.S. in Electrical Engineering from Purdue University. However, I've spent most of my professional career involved with software engineering and computer system administration. As such, I hope that I'll be able to bring some of my skills and expertise to bear on committees that are dealing with improving the League's I.T. infrastructure. Having said that, I know there are already some very skilled I.T. and computer people involved with the Board's committees. As you may have heard, the Board has several projects underway to modernize the ARRL website, as well as its in-house computer
infrastructure.

Amateur radio-wise, I've always been a "dabbler" in the hobby. I've tried my hand at many different facets of the hobby—especially operating. I've been involved with contesting, DXing,

Interview with Phil Temples, K9HI ~ continued

county-hunting, the National Traffic System, MARS, and even operating exclusively HF mobile on CW only. I hold WAS, WAC, and DXCC. Living in a high-rise condo for the past 25 years has precluded me from having a real station, but I still love to operate from a club or friend's station and have the occasional high-speed CW QSO.

At the moment, I'm very involved in maintaining the Eastern MA ARRL website, https://ema.arrl.org , along with the new division website. I also serve as the Program Chair for the New England Division ARRL Convention, also known as the Northeast HamXposition.

- ***MT: What do you consider one of the highlights of your ham radio career?***

K9HI: That's a toughie! Two things come to mind. First, as a 14-year-old youngster and newly-minted Novice, I recall getting up at 4:30 AM one fall morning to make contacts on 40 CW with my humble station that consisted of a crystal-controlled Heathkit DX-40 transmitter, Hammarlund HQ-160 receiver, and a random piece of wire strung out the bedroom window. From my southern Indiana QTH, DX for me was W1, W4, and the occasional W0 station. Suddenly, my CQ was answered by a faint W6 station! To be more precise, the prefix was KW6. The station was signing "/6" so I immediately assumed it was a Pacific station operating portable in California. After a rough exchange of signal reports, I received the shock of my life — the KW6 confirmed that he was, indeed, operating from Wake Island!

Years later as an adult, I had the immense privilege of serving as a volunteer instructor in the Courage Center Handiham Program based out of Golden Valley, Minnesota. Handiham held two Radio Camps annually—one in Malibu, California; the other in beautiful, rustic northern Minnesota. I was involved in the program for almost 15 years. One year, I was helping tutor an elderly gentleman who was attempting 13 WPM. This was back in the days when Morse code was still a requirement for General, Advanced and Amateur Extra. The man had suffered from a brain injury that affected his memory and cognitive learning. It was difficult and frustrating—both for him and for me. As soon as he had mastered a group of letters and numbers, he would forget it the next day. I have to admire his stick-to-itiveness! We worked together on his Morse proficiency for the better part of a week. At the end of Radio Camp, he took his exam and flunked the code portion badly. I figured that he would be devastated. But an amazing thing happened! The man came up to me, hugged and thanked me, and said to me, "God bless you." It was a very emotional moment for me. It brought tears to my eyes.

- ***MT: Thank you, Phil, for sharing that story. And best of luck in your new role as Vice Director.***

Note from the editor: Phil is a member of the MMRA. I want to thank ARRL Maine Assistant Section Manager Cory Golob, KU1U, for giving me permission to reprint this interview. AND — your editor still doesn't have Wake Is. confirmed!

Spring 2021 Ham Bootcamp

The Nashua Area Radio Society will be holding an online Ham Bootcamp on Saturday April 24th from 10:00 am to 6:00 pm Eastern Time.

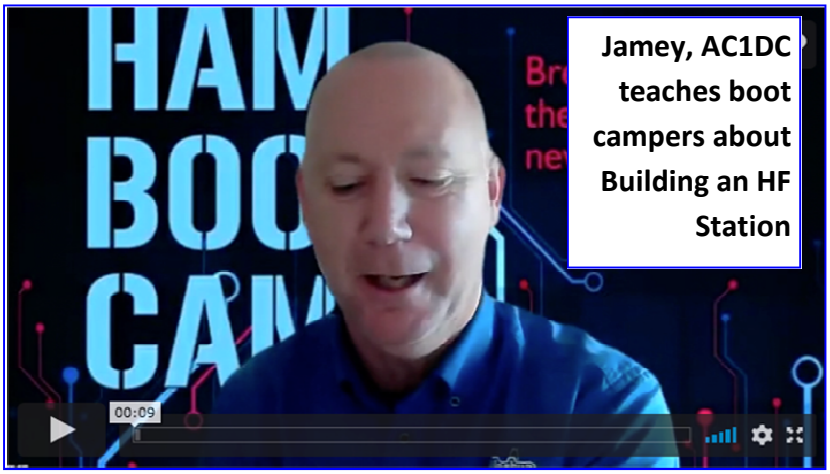
Abby, AB1BY Teaches Boot campers about Fox Hunting

Ham Bootcamp is a program to help new, inactive, and prospective hams gain the skills and information that they need to Get On The Air. It is open to any interested Ham or Prospective Ham in the US and Canada and there is no charge to attendees.

The morning session is geared toward operating on the VHF/UHF bands:

- Putting together a Station for Repeaters – How to pick an HT or Mobile Radio and an Antenna
- Radio Programming Tutorial
- Getting started with EchoLink
- Making Contacts and Joining a Repeater Net
- Getting Started with Amateur Radio Satellites
- Getting started with Fox Hunting

The afternoon session is geared toward operating on the HF Bands:



Jamey, AC1DC teaches boot campers about Building an HF Station

- Putting together an HF Station for SSB, CW, and Digital
- Picking and putting up an HF Antenna, Feedlines, and Grounds
- Operating on the HF bands using SSB Voice
- Software and setup for Logging Contacts via your computer
- Getting started with WSJT-X and FT8 Digital
- Finding DX and QSL'ing – Getting them in the log and confirmed
- How to learn CW

… and more!

Registration is now open for the April 24th session. You can get more information about Ham Bootcamp, including a link to register at n1fd.org/bootcamp If you have any questions, you can contact us at bootcamp@n1fd.org. Registration is required in order to receive the link to the web conference.

Repeaters – A look back into their origin ~ Don Lacroix AA1FE

When I started to research this article about the beginnings of repeaters, their origin and the VHF band in general from back in the day I assumed (which was not a good idea) there would be plenty of information and more than I would need, not so at all. It was like a big puzzle that I had to put together and as you will see, the origin, and who tested and operated successfully the first repeater system for amateur radio fell into a little "gray area" at first. What found as I began my research was website after website from amateur radio clubs from across the United States sharing their story as to how and when they first put up their repeater network(s), dating from the early 1970's to present. I even checked the Newsletter from the MMRA archives, dating back to 1976 to read about our repeater history. Like all the other amateur radio clubs I read about, what you will find is that they almost all have the same beginnings and stories. Particularly the efforts of the club members and others responsible for maintenance and repair of the repeater networks, and for their continuous drive for improvements for updating and upgrading the equipment. Like so many other clubs, they all started out with just one repeater then, eventually, several and, in time, finally achieving expanded State-wide coverage and beyond with today's technology.

Within their stories from their early beginnings one thing stood out the most: the enthusiasm of the club members and others to research, understand and experiment with this new idea of expanding local and State-wide communication on VHF, with the goal of finally getting their repeater network(s) up and running. Let's take a look back after the end of World War II and try to get a better understanding of the mindset from this new generation of ham radio enthusiast who helped put repeaters on the map. Post-World War II emerged a new generation of eager young and old hams buying up old surplus radio equipment, military and otherwise. Reverse engineering those old "boat anchors", modifying them to work on the ham bands if at all possible, and if all else failed at least they could get a good communication receiver out of it. Building your own homebrew transmitter or receiver was still popular. Technology in those days after the war was considered to be moving fast and once it got going it never looked back.

The need for improved vehicle to vehicle, or vehicle to base communications on a local/State level using the VHF band was now the main focus for hams it seemed. A whole article could be written on the subject about 5-meters (which dates back to the 1930's), 6-meters and the VHF/UHF bands and allocations during the 1950's - 1990's, and the first mobile VHF radios and their evolution to current VHF/UHF technology. I felt that information can be obtained on the Internet for reference etc., including the repeater technology, from the first true FM model to the latest of today. But here are some key points that helped gave an incentive to find a better way to communicate from vehicle to vehicle, or vehicle to base on VHF within the amateur radio community during those days. On September 11, 1958 the Citizens Band service class D was created on 27 MHz, which was the 11-meter ham band prior to the changeover. Needless to say, this did not please the amateur radio community or the ARRL losing that part of the band.

The citizens band radio service originated in the United States as one of several personal radio services regulated by the FCC. These services began in 1945 to give citizens a radio band for personal communication (e.g., radio-controlled model airplanes and family and business communications). In 1948, the original CB radios were designed for operation on the 460–470 MHz UHF band. There were two classes of CB radio: "A" and "B". Class B radios had simpler technical requirements, and were limited to a smaller frequency range. Ultra-high frequency (UHF) radios, at the time, were neither practical nor affordable for the average consumer, so that is why the change occurred to the class D and allocating the 11-meter band. With very low wattage output for CB radios the 11-meter band made perfect sense in the FCC's eyes. Why mention this piece of history? After losing the 11-meter band to CB there was some talk and concern in 1959 among hams about whether the VHF band would be next to go, keeping in mind that the Technician Class licensees were given 2-meter privileges in 1959, the same as the Novice Class licensees from 145 MHz to 147 MHz and that 146.940 MHz was becoming very popular.

So, what happened you may ask. During its infancy and shortly thereafter, understanding the characteristics of the VHF band became key to moving forward, and as it became known that in areas where signals travelled over long

Repeaters ~ Don Lacroix AA1FE, cont'd

distances, in the VHF band amateurs observed a strong signal attenuation and, in some areas, it was impossible to transmit or receive data at all. It was determined, however, that the VHF band was still possibly the best way to improve vehicle to vehicle, or vehicle to base communications on a local/State level, with a larger footprint as the goal. This was the thinking at the time, but how could it be done? They surmised that the signals needed to be re-amplified somewhere on the path and be retransmitted at a higher level without signal loss, in addition to improved radio equipment.

So, who was the first repeater experimenter that made it work, and what were the results? My research finally came to fruition when I came across several articles, one written by William Duncan WA6OHP, to which he writes:

> *"Arthur M. Gentry, W6MEP (SK) began experimenting with the concept of a radio repeater in the late 1940s but it was not until the early 1950s that he was able to put his AM repeater on top of Mount Lee overlooking Los Angeles with the call of K6MYK. For those of you who don't know where Mount Lee is, it is the one that has the big Hollywood sign that is so frequently seen in movies and on TV. The repeater continued to operate using AM until the early 1970s. Other AM repeaters began to spring up by the early 1960s. It was at that time that the commercial FM all-vacuum tube radios like the Motorola Twin-V were being traded up to transistor units with tube drivers and finals like the Motorola Motrack. This made a lot of vacuum tube FM equipment available for ham use for a very low cost. Most of these units could easily be switched to ham frequencies by changing crystals and retuning. FM is much more effective for repeater use then AM so the switch to FM was natural. There seems to be no argument that Arthur W6MEP (SK) built the first ham radio repeater, but whether or not this had any effect on the advent of commercial repeaters seems to be aloof."*

Please note that the callsign W6MEP is now the Duck Mountain Repeater Assoc., W6MEP (Club) in Glendale, CA.

The Arthur M. Gentry story was again verified when I came across another article written by Rich Stuart, WF7A in a discussion on eHam.net about repeaters in which he briefly states:

> *"Some of us can remember--or were there--when the first repeater came on-line in 1954 in San Jose, California...There was a quantum leap in amateur radio in the 20th century with the creation of the first, true repeater in 1954 by a talented group of ham ops in San Jose, California; which interestingly was on 2-meters AM. I can't do justice to this part of the story any better than Bill Pasternak WA6ITF did; he wrote about repeater pioneer, Art Gentry (W6MEP, SK)."*

Note that the article about Arthur M. Gentry and his achievement, written by Bill Pasternak WA6ITF, was forwarded to the ARRL around 2005(?) for publication consideration in QST magazine.

To summarize, I came to the conclusion that although Arthur M. Gentry in all probability was the first to succeed, it still took the collaborative efforts from many other hams and others throughout the years to make this all happen for all of us then and now. They were very resilient and determined experimenters where failure was not an option but an opportunity to learn, an learn they did as I did researching this article. The peak years of repeater popularity of the 1980's - 1990's may never be duplicated, but it is still a great place to meet old friends and to make new ones on a local or State-wide level. A place where new hams will most likely make their first contact and are welcomed into the hobby. Where local nets with various kinds of formats continue, where ARES emergency training and practice drills are practice and so forth. Let us all try to ensure that we keep the repeater networks alive and supported by us, by balancing our use of all the different modes of operation we now have, and by stopping by our local or distant repeater of choice and just "throw out our callsign" just to say hello or to enjoy a good conversation.

Sources: Wikipedia and other reliable/related amateur radio "public domain" sites and fact-checked.

17 February 2021 Business Meeting — Minutes

The meeting was brought to order by President Dave, N1DCH, at 7:35 pm local via ZOOM

Present: **K1IW**, Bob – Technical Officer; **K1KWP**, Kevin – Treasurer; **KC1LPZ**, Steve – member; **KC1OOB**, Mark – member; **N1BE**, Rob – Director; **N1DCH**, Dave, President;
N1DDK, James – Director; **W1DYJ**, Larry – trustee; **W1HAI**, Joe – member;
W1HFP, Jason – Secretary; **WA1MDD**, John – Vice-president

Repeater Status

Bob, K1IW, presented a table that detailed what was at each site, for reference
There are still some issues with Echolink reliability although the MMRA end seems to be OK
Otherwise, the system has been stable. Burlington and Belmont are still waiting for COVID to subside before repairs can be made

Freedompop / 4G changes (our internet connection at each site)

Freedompop has said they are discontinuing this plan in favor of a "new improved" plan which is based on the AT&T network

- Current plan: 200MB/mo and free
- "Improved" plan: 25MB/mo free, $8 for 500MB after that.

New plan requires new SIM card to be installed – Bob has obtained all the new SIMs needed if they deactivate the old-plan SIM cards
So far the old-plan SIM cards are still working
If the old-plan SIMs stop working, we have two options:

1. Convert to the new-plan SIMs. No cost to convert, but we will definitely exceed the 25MB/mo limit, thus we will eventually be paying $8/mo for each of 6 lines.
2. Convert to TELLO, which is $5/mo. However, Tello recently switched away from Sprint to T-Mobile, so the old 'modem' we have will no longer work. We would have to pay $100 for a T-Mobile compatible device for each one we convert.

Recommend we stick with the Freedompop devices
No need to change until the old-plan SIMs stop working – then will have to visit each site and swap in the new SIM.

- Downside to this plan: remote programming will be difficult to impossible until new SIM is installed. (Can "sort of program" via tones sent via RF.)
- Burlington SIM will be inaccessible, but it is possible we can get the hospital staff to swap the SIM card for us.

Recommendation accepted: we will wait to change to new SIMs (and plan) as needed

Weather Station for Sligo?

Bob, K1IW, would like to install a weather station (perhaps with camera) at Sligo to monitor conditions in/around our main Hub 1. A USB connected station is preferred.
This generated much discussion of pros and cons.
Motion (by K1IW), **Seconded** (by W1DYJ): Purchase and set up a weather station at Sligo, not to exceed $200.

- **Approved: 6 for, 2 against**
- **Bob, K1IW**, will make this happen
- Camera to be deferred

Moving Swap net to MMRA repeaters

This was first discussed at the business meeting of 16 December 2020

17 February 2021 Business Meeting — Minutes — continued

The long-time Waltham Swap Net takes place on Wednesday evening at 9 pm local on 146.64, hosted by John Flood, N1JAF

At that time (December 2020) the consensus was to link the Swap Net into the MMRA repeaters.

Current recommendation: link the net as an experiment. If successful, make it permanent.

Dave, N1DCH, to revisit this with John, N1JAF

Repeaters to be linked: the core group plus Quincy 2m and North Reading 2m

The core group of repeaters that are nominally linked are: HUB1, Boston 2m, North Reading 70cm, Mendon 2m, Lowell 70cm, Hopkinton 70cm

The link will be automated at 9 pm local (Wednesday) and be dropped at 9:55 pm local to allow for the Heavy Hitters Traffic Net to commence.

MMRA 50th anniversary (The MMRA was incorporated in 1971)

We need to do something special this year:

- Picnic (assuming we can once again meet in person this year)? Where/when?
- Special ZOOM meeting during the summer?
- Gathering at HamXposition in September?

We need a 50th anniversary logo

Mark, KC1OOB, volunteered to design this. (Target: April 30th for May newsletter)

Note: Mark's initial design on 18 February was well received!

Kevin, K1KWP, volunteered to write a newsletter article for the March newsletter to announce this celebration and to ask for someone to lead this celebration

"How-to" session

There have been a number of requests during the TIaOS Net to have a "how-to" session on linking the repeaters, etc.

This would be more than just the usual discussion of the network, but a live demonstration of how to use the codes on your HT, etc.

This could be done via ZOOM during the summer or at the first meeting in September 2021

This needs more discussion. **Kevin, K1KWP**, will lead this for now

Other Business

A discussion ensued centered around whether the MMRA should have a "Duty List" schedule of maintenance items, including timing (annual, etc.) and estimated cost.

No action was taken.

Upcoming Meetings

March – Dave – N1DCH: CHIRP programming - ZOOM

May – Charles – KC1JUO: SDR Presentation – ZOOM

Newsletter

Articles to Larry (newsletter@mmra.org) by 26 February.

Executive Session

A short Executive Session was held regarding membership issues

The meeting adjourned at 9:43 pm local.

Upcoming MMRA Meetings

Note: Meeting locations and times are subject to change. Consult the MMRA website for the most up-to-date information. Teleconference numbers will be available one week before a business meeting—if you wish to attend, email contact@mmra.org.

Wednesday, 20 January ~ Membership Meeting ~ 7:30 PM
CW DXCC in Six Months
Larry Banks, W1DYJ
Location: ZOOM Teleconference

Wednesday, 17 February ~ Business Meeting ~ 7:30 PM
Location: ZOOM Teleconference

Wednesday, 17 March ~ Membership Meeting ~ 7:30 PM
Program your rig with CHIRP
Dave Hornbaker, N1DCH
Location: ZOOM Teleconference

Wednesday, 21 April ~ Business Meeting ~ 7:30 PM
Location: ZOOM Teleconference

Wednesday, 19 May ~ Annual Meeting & Elections ~ 7:30 PM
Program: SDR Presentation
Charles Miller, KC1JUO
Location: ZOOM Teleconference

Wednesday, 16 June ~ Business Meeting ~ 7:30 PM
Location: TBI

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	KB1OQA	Tom Turner
Week 3	KC1CLA	Ed Curley
Week 4	K1KWP	Kevin Paetzold
Week 5	K1BTZ	Jonathan Traum

To connect using Echolink / IRLP during the Net:

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

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

MMRA Leaders

Executive Board — Officers

President	Dave Hornbaker	N1DCH
Vice President	John Spencer	WA1MDD
Secretary	Jason Peardon	W1HFP
Treasurer	Kevin Paetzold	K1KWP
Clerk	Charles Miller	KC1JUO

Executive Board — Directors

Director »2021	Bob DeMattia	K1IW
Director »2021	Roger Coulson	WA1NVC
Director »2022	Rob Evans	N1BE
Director »2022	James Lee	N1DDK

Technical Officer

Technical Officer	Bob DeMattia	K1IW

President Emeritus

Bob DeMattia K1IW

Technical Officer Emeritus

Bryan Cerqua W1BRI

Repeater Trustees

* Belmont 145.43	Ed Curley	KC1CLA
* Boston 146.82	John Mullaney	K1BOS
* Boston 927.0625	Rick Zach	K1RJZ
* Brookline 145.16	Joyce DeMattia	K1IWW
* Brookline Rcv 146.82	Bob Phinney	K5TEC
* Burlington 224.88	Bruce Pigott	KC1US
* Hopkinton 449.575	Bryan Cerqua	W1BRI
* Marlborough 53.81	Bryan Cerqua	W1BRI
* Marlborough: 29.68, 144.39, 147.27, 223.94, 448.225, 449.925, 927.70 Lowell 442.25 all as W1MRA	Bill Northup	N1QPR
* Mendon 146.61	Kevin Paetzold	K1KWP
* N. Reading 146.715	Bruce Pigott	KC1US
* N. Reading 446.775	Larry Banks	W1DYJ
* Quincy 224.40	Bill Dunn	N1KUG
* Quincy 146.67	Bryan Cerqua	W1BRI
* Weston 146.79	Rob Evans	N1BE
* Weston 224.70	Eddie Mulhern	N1NOM
* Weston 442.70	Dave Hornbaker	N1DCH

Additional, non-Voting

* Newsletter Editor	Larry Banks	W1DYJ
* Emerg. Coord.	Kevin Paetzold	K1KWP
* Pub. Serv. Coord.	Bruce Pigott	KC1US
* VEC Liaison	Bill Wade	K1IJ
* Net Manager	Larry Banks	W1DYJ
* Web Page Editor	Bob DeMattia	K1IW

* Appointed

Contacting the MMRA

Members: mmra@groups.io
Note: This may take some time.
You must be approved by the moderator.
Officers: contact@mmra.org
Control Ops: control-ops@mmra.org

http://www.mmra.org/

@mmraham

https://www.facebook.com/mmraham

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 week.

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

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

MMRA VE Sessions
Stay tuned for more in the future.

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 (449.495) is linked to the following repeaters, Boston (146.820), North Reading (446.775), Mendon (146.610), Lowell (442.250), and Hopkinton (449.575). 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 web.

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.