



# Minuteman Repeater Association

# The Minuteman



Volume 51 Number 1 September 2021

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

**We have TWO (2) MMRA meetings this month!!!**

## Northeast HamXposition

Sunday, 12 Sept., 12:00—13:00

Salon B

**Jason Peardon ~ W1HFP**

Jason will lead a presentation on the MMRA repeater network followed by our annual raffle drawing.

First Prize: SDRplay RSPdx

Second Prize: Mobilinkd TNC3

Third Prize: Powerwerx Powerpole Kit

Join us for dinner Friday and/or Saturday night!

Friday night is the DX Dinner, Saturday Night is the Grand Banquet. There are Door Prizes!

Purchase tickets at <https://hamxposition.org/>

**During the convention, visit the MMRA in  
the Executive Room**

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### Membership Meeting

Wednesday, 15 September 2021

7:30—9:30 pm

**Dave Hornbaker – N1DCH**  
**Shortened 80m End Fed Half**  
**Wave Antenna**

Location: New England Sci-Tech, Natick  
+ Zoom Teleconference

Dave will discuss his Shortened 80-meter End Fed Half Wave Antenna. He will start with an overview of End Fed Antennas then, move onto the End Fed Half Wave. Dave will talk about how to feed an End Fed Antenna, counterpoise, and grounding. He also will discuss the design of his two End Fed Half wave antennas, the differences and performance, as well as design of the transformers and the common mode choke. He will also delve into the need for a counterpoise and common mode choke.

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 owns and is president of DCH Consulting Services, an Information Technology company. He has worked in the computer industry for over 40 years, most recently with the Microsoft Corporation. David is a graduate of University Massachusetts Lowell. BS, MS, Information Technology.

## 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](mailto: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](mailto: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 <i>Remote receive Marlboro West: PL=100</i>	53.810	71.9	W1BRI	PTL	PTL	
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	
	<i>Remote receive in Brookline Boston: PL = 127.3</i>						
Marlborough	147.270	146.2	W1MRA	PTL	PTL		
1½m	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 <i>System Fusion</i>	446.775	88.5 Linked 71.9 Local	W1DYJ	FTL [88.5]	PTL [88.5]	
	Marlborough	448.225	na	W1MRA	D-Star (REF050C)		
	Hopkinton <i>System Fusion</i>	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 *	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 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.

## President's Corner ~ David Hornbaker, N1DCH

Hybrid meetings are here! MMRA held its first hybrid meeting, a bi-monthly Business Meeting, on August 18<sup>th</sup>. We tested the process for hybrid meetings in preparation for the September 15<sup>th</sup> Membership Meeting. I anticipate that all future membership meetings and most business meetings will be hybrid.

The slides, from July's special "members only" presentation by Kevin – K1KWP, are available on our website. You must be a member and be logged into the website. Click on "My Profile" on the left-hand side of the home page. The link is directly above your profile information.

There are two MMRA meetings this month. The first meeting will be on Sunday, September 12, 12:00 PM during HamXposition in Salon B. Jason – W1HFP will be presenting "Introduction to the Minuteman Repeater Association". There will be a raffle drawing following the presentation. The second meeting will be Wednesday, September 15<sup>th</sup> at New England Sci-Tech in Natick, MA. I will be presenting "A Shortened 80-meter End Fed Half Wave Antenna".

Please visit us in the Executive Room at HamXposition September 10-12 in Marlborough. Check out HamXposition's web site for more information <https://www.hamxposition.org/>

MMRA is sponsoring a raffle at HamXposition, see below for the prizes. Raffle tickets are: \$2.00 each, \$5.00 for 3, \$10.00 for 7. Tickets are available at the MMRA booth. If you renew for 2 years, before September 12 at noon, you will receive one free entry. You do not need to be present to win.

Membership renewal! All MMRA memberships expire in August. Please check your profile and if your membership expires this year, please renew. Renewals may be done at HamXposition, 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. While you're on the website (<https://www.mmra.org>) checking your expiration date, please verify your email address. We have had several email bounces recently.

Join us Tuesday nights at 8:00 PM for our weekly Technical Information and Other Stuff (TlaOS) 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. 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](https://www.mmra.org/repeaters/repeater_linking.html)).

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](mailto:contact@mmra.org) and we will update your callsign in the database.

## 19 May 2021 Annual Membership Meeting Minutes

President N1DCH called the ZOOM meeting to order at 7:30pm local.

### The first order of business was election of officers:

One-year term

N1DCH, David Hornbaker, President

WA1MDD, John Spencer, Vice President

K1KWP, Kevin Paetzold, Treasurer

W1HFP, Jason Peardon, Secretary

Directors – Two-year term

K1IW, Bob DeMattia, Director → 2023

WA1NVC, Roger Coulson, Director → 2023

*There was no candidate for Clerk.*

There being no additional candidates, the slate was elected.

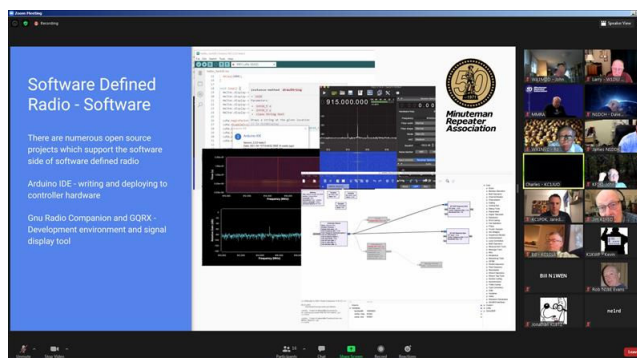
### The second order of business was to reauthorize the emergency fund

The emergency fund allows the Board to authorize up to \$2500 without a membership vote for emergency repair or replacement of existing equipment. This policy has been in place for three years and must be reauthorized each year.

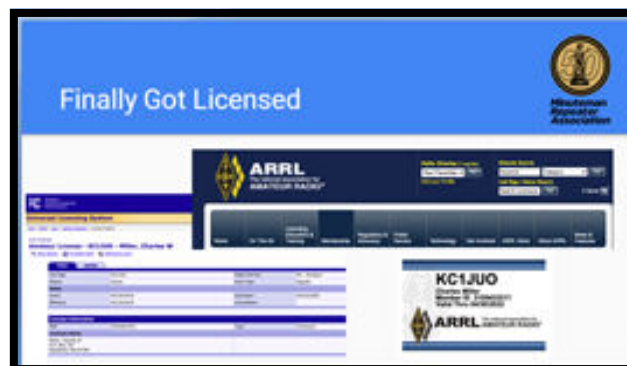
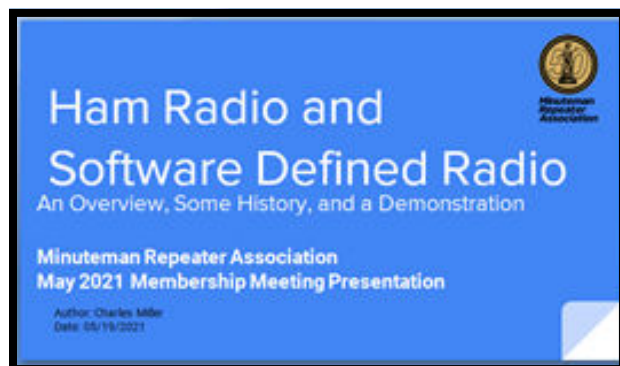
This was reauthorized.

### The “Main Event”: Charles Miller - KC1JUO Ham Radio and Software Defined Radio An Overview, Some History, and a Demonstration

Charles has been licensed since 2017 with the call sign KC1JUO. During his many decades of tinkering, he has built and broken much. He is a Gordon Engineering Fellow with a Computer Science degree from Boston University and a Master of Information Systems from Northeastern University. His current career focus is on Cyber Systems Engineering, receiving his CISSP certification in 2019.



Here are some of his slides.





# 19 May 2021 Annual Membership Meeting Minutes

## Getting on the Air



Minuteman  
Repeater  
Association

## Radio Frequencies

### Three Popular Bands:

- VHF (144-148 MHz) often referred to as 2 meters
- 1.25 (222-225 MHz)
- UHF (420 - 450 MHz) often referred to as 70 cm

Interceding Technology: LoRa and LoRaWAN

over wide-area network modulation (which considered security as architecture and specification)



ARRL  
The national association of  
AMATEUR RADIO

144.1 - 2 Meters (144 MHz)

1.25 Meters (222 MHz)

70 cm (420 MHz)

LoRaWAN

LoRaWAN

LoRaWAN

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## LoRa and LoRaWAN

Standard: IEEE802.15.4

Frequency: ISM bands: 433MHz, 915 MHz

Bandwidth: 125KHz, 250KHz, 500KHz

Data Rate: Up to 50Kbps

Range: Up to 20 KM or approx. 12.5 miles

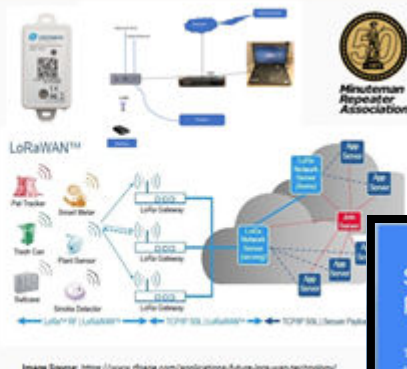


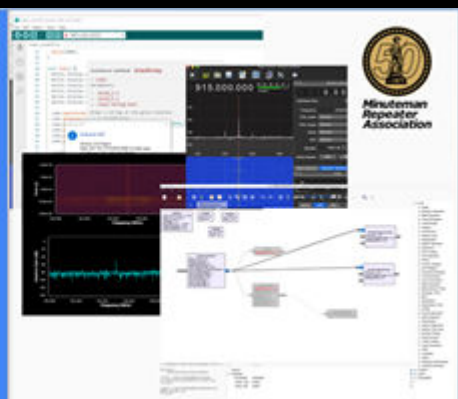
Image Source: <https://www.rpaga.com/applications-future-lo-ran-technology/>

## Software Defined Radio - Software

There are numerous open source projects which support the software side of software defined radio

Arduino IDE - writing and deploying to controller hardware

GnuRadio Companion and GQRX - Development environment and signal display tool



## Software Defined Radio - Hardware

There is a huge variety of Hardware options most of which are open source.

Mono-Pole 915MHz Antenna

HackRF One - Great Scott Gadgets

RF Impedance SWR Analyzer/Meter

Hefter ESP32+ LoRa Series / Arduino



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## Thanks!

Charles Miller

kc1juo@gmail.com

[www.mmra.org](http://www.mmra.org)

Some organize differently...

Ham Radio Where All Are Welcome :)



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## 16 June 2021 Business Meeting Minutes

President N1DCH called the ZOOM meeting to order at 7:37 pm local.

### Present:

N1DCH, Dave: President / Trustee	K1KWP, Kevin: Treasurer / Emergency Coordinator
W1HFP, Jason: Secretary	KC1US, Bruce: Trustee / Public Service Coordinator
K1IW Bob: Director / Technical Director	WA1NVC: Roger, Director
W1DYJ: Larry, Trustee / Net Control / Newsletter Editor	

### In-person Meetings

- We discussed when we would go back to in-person meetings. The consensus was that hybrid meetings are here to stay and we need to be good at them, and they should start soon.
- The August business meeting will be our first hybrid, and will be held at New England Sci-Tech, Natick. This will be a “dry-run” of our first hybrid meeting. Dinner before is planned.
- The September membership meeting will be hybrid at New England Sci-Tech, Natick. Dinner before the meeting is planned.
- Those present felt that we need to have our own equipment and expertise for hybrid meetings as we will be at venues that are not set up with hybrid equipment.

### Repeater Status

The major portion of the meeting concerned our repeaters.

**Burlington 224.880:** The off-frequency crystal has been replaced, but the receiver is out of alignment and cannot be properly fixed. The audio is off by about a kilohertz or two. **Bryan, W1BRI** has suggested using a Spectra Engineering MX800, and **Bob, K1IW** suggested we replace this very old system (a VHF Engineering TX-220B transmitter and Kendecom MR-4 receiver) with an MX800. Bob asked **Roger, WA1NVC** to describe this rig. Roger volunteered to modify one from its 217 MHz native mode to 220 MHz FM. (The MX800 quality is superior to anything else we have seen and less than 1/2 the price of a Bridgecom repeater.)

**Bob, K1IW:** motion to spend up to \$500 to purchase an MX800

**Larry, W1DYJ:** second

Motion carried

**Belmont 145.430:** The link radio will (hopefully) be repaired by end-June, and a new link antenna installed.

**Mendon 146.610:** The link radio is again dead. **Bryan, W1BRI** will endeavor to check it out soon.

**Quincy 147.670:** The TX tone is disabled as it gets into the RX, creating chaos. No easy fix is known.

**Overall Network:** There has been noise during HHTN nets, cause unknown.

TlaOS nets have witnessed a lot of “beeps and bops”, apparently from the N1IMO-N1IMN network in New Hampshire. **Bob, K1IW** has changed the link timing; perhaps this will reduce this issue.

**Freedom Pop:** Ongoing issues with our internet connection are slowly being resolved.

**Router Power:** **Bob, K1IW**, has installed remotely switched power cables at BUR, HOP, and MRE. This allows power recycling of the routers if they go down. **Bryan, W1BRI**, will install one at MDM. **Mike, K1UVH**, will install one at Quincy.

**Controllers:** Apparently, 7330 controllers are now in “end-of-life” status. The remaining ones will be sold and no new ones will be manufactured. A discussion about how to address this led to many possible scenarios. No decision was made.

## 16 June 2021 Business Meeting Minutes—cont'd

### HamXposition Plans (September 10-12, Marlboro)

**Prizes:** We agreed to fund up to \$500 in prizes. **Jason, W1HFP** volunteered to investigate. A “nanoVNA” was suggested as a prize, along with a few other traditional items.

**HamXposition Advertisement:** The MMRA has traditionally purchased one.

**Kevin, K1KWP:** Moved to purchase the “color centerfold” for \$300

**Dave, N1DCH:** Seconded

**Approved**

**Larry, W1DYJ:** Volunteered to mock up an ad, based on last year's

**Booth & Talk-In:** This is a major effort (and a good contribution to HamXposition) that requires much planning. **Clark, N1NVK** was our “usual” volunteer but he has moved to AZ. We need volunteers to make this happen. We also collect dues and raffle ticket money for the door prizes.

**Dave, N1DCH & Jason, W1HFP** volunteered to share the official duties, money and otherwise. An email request for volunteers will be sent to the membership.

**Signage:** We need a new MMRA banner. **Dave, N1DCH** will check into Staples for pricing of an 8' x 2' banner. Suggested design: our new logo at the ends with the name and URL in the middle.

**Updated Brochure?** **Larry, W1DYJ** volunteered to mock up a new tri-fold.

**MMRA meeting:** Our usual time-slot is noon on Sunday to allow for the maximum number of raffle tickets to be sold.

**Dave, N1DCH** will submit the meeting request to FEMARA

**Jason, W1HFP** agreed to be the presenter

### July Members-only Special Meeting

Scheduled for 21 July at 7:30 pm local via ZOOM

**Kevin, K1KWP** will present: topic to be the usage of our repeater system

There will be a special July newsletter detailing the meeting

### Treasurer's Report

**Kevin, K1KWP** presented a detailed report of our finances. A shortened version of this will be in an upcoming newsletter.

### Upcoming Meetings

July 21 – Kevin, K1KWP: Using the MMRA Repeater System - Zoom

August 18 – Business Meeting - Hybrid

September 15 – Dave, N1DCH: Shortened 80m End Fed Half Wave Antenna - Hybrid

October 20 – Business Meeting - Hybrid

November 17 – Jason, W1HFP: topic to be determined – Hybrid

### Upcoming Newsletters

There will be a special newsletter in July for Kevin's [K1KWP] special member only Presentation.

Input to Larry [W1DYJ] by 30 June

Input for the September newsletter, to include both our September membership meeting and HamXposition, is due to Larry [W1DYJ] by 20 August. [This is early!]

**The meeting was adjourned at 9:40 pm local.**

Submitted by Larry Banks, W1DYJ, Clerk pro-tem

## TESLA VS. MARCONI, Who Invented Radio? ~ Don Lacroix AA1FE

Was it Marconi or Tesla who actually invented radio, or was it really an indirect collaboration of many other people during their lifetime, and why has it taken over a century for the confusion and finally some clarification to slowly come forth through the decades? In fact, I am convinced that the truth is still confusing despite the **1943 Supreme Court ruling -- Marconi Wireless Tel. Co. v. United States - 320 U.S. 1** as we shall see later on. There are many good books about Tesla and one I can recommend is called [\*Tesla, Man Out of Time\*](#), by Margaret Cheney. It has a 1981 copyright date on it, but was re-released in 1993. If you are fascinated by Tesla and even amazed at Tesla's unbelievable inventions then this book is for you. Tesla was not only a real success in the electrical fields, but also a terrible failure in many ways. And one of those struggles and failures was his inability to get recognition for inventing and/or his contributions towards the invention of radio during his lifetime. It is a very good book about the man and his inventions, ideas and contributions. My reading changed my own thoughts about him, to which I now see him as a man way ahead of his time.

Tesla actually invented the idea of radio in 1892, not too long after Heinrich Hertz demonstrated UHF spark wireless transmissions in Germany in 1885. In 1898, he developed a radio-controlled robotic boat which he demonstrated by driving the boat remotely around the waters of Manhattan from a set of controls at Madison Square Garden. But despite this amazing feat, he tried for years to sell the idea to the Navy without success. Once realizing the importance of radio, Tesla actually built a huge transmitting tower at Wardenclyffe on Long Island in 1900 to develop worldwide radio transmission services. He ran out of money and could not raise the capital to continue. He actually went bankrupt, thus ending his formal radio research and development.

Marconi began experimenting with Hertz's spark apparatus and developed improvements to extend the transmission range to one mile, then hundreds of miles. He received British patents for his radio inventions. In 1901, he demonstrated the first trans-Atlantic radio transmission. He went on to form a wireless telegraphy business for the British. While all of the first patents were related to spark wireless, the real important patents were for continuous wave (CW) transmission on one frequency. Spark gap transmitters radiated a very broadband signal on no particular frequency. CW signals used the resonance of tuned circuits and antennas.

Marconi's real contributions are more engineering and commercial than theoretical. He took the basic ideas and inventions of others and improved upon them and made them practical business successes. Tesla was almost the opposite. He created original ideas and proved them mathematically and physically, patenting some and not others. Some of his best ideas like the AC induction motor was a commercial success which brought him fame but not riches. Marconi, of course, was already very rich. The patent battle between Tesla and Marconi went on for years. Marconi died in 1937. Tesla died in 1943 and six months after his death the US Supreme Court ruled that all of Marconi's radio patents were invalid. Because of this decision by the US Supreme Court some thought Tesla was rewarded the patents. So, for many years before and since the US Supreme ruling, most thought Marconi was still the only one who invented radio. Few actually know of Tesla's radio inventions. He is of course well known for his strange experiments with high voltage, lightning, and the claim he had invented not only an electrical "death ray" but a way to transmit electrical power wirelessly.

Like most significant inventions, radio had not just one "father," but many. British mathematician James Clerk Maxwell first proved the existence of radio waves mathematically in 1864. The German physicist Hertz set out to prove Maxwell's equations and did so in 1885. After that, lots of others jumped into the



## TESLA VS. MARCONI, Who Invented Radio? — cont'd

fray. Some of them included Briton Oliver Lodge, Indian physicist Jagdish Chandra Bose, and the Russian Alexander Stepanovich Popov. And none of this would have happened unless Edouard Branly invented the coherer, the first real detector of radio waves. This device used metal filings inside a glass tube that served as a kind of crude but sensitive diode detector.

A fuller answer is that although Tesla did do groundbreaking research in early electrical systems, most importantly wired power transmission using alternating current, his contributions to radio technology were minimal, overshadowed by the far more important practical work conducted by other inventors and scientists such as Heinrich Hertz, Oliver Lodge, Guglielmo Marconi, Karl Braun, the latter two shared the Nobel prize for physics in 1909 -- Reginald Fessenden and John Stone. Tesla was a major player in building the first big power-generating plant at Niagara Falls, NY. In any case, he was also a major player in making AC the electrical power of choice. And despite his essential role and success, he never got rich like the Westinghouse's and Edison's of his time.

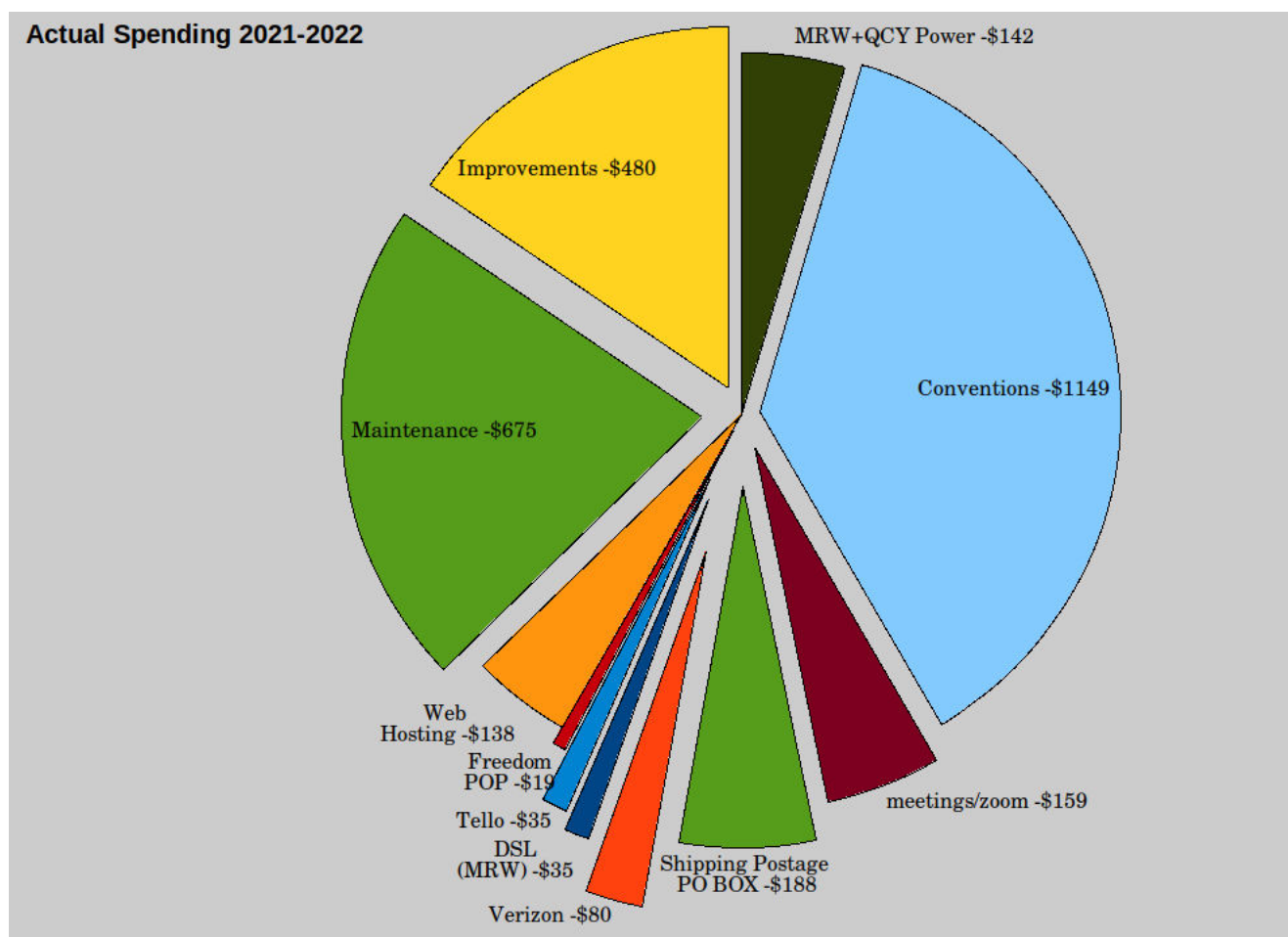
And about that **1943 Supreme Court ruling *Marconi Wireless Tel. Co. v. United States* - 320 U.S. 1**, this case actually did NOT even try to determine "who invented radio". Instead, it just set governmental compensation for the use of patents primarily during World War One, not the original patents covering radio transmission and reception, but ones covering later improvements. One of these improvements was using an adjustable "four-circuit" transformer configuration for radio transmission and reception. And in this matter, the U.S. counterpart to Marconi's original British "four sevens" tuning patent was in fact invalidated. But, instead of awarding priority to Tesla, the court actually upheld a 1935 lower court ruling that Oliver Lodge's and especially John Stone's earlier work and patents had priority. So, to recap, the 1943 decision didn't overturn Marconi's original patents, or his reputation as the first person to develop practical radiotelegraphic communication. It just said that the adoption of adjustable transformers in the transmitting and receiving circuits, which was an improvement of the initial invention, was fully anticipated by patents issued to Oliver Lodge and John Stone. (This decision wasn't unanimous, but the dissents sided not with Tesla, but with Marconi.)

Radio or wireless was strictly a telegraphy medium until the vacuum tube was invented. The first tube diode was invented by John Fleming of England in 1904. In 1906, American Lee de Forest invented the triode vacuum tube that quickly made radio even better because of the amplification and oscillation it could provide. Reginald Fessenden then made the first AM radio broadcast in 1906. By the 1920s, there were hundreds of radio stations in the USA. Edwin Armstrong invented FM in 1933, but lost the patent battle with RCA, and committed suicide shortly thereafter. Then in 1947, Shockley, Bardeen, and Brattain at Bell Labs invented the transistor which Shockley later perfected into the transistor as we know it today. In 1957 and 1958, Jack Kilby (Texas Instruments) and Robert Noyce (Fairchild, later Intel) invented integrated circuits.

I suspect even with all the information, court rulings etc., it seems that Tesla really never got all the recognition or financial backing for his ideas, experiments and achievements during his lifetime. Marconi, on the other hand, went on to achieve much fame and recognition, was financially secure and is still considered by many as the "father of radio". As the debate continues from the Tesla and Marconi camps as to who is the "father of radio" we should always remember that even in this case it still took the collaborated efforts of the many great scientific minds during that period of wireless experimentation and credit should be given to all of them and not just one person, itemizing each of their contributions to the final invention of what we call radio.

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

## Treasurer's Report ~ Kevin Paetzold ~ K1KWP



### 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

## 18 August 2021 Business Meeting — Minutes

Brought to order by President **Dave, N1DCH**, at 7:35 pm at New England SciTech

**Present:** Dave, N1DCH; Larry, W1DYJ; Bob, K1IW; Bruce, KC1US; Roger, WA1NVC; Bob, K5TEC

**Via ZOOM:** Kevin, K1KWP; Bob, N1BE; Kevin, AE1EI; Lars, N1LKS; Jason, W1HFP; Dan, N1DFL; John, WA1MDD; Don, KC1NJO; Jon, K1BTZ; Mike, K1TWF (guest); Mike, W1USN (guest)

### Agenda

#### HamXposition plans

The MMRA traditionally has held a raffle on Sunday. **Jason, W1HFP**, volunteered to choose and purchase the prizes. This year's prizes:

- SDRplay RSPdx (\$239.95)
- Mobilinkd TNC3 (\$119.95)
- Powerwerx PowerpoleBag (\$99.95)

The staffing schedule for the MMRA booth needs to be pinned down. **Dave, N1DCH**, volunteered to send out an email soliciting participants

The MMRA is responsible for the talk-in frequencies for HamXposition. We need volunteers to be on-the air. **Dave, N1DCH**, volunteered to send out an email soliciting participants

Our MMRA banners have disappeared. We have both large and small banners for publicizing our participation in HamXposition. Given our 50<sup>th</sup> anniversary, we need new banners. This led to the approval of purchasing new banners:

**Moved: Rob Evans, N1BE**, to purchase a 4' x 2' and 6' x 3' mesh banner, not to exceed \$150

**Seconded: Bob DeMattia, K1IW**

**Approved**

The MMRA typically has signage in our HamXposition booth to indicate such things as membership fees, raffle ticket prices, and our free membership offer to new hams. We need new ones.

**Moved:** Rob Evans, N1BE, to print and laminate a total of 13 of these signs, cost not to exceed \$40

Three raffle ticket prices

Five newly licensed

Five membership prices

**Seconded:** Bob DeMatia, K1IW

**Approved**

The MMRA provides a "Tri-fold" brochure to VE sessions and other events. We need a new one.

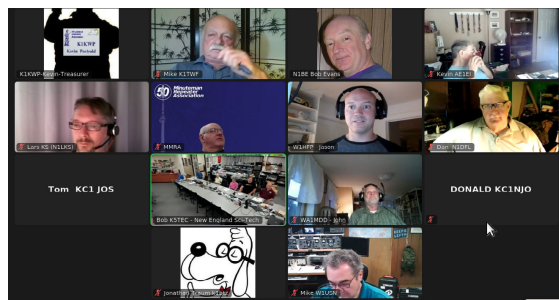
Larry, W1DYJ, designed a new one

The consensus was to print 250 of these for HamXposition use

**Moved (Rob E, N1BE) and seconded (Bob D, K1IW)** to spend <\$200

**Approved**

Jason, W1HFP, noted that we need a new roll of raffle tickets – the old roll is probably with the banners. After the meeting and via an email vote, up to \$15 was approved.



## 18 August 2021 Business Meeting — Minutes — continued

*The business meeting then went into Executive Session to discuss a repeater issue.*

### Social Media Coordinator

We have had several instances over the last three years when comments and questions posted or direct messages were not responded to.

#### **Responsibilities**

Monitor and respond to questions direct messages from Facebook & Twitter

Develop a Social Media strategy

Publish meeting videos?

We have had a member express interest in this appointed position. **Dave, N1DCH**, will discuss the position with this member

### Repeater Status

- North Reading Link has been fixed.
- Belmont link antenna is UP, transmitted signal into '925 is good,
  - But the radio couldn't hear the HUB. Testing in Bob's garage showed it needed a -70dBm signal just to open the squelch. Radio has now been repaired. Bob needs to make new connector cable for it because the current one is flaky, then the radio will be reinstalled.
- RF conversion work on new Burlington 220 machine is complete – Roger transferring repeater to Bob for final work
- Internet migration to Tello:
  - Hopkinton, Mendon, Quincy, North Reading, and Marlborough East has been migrated
  - Burlington migration will take place when new repeater is installed

### MMRA VE Sessions

Bill no longer wants to handle testing

- Do we want to sponsor VE sessions? Perhaps we should do this with another club?
  - Need a new VEC coordinator
- Dave, N1DCH**, will discuss this with some potential candidates

### Repeat of Kevin's special presentation

- The presentation needs to be updated
- Will probably be scheduled for a special meeting in the sometime future

### Upcoming meetings — see page 10

### Newsletter

Deadline: Friday, 20 August

Email W1DYJ@mmra.org

**Meeting adjourned at 9:28.**

Submitted by Larry Banks, W1DYJ, Clerk pro-tem



## 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](mailto:contact@mmra.org).

Sunday, 12 September ~ Noon

The MMRA Repeater System ~ Jason Peardon, W1HFP  
HamXposition, Marlboro MA

Wednesday, 15 September ~ Membership Meeting ~ 7:30 PM

Shortened 80m End Fed Half Wave Antenna ~ Dave Hornbaker, N1DCH  
New England Sci-Tech, Natick + Zoom Teleconference

Wednesday, 20 October – Business Meeting ~ 7:30 PM

ZOOM teleconference

Wednesday, 17 November ~ Membership Meeting ~ 7:30

Space Weather ~ Jason Peardon, W1HFP  
Marlborough Central Fire Station, Marlborough + Zoom Teleconference

Wednesday, 15 December – Business Meeting

Zoom Teleconference

Wednesday, 19 January ~ Membership Meeting ~ 7:30

SKYWARN Training ~ Robert Macedo, KD1CY  
New England Sci-Tech, Natick + Zoom Teleconference

Wednesday, 16 February – Business Meeting ~ 7:30

Zoom Teleconference

Wednesday, 16 March ~ Membership Meeting ~ 7:30

Grounding and Bonding ~ K3LR  
New England Sci-Tech, Natick + Zoom Teleconference

Wednesday, 20 April – Business Meeting ~ 7:30

Zoom Teleconference

## 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](mailto: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	OPEN	-----

### Executive Board — Directors

Director »2023	Bob DeMattia	K1IW
Director »2023	Roger Coulson	WA1NVC
Director »2022	Rob Evans	N1BE
Director »2022	James Lee	N1DDK

### Technical Officer

Technical Officer	Bob DeMattia	K1IW
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### President Emeritus

Bob DeMattia	K1IW
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### Technical Officer Emeritus

Bryan Cerqua	W1BRI
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### 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	OPEN	
* Net Manager	Larry Banks	W1DYJ
* Web Page Editor	Bob DeMattia	K1IW
* Social Media Coordinator	Steve Umans	K8ZBE

\* Appointed

## Contacting the MMRA



Members: [mmra@groups.io](mailto:mmra@groups.io)

*Note: This may take some time.*

*You must be approved by the moderator.*

Officers: [contact@mmra.org](mailto:contact@mmra.org)

Control Ops: [control-ops@mmra.org](mailto: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.

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

If you haven't updated your MMRA profile in a while, now is the time!

Go to < [MMRA.ORG](http://MMRA.ORG) > and log in to do so.

## Waltham Wranglers Swap Net

The MMRA Network connects to this swap net every Wednesday at 8:45 pm local and promptly at 9:59 pm switches over to the Heavy Hitters Traffic Net.

## Heavy Hitters Traffic Net

This net is active on our repeaters Sunday through Friday evenings from 10—11 PM.

In both cases, the repeaters that are active are:

2m: Mendon (61), Boston (82), North Reading (715), Quincy (67) and Marlborough (27)

220: Quincy (224.40), Marlborough (223.94)

440: Marlborough (449.925), North Reading (446.775), Hopkinton (449.575)

## 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 TlaOS 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](https://mmra.org/repeaters/repeater_linking.html).