Mahoning Valley Amateur Radio Association Voice Coil

July 2026	mvara.w8qly@gmail.com	The Voice Coil - Volume 26-7

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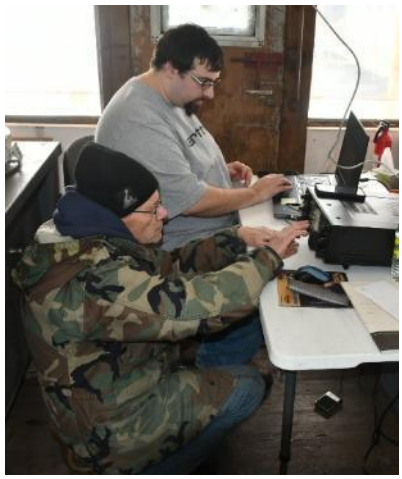


President's Corner

Hello Everyone!

First I'd like to thank everyone who came out to this year's Field Day and especially a huge thank you to those that helped with setup and teardown. Events like these are some of my favorite things to be a part of, something about seeing so many people come together for a common goal and seeing the various moving parts come together just keeps me excited about this hobby! Please stay safe as we enter the peak of not only the local temperatures but also humidities, the air is so heavy it can be tough to even breathe. Stay hydrated and take breaks if you're working outdoors! This extends to any 4th of July plans as well, be safe while having fun! See you all at the next club meeting!
73, Ralph Streb, K8TCP

Upcoming MVARA Events

Date	Event	Location
July 9, 2026	**MVARA Meeting**	**Boardman**
August 2, 2026	**Olde Car Club Special Event Station**	**Boardman**

July Club Program

For our July meeting we will be welcoming Gary Mikitin, AF8A, Amateur Radio Community Coordinator for HamSCI, the Ham radio Science Citizen Investigation. HamSCI is a community of citizen scientist volunteers (nearly all of whom are hams) and professional researchers (physicists, mathemeticians, university professors). HamSCI's primary research focus is the ionosphere, a subject near and dear to most ham operators. HamSCI has many activities for hams, such as:

- Data collection opportunities, with a DIY Personal Space Weather Station (over 100 of which are operating 24/7/365, at ham QTHs across North America)
- Weekly Zoom calls on a variety of topics and a Google Group open to all
- Operating events, such as the Meteor Scatter QSO Party
- HamSCI's Annual Workshop, where the previous years' observations and findings are presented and discussed

In addition to his HamSCI work, Gary is a retired EE and was first licensed in 1977. Gary does a lot of portable operation, and his preferred mode is CW. His QRZ page shows he had over 4900 QSO's in 2025 and 99% were CW.

ClubWear Available

Hello everybody. We are doing clubwear and here is the form for ordering it. Fill it out, add up the total, and then either bring the form along with your payment to the July meeting or mail it to the PO box on page 1. If you pay by check, make it out to M.V.A.R.A. After Nancy & myself go over the forms I will then take them to Trolio's so they can get started on the order.

Mike, K8PRR

Mahoning Valley Amateur Radio Association 2026 Clubwear

Name _____ Call Sign _____

All items are dark blue in color.

Embroidered items -
Polo Shirts - $20.00 w/o pockets, $24.00 w/pockets.
Sizes – SM thru XL (2x add $2.00 per item), (3xl – 5xl add $3.75 per item)
Call signs - $5.00 per item, names - $5.00 per item

Hoodies - $38.00 each.
Sizes – SM thru XL (2x add $2.00 per item), (3xl – 5xl add $3.75 per item)
Call signs - $5.00 per item, names - $5.00 per item

Baseball Caps - $15.00 each. (No call signs or names.)

Tee Shirts - $14.00 each, pocket T's - $16.85.
Sizes – SM thru XL (2x add $2.00 per item), (3xl – 5xl add $3.75 per item)
No call signs or names on tee shirts

Screen printed tee shirts - $9.50, pocket T's $12.35
Sizes SM thru XL. (2x add $2.00 per item, 3xl – 5xl add $3.75 per item)
No call signs or names on tee shirts

Note: We need a minimum order of 7 screen-printed tee shirts.

Item	Qty	Size	Price Each	Total Price

Total _____
Tax (7.5%) _____
Amount Included _____

Groups.io

This is a reminder that MVARA has a groups.io page we use to make announcements and discuss upcoming events and such. The page is available to all members of the club and can be found here: https://groups.io/g/mvara and there is a subscribe link about midway down the page.

Mahoning County ARES Update

ARES Update

June is Field Day, a great opportunity to practice emergency preparedness

There are many ways to participate in the ARRL Field Day. You can simply get on the air from your home or portable station as an individual. In Mahoning County we have three very active Amateur Radio Clubs and although Mahoning County ARES does not have any activities scheduled this year for Field Day we highly encourage our ARES Members to participate with their local club or as individuals. The bottom line, however, you would like to enjoy Field Day, participate in Field Day. It's the premier Emergency Operations event in the USA.

This year Mahoning County EMA has elected to bring the County's new Mobile Command Post communications vehicle to the Mahoning Valley Amateur Radio Association's (MVARA) Field Day. The Van as we call it will be at Mill Creek MetroParks Farm, 7574 Columbiana-Canfield Rd, Canfield, from 1 until 5 pm Saturday. This is a great opportunity to see this state-of-the-art communications system in action. If you're an EMA Qualified ARES Member you can even operate. Just another way to participate in this year's Field Day.

Mahoning County ARES has a lot going on. It's all happening because of you our ARES Members. Thank you all for your commitment to serving our communities in times of need.

If you're interested in joining Mahoning County ARES, please visit our website https://www.mahoning-ares.org/ , or email mahoning.ares@gmail.com

Your ARES Leadership Team.

What is a Repeater and How Do You Use One to Communicate?

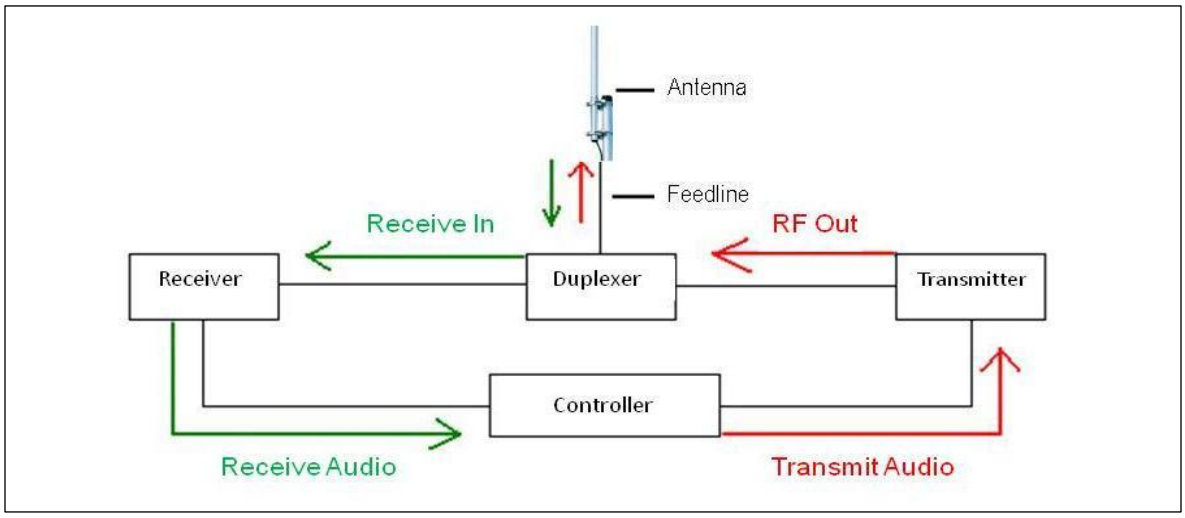
by Mark Haverstock, K8MSH

Want to get the best possible coverage in a marginal location, like inside a building or down in a valley? A repeater system can rebroadcast your transmitted and received signals to improve communications.

Repeaters and their antennas are generally located at high elevations—on towers, mountains, or atop tall buildings. To improve signals between radios, they use very efficient high-gain antennas, low-loss feedlines, and transmitter/receiver combinations rated for heavy or continuous duty. A repeater can increase your effective transmitting and receiving coverage, boosting the limited range of your transceiver alone.

How Does a Repeater Work?
Being a former track coach, I think of repeater operation as being much like running a relay race. The transmitting station hands off to the repeater, which receives the signal and passes it to the receiving station.

Since you push the transmit button to send and release to receive, only one side of the conversation is heard at any given time. If you look at Figure 1, you'll see the hardware involved in operating a repeater and the path the signals take. Here's a brief explanation of the components used:



Antenna: Most repeaters use one antenna for both transmit and receive. It's generally a high-performance, durable, and efficient antenna with an omnidirectional pattern. They're placed as high above ground level as possible.

Feedline: Repeaters use a rugged, low-loss cable called hardline. Actually, it looks more like a flexible pipe with a center conductor than a cable. Hardline provides lower signal loss than conventional coax, which means more transmitted power reaches the antenna, and weaker signals can be received by the repeater.

Duplexer: The duplexer separates and isolates the incoming signal from the outgoing and vice versa. It prevents the receiver and transmitter from interfering with one another and helps reject very strong nearby frequencies or other RF interference from entering the repeater system. A duplexer typically has two bandpass filters connected in parallel. One filter provides a path between the transmitter and the antenna, and the other provides a path between the antenna and the receiver—there's no direct path between the transmitter and receiver.

Receiver: Repeater receivers are generally very sensitive and selective, and capture signals that wouldn't be clearly heard when transmitting directly from radio to radio. It is set to receive the input frequency from radio transceivers.

Controller: This is the brain of the repeater, essentially a dedicated computer. It handles repeater station ID using either CW or voice and activates the repeater at the appropriate times. It sometimes performs a variety of functions, such as giving programmed announcements or linking multiple repeaters.

Transmitter: Most repeaters have a transmitting section containing an exciter and a power amplifier. The exciter retransmits the received audio at the proper frequency and the power amplifier boosts its output.

Keeping Things Separate

To use a repeater, a station must use different transmit and receive frequencies. Without an offset between transmit and receive signals, the repeater would only hear itself when transmitting on its receive frequency. For example, 2 meter Amateur Radio repeaters (144-148 MHz) use a +/- 600kHz offset between the receive and transmit frequencies. Repeaters in the 450-470 MHz band use a 5 MHz separation, while those in the 806-869 MHz band use a 45 MHz separation.

Using an amateur radio repeater pair on 146.94/146.34 MHz as an example, here's how the process works. Amateur radio operators would transmit their signal at the 146.34 MHz input frequency, which is received by the repeater. The repeater rebroadcasts the original signal on 146.94 to amateur radios and other receivers listening to that frequency.

Another feature that can help minimize interference and keep the repeater operating smoothly is the subaudible tone (e.g., PL, Motorola's trademarked tone system). Subaudible (low-level) tones can be sent during transmission. The purpose of the tone is to allow you to key up a repeater so you can transmit through it. If your radio is not sending the proper tone, the repeater will not open and relay the signal. Subaudible tones act as a gateway to screen out unwanted signals on receive, such as those from unauthorized users or distant repeaters on the same frequency that may interfere due to band openings.

Hams on Repeaters
Amateur radio has been around for more than 100 years, but repeaters didn't appear on the amateur bands until the late 1950s. Most of today's Ham repeaters are used for local communications on the VHF/UHF bands. Repeaters are used in many areas to extend communication range and provide local emergency communications.

Typically, you'll find repeaters between 144-148 MHz, 222-225 MHz, 420-450 MHz, and 902-928 MHz. Some still exist in the HF/lower VHF band from 29.5-29.7 MHz and 51-54 MHz, but their numbers have declined.

Though FM is still the most popular repeater mode, digital repeaters with DMR, D-STAR (such as the DX Engineering employee radio club, N8DXE, and the new D-STAR repeater), and Yaesu System Fusion capabilities are making inroads. Both digital and analog repeaters can also be connected to online networks such as Echolink, AllStar, Wires II, IRLP, and others, allowing worldwide communication capabilities from a handheld radio.

(Originally appeared in *On All Bands*, July 2019)

60M – Is it an often-overlooked gem?

As of February 2026, the FCC implemented regulatory changes that substantially expanded Amateur Radio privileges on the 60-meter band. Subsequently there has been discussion of the changes to the 60M band and why it may be a diamond in the rough. Consider a couple of points:

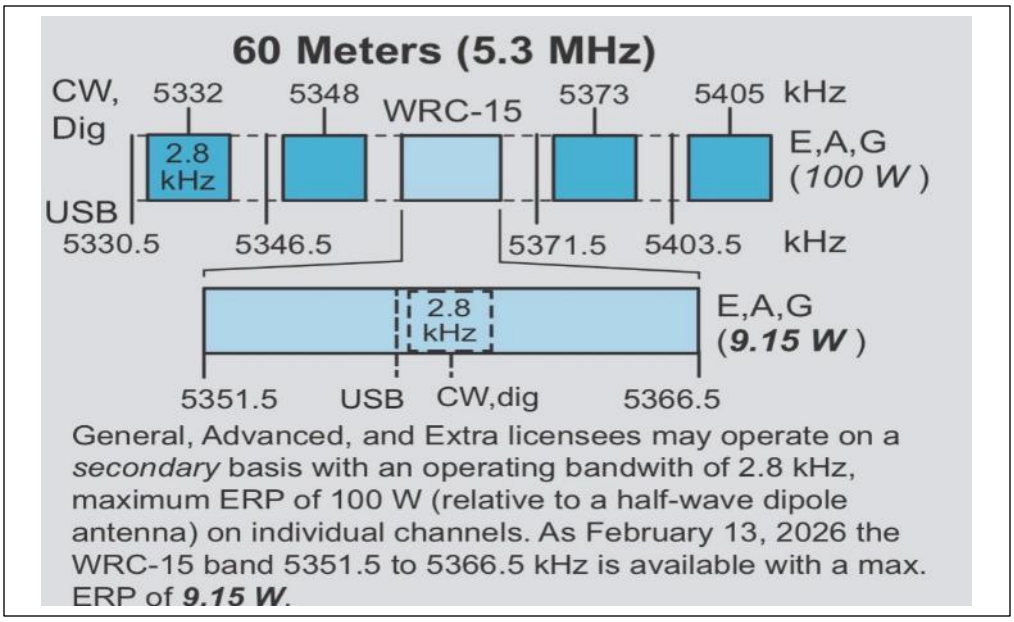
- All emergencies are local. Ok, where is local? We probably don't need to be able to talk to California if we have a crisis in Mahoning County. So HT's are the order of the day for working at the local level. But might we need to talk with other locations in Ohio – Columbus being the obvious first thought. That rules out HT's and we need to look at HF and especially NVIS operation. Of the HF bands, the 60M band is the sweet spot for NVIS and will typically support reliable communication day and night. The NVIS bands are often quoted as 80M and 40M, higher frequencies don't work well for NVIS. But what is right between 80 and 40 –-> 60M.

- Use one channel for both Voice and Digital modes. We'll talk more about the details, but what this says is you can set your radio to a single frequency and use either SSB Phone or Digital. The catch is you have to use USB, but if you work digital, you are already doing this.

- The 60M channels were specifically designed to allow government agencies to coordinate with Amateur Radio operators, particularly during emergencies. Government stations have priority on these channels; if they are actively using a channel and ask amateurs to stand by, we must comply. This framework works in our favor. Operators working on behalf of a government entity, such as the EOC, effectively hold priority over routine amateur traffic. This is a meaningful advantage when passing traffic between government-run stations and the EOC. It is also worth noting that EOCs are authorized

to operate on SHARES (Shared Resources High Frequency Radio Program) frequencies, which include the 60M channels, while shelters and other non-government sites are not.

There are a lot of details to consider when using the 60M band and ARRL has specifics on their website here: https://www.arrl.org/60m-channel-allocation , but we can make some translations.



Setting the dial. Say you want to use channel 3 in the bandplan. (There are four defined channels for 100 W operation and one for 9.15W operation.) The FCC designates specific center frequencies for 60M amateur channels. The channel centered on 5373.0 kHz is currently Channel 3 (following the December 2025 FCC "Report and Order," which replaced the former Channel 3 at 5357 kHz with the new WRC-15 contiguous allocation and renumbered the remaining channels accordingly).

The maximum permitted bandwidth on these channels is 2.8 kHz — that is, ±1.4 kHz above and below the channel center. Because we exclusively use **Upper Sideband (USB) on 60M** — **even for voice** — our transmitted signal extends upward from the dial frequency. To place the center of our signal at 5373.0 kHz, we set the dial 1.4 kHz lower, to 5371.5 kHz. If the dial were left at 5373.0 kHz and we transmitted a typical USB signal of 2750 Hz, the upper edge of our signal would exceed the channel boundary. The math technically works out to 5371.6 kHz, but the ARRL rounds to 5371.5 kHz — close enough for government work, as they say.

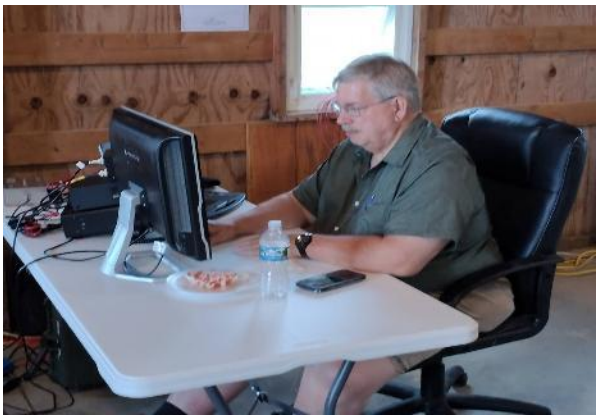
Yes, we ignored the fifth channel – the 9.15W channel. It has some special requirements we will save for another day.

(Extracted from a post by Brett Wallace, NH2KW, on the NF4RC Groups.io page.)

Field Day Photos


MVARA


MVARA




EMA

Amateur License Refresher

It's probably been a while since you took your Amateur License exam. Here are a few sample questions from the current question pools just to keep those synapses firing.

Extra Pool

E5D01
What is the result of conductor skin effect?
A. Resistance increases as frequency increases because RF current flows closer to the surface
B. Resistance decreases as frequency increases because electron mobility increases
C. Resistance increases as temperature increases because of the change in thermal coefficient
D. Resistance decreases as temperature increases because of the change in thermal coefficient

E5D02
Why is it important to keep lead lengths short for components used in circuits for VHF and above?
A. To increase the thermal time constant
B. To minimize inductive reactance
C. To maintain component lifetime
D. All these choices are correct

E5D03
What is the phase relationship between current and voltage for reactive power?
A. They are out of phase
B. They are in phase
C. They are 90 degrees out of phase
D. They are 45 degrees out of phase
D. A negative 90 degree phase angle

General Pool

G0B01
Which wire or wires in a four-conductor 240 VAC circuit should be attached to fuses or circuit breakers?
A. Only the hot wires
B. Only the neutral wire
C. Only the ground wire
D. All wires

G0B02
According to the National Electrical Code, what is the minimum wire size that may be used safely for wiring with a 20-ampere circuit breaker?
A. AWG number 20
B. AWG number 16

C. AWG number 12
D. AWG number 8

G0B03
Which size of fuse or circuit breaker would be appropriate to use with a circuit that uses AWG number 14 wiring?
A. 30 amperes
B. 25 amperes
C. 20 amperes
D. 15 amperes

E5D01 (A)
E5D02 (B)
E5D03 (C)
G0B01 (A)
G0B02 (C)
G0B03 (D)

Swap & Shop

Baofeng UV-5Rs and accessories.

Two Baofeng UV-5R dual-band HTs, each with drop-in charger, earphone/mic with PTT. Very good condition.

$15 for one, $25 for both.

Mark, K8MSH mhaverstock52@gmail.com

Upcoming Contests and QSO Parties

Dave Fairbanks N8NB

Contests:
Source is contestcalendar.com

Many more activities online. These are recommended.

July 2026	
RAC Canada Day Contest	0000Z-2359Z, Jul 1
ARAM 50 MHz Contest	1200Z-2400Z, Jul 4
Marconi Memorial HF Contest	1400Z, Jul 4 to 1400Z, Jul 5
CQ Worldwide VHF SSB/CW Contest	1400Z, Jul 4 to 1400Z, Jul 5
Original QRP Contest	1500Z, Jul 4 to 1500Z, Jul 5
Worldwide Sideband Activity Contest	0100Z-0159Z, Jul 7

ICWC Medium Speed Test	0300Z-0400Z, Jul 7
VHF-UHF FT8 Activity Contest-NA	0000Z-0500Z, Jul 9
IARU HF World Championship	1200Z, Jul 11 to 1200Z, Jul 12
Worldwide Sideband Activity Contest	0100Z-0159Z, Jul 14
Worldwide Sideband Activity Contest	0100Z-0159Z, Jul 21
ICWC Medium Speed Test	0300Z-0400Z, Jul 21
Tuesday's Telegraphy Contest	1930Z-2030Z, Jul 21
SKCC Sprint	0000Z-0200Z, Jul 22
Phone Weekly Test	0230Z-0300Z, Jul 22
A1Club AWT	1145Z-1300Z, Jul 22
RSGB 80m Club Championship, Data	1900Z-2030Z, Jul 23
QRP Fox Hunt	0100Z-0230Z, Jul 24
NCCC FT4 Sprint	0100Z-0130Z, Jul 24
Weekly RTTY Test	0145Z-0215Z, Jul 24
NCCC Sprint	0230Z-0300Z, Jul 24
K1USN Slow Speed Test	2000Z-2100Z, Jul 24
RSGB IOTA Contest	1200Z, Jul 25 to 1200Z, Jul 26
Alabama QSO Party	1500Z, Jul 25 to 0300Z, Jul 26
ARS Flight of the Bumblebees	1700Z-2100Z, Jul 26
K1USN Slow Speed Test	0000Z-0100Z, Jul 27
QCX Challenge	1300Z-1400Z, Jul 27
ICWC Medium Speed Test	1300Z-1400Z, Jul 27
OK1WC Memorial (MWC)	1630Z-1729Z, Jul 27
QCX Challenge	1900Z-2000Z, Jul 27
Worldwide Sideband Activity Contest	0100Z-0159Z, Jul 28

DX Information

Source is www.ng3k.com,

July						
2026 Jul04	2026 Jul23	**Crete**	**SV9**	LoTW	OPDX 20260513	By HB9EMP as SV9/HB9EMP; HF; CW; holiday style operation
2026 Jul07	2026 Aug04	**Benin**	**TY5FR**	LoTW	TDDX 20260211	By DL1BUG fm Cotonou (JJ16fj); 160-10m; CW SSB; 100w; wire; QRV for ARRL DX CW; QSL via DL1BUG (B/d) or Club Log OQRS
2026 Jul11	2026 Jul24	**Crete**	**SV9** NEW	LoTW	OPDX 20260613	By S50B as SV9/S50B; 40-6m; CW SSB + digital; QSL via S50B Buro or eQSL
2026 Jul22	2026 Aug14	**South Cook Is**	**E51KEE**	LoTW	OPDX 20260317	By ZL2KE fm Rarotonga I; HF; CW, some SSB; QSL via IK2DUW, Club Log OQRS, eQSL

2026 Jul23	2026 Aug08	**Azerbaijan**	**4K**	LoTW	OPDX 20260207	By DL4XT as 4K/DL4XT fm Baku; 20-10m; SSB CW FT8; 100w; 1/4 wave vertical; QSL via Club Log OQRS
RSGB IOTA Contest (Jul 25-26, 2026) Check here for pericontest activity too.						
2026 Jul26	2026 Aug06	**South Cook Is**	**E51CZZ**	IK2DUW	OPDX 20260317	By ZL4CZ fm Rarotonga I; HF; SSB

Follow/Like us at: https://www.facebook.com/mahvalradio

Website: The MVARA is on the web at www.mvara.org. It is the place to go for club events, classes, newsletters, VE exams, swap and shop, repeaters, history, documents, and contact information.

24/7 Club Connection: The MVARA is on groups.io at https://groups.io/g/mvara. Members are invited to hang out with us there and discuss any ham related topic that interest them such as, Club Activities, Parks on the Air, Solar Cycle 25, EmComm, Special Event Stations, Contesting, Public Service, and Swap and Shop. There is video on our website at **https://mvara.org/videos.html** that shows how to use and join the 24/7 Club Connection.

The ***VOICE COIL*** is the monthly publication of the Mahoning Valley Amateur Radio Association, Inc. (MVARA) and is intended to present news, issues and opinions of interest to MVARA members and the Amateur Radio Community. We encourage contributions of articles, letters to the editor, etc. and welcome newsletter exchanges with other clubs from around the country and around the world. Permission is granted to reprint material contained herein as long as proper credit is given to this newsletter and the author. Ideas for and contributions to the VOICE COIL should be submitted to: **mvara.w8qly@gmail.com**

Submissions must be received **no later than the 24th** of the month prior to the month of issue, unless otherwise specified. **Submissions should be in MS Word format or ASCII text—no PDF, please!** Material received after the deadline will be used in the next month's VOICE COIL if it is still current and /or newsworthy.

Swap and Shop Policies
Swap and Shop listings are open to all licensed Mahoning Valley Hams--you don't need to be an MVARA member. You can include a picture for your listing. Please submit your list to mvara.w8qly@gmail.com for placement in both *Voice Coil* and website. MVARA assumes no responsibility for transactions made or inaccuracies in ads. You are responsible for checking your ad and notifying us of any corrections. Ads will run for two consecutive issues unless we are notified otherwise.

The Mahoning Valley Amateur Radio Association, Inc, meets the second Thursday of every month. Location and time are subject to change. Dues are $20.00 per year, $10.00 each for additional family members. Contact Nancy, nanceanne34@gmail.com for details.

The club call is **W8QLY**; equipment operated under this call includes a two-meter voice repeater at 146.745 (-600, 110.9 PL).

Club email: mvara.w8qly@gmail.com

MONDAY NIGHT NET operates every Monday at 9:00. PM on 146.745 MHz.
SKYWARN NET - On 146.745 MHz as weather warrants.
ARES NET- First and third Mondays of each month at 8:30 PM on 146.745 MHz; prior to the Monday Night Net.

Disclaimer
The ***VOICE COIL*** is published by the MVARA. All material contained herein is considered the opinion of the author and not necessarily that of the MVARA. Announcements of events are for informational purposes and do not necessarily constitute an endorsement by the MVARA. No responsibility for accuracy is assumed by the editor or newsletter staff. Typos are included for the entertainment of those who enjoy looking for them and should be reported immediately to any nearby MVARA member :-)