Mahoning Valley Amateur Radio Association Voice Coil

June 2025 | mvara.w8qly@gmail.com | The Voice Coil - Volume 25-6

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President's Corner

Seems we have a thing for doing outside radio activities lately in the cold and rain.

First was NVIS day, it was cold and rainy the day before and just cold and windy that Saturday. The guys made several contacts I don't know the exact amount as I could not stay long as I had a prior engagement.

Next was our "Boot camp" this past Saturday and again it was cold and windy, but we had a good time. We had several setups going, of course there were the favorites. Ed had his digital setup going and that always seems to be the big draw. Dave was having a time getting it to work a couple of times with his HT games. They did have a good time doing it.

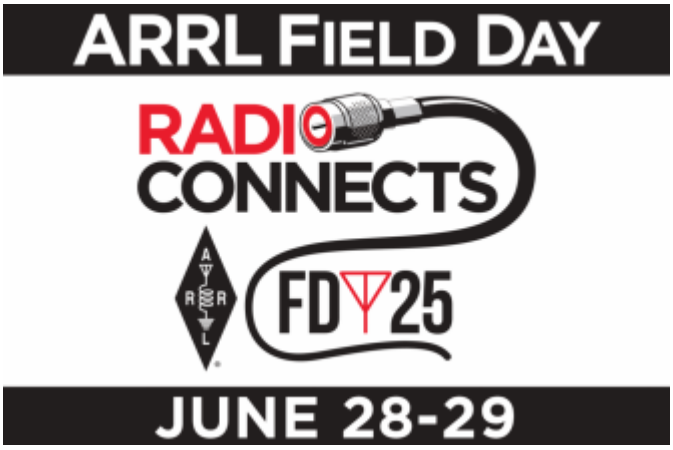
Don't forget that Field Day is coming up and we sure could use your help setting everything up. Friday will be antennas, and we can never have too many people helping. Saturday setup of all the stations. If you can't make it out, then come out for dinner on Saturday evening and have a great dinner of hamburgers and all the fixings. Scott, KE4UHC

Upcoming MVARA Events

Date	Event	Location
June 12, 2025	MVARA Meeting	Boardman
June 25, 2025	Kent Salem Workshop	Salem
June 28/29, 2025	ARRL Field Day	Canfield

June Club Program

For June we are going to do another look at coax. You may recall that Andy WA8ZLK did a program on coax specs/construction/history in May of last year. During his presentation he talked about how the dimensions of the cable determine its' impedance and that if you abuse the cable, for instance slam a car door on it, it changes the performance of the cable. That's what we are going to check at our June meeting. Ed KE8NSW is going to bring a variety of coax types and we are going to measure the power losses at various frequencies and what happens if you bend the coax. Mark W4ZIP is going to bring his Nano VNA and we will look at Return Loss on the cable.



Field Day 2025

Field Day this year is June 28th and 29th and the FD committee is working hard to make this our best one ever. I'm pleased to announce we have over 20 members involved. If you would like to join the email list, send an email to kb8gae@yahoo.com and I'll add you.

We decided we wanted to try a delta loop antenna for 20 meter SSB. Karl ND8DX had one he wasn't using so he brought it out to Boot Camp on May 24th. Setup and tear down went fast using Ed KE8NSW's push up mast and tripod. The swr was less than 1.5 to 1 across the band. Band conditions were fair. I sent a series of CQ's on CW and we checked the reverse beacon network which showed the band was long as we were heard by stations on the west coast, Florida, and western Canada. We worked a half a dozen stations including Louisiana, Florida, and Minnesota. It will be interesting to see how it plays on Field Day and if we need to, we can easily switch to the clubs 20 meter dipole.

We haven't done any 6 meters on Field Day since Dave KE8KT put up his 50 foot military mast and yagi. We are going to try some 6 meter FT8 this year and several club members are working on antennas which will give us lots of options. If we get some band openings there should be a ton of activity and we could get beaucoup QSOs.

We need as many members as possible to come out and make 2025 a success. Whether it is help with setup, operating, promoting amateur radio to the public, food service, infrastructure, or tearing down, all contributions big or small are much appreciated.

Hope to see you all there.

73 Rich KB8GAE

Mahoning County ARES Update

ARES Takes Last Minute Assignment

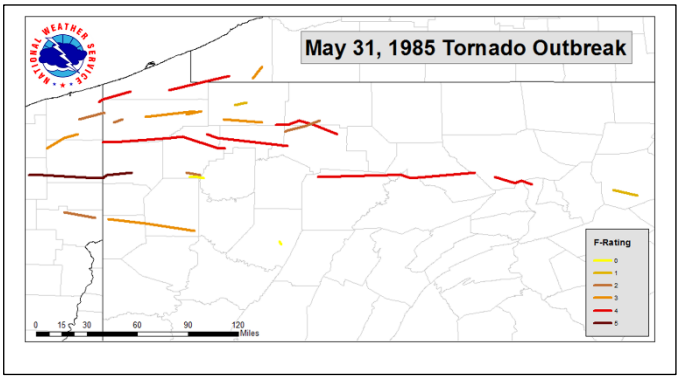
Mahoning County ARES Members met a late request to assist the Autism Society of the Mahoning Valley with the Warriors Fund Raiser May 31st at the Canfield Fair Grounds.

Answering a phone call from Jodi Glass, Autism Society Vice President for communications needs was a simple “yes we can do that” from ARES Leadership. A quick meeting at the Fair Grounds under rainy skies confirmed the project and a quick email to the entire ARES Membership resulted in volunteer operators almost immediately. ARES Leadership wants to thank all those volunteering for the rapid response.

Your ARES Leadership Team

Operators Recall Amateur Radio 1985 Tornado Response

Responding to a Vindicator request four local Amateur Radio operators sat down with reporter Bob Coupland this last week. They talked about their experiences responding to the 1985 Tornado that devastated communities from Ravenna and Newtown Falls to Niles and Wheatland Pennsylvania killing dozens in its path.



Wes Boyd - W8IZC, Andy Brinko – WA8ZLK, Jerry Love – ND8E and Frank Sole – WB8YHD related numerous stories to reporter Coupland of what they heard and did on their radios as well as what they saw at numerous sites damaged by the storm. All four operators recounted how the storm had taken out all power and telephone service to the damaged areas in its path and had even impacted police and fire communications. Amateur Radio operators were a vital part of the communications needed to respond to the many needs of the communities the tornado had impacted from Ravenna Ohio to Western Pennsylvania.

Wes, working as a WHOT Broadcast Engineer at the time, was intimately involved in the Amateur Radio response. He was at the Niles site on Route 422 and says he was very grateful that his children hadn't attended a party at the Niles Roller Skating Rink that was destroyed in the Tornado. He recounted how the EBS Alert system of the time had issues in alerting the public and later Congressional hearings led to revisions to that system. Wes also worked a shift providing radio communications at the Liberty High gymnasium where storm victims spent the weekend.

Andy listened to the Weather Net (this was pre SkyWarn in our area) as the storm was tracked and manned a position in Austintown where the weather was fine, but he could see black storm clouds to the north. He chastised another operator for announcing that a tornado had touched down in Niles as being "giving unverified storm information" when in fact the tornado had just gone through Niles. Andy spent a good bit of the next few days acting as communications liaison following Red Cross personnel canvasing neighborhoods for storm damage.

Jerry had been having dinner with his parents when the storm struck. He quickly took his radio and made his way to the damaged areas. He ended up not only working with Red Cross responders, but he became the communications liaison for Ohio Governor Richard Celeste during his lengthy visit to review the damage. Jerry and the other three operators also told many stories of not only the devastation of the storm but also the difficulty of driving through the tornado altered roads and communities.

Frank was "grilling hamburgers and hot dogs for dinner" on his apartment's patio as he listened to the developing situation on the 2 meter Weather Net. He heard someone calling for information from the Newton Falls area and recalls an operator responding, "I'm in downtown Newton Falls and it's not here anymore". Frank ended up relieving Wes for radio duty at 1 am the following morning at the Liberty High School shelter and recalled the "shell shocked look" of those that came in and those that were already there. "I just really felt for them all".

The four operators' recollections will be written up by reporter Coupland in an article to be included in a special Vindicator 40th Anniversary section about the 1985 Tornado.

If you're interested, Steven Ruman KC8YDS of the Warren Amateur Radio Club has provided a link to videos shot by local Amateurs that responded to Tornado of '85 including ground and airborne views that have a lot of Amateur Radio communications going on in the background. You can find the videos at this link:
https://os5.mycloud.com/action/share/c64163f7-f365-404d-b45d-c0d0e843c59f

All of this shows how Amateur Radio played a key role in our Community's response to a very bad day. Much of what is recalled is still relevant today.

MVARA at Hamvention

Boot Camp 2025

Ham Radio Tech: Linear Loading—Long Wire in a Short Space

by Mark Haverstock, K8MSH

For some amateur radio operators, putting up a full-length HF dipole is not always feasible. With today's postage-stamp-sized lots, some hams can only dream of installing a dipole for 80 meters—or even 40 meters.

The most common solution has been to add loading coils to reduce length. The **Alpha Delta DX-DD**, for instance, offers 40/80m coverage in half the space of a typical dipole. Loading coils work, but it comes at the cost of reduced bandwidth and efficiency. There are other options.

A linear-loaded dipole might just fit your available space. Instead of using a full-length wire, a portion of the wire is folded back on itself to reduce length. Linear loading results in a significant reduction in size while maintaining good electrical performance compared to its coil-loaded equivalent.

Know When to Fold 'Em

According to the **ARRL Antenna Book**, linear loading introduces minimal loss and has a low Q, which allows reasonable bandwidth compared to using loading coils. This method of shortening radiators can be applied to almost any antenna configuration to reduce its physical length while maintaining overall signal radiation. Folding the elements can significantly reduce the required length for resonant antennas. For example, you can make a resonant antenna that's 30 to 40% shorter than an ordinary dipole for a given band.

Performance depends on what section of the antenna is folded, by how much, and the spacing of the conductors. When experimenting with linear loading, add about 10% to the calculated conductor length as a precaution. Use the cut-and-trim method to tune while taking care to adjust both the spacing and length of the folded section to optimize the match. Feeding the antenna with a ladder line connected to a tuner is another option.

Linear loading is superior to using an inductive coil because the loading is distributed along the entire length of the element rather than being lumped. The result is significantly improved radiation efficiency and a greater bandwidth than the coil-loaded equivalent. A simple dipole can be linearly loaded to shorten its length, making it possible to operate on the lower bands despite the disadvantage of being located on a small city lot.

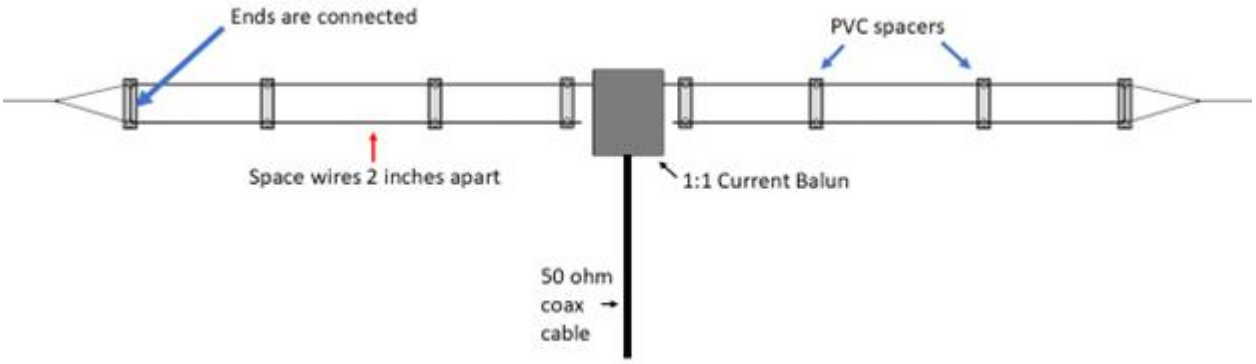
What Makes it Work?

Linear loading is a technique to make a shorter, yet resonant and efficient antenna on the frequency for which it's designed. To explain how the linear-loaded dipole antenna works, let's look at the theory of resonant circuits and apply it to an antenna.

A dipole antenna at resonance is a resonant circuit. It's the result of the combination of inductance (L) and capacitance (C). Think of a dipole antenna as a pair of coils that have been stretched out to form straight wires, one on each side of the feedpoint.

With linear-loaded dipoles, we simulate a large one-turn coil on each side of the feedpoint by folding each half of the dipole antenna back onto itself. The folded portion of wire interacts with the antenna wire above or below. Each side of the antenna becomes part of a resonant circuit, comprising inductance (due to the length of the wire) and capacitance (formed by the proximity of the folded-back wires). The resonant frequency of the dipole antenna is the result of the self-coupling of the two wires on each side of the antenna feedpoint.

Be aware that the linear-loaded dipole will be less efficient on bands other than its fundamental resonance frequency. In the example below, it is in the 40-meter band with a third harmonic in the 15-meter band. Of course, it can be coaxed into working on other bands with an antenna tuner. The tuner will make your transceiver think it's properly matched to your antenna system.



The overall length of this easy-to-build M0PZT version is 40 feet for the 40m band. It will also cover the 15m band. The feedpoint impedance for this configuration is about 35 ohms. Important: Keep the wires parallel**.** (Image/Mark, K8MSH)

Want to go vertical? Electrically, the antenna appears and behaves like a standard vertical 1/4 λ radiator but with a higher impedance at the feedpoint. On receive, it works almost as well as a full-size radiator over the same ground plane. Upon transmission, it appears to perform equally well, with the same signal reports being received when switching between a linearly loaded and a full 1/4 λ radiator. As with all vertical antennas, a good ground plane is required.

Can the linear-loading technique be applied to a multiband fan dipole? Yes, it can. However, other antennas near the 40-meter linear-loaded dipole will likely cause it to detune somewhat. You may need to adjust the lengths of the multiple elements, requiring some trial and error until they collectively work well with the others. Can you linear-load a G5RV? Yes—search online for details.

Construction Tips

Here are some tips to help you construct a suitable linear-loaded antenna for your individual application.

- You need to install an RF choke or clip-on ferrite chokes on the coaxial cable before it enters the shack to prevent common-mode problems. You can tell that you need additional chokes when your tuner struggles to stabilize during transmission.
- Linear loading is used to reduce the physical size of an antenna, particularly in applications where space is limited, such as in small gardens or for portable use.
- The final size is a compromise between the desired bands, available materials, and location. This is one of the best aspects of designing your antennas: You can tailor the design to fit the space and surroundings according to your specific circumstances.
- A more efficient version would be to feed a linear-loaded dipole antenna directly with 450-ohm ladder line or 300-ohm twin lead terminating in a weatherproof box. Run 50-ohm coax into the shack to your tuner—as short as possible. Ladder lines can also make excellent elements for linear-loaded antennas since they come with built-in spacers.

Linear-Loaded Dipole Approximate Dimensions

Band	Frequency	Length*
10M	28.5 MHz	11.5 ft.
12M	24.9 MHz	13.2 ft.
15M	21.1 MHz	15.5 ft.
17M	18.1 MHz	18.1 ft.
20M	14.1 MHz	23.2 ft.
30M	10.1 MHz	32.44 ft.
40M	7.1 MHz	46.14 ft.
80M	3.6 MHz	91.0 ft.

** With a Bit Extra, Just in Case*

The lengths given in the chart are based on calculations by Claude Jollet, VE2DPE, for the M0PZT dipole pictured earlier. The above are the full overall length of the top half of each side of the linear-loaded dipole. The dimensions include the width between the balun connections.

You may have heard that short ham antennas are not as efficient or effective as a full-length half-wave dipole, regardless of the configuration. Good news! Linear-load antennas are probably the next best thing, especially for those with restricted space.

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

E2D01
Which of the following digital modes is designed for meteor scatter communications?
A. WSPR
B. MSK144
C. Hellschreiber
D. APRS

E2D02
What information replaces signal-to-noise ratio when using the FT8 or FT4 modes in a VHF contest?
A. RST report
B. State abbreviation
C. Serial number
D. Grid square

General Pool

G6A01
What is the minimum allowable discharge voltage for maximum life of a standard 12-volt lead-acid battery?
A. 6 volts
B. 8.5 volts
C. 10.5 volts
D. 12 volts

G6A02
What is an advantage of batteries with low internal resistance?
A. Long life
B. High discharge current
C. High voltage
D. Rapid recharge

E2D01 (B)
E2D02 (D)
G6A01 (C)
G6A02 (B)

Upcoming Contests and QSO Parties

Dave Fairbanks N8NB

Contests:
Source is www.contestcalendar.com

June 2025	
PVRC Reunion	1700Z-2000Z, Jun 1
K1USN Slow Speed Test	0000Z-0100Z, Jun 2
ICWC Medium Speed Test	1300Z-1400Z, Jun 2
ICWC Medium Speed Test	1900Z-2000Z, Jun 2
ARS Spartan Sprint	0000Z-0200Z, Jun 3
Worldwide Sideband Activity Contest	0100Z-0159Z, Jun 3
Phone Weekly Test	0230Z-0300Z, Jun 4
A1Club AWT	1145Z-1300Z, Jun 4
VHF-UHF FT8 Activity Contest	1700Z-2100Z, Jun 4
Walk for the Bacon QRP Contest	0000Z-0100Z, Jun 5 and 0200Z-0300Z, Jun 6
NCCC FT4 Sprint	0100Z-0130Z, Jun 6
Weekly RTTY Test	0145Z-0215Z, Jun 6
NCCC Sprint	0230Z-0300Z, Jun 6
HA3NS Sprint Memorial Contest	1900Z-1929Z, Jun 6 (40m) and 1930Z-1959Z, Jun 6 (80m)
K1USN Slow Speed Test	2000Z-2100Z, Jun 6
10-10 Int. Open Season PSK Contest	0000Z, Jun 7 to 2400Z, Jun 8
Wake-Up! QRP Sprint	0600Z-0629Z, Jun 7 and 0630Z-0659Z, Jun 7 and 0700Z-0729Z, Jun 7 and 0730Z-0800Z, Jun 7
Atlantic Canada QSO Party	1200Z, Jun 7 to 0200Z, Jun 8
Kentucky QSO Party	1300Z, June 7 to 0100Z, Jun 8
IARU Region 1 Field Day, CW	1500Z, Jun 7 to 1459Z, Jun 8
RSGB National Field Day	1500Z, Jun 7 to 1500Z, Jun 8
ARRL Inter. Digital Contest	1800Z, Jun 7 to 2400Z, Jun 8
K1USN Slow Speed Test	0000Z-0100Z, Jun 9
4 States QRP Group Second Sunday Sprint	0000Z-0200Z, Jun 9
Worldwide Sideband Activity Contest	0100Z-0159Z, Jun 10
NAQCC CW Sprint	0030Z-0230Z, Jun 11
Phone Weekly Test	0230Z-0300Z, Jun 11
A1Club AWT	1145Z-1300Z, Jun 11
CWops Test (CWT)	1300Z-1400Z, Jun 11
VHF-UHF FT8 Activity Contest	1700Z-2100Z, Jun 11
CWops Test (CWT)	1900Z-2000Z, Jun 11
CWops Test (CWT)	0300Z-0400Z, Jun 12
CWops Test (CWT)	0700Z-0800Z, Jun 12

NCCC FT4 Sprint	0100Z-0130Z, Jun 13
Weekly RTTY Test	0145Z-0215Z, Jun 13
NCCC Sprint	0230Z-0300Z, Jun 13
K1USN Slow Speed Test	2000Z-2100Z, Jun 13
SKCC Weekend Sprintathon	1200Z, Jun 14 to 2400Z, Jun 15
REF DDFM 6m Contest	1400Z, Jun 14 to 1400Z, Jun 15
AGCW VHF/UHF Contest	1400Z-1700Z, Jun 14 (144) and 1700Z-1800Z, Jun 14 (432)
GACW WWSA CW DX Contest	1500Z, Jun 14 to 1500Z, Jun 15
ARRL June VHF Contest	1800Z, Jun 14 to 0259Z, Jun 16
Run for the Bacon QRP Contest	2300Z, Jun 15 to 0100Z, Jun 16
K1USN Slow Speed Test	0000Z-0100Z, Jun 16
ICWC Medium Speed Test	1300Z-1400Z, Jun 16
OK1WC Memorial (MWC)	1630Z-1729Z, Jun 16
ICWC Medium Speed Test	1900Z-2000Z, Jun 16
Worldwide Sideband Activity Contest	0100Z-0159Z, Jun 17
ICWC Medium Speed Test	0300Z-0400Z, Jun 17
NAQCC CW Sprint	0030Z-0230Z, Jun 18
A1Club AWT	1145Z-1300Z, Jun 18
Walk for the Bacon QRP Contest	0000Z-0100Z, Jun 19 and 0200Z-0300Z, Jun 20
NTC QSO Party	1900Z-2000Z, Jun 19
NCCC FT4 Sprint	0100Z-0130Z, Jun 20
Weekly RTTY Test	0145Z-0215Z, Jun 20
NCCC Sprint	0230Z-0300Z, Jun 20
K1USN Slow Speed Test	2000Z-2100Z, Jun 20
SMIRK Contest	0000Z, Jun 21 to 2400Z, Jun 22
SKCC QSO Party	1200Z, Jun 21 to 2359Z, Jun 22
Stew Perry Topband Challenge	1500Z, Jun 21 to 1500Z, Jun 22
West Virginia QSO Party	1600Z, Jun 21 to 0400Z, Jun 22
ARRL Kids Day	1800Z-2359Z, Jun 21
Feld Hell Sprint	0000Z-2359Z, Jun 22
WAB 50 MHz Phone	0800Z-1400Z, Jun 22
K1USN Slow Speed Test	0000Z-0100Z, Jun 23
ICWC Medium Speed Test	1300Z-1400Z, Jun 23
OK1WC Memorial (MWC)	1630Z-1729Z, Jun 23
ICWC Medium Speed Test	1900Z-2000Z, Jun 23
Worldwide Sideband Activity Contest	0100Z-0159Z, Jun 24
ICWC Medium Speed Test	0300Z-0400Z, Jun 24
SKCC Sprint	0000Z-0200Z, Jun 25
Phone Weekly Test	0230Z-0300Z, Jun 25
A1Club AWT	1145Z-1300Z, Jun 25
CWops Test (CWT)	1300Z-1400Z, Jun 25
RSGB 80m Club Championship, SSB	1900Z-2030Z, Jun 26
NCCC FT4 Sprint	0100Z-0130Z, Jun 27

+ Weekly RTTY Test	0145Z-0215Z, Jun 27
+ NCCC Sprint	0230Z-0300Z, Jun 27
+ K1USN Slow Speed Test	2000Z-2100Z, Jun 27
+ UFT QRP Contest	0600Z-0900Z, Jun 28 and 1400Z-1700Z, Jun 28
+ His Maj. King of Spain Contest, SSB	1200Z, Jun 28 to 1200Z, Jun 29
+ ARRL Field Day	1800Z, Jun 28 to 2100Z, Jun 29
+ K1USN Slow Speed Test	0000Z-0100Z, Jun 30
+ ICWC Medium Speed Test	1300Z-1400Z, Jun 30
+ QCX Challenge	1300Z-1400Z, Jun 30
+ OK1WC Memorial (MWC)	1630Z-1729Z, Jun 30
+ ICWC Medium Speed Test	1900Z-2000Z, Jun 30
+ QCX Challenge	1900Z-2000Z, Jun 30

DX Information

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Source is www.ng3k.com

June

2025 Jun01	2025 Jun10	**Faroe Is**	**OY**	LoTW	DXW.Net 20240619
2025 Jun04	2025 Jun11	**Madagascar**	**5R8RD**	Club Log OQRS	DXW.Net 20250213
2025 Jun04	2025 Jun18	**St Martin**	**FS**	LoTW	TDDX 20250125
2025 Jun06	2025 Jun13	**Jersey**	**MJ**	M0URX	M0URX 20250501
2025 Jun07	2025 Jun08	**Jersey**	**MJ**	ON6QR	ON6QR 20250518
2025 Jun07	2025 Jun09	**Spain**	**EA5**	LoTW	DXW.Net 20250506
2025 Jun10	2025 Jun17	**Bermuda**	**VP9** NEW	LoTW	OPDX 20250522
2025 Jun10	2025 Jun26	**French Polynesia**	**FO** NEW	M0OXO OQRS	OPDX 20250521
2025 Jun11	2025 Jun27	**French Polynesia**	**FO**	LoTW	DXW.Net 20241210
2025 Jun11	2025 Jun28	**Vanuatu**	**YJ0RS**	LoTW	DXW.Net 20250322
2025 Jun14	2025 Jun16	**Ogasawara**	**JD1BQP**	JP1IHD Direct	OPDX 20250401
2025 Jun14	2025 Jun20	**Cyprus SBA**	**ZC4TH**	DK6SP	TDDX 20250514

2025 Jun18	2025 Jul09	**Guatemala**	**TG**	LoTW	TDDX 20250501
2025 Jun19	2025 Jun23	**Palau**	**T88PB**	LoTW	OPDX 20250417
2025 Jun25	2025 Jul31	**Morocco**	**CN2DX** NEW	F5LRL	DXW.Net 20250521
2025 Jun28	2025 Jul14	**St Pierre & Miquelon**	**FP**	LoTW	TDDX 20241219
2025 Jun30	2025 Jul05	**Dodecanese Is**	**SV5** NEW	LoTW	TDDX 20250521

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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.

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