

July 2023  
2023 Edition 7



# Mount Vernon Amateur Radio Club



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## MVARC Repeaters

K8EEN VHF Repeater  
146.790 MHz  
- 600KHz

K8EEN-R Echolink Node:  
809800

K8EEN UHF Repeater  
444.600 MHz  
+5 MHz / PL = 71.9 Hz

## President's View

Frank Counts  
KC8EVS



Wow, July already, Field Day 2023 is in the books. We did well as far as I'm concerned, turn-

out was good. I appreciate all who did come out to help and those who operated the radios. Would like to see more even if it is just to chat a little while and sign the log. While I'm at it I want to give a special thanks to Nathan, KEORYO from Newark. His club did not participate in Field Day this year, so he came up to join us. He sat in and operated SSB Saturday evening and Sunday morning and did a great job. I don't think we had many unusual problems except for one station which turned out to be a faulty cable. Once that was fixed everything was good to go.

What's next? Well, August 4<sup>th</sup> First Friday we will have a booth. Details to be worked out at the next meeting. Then on September 9<sup>th</sup> we have Ohio State Parks on the Air (OSPOTA) details to be worked out but will

probably be like years past. Mark these dates on your calendar and come join in the fun.



I've built a couple of antennas and have them up out on the back forty. One is an end fed half wave and does well on 40 and 20 meters. The other is an off center fed dipole for 80 meters. I'm in the process of tuning it but it seems to be doing well. I will probably leave the OCF up to use when I'm camping back there. Oh, that brings to mind I just participated in the weekly round table net Thursday night from there using my handheld. I had no problem getting into the repeater. So, all the hard work that Steve and Roger are putting into the repeater is paying off. I have not been able to hold the repeater from back there with the HT for some time now.

## Ohio State Parks On The Air



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## Meeting Minutes

**Scott Yonally**

**N8SY**



The meeting was called to order by Frank, KC8EVS he asked if there were any additions or corrections to the May Meeting Minutes as published in the newsletter. Hearing none, the meeting minutes were approved as published.

### **Treasurers Report**

The Treasurer's report was given by Terry, KI8N. There were no corrections or changes and will stand as read.

### **Committee Reports**

#### **ARES**

Terry, KI8N gave a short overview of the work done at the Knox County EMA. Some discussion followed about work needing to be done on some of the antennas at the EMA office.

#### **ARRL**

Scott, N8SY stated there was nothing new to report on. Some discussion followed about the progress on Form 2, the electronic reporting form for EC's and DEC's and there was also some discussion on the HOA Bill that was introduced recently (HR-4006).

#### **Repeaters**

Steve, N8RLW reported on the repeaters and their condition. He stated the duplexers do need some tweaking, which will improve the repeater sensitivity greatly. The new Henry

2M amplifier was on display for everyone to look at before it is installed. He also stated he needs to go out to the repeater site to do software updates and will be doing that within the next few days.

#### **MESH / EchoLink**

Don, W8PEN gave a short overview of the MESH and EchoLink systems. He stated as far as he is aware everything is working around 99% of the time on EchoLink. He then reported on the recent issue where the EchoLink did go down. Some discussion followed with Scott, W8HK stating that he will donate a radio for use on EchoLink. Don also reported that he will be switching out the computer on EchoLink since the one now in service has not been working properly.

Don reported he hasn't had time to check and see if everything is working properly on the MESH network and stated that he will be checking it out soon and report back at the next meeting.

#### **Old Business**

Frank, KC8EVS opened the floor on the proposed new position of a Public Information Officer (PIO). Much discussion followed with some new input as to the requirements for the PIO. Michael, KE8HGE stated that he would add the new suggestions to the current document and Scott, N8SY stated that he would get the updated proposal on the website as soon as they become available for all to view.

#### **Club Station Lease**

No new news to report.

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**"As always, lessons learned from this year's event will be applied to next year's Field Day. ."**  
**Michael, KE8HGE**

### **Meeting Room**

There has been conversation with personnel at Head Start regarding the meeting room availability and thus far there haven't been any issues. Everything is still good with us using the big meeting room.

### **Tech Class / V.E. Testing**

Michael, KE8HGE reported there is a class going on now. Some discussion followed on the need for upcoming VE Testing sessions. As reported there will be a test session Wednesday, June 14th with the next test session after that on July 12th.

### **Equipment List for Insurance**

Terry, KI8N reported on the current listing of equipment that would be insured. There were a few new items discussed that needed to be added and he and Steve, N8RLW will be updating the list before it is sent into the insurance company. Some discussion followed.

### **Events**

Field Day is shaping up well. Apple Valley will have the big tent setup for us on the Friday before Field Day. Setup will start Friday night (June 23rd) with operations starting at 2pm Saturday. Some discussion followed on what stations will be set up for operating. It appears that we will be operating as (4a) this year. A letter is being drafted and will be going to the county commissioners as well as to the local newspaper inviting them to come out to the Field Day site. Everyone that plans on eating Saturday supper please bring a \$5 donation. Don, W8PEN stated that he will be providing a fish dinner to everyone that comes and helps set up on Friday night. Roger, KE8ICI volunteered to bring bottled water. Much discussion followed.

Frank, KC8EVS reported he has a spot reserved for the club for the First Friday (August 4th) gathering in downtown Mount Vernon. We will have a public display with handouts. Some discussion followed.

- ◆ Ohio State Parks on the Air is September 9.

### **New Business**

A reminder to everyone that operates a transmitter is now required to do an R.F. Exposure calculation and keep it on file at your station. Discussion followed on just how to get this accomplished.

A motion to adjourn the meeting was made at 8:15 pm EDT with no dissenting votes cast.

The raffle was held for a 50/50 drawing and Darlene, WS8W won.



June Meeting Members Present	
Frank Counts, KC8EVS	Jim Bostic, KD8IZT
Rick Wetzel, KE8AOA	Shawn Bleiler, KD0DMJ
Emery Bennet, W8TW	Barry Butz, N8PPF
Tom Evans, KD8HSA	Roger Gorrell, KE8ICI
Don Russell, W8PEN	Darlene Pudlinski, WS8W
Scott Yonally, N8SY	David Phillips, W8DEP
Wendell Combs, KE8NUX	Scott Fields, W8HK
Michael Jacobs, KE8HGE	Ralph Dunmire
Don Bunner, KB8QPO	Terry Windsor, KI8N
Steve Harvey, N8RLW	Bill Stroud, KD8WHQ
Madi Shiedz	



# Mount Vernon Amateur Radio Club MONTHLY MEETING



10 JULY 2023

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7:00 PM

Academy Building  
790 Fairgrounds Rd.  
Mount Vernon, OH

## Field Day 2023

**G. M. Jacobs**

**KE8HGE**



We had a good weekend for Field Day, this year. We had rain on Friday leading up to the antenna raising, but the weather calmed down

enough that antennas were erected and fish was fried (thanks to Don Russell, W8PEN) for a successful Friday setup. Both Saturday and Sunday were more sunny than cloudy. A very brief sprinkle Sunday evening had some of us going out to roll up our windows in anticipation of the worst, but about all that happened was some dust was settled and it quickly passed. A particularly rain-heavy cloud passed through about noon on Sunday that prompted an early cleanup, but nothing but a brief shade is all that happened and it cleared back up for a bright and sunny conclusion to the day.

The bands didn't cooperate with us this year. The West and Southwest were virtually closed to us until very early Sunday morning when things opened.

Scott Fields (W8HK) had some initial difficulty getting FT8 to cooperate, but he was able to get that sorted out and ended up making just over 90 contacts. If the other FT8 users out there were better versed in that digital mode's protocols, he would have had another 10 or so confirmed contacts.

Barry Butz (N8PPF) had some cabling issues that were resolved by moving his station into his camper -- removing the cables and their bad connections from the equation.

Roger Gorell (KE8ICI) and Steve Harvey

(N8RLW) had a very good set up. Roger's antenna was particularly effective. I won't steal his thunder; ask him about it sometime.

We had a total of 27 participants this year.

Highlights included:

- Our new Techs (Jocelyn and Mark Whittaker, KE8WMC and KE8WMB) showing up with their daughter. Jocelyn even made some contacts on voice.
- Amber Keener, Mount Vernon City Council member, stopped by and spoke with Steve and Don. The club has been invited to make a presentation to the City Council later this year. Details on this will follow.

As always, lessons learned from this year's event will be applied to next year's Field Day. And the stories will be shared about the breakfast table on Friday mornings for weeks to come.

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# Field Day 2023 Photos



Photos by: G. M. Jacobs, KE8HGE



# Field Day 2023 Results

**Don Russell**  
**W8PEN**



The dust has settled, and Field Day 2023 is history.

This year, our score was a little down from previous years. Although we paid more attention to bonus points this year and did much better in that area, we did not do as well contact wise.

That was okay. We had a lot of fun and I thought the turnout was better than in some years.

The group did very well in the states. The only ARRL sections that we did not contact were East Bay (California), Alaska, East Washington, Nevada, and Wyoming. This translates into 47 States worked. Not bad at all.

The club did not fare so well in Canada. We missed (AB) Alberta, (MB) Manitoba, (NB) New Brunswick, (NL) Newfoundland / Labrador, (ONN) Ontario North, (PE) Prince Edwards Island, (SK) Saskatchewan, and (TER) Territories. We worked only six of the fourteen Canadian Sections.

As far as DX goes, the club worked Puerto Rico and Czech Republic.

Both social events were successful. On Friday evening after the antennas were up in the air, I sponsored a Fish Fry for those that stuck around. I believe I counted eight club members. The menu was Walleye, Crappie, and Catfish, plus Potato Salad and chips.

On Saturday evening, the club had a Pizza Party instead of the picnic we usually have.

This worked out great. No one had to bring covered dishes and stuff, making it easy on everyone. Steven, N8RLW, had the perfect combination of Pizzas. No one left hungry for sure.

Saturday breakfast was provided by Darlene, WS8W and Don, KB8QPO.

Mt. Vernon Councilwoman Amber Keener made a visit to the Field Day site and was very impressed with what she saw. Councilwoman Keener had extensive conversations with N8RLW and W8PEN.

The screenshot shows a ham radio software interface with the following sections:

- Recent Contacts Table:**

Rec	Call	Class	Sec	Date / Time	Bnd	Mode	Country	Initials	Operator
811	KF6XA	1E	IN	06/25 18:00	40	FT8	USA	SEF	W8HK
810	NP2WJ	1E	IL	06/25 17:57	40	FT8	USA	SEF	W8HK
809	K4RCA	1E	VA	06/25 17:55	40	FT8	USA	SEF	W8HK
808	KD8KXK	1D	OH	06/25 17:45	40	FT8	USA	SEF	W8HK
807	WU3C	2A	EMA	06/25 17:44	40	FT8	USA	SEF	W8HK
806	WC4DC	3F	TN	06/25 17:41	40	FT8	USA	SEF	W8HK
805	WB9AYW	1E	IL	06/25 17:40	40	FT8	USA	SEF	W8HK
804	VE3EAC	1B	ONE	06/25 17:37	40	FT8	Canada	SEF	W8HK
803	KD8YNC	1D	WV	06/25 17:31	40	FT8	USA	SEF	W8HK
- Score Statistics:**
  - Total CW Contacts: 455
  - Total Phone Contacts: 260
  - Total DIG Contacts: 96
  - Total QSO Points: 1,362
  - QSOs / Hr (Last 20 min): 0
  - QSOs / Hr (Last 60 min): 0
- DX List:**
  - 3:** DE MDC, EPA WPA
  - 4:** AL SC, GA SFL, KY TN, NC VA, NFL VI, PR WCF
  - 5:** AR NTX, LA OK, MS STX, NM WTX
  - 6:** EB SCV, LAX SDG, ORG SF, PAC SJV, SB SV
  - 7:** AK NV, AZ OR, EWA UT, ID WWA, MT WY
  - 8:** MI WV, OH
  - 9:** IL WI, IN
  - 0:** CO MO, IA ND, KS NE, MN SD
  - Canada:** AB ONE, BC ONN, GH ONS, MB PE, NB QC, NL SK, NS TER
- Call, Class, Section:** Input fields for search.
- Possible Duplicates:** Section with a checked box for "Any Portion".
- Bottom Status Bar:** Bearing, Miles, Band: 3, Mode: CW, K8EEN, 4A, OH, 10:44:55 PM, 02:44:55 UTC.

## Our Official Results as Submitted to the ARRL:

Entry received at: 2023-06-27 15:47:26

Call Used: K8EEN GOTA Station Call: (NONE) ARRL/RAC Section: OH Class: 4A

Participants: 26 Club/Group Name: Mt Vernon, Ohio ARC (MVARC)

Power Source(s): Generator, Battery, Solar

**Power Multiplier: 2X**

**Preliminary Total Score: 3,774**

**Bonus Points:**

<b>100% emergency power</b>	<b>400</b>
<b>Media Publicity</b>	<b>100 - File [Knox Pages FD Article.doc]</b>
<b>Public location</b>	<b>100</b>
<b>Public information table</b>	<b>100 - File [Information Booth.doc]</b>
<b>W1AW Field Day message</b>	<b>100 - Documented by Field Day Message.pdf</b>
<b>Site visit by invited elected official</b>	<b>100</b>
<b>Social media</b>	<b>100</b>
<b>Entry submitted via web</b>	<b>50</b>
<b>Total bonus points</b>	<b>1,050</b>

**Score Summary: (File [K8EEN.dup])**

	<b>CW</b>	<b>Digital</b>	<b>Phone</b>	<b>Total</b>
<b>Total QSOs</b>	<b>455</b>	<b>96</b>	<b>260</b>	<b>811</b>
<b>Total Points</b>	<b>910</b>	<b>192</b>	<b>260</b>	<b>1362</b>

**Claimed Score = QSO points (1362) x power mult (2) = 2,724**

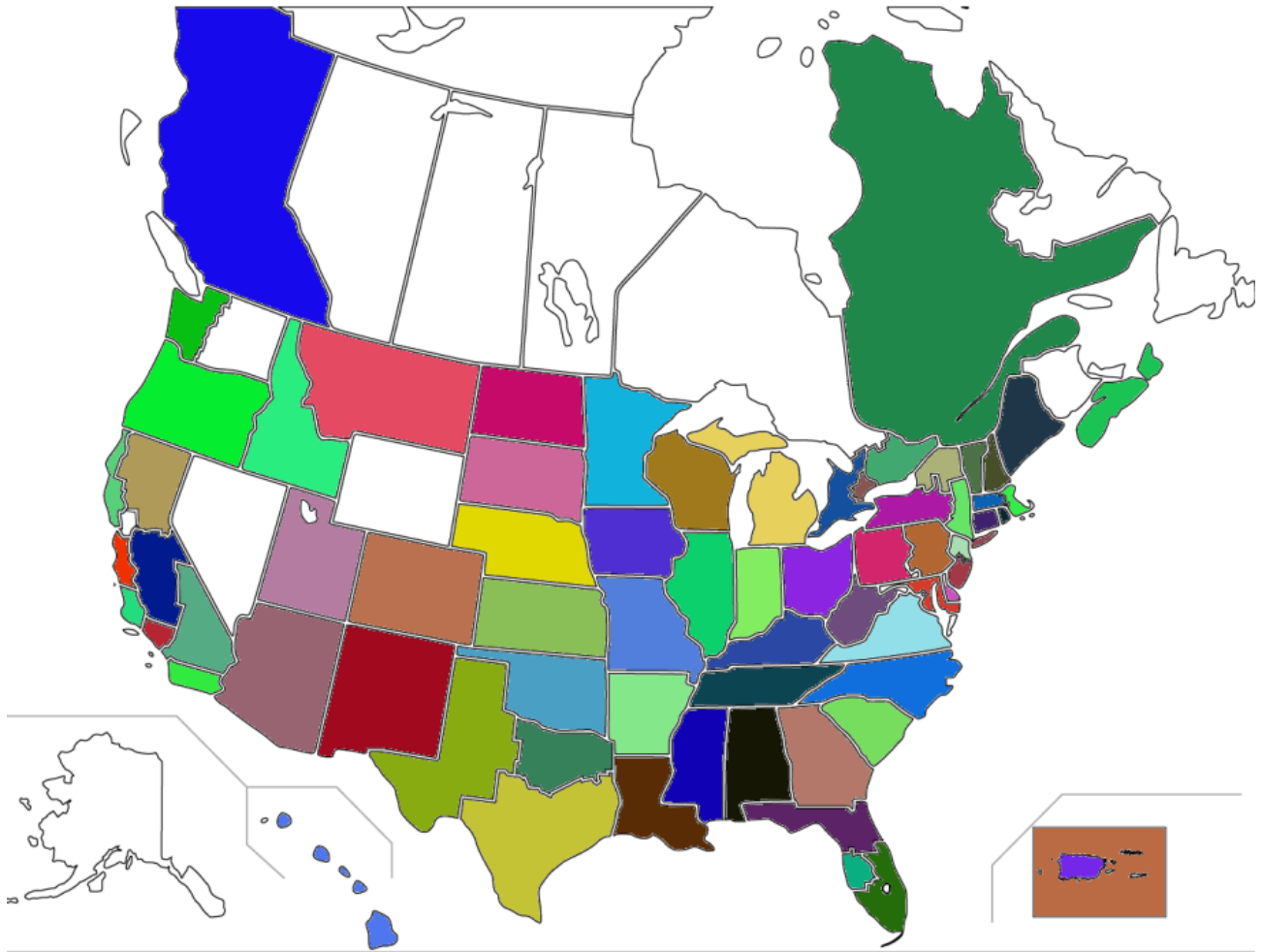
**Total Score = Claimed Score (2724) + Bonus Points (1050) = 3774**

**\*\*\*Bonus Points will be added in upon approval from the ARRL.**

**Band/Mode QSO Breakdown:**

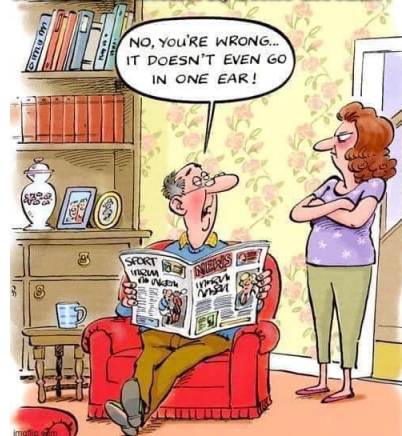
<b>Band</b>	<b>CW</b>	<b>Phone</b>	<b>Dig</b>	<b>Total</b>	<b>%</b>
80	110	5	0	115	14%
40	253	237	71	561	69%
20	45	11	19	75	9%
15	47	7	6	60	7%
<b>Total</b>	<b>455</b>	<b>260</b>	<b>96</b>	<b>811</b>	

## 2023 Field Day QSO Map



Which Pin Connects to the Black Wire?

### NOISE BLANKING, SIMPLIFIED:



Yesterday I saw an ad that said "Radio for Sale, \$1, volume stuck on full." I thought, "I can't turn that down". Unknown

## ARES

Terry Windsor

KI8N



Nothing to discuss this month. I have not done anything related to ARES activities.

Until my physical condition improves I am unable to work on getting the EMA antennas looked at. Unless someone else wants to take this on and see what they can do. If so let me know and I will contact JT DeChant and arrange to get you set up.

### CONTINUING:

This is a great time for all club members interested in ARES to review the [Ohio Section ARES](#) web pages and complete or update any NIMS ICS training courses.

If you find your ARES training record in the [ARRL Ohio Section](#) is incomplete or has an error please email James Yoder with an explanation of what you found; w8er@arrl.net.



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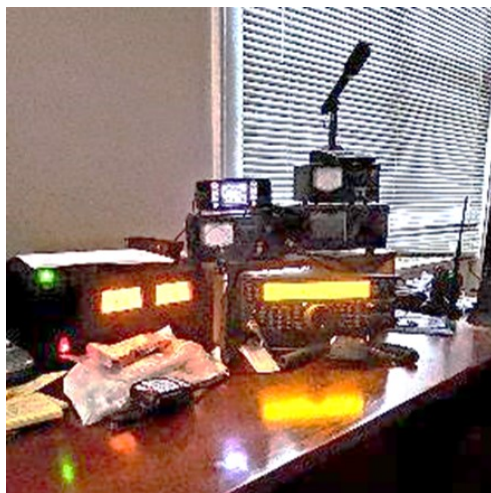
## Member Ham Shack

Steven Harvey

N8RLW




My main HF Rig is a Kenwood TS-590SG. 2m/440 is a Yaesu FTM-300 and ICOM 910H when I need 100 watts of FM power. Astron RM-35M and various HT's.



“Mt. Vernon Councilwoman Amber Keener made a visit to the Field Day site and was very impressed with what she saw. .” Don, W8PEN



# July 2023

Sun	Mon	Tue	Wed	Thu	Fri	Sat
						1 
2 9:00 pm ARES Sunday Night Net—Don (W8PEN)	3	4 <b>Independence Day</b> OHDEN Net 7:45 pm	5 4:45 pm Dinner	6 7 PM Roundtable Discussion on 146.79	7 9:00 am— Breakfast	8
9 9:00 pm ARES Sunday Night Net— Roger (KE8ICI)	10 <b>7 pm MVARC Meeting</b>	11 OHDEN Net 7:45 pm	12 4:45 pm Dinner	13 7 PM Roundtable Discussion on 146.79	14 9:00 am— Breakfast	15 <b>440 Repeater Discussion— What is DMR?</b>
16 9:00 pm ARES Sunday Night Net— Michael (KE8HGE)	17	18 OHDEN Net 7:45 pm	19 4:45 pm Dinner	20 7 PM Roundtable Discussion on 146.79	21 9:00 am— Breakfast	22
23 9:00 pm ARES Sunday Night Net—Terry (K18N)	24	25 OHDEN Net 7:45 pm	26 4:45 pm Dinner	27 7 PM Roundtable Discussion on 146.79	28 9:00 am— Breakfast	29
30 9:00 pm ARES Sunday Night	31					

## Ham Radio Contest Calendar

## Radio Activity

**Don Russell**

**W8PEN**



Well, another Field Day is in the books. See 2023 Field Day results elsewhere in this newsletter.

Turnout was a bit better than last year. That was a positive sign.

However, I think our Field Days have stagnated. We set up pretty much the same antennas in the same locations and run the same equipment from the same locations.

Looking back, we also always seem to have the same problems every year.

After last year's issues with the networked software, I decided to do extensive testing on the software at home a week before Field Day. After a 48 hour test session and occasionally entering stations into two logs, I was convinced that the software was ready to go. And it was. The only glitch we had that I could contribute to the logging software was the one time the computer acting as the server went to sleep. My bad. While testing, I had it set for never sleep but after the testing I switched it to sleep so I could continue using it normally up until Field Day. I meant to switch it back to not sleeping when Field Day began but forgot.

The CW station seemed to have a lot of problems this year. The computer was causing hash in the receiver. Something it never did before. The software crashed a couple of times. And the generator stopped outputting voltage for I don't know how long.

We also participate in a Field Day class (4A) that takes a lot of operators to run full time. So, we don't. Our group pretty much shuts everything down around 3:00AM to get some sleep.

For next year, I would like to change things up a little. Here is a possible scenario.

1. Run 2A instead of 4A. This means that we would reduce the number of transmitters allowed to operate simultaneously to two transmitters instead of four. Why? Running four transmitters requires a lot of operators. If we are going to run four stations, we should have enough operators to cover the whole 24 hour period. Running two transmitters requires less operators. Perhaps we can keep two stations going for the whole Field Day period.
2. Okay, fine. But that would be one SSB station and one CW station? Seems like we would want at least two SSB stations. Not necessarily. My plan would be to set up each station to be capable of running SSB, CW, or Digital. This way, the operators themselves can decide what mode they would like to operate. Operators would sign up for their time on a Field Day operating schedule posted on the web. Open hours could be grabbed by anyone, but those signing up for a scheduled time would be given priority over one of the stations. This would also give us a very good picture of how our Field Day would go. I admit that this would be a challenge but let's talk about it.

3. We can still set up a GOTA station as a third station. Newcomers or hams that do not contest much would be allowed to use this station. Under the direction of a station manager.
4. Stations should still be separated to help reduce interference. But with only two transmitters, perhaps they won't have to be so far apart.

Lastly, Mt. Vernon Councilwomen Amber Keener visited our Field Day site Saturday afternoon. She asked if we would be willing to do Field Day at Foundation Park. I explained the difficulties we were having with park officials as far as hanging antennas in the trees and hammering stakes in the ground. They didn't want that.

Apparently, Councilwomen Keener has some pull with the new park officials and thinks that exceptions could be made for us. Yes, Apple Valley is a great Field Day site. But shouldn't we at least think about setting up elsewhere?

That's it for this month. Hope you make it to the meeting.

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## Repeater Update

### Steven Harvey



#### **N8RLW**

Hard to believe July is here already and summer is in full swing. Wanted to give you an update on the status of our repeaters. As of writing this report the new duplexers for the 146.790 set up by Vasu Communications are in service and shown in the photo is our Wacom duplexers ready to be delivered for retuning and repair to Vasu. Initial reports with the new TXRX duplexers show it has improved the receive with people now over 10 to 12 miles away from the 146.790 repeater able to get into the machine with handhelds on 1 watt with a full quiet signal report. I also received a report from Frank KC8EVS from Camp Counts

that he can use his handheld again to access the repeater after the duplexer swap. It has also improved the quietness of the carrier when nothing is being modulated on the signal too. All good improvements for us to be able to use the 146.790 repeater in Skywarn, Gravel Grinder and other emergency communications. As far as our Wacom duplexers they will be looked at by Vasu to see if they can be repaired and tuned back to spec.

Where is the PL you might ask? With the duplexer issue solved, I called the manufacturer of our controller, Arcom. They will be releasing a new one-piece board that works with the Yaesu repeater and the controller to be able to generate the needed PL encode and decode. This board is due in September 2023 and is a plug and play device. This means it will be a few more months of no PL on the 146.790 while the production run is made by Arcom and hopefully we'll be back in business with full PL by mid-September.



Some have also asked; we order an amplifier for the repeater, is it on the air? The amplifier is in, and I have it on my bench and it has been tested with a bird watt meter to a dummy load. I'm happy to report it generates the fully advertised 100 watts of continuous power. Now that the duplexers have been swapped, we'll proceed with the installation of the amp later this month and this means the repeater will be putting out 100 watts, making the 146.790 a solid coverage machine once again. I look forward to hearing from you on how far you can hear the repeater away from the site and how far you can get into it when you're mobile. That is all the updates for this month on the 2-meter repeater.



#### **444.600 K8EEN Repeater**

We recently had a good tech net last month on the 444.600 repeater discussing C4FM and DMR. The net lasted one hour, Roger (KE8ICI) and Don (W8PEN) were the first people on the new net, and I encourage everyone to explore the 440Mhz side of their radio. It was also a good test to see how the repeater is doing and to test the coverage it provided after installing the newly retune duplexer. Most of the coverage reports show it can be heard around town well and there are some holes towards Centerburg and Brandon that will need to be investigated. The Wires-X feature still works well on the 444.600 and will be receiving a software update remotely as Yaesu has placed an update to accommodate their new FT-500 radio that came out earlier this year.

If you have a Wires-X capable radio, I highly recommend using this feature on the 444.600 and making a few contacts via the America's link room 28030. Hope to hear some of you on the

444.600 and using it for a rag chew, general talking around town, and taking advantage of Wires-X.

The club and you have invested in keeping these repeaters on the air so let's use them, that is what they are there for, it helps all of us find any issues before a real emergency event and to exercise the machines on a regular basis. If you have any questions between newsletters or maybe you would like to see improvements made on the machines let myself or Roger know. Our doors are always open and feel free to catch us on the air, phone call, or write an email.

73 and happy repeater use.

## Miscellaneous Rambling

Terry Windsor

KI8N



I missed attending Field Day this year due to hurting my back and not being able to get around. On June 12 I woke up in a lot of sciatic pain

through both legs and eventually went to the doctor. They diagnosed me with Degenerative Disk Disease in my lower back and referred me to a spine specialist in Columbus. In the mean time I have been on medication to assist with the pain.

Getting an appointment with a specialist is not something that happens in a hurry; my appointment isn't until July 17.

Besides missing attending Field Day I have been unable to do much of anything around home. I had started on the car last month and it sits waiting, no POTA activations, and no driving. About all I have been doing is reading and working a little radio from home.

I did work Field Day as a 1D home station for about 1.5 hours late Saturday evening. I made 46 FT8 contacts before sciatic leg pain caused me to give up and go back upstairs and relax.

I haven't fixated on any dandelions or lawn items since mowing isn't my job. I just go

out into the garage sit and stare at the old cars and make plans to do more work on both when I can finally get to it. I have read the repair manuals for both cars a couple of times. I may ask a few of the car crazy kids at church to assist with pulling the engine and transmission out of the Galaxy 500 so at least some progress is being made.

June started out good with our granddaughter visiting and attending VBS in Fredericktown. I took her to Terra Haute, IN to meet her parents for the handoff on 6/10 and thought I would hit a couple of Indiana POTA parks on the way home. However, in my haste to get going Saturday morning I forgot to pack the battery I use for activations. Nothing like making plans to stop and play radio only to realize you forgot an important piece of your gear and now an activation is not possible.

Lastly, I received a Comet 4 element 6M beam in hopes of getting it on the tower this summer since 6M seems to be coming alive. However, it will remain in the box unassembled until a future date when I can hopefully get back to doing physical activities.

Until next month "Be safe and Ham it UP"!



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“...I encourage everyone to explore the 440Mhz side of their radio. It was also a good test to see how the repeater is doing and to test the coverage it provided after installing the newly retune duplexer. .” Steven, N8RLW

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## Let's Be 440.600 Radioactive

**Steven Harvey**  
**N8RLW**



You need to join us for the 440 FM and Digital Tech Net on the MVARC 444.600 machine.

This new net will be held monthly on the 3<sup>rd</sup> Saturday of the month starting **10:00 AM to 11:00 AM** on the 444.600 pl 71.9. The FM and Digital Tech will be hosting various topics of digital nature such as, what is C4FM, why is it different from DMR. What is the difference between a Talk Group and a Room. Many other topics in the digital ham radio world will be explored and this will also give our lonely 444.600 machine some exercise besides Terry, KI8N and Steven, N8RLW using it to listen to Wire-X groups all over the world.

We'll all check in and have discussion on the topic and see where it goes from there. My hope over time is to get enough local people with C4FM radio's so I can open this net up to others who can check into the net via our Wires-X room on the repeater. In the meantime, dig out your dusty 440 rig or dual band handheld and set it up for an outside antenna and program it to 444.600 pl 71.9. Give it a try before the net starts that way if you have any questions let me know. Let's become 444.600 Radioactive.

### Schedule and Topics

July 15<sup>th</sup>, 2023 – What is DMR and how is it different from C4FM?

August – TBA

September – TBA

# 73



**440.600 MHz**  
**PL 71.9**

**FM and Digital  
Tech Net**



## 222 MHz Anyone?

**Steven Harvey**  
**N8RLW**



I recently purchased a 220 MHz Alinco radio and am really enjoying the band finding new repeaters and figuring out what I can do here. Thought it might be a good article to help spur some interest and it gives some good

facts and history on this band. I will say this band is very quiet but however it really does just as well in propagation if not better at times than 2 meter and 440.

### **HAM Radio 101**

#### **222 MHz: Is Anybody There?**

by Mark Haverstock, K8MSH from [On All Bands Blog](#)

“W8XYZ listening 223.500.”

Whether you get a response or silence could depend on where you’re located. Calls in some locations in the United States—major metro areas in states like New York, New Jersey, Texas, Washington, and California—are more likely to produce a QSO. Other places, not so much. So what gives?

#### **History of 222 MHz**

To really understand 222 MHz, some knowledge of its history is helpful. Amateur radio on 222 MHz has endured several reallocations and other changes through the years. The Federal Communications Commission (FCC) approved VHF bands in 1938, 1.25 meters (224 MHz) being one of them. Amateur radio activity spiked rapidly in the 1960s and 1970s as 2m and 70cm bands quickly became the go-to bands. The 1.25m band, however, never became as popular.

Radio equipment for 1.25 meters was scarce in the beginning, partly due to lack of commercial rigs that could be easily converted for the band. Amateurs wanting to operate here generally had to build their own equipment or buy specialized amateur radio equipment, such as transverters.

In 1973, the FCC considered a proposal to establish the Class E Citizen’s Band Service at 224 MHz. The proposal was opposed by the ARRL and after the explosive growth of 27 MHz Citizen’s Band usage, the FCC dropped the plan in 1977.

In the late 1980s, the United Parcel Service (UPS) began lobbying the FCC to reallocate part of the 1.25 meter band to the Land Mobile Service for the development of a narrow-bandwidth wireless voice and data network using a mode called ACSSB (amplitude-companded single sideband). UPS argued that amateur use of the band was sparse and that the public interest would be better served by approving their proposal.

In 1988, over the objections of the amateur radio community, the FCC adopted the 220 MHz Allocation Order, which reallocated 220–222 MHz to private and federal government land- mobile use while leaving 222–225 MHz exclusively for amateur use. The reallocation proceeding took so long that UPS eventually found other options for meeting its communications needs.

Today, the 1.25m band VHF radio spectrum is reserved for amateur radio use with a 219 to 220 MHz allocation for secondary local communications and data in the U.S.

## Ch-Ch-Changes

Why hasn't 222 MHz reached its potential as a VHF frequency? Reasons that are frequently cited include a history of frequent changes/proposed changes, lack of harmonic relationship to 2m/70cm bands, and limited access to the band worldwide—only region 2 (North and South America) has ham allocations on this band. Traditionally, the blame has been put on the big three (Kenwood, Icom, Yaesu). Some believe they weren't motivated to produce radios for the band due to a "limited market."

However, they've marketed a few HTs and base/mobile radios over the years. In the 1980s, Icom offered the IC-37A—a 220 MHz, 25-watt FM transceiver. Other examples that followed include the Alinco DR-235T, Kenwood TH-F6A, Yaesu's VX-6R, VX-7R, VX-8R, BridgeCom Systems BCM-220, and the BaoFeng UV-82X. Offerings weren't anywhere near the number available for 2m and 70cm, but enough to help generate some interest in 1.25m.

Among the currently available VHF/UHF radios, some have continued to add 1.25 meter coverage to the 2 meter and 70 centimeter handholds and mobiles. Just about all are Chinese imports, with the exception of well-known brands like Yaesu's VX-6R or the Alinco DR-MD520T tri-band DMR mobile.

### 222 MHz Repeaters

According to the ARRL, the majority of repeaters—more than 6,000—are on 2 meters. There are more than 5,000 on 440 MHz, but only about 1,600 repeaters on 222 MHz. Yet 222 MHz repeaters have some advantages over those designed to operate on 2m/70cm. Hams that use 222 MHz repeaters have discovered that it's an excellent, low-interference band. It has the long range of 2 meters, some of the signal bounce characteristics of 440

MHz, and a lower noise floor since it is farther away from public safety and other land mobile services. Best of all, the band has a primary allocation to amateur radio, unlike 440 MHz and 900 MHz.

Many repeaters are constructed from converted gear, such as Motorola MICOR High Band and GE Mastr II High-Band mobile, pairs of 222 MHz mobile transceivers, as well as several units from various Chinese manufacturers. The BridgeCom Systems BCR-220 repeater appeared on the market around 2014 but was discontinued. You can also find them on the used market, though they can sometimes be difficult to locate.

### Changing Perception

Adapting a one-liner from comedian Rodney Dangerfield, "This band don't get no respect." It's a chicken vs. egg problem. There's not much activity because there aren't that many radios available. There aren't many radios because there's not much activity. If this band were included in the various DC to Daylight rigs from the get-go, many more hams would probably be using the band today.

For those who don't want to deal with the crowded band conditions, interference from commercial equipment located just above the band, or some of the bad operating found on 2m, 222 MHz is a great alternative.

The 1.25 meter band has some unique properties, blending the propagation advantages of the 2 meter and 70cm bands. So 222 MHz radios and repeater systems can potentially have better range and coverage than similar VHF and UHF systems.

Maybe the time has finally come for 222 MHz. What are you waiting for?

## 222 MHz Repeaters in Ohio ([RepeaterBook.com](http://RepeaterBook.com))

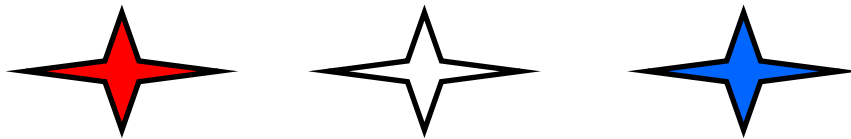
Output Freq	Input Freq	Offset	Uplink Tone	Downlink Tone	Location	County	Call	EchoLink
223.4400	223.4400	0	141.3		Parma	Cuyahoga	N8JLK	44134
223.8200	222.2200	-1.6 MHZ	77.0		Springboro	Warren	K8DZ	
223.9400	222.3400	-1.6 MHZ			Dayton	Montgomery	W8BI	275515
223.9600	222.3600	-1.6 MHZ	107.2		Ft. Recovery	Mercer	KB8SCR	
224.0000	222.4000	-1.6 MHZ	123.0		Batavia - WOBO Tower	Clermont	K8YOJ	
224.0200	222.4200	-1.6 MHZ	141.3		Kent	Portage	N8BHU	
224.0400	222.4400	-1.6 MHZ	141.3	141.3	Elyria	Lorain	WD8CHL	166616
224.0600	222.4600	-1.6 MHZ	100.0		Cincinnati	Hamilton	K8YOJ	
224.0600	222.4600	-1.6 MHZ			Norton	Summit	WB8UTW	
224.0800	222.4800	-1.6 MHZ	141.3		Fairport Hrbr	Lake	N8JCV	
224.1400	222.5400	-1.6 MHZ			Atwater	Portage	WA8LCA	
224.1400	222.5400	-1.6 MHZ	103.5		Toledo - University of Toledo	Lucas	W8HHF	
224.1600	222.5600	-1.6 MHZ			Dayton	Montgomery	WC8OH	
224.1600	222.5600	-1.6 MHZ	131.8		Warren	Trumbull	N8DOD	
224.2200	222.6200	-1.6 MHZ	100.0		Springboro	Warren	N8RXL	
224.2800	222.6800	-1.6 MHZ	131.8		Columbus	Franklin	W8KHW	
224.3000	222.7000	-1.6 MHZ	123.0	123.0	Huber Heights	Miami	NO8I	
224.3400	222.7400	-1.6 MHZ	77.0		Oxford	Butler	N8ECH	
224.3800	222.7800	-1.6 MHZ			Canal Winchester	Franklin	KA8ZNY	
224.3800	222.7800	-1.6 MHZ	131.8	131.8	Shaker Heights	Cuyahoga	KD8LDE	
224.4000	222.8000	-1.6 MHZ	141.3	141.3	Chesterland	Geauga	K9IC	
224.4800	222.8800	-1.6 MHZ	141.3		Parma	Cuyahoga	KB8WLW	146520
224.5000	222.9000	-1.6 MHZ	141.3		Mentor - Tri-Point Hospital	Lake	N8BC	
224.5200	222.9200	-1.6 MHZ			Blanchester	Clinton	KB8CWC	
224.5400	222.9400	-1.6 MHZ			Hamilton	Butler	WB8TCB	
224.5800	222.9800	-1.6 MHZ			Beavercreek	Greene	N8DCP	
224.5800	222.9800	-1.6 MHZ	110.9	110.9	Hayesville - Ashland/Mansfield	Ashland	KD8BIW	
224.6000	223.0000	-1.6 MHZ	100.0		St. Paris	Champaign	WB8UCD	
224.6200	223.0200	-1.6 MHZ	110.9	110.9	Cincinnati	Hamilton	W8ESS	
224.6600	223.0600	-1.6 MHZ			Galena	Delaware	W8RUT	391711
224.7200	223.1200	-1.6 MHZ			Dayton	Montgomery	KB8CSL	
224.7600	223.1600	-1.6 MHZ			North Royalton	Cuyahoga	K8SCI	
224.8600	223.2600	-1.6 MHZ	100.0		Cable	Champaign	WB8UCD	
224.8600	223.2600	-1.6 MHZ	CSQ	CSQ	Medina	Medina	W8EOC	
224.8800	223.2800	-1.6 MHZ			Hamilton - North C Street hill	Butler	W8AJT	
224.9000	223.3000	-1.6 MHZ	141.3		Lakewood	Cuyahoga	WR8ABC	
224.9200	223.3200	-1.6 MHZ	114.8	114.8	Minford	Scioto	N8WBV	866900
224.9400	223.3400	-1.6 MHZ	71.9		Mt Gilead	Morrow	WY8G	
224.9400	223.3400	-1.6 MHZ			Troy	Miami	WB8PMG	
224.9400	223.3400	-1.6 MHZ			Zanesville	Muskingum	KJ8N	
224.9600	223.3600	-1.6 MHZ	141.3		Thompson	Geauga	KB8FKM	
224.9800	223.3800	-1.6 MHZ	100.0		Urbana	Champaign	K7GUN	

## Final Takeaway

Last month there was a quick discussion of VOACAP Online and how I was looking into what it can do. Going into July I haven't put much effort into learning more about its capabilities. Instead I have acquired a Geochron Atlas 2 4K. It has been informative learning what the Geochron displays. It was demonstrated at Hamvention and I liked what I saw for amateur radio. Since setting it up at home it has been very easy to determine which bands are active and where the activity is coming from. Having the MUF displayed for various points around the globe has also assisted with making DX contacts. Another useful feature is knowing where the grey line is and observing how that affects the MUF.



The image above shows 20M FT8 spot information. I have also been using it to display 6M activity. Being able to show what bands, paths, and from where contacts are being made could assist with working DX contests.



## General Exam Sample Test Questions:

The new 2023 – 2027 question pool is effective July 1, 2023 – June 30, 2027, and *must* be used for General-class license exams administered on or after July 1, 2023.

**G9B01** What is a characteristic of a random-wire HF antenna connected directly to the transmitter?

- A. Station equipment may carry significant RF current
- B. It produces only vertical polarized radiation
- C. It is more effective on the lower HF bands than on the higher bands
- D. It must be longer than 1 wavelength

**G9B06** Where should the radial wires of a ground-mounted vertical antenna system be placed?

- A. At the center of the antenna
- B. Parallel to the antenna element
- C. As high as possible above the ground
- D. On the surface or buried a few inches below the ground

## Extra Class Exam Sample Test Questions:

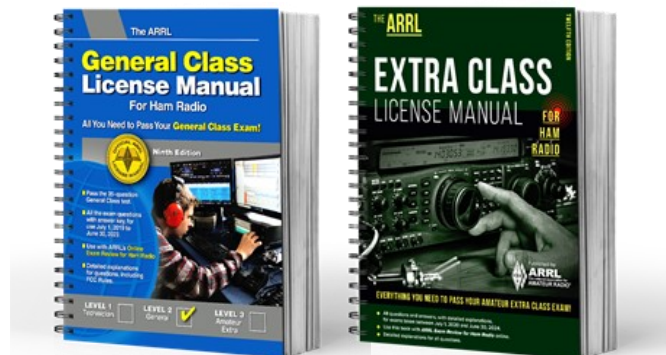
**E5D06** In what direction is the magnetic field oriented about a conductor in relation to the direction of electron flow?

- A. In the same direction as the current
- B. In a circle around the conductor
- C. In a direction opposite to the current
- D. In all directions; omni-directional

**E5D14** What is reactive power?

- A. Wattless, nonproductive power
- B. Power lost because of capacitor leakage
- C. Power consumed in circuit Q
- D. Power consumed in wire resistance in an inductor

These test questions are from the current test pools for their respective license classes. How did you do? The answers are on the last page. Practice tests for all license classes can be found here: <https://www.qrz.com/hamtest/>. The ARRL license manuals shown are available from the [ARRL](#) or Amazon.





## FM Repeater Nets In And Around Knox County

County	Net	Frequency	Day and Time
Ashland	No net as of 03.30.2023		
Coshocton	CCRA	147.045 PL 71.9	Every Sunday 9:00 PM
	ARES	147.045 PL 71.9	Every Monday 8:00 PM
Delaware	Monday Night Net	145.170 PL 74.4	Every Monday 8:00 PM
Holmes	No net as of 03.30.2023		
Knox	<b>MVARC Roundtable</b>	<b>146.790 PL 71.9</b>	<b>Every Thursday 7:00 PM</b>
	<b>ARES Sunday Night Net</b>	<b>146.790 PL 71.9</b>	<b>Every Sunday 9:00 PM</b>
	<b>440 FM and Digital Tech Net</b>	<b>444.600 PL 71.9</b>	<b>3<sup>rd</sup> Saturday of the month 10:00 AM</b>
Licking	N8RA Tuesday Night Net	146.880 PL 141.3 444.500 PL 141.3	Every Tuesday 9:00 PM on the 146.880 except for the last Tuesday of the month they check in on the 444.500 repeater.
Morrow	Morrow County Net	146.775 PL 107.2	Every Sunday 9:00 PM
Richland	IRAC Net - Mansfield	146.940 PL 71.9	Every Wednesday 8:00 PM

**Has anyone tried contacting any of the other nets? We have several operators from Licking County joining our Sunday Night Net and it would be great if we could reciprocate and join their net!**

## Great Lakes Division ARRL Sanctioned Hamfests

Here is the current listing of Great Lakes Division ARRL Sanctioned hamfests and Special Events through September of 2023. (Ohio hamfests in **BOLD**)

**7/8/23 - Mansfield Mid-Summer Trunkfest, Mansfield, OH**

7/15/23 - GM ARC Trunk Swap, Shelby Twp, MI

**7/15/23 - NOARS Fest, Elyria, OH**

**7/16/23 - Van Wert, Van Wert, OH**

**7/22/23 - Ashtabula County Hamfest, Pierpont, OH**

**8/5/23 - Columbus Hamfest, Grove City, OH**

8/5/23 - UP Hamfest, Rapid River, MI

**8/12/23 - Cincinnati Hamfest, Owensville, OH**

**8/19/23 - Portsmouth Hamfest, New Boston, OH**

**8/20/23 - WARA Tailgate Swap, Cortland, OH**

8/27/23 - Seaway Trunk Swap, Port Huron, MI

9/9/23 - Letcher Co KY ARC Hamfest, Whitesburg, KY

9/9/23 - Greater Louisville Hamfest, Shepherdsville, KY

**9/10/23 - Findlay Hamfest, Findlay, OH**

9/16/23 - Hiawatha ARA Swap, Negaunee, MI

9/16/23 - Richmond Hamfest, Richmond, KY

9/17/23 - Adrian Hamfest, Adrian, MI

9/23/23 - CMARC Hamfest, Okemos, MI

9/23/23 - Gaylord Hamfest, Gaylord, MI

**9/24/23 - Cleveland Hamfest, Berea, OH**

9/30/23 - KY4ARC Hamfest, Paintsville, KY



## Miscellaneous Amateur Radio Information

Join us every Sunday night on the Mt. Vernon 146.79 repeater for our weekly **MVARC ARES Sunday Night Net. Check-in starts at 9 pm.**

Unable to access the repeater from where you are? We are on IRLP (EchoLink) K8EEN-R Node 809800.

## Ohio Traffic Nets



### [The Ohio Single Side-Band Net \(OSSBN\)](#)

Ohio Single Side-Band Net; Ohio connection for what is going on in the Ohio Traffic System. The Net meets on 3.972.5 MHz at 10:30 am, 4:15 pm, and 6:45 pm daily. Alternate Frequency for all sessions is 3.968 MHz.



### [Central Ohio Traffic Net](#)

The Central Ohio Traffic Net is a part of the Ohio Section of the National Traffic System. They meet daily to handle traffic; all licensed amateur radio operators are welcome to check in and to learn to handle traffic. COTN meets daily at 7:15 pm on 146.970, -.600 MHz, PL 123.0. Signal Operating Instructions and frequencies given here: <https://www.cotn.us/sop>.



### [The Ohio ARES HF Digital Net—OH DEN](#)

Tuesday at 7:45 pm 1804.5 MHz, USB, Olivia 8-500 with waterfall frequency 1500.

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“I think our Field Days have stagnated. For next year, I would like to change things up a little.” Don, W8PEN

## FCC and License Updates



### First-Time Exam Applicants Must Obtain an FCC Registration Number before Taking an Exam

All amateur examination applicants are required to provide an FCC Registration Number ([FRN](#)) to the Volunteer Examiners (VEs) BEFORE taking an amateur exam. **Social security numbers are no longer accepted at exam sessions.**

Amateur candidates who already have an FCC license, whether for amateur radio already have an FRN and can use the same number. All prospective new FCC licensees, however, will be required to obtain an FRN *before* the examination and provide that number to the volunteer examiners on the Form 605 license application

All applications will be required to contain an email address for FCC correspondence. Applicants will receive an email direct from the FCC with a link to the official electronic copy of their license whenever a license is issued or changed.

### FCC Application Fee and VEC Filed Applications

EXAMINEES MUST PAY WITHIN 10 DAYS.

Examinees do **NOT** have to wait for the email from the FCC to pay the fee. As soon as an the application file number is issued by

the FCC, they can pay by logging into the CORES [Payer FRN System](#).

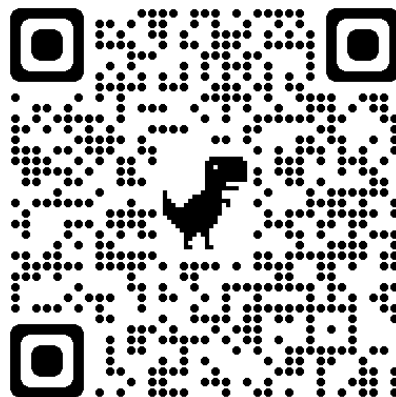
Application File Number search using an FRN: [FCC Application File Number Search](#)

### FCC Legacy CORES System—Retired

The Federal Communications Commission (FCC) retired the [Legacy version](#) of its Commission REgistration System (CORES) on July 15, 2022.

CORES is designed to identify those who hold certain types of FCC licenses and FCC authorizations, including amateur licenses, and organize them in an easily accessible manner under a common FCC Registration Number (FRN) regardless of whether one holds a single such authority or more.

Starting on July 15, 2022, the Legacy CORES website will re-direct users to the [Commission's updated CORES](#) site. Although some functionalities in the old system will continue to work for a short time, the [FCC has urged all users](#) to transition to the updated CORES system to take advantage of its enhanced security and functionality.



## MVARC

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Bill Stroud, KD8WHQ

\* Newsletter Editors

Frank Counts, KC8EVS

Terry Windsor, KI8N

## Contact Us

MVARC

812 Coshocton Ave.

PMB #145

Mount Vernon, OH

43050

## Email

[admin@mvarc.net](mailto:admin@mvarc.net)



Answers to sample test questions on page 20.

G9B01: A

G9B06: D

E5D06: B

E5D14: A

## Editors Notes



The MVARC Newsletter is delivered to club members via email containing a link to the MVARC webpage, Member Pages heading.

*Thanks to all for your assistance with the MVARC Newsletter; in 2022 we were selected as the second best newsletter in the Ohio Section.*

Please note the contact email for the MVARC newsletter is: [admin@mvarc.net](mailto:admin@mvarc.net).

The MVARC CQ is the official newsletter of the Mount Vernon Amateur Radio Club.

## Web Page

MVARC.net

## Facebook Page

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