

Mount Vernon Amateur Radio Club

March 2025

2025 Edition 3



Inside this issue:

President's View.....	2
Meeting Minutes.....	3
ARES.....	5
ARES Information.....	5
New Ham Info.....	6
Meeting Notice.....	6
MVARC Calendar.....	7
Radio Activity.....	8
ARES Planning.....	10
Knox County Repeaters.....	11
FM Repeater Nets.....	11
Miscellaneous Rambling.....	12
Final Takeaway.....	14
Ohio Hamfests.....	20
Training Schedule.....	20
Electrical Quiz.....	21
MVARC Officers.....	22

MVARC Repeaters

K8EEN
146.790 MHz
- 600KHz / PL = 71.9 Hz

K8EEN-R EchoLink Node:
809800

K8EEN
444.600 MHz
+5 MHz / PL = 71.9 Hz



Meeting Notice

March Meeting— March 8 — 10:00 am at the Academy Building on Fairgrounds Road.

President's View

Frank, KC8EVS



Well, we made it through February now for Mud month, I mean March. Here on the farm in Southern Knox as we thaw out from winter everything turns to mud. This makes doing anything outside miserable, and don't even think about returning to the house with mud on any part of your clothing. It won't go well.

I've been working with Don to operate the club's 7300 remotely and it works, sort of. So far, we have proved that I have a lousy internet connection. He is going to work with someone else that has a good internet connection. I can connect and hear audio, change the frequency but that is about it. The lag

time is too much because of the poor connection. But I look forward to connecting when I'm down in southern Ohio. My kids have better internet service.

Still no date for NVIS. I've kept April 26 open on my calendar (last Saturday in April). I propose that we plan for POTA activation day regardless. Let me know what you think. We can still participate in NVIS, too.

One last thing before closing for the month. I have had a couple of requests to continue the meeting on Saturday mornings. So, make sure to come to our next meeting on Saturday March 8 at 10a so we can discuss.

Oh, I lied, there is something else I need to mention before I put an end to my ramblings. I'm cancelling the test session in March unless someone wants to step up and be the lead. I'm heading out to Pensacola, FL hopefully to arrive before our newest grandchild arrives, Grammy must be there when it happens. I get to play with the other two grandchildren.

73

NVIS	TBD
Blackfork Gravel Grinder	May 3, 2025
Field Day	June 27-29 , 2025
OSPOTA	Sep 6, 2025
POTA Activation	TBD
First Friday	TBD
Family Palooza (Apple Valley, Floral Valley)	TBD

Every Sunday night on the Mount 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.

Meeting Minutes

Terry, KI8N



Call To Order

The February 2025 meeting of the Mt. Vernon ARC was called to order by Frank, KC8EVS at 10:04 am. With 21 individuals attended the meeting.

Minutes of the Last Meeting

The minutes for last month were presented. There were no changes. The minutes were passed as read. Motion by Scott, N8SY and Bill, KD8WHQ.

Treasurers Report

Terry KI8N provided an account of the current balance of all bank accounts and expenditures through January 2025. There were no additions or corrections, and the report was approved as presented. Motion by Emery, W8TW and Roger, KE8ICI.

Committee Reports

ARES

Tony, KE8OOE introduced as the new Knox County Emergency Coordinator. He stated his background and his experience as the AEC in Ottawa County. Tony also started a Knox County Ohio ARES page on Facebook that he encouraged everyone with access to join.

Tony went over his plans to exercise and train the Knox County ARES group and discussed questions about local ham's capabilities and VHF/UHF radio coverage. He also stated he had attempted to contact the Knox County Emergency Management Agency director and would follow up with this activity.

Tony is looking for a local AEC volunteer. He also went over the needs for everyone to attend NWS WeatherSpotter training and complete NIMS required training courses.

ARRL

Scott, N8SY is the Chair of ARRL Emergency Communications and Field Services Committee (ECFCS) and he stated Auxiliary Communications (AUXCOMM) which supports state public safety is being integrated with ARES to strengthen Emergency Communications (EmComm).

Scott talked about HOA bills that have been reintroduced in the US Senate (459) and House (HR1094). These are apolitical bills with several elected officials supporting that allow hams within HOA communities to request the installation of amateur antennas. Results are expected within a few months. In Ohio we have PRB1 that is stronger than the currently introduced federal bills.

Repeaters

Roger, KE8ICI reported that the Hytera 2-meter repeater is working well. However, there is occasional scratchiness probably related to weather. The 444.600 MHz repeater has moved from the hospital roof and is located at the water tower with the 146.790 MHz repeater.

One set of repeater duplexer cavities has been taken to VASU Communications for check out and tuning.

Discussion about installing internet service at the water tower for possible installation of DMR repeater capability.

Any questions regarding repeaters can be located at: repeater-builder.com

Will be getting the unusable Yaesu DRX-1 repeater assembly ready to sell as is.

EchoLink

Don, W8PEN reported that the EchoLink system is working well. He had to perform one reboot in January. Don is considering moving the EchoLink equipment from his home shack to the Academy Building.

Remote Radio Connection

Don, W8PEN is continuing to work on remotely connecting MVARC's IC-7300 via the internet so that club members can operate the radio from their home. Don is experiencing issues with the program that controls the audio due to an issue with opening ports on the Academy Building router. (This router does not belong to MVARC.) Another issue is getting the remote-control program to assign more than two users which is needed for multiple operators to use the radio. Work continues with this endeavor.

Directors

Michael, KE8HGE stated no new business for MVARC Directors.

License and Exam Testing

Michael, KE8HGE has two students for the upcoming Tech Class starting 2/25/25. No testing session scheduled in March since Frank, KC8EVS will not be available.

Winter Field Day

WFD was held at Roger's, KE8ICI house and several members attended/operated. Evan, KF8APC made his first HF contacts at WFD. Article about WFD was in the February MVARC newsletter.

New Business

Frank and Emery are looking for a club volunteer to take the PIO (Public Information Officer) position. Details about the PIO position is located on the [ARRL web page](#).

Terry, KI8N discussed the club's financial status. A detailed spreadsheet was provided to attendees to show how club funds were received and spent in 2024. A discussion of 2025 expected disbursements was also presented.

A motion was made by Emery, W8TW and Scott, W8HK to donate \$150.00 to Apple Valley POA for MVARC using their location behind Floral Valley Community Center for Field Day in 2024.

Discussion about Field Day 2025. How many stations, two or three, to operate and whether a sign up sheet would be viable. The decision was deferred to a later date.

NVIS Day is expected to be the fourth weekend in April. MVARC will utilize a shelter at Mohican State Park.

Old Business

Stephen, N8RLW talked about the upcoming DMR and Digital class and his need for more students.

Barry, N8PPF still has equipment from his brother's estate for sale in the club radio room.

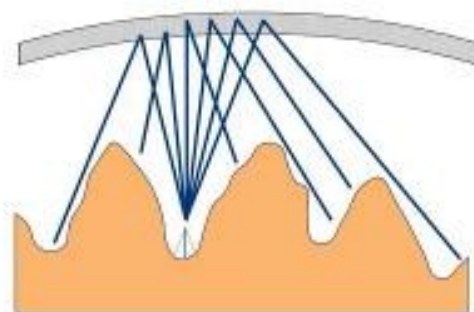
Raffle

ARRL handbook.

Meeting adjourned – motion by Scott, N8SY and Bill, KD8EHQ.

Near vertical incidence skywave (NVIS)

- ▶ Special case of skywave that enables
 - Skip zone coverage
 - Coverage in rough terrain
- ▶ Implemented using antennas with very high (> 75°) radiation angles and low HF frequencies
- ▶ Typical coverage range is several hundred kilometers
- ▶ Common applications include:
 - Military
 - Disaster relief



ARES

Tony, KE8OOE

Hello everyone, Tony Aristide, KE8OOE here and I am the new Knox County ARES EC.

I recently moved from Catawba Island with my wife, where we still have a summer home, to Apple Valley in the summer of 2024. I served as the AEC for 4 years in Ottawa county where we built a team from the ground up with over thirty members, radio, and auxiliary. We worked two live tornados and 2 Davis Besse nationally graded exercises.

I am a retired union electrician; I spent 10 years in the US Army in the infantry. I am a father of three men and four step kids, ten grandkids and happily married to Deb a retired GS15 human resource officer for the Department of Defense. I have been in the ham radio hobby since 2019. Still a newbie.

I took this position because it is an important way to help the county and its residents in times of emergency, when called. The relationship between ARES and EMA, Sheriff's Departments and Red Cross can be a little touchy at times especially when the ARES group seems unorganized, mismanaged, and undertrained for any disaster. I believe in training. I know this is a volunteer organization but it's one that can be of great service to the community.

Training will be announced at meetings on the Facebook page, Knox County Ohio ARES, all members, and non-members are encouraged to join, or mass communication texts for ARES roster members. The training that will be going on will cover Winlink, HF, simplex frequencies, emergency frequencies, post mobile damage storm reporting etc. These are things I discussed with the EMA director, and he was very receptive. The thunderstorm season is coming up and being ready to aid in any post disaster when called is a terrific way to serve our county and its residents.

When you don't plan and practice your only plan is to fail.

Keep those HTs charged. Anyone interested in the AEC position please let me know if you have the FEMA training certs.

Thanks.

ARES Information

Tony, KE8OOE



A few things on the agenda, I am looking for an AEC. You must have completed the NIMS training and provide me with a copy of your certs. If you are interested contact me and we can go over what the AEC duties entail.

I am also looking forward to putting together a testing team, a team that will test our radio sites. This will be done on a quarterly basis and if I get enough people, on a rotation at each location. Testing our radios is vital to our mission. I would like to start this in May 2025.

Each member will need to have a background check completed at their own expense by the Sheriff's Department. Please call the SD and make an appointment to have your background completed. Some of you may have had a background check done recently and we can bring that up with the SD and the EMA director and let them decide your status. You will be given an ID card to present to each location.

You must call the SD and make an appointment. The cost is \$64.00 for FBI and BCI, bring your picture ID. You will also need ORC codes. I talked with the Ohio Attorney General, and they suggest using: **NO ORC or Other and fill in radio test in County Emergency and Hospitals.**

New Ham Information

If you are a new ham (less than 6 months ago) you are eligible for the [QRZ New Ham Jumpstart Program](#).

Click on the link or go to QRZ.com and scroll down to the box for the Jumpstart Program.

This program is designed to promote amateur radio to the masses, helping to eliminate a possible barrier to entry by providing new hams with everything they'll need to get on the air at a very reasonable price.



Includes:

- Explorer QRZ-1 Handheld Radio (made by TYT)
- 1400mAh Battery (ZXP-BAT-10)
- Charging Cradle with AC Adapter
- Antenna (SMA)

Contact Us

Mail

MVARC

812 Coshocton Ave.

PMB #145

Mount Vernon, OH 43050

Email

admin@mvarc.net

MVARC MONTHLY MEETING

MARCH 8, 2025



10:00 AM

Academy Building
Fairgrounds Road



"I have had a couple of requests to continue the meeting on Saturday mornings." Frank, KC8EVS



March 2025



Sun	Mon	Tue	Wed	Thu	Fri	Sat
						1
2 9:00 pm ARES Sunday Night Net	3	4	5 4:45 pm Dinner Ash Wednesday	6	7 9:00 am— Breakfast McDonalds	8 CLUB MEETING 10:00 AM 
9 9:00 pm ARES Sunday Night Net Daylight Savings Time Begins	10	11	12 4:45 pm Dinner	13	14 9:00 am— Breakfast McDonalds	15
16 9:00 pm ARES Sunday Night Net	17 St. Patrick's Day 	18	19 4:45 pm Dinner	20 First Day of Spring	21 9:00 am— Breakfast McDonalds	22 National Goof Off Day
23 9:00 pm ARES Sunday Night Net	24	25	26 4:45 pm Dinner	27	28 9:00 am— Breakfast McDonalds	29
30 9:00 pm ARES Sunday Night Net	31					

Link to: [Ham Radio Contest Calendar](#)

Radio Activity

Don, W8PEN



As I write this, the sun is shining and it's a beautiful, although windy day. Spring is right around the corner. I know the current weather is an anomaly, but the weather should continue to improve from here on out.

I am hoping that I will not have any setbacks to my current improved health. Although I still have difficulty walking, most of my other issues have gradually improved to where I should be able to enjoy fishing this summer. Last year was hit and miss. I did some fishing, but not as much as I would have normally done.

The other activity that I like to do is activating POTA parks. I did quite a bit of that last year at Kokosing Reservoir. This year I would like to expand to some other parks.

There are only a few things to update members on this month, so let's get started.

EchoLink

Not much to report here. EchoLink has been running without too many issues for some time now. I am still hoping to take the EchoLink equipment to the club room and set it up there. That way our repeater tech guys can access it if I am away.

This should happen sometime in March. The sooner the better, I would think.

Local Mesh Network

Yes, the Local Mesh Network is still alive. However, I am planning on shutting the rest of it down in the next few weeks. Then we will get a team together to dismantle the equipment on the Water Tower.

As much as I wanted the Mesh Network to be successful, I am tired of spinning my wheels with it. At one time, we were very close to a working system that would have had some value. That was a short-lived experience.

Club Remote Station

I am always playing around with something. That's why I write a column called "Radio Activity".

Since I am not spending time with the Mesh Network, I have turned my attention to setting up a Remote HF station in the club room. In all honesty, it is a modest station consisting of the club's IC-7300 and an Off-Center Fed Antenna in the attic.

When assembling this station, I had in mind that a few club members with limited equipment or ham unfriendly locations would be able to workstations on HF by connecting to the club's station via the internet.

It is not really meant for club members with full blown stations of their own. Although I have no objection to them participating in this project.

As such, I am going to leave access to the club station by remote as a "By Request" feature.

If you would like to use the club station remotely via the internet, let me know and I will send you instructions along with a username and password. I am going to do another month of testing with a few selected participants to make sure no issues are going to develop. Currently, the software has been working well.

I will be demonstrating how to access the club by remote at the March meeting.

The only requirement will be you must have a fast internet. Anyone using Cable should not have an issue. Not sure about phone lines or Satellite internet. 5G works if you are within range of a cell tower.

If anyone is wondering if they can use the IC-7300 as a typical base station (not remotely), then the answer is yes indeed. However, I will have to post some instructions. I promise it will be easy.

If all you want to do is receive, then just go at it. No problem there. But to transmit, you must change some settings.

Luckily, the radio has a micro-SD card installed. Basically, all you must do is load the correct software into the radio.

This project started out using the Clubs Kenwood TS-570-D. I spent a week or two getting all the bugs out of the system and had the Kenwood purring along as a remote station.

The only thing I did not like about using the Kenwood TS-570D was that I would be forced to use Skype as the audio link. I created two Skype accounts. One for the TS-570D and one for myself. Then I would dial into the club on Skype, which was set to auto-answer.

This worked well. Audio during transmit and receive was very good. However, it was a little confusing getting connected. First you would have to connect to the transceiver. Once that was working, you would dial into Skype for the audio. A lot of remote stations do this.

I tested this system out for about two weeks. Again, it worked pretty darn good, and I was happy with it. I still didn't like using Skype, but it would be easy to teach how to use this system.

Then I discovered the software that I am currently going with. This software is easy to set up and as a plus, has audio built into it. You connect to the radio and audio magically appears. It is much easier than using Skype.

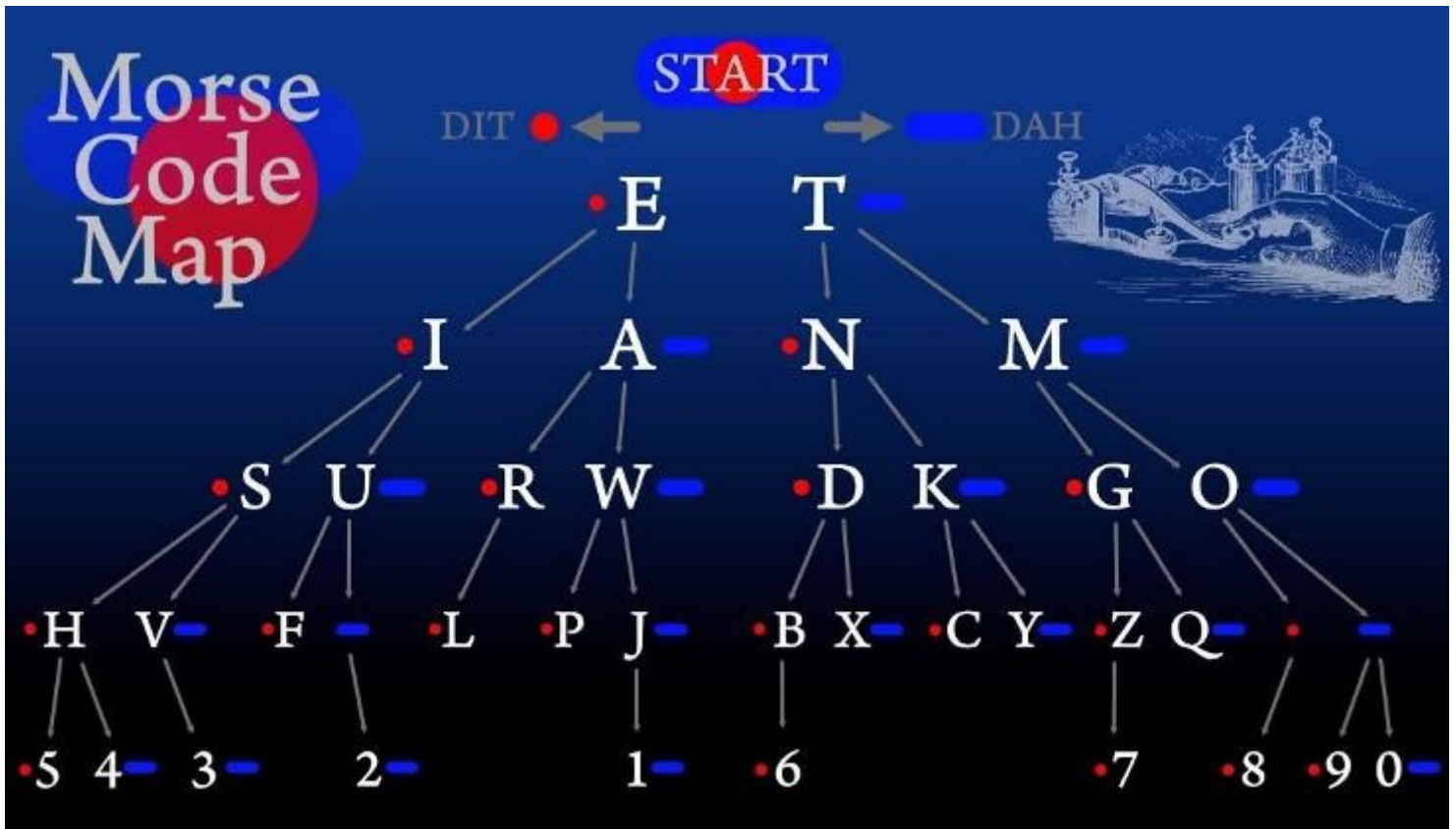
Only one issue with this system: Currently, it only works with Icom radios. The authors of the software have promised a version for Kenwood, but who knows if that will ever happen and if it does, whether it would work with the somewhat dated TS-570D.

Fortunately, the club has the Icom IC-7300, which is a perfect fit for this software.

So, I back tracked and set up the Icom IC-7300 as the remote using this new software. Bingo! This software works well.

Let me know who's interested in using the remote and I work towards making that happen.

73 until next month.



ARES Planning

Tony, KE8OOE



I want to update all the members of Knox County Ares on what is in the near and distant future. First, I would like to know who has mobile capability for a mobile team to access storm damage in their area, i.e. after a major storm, after you and your family are safe taking a quick drive around your assigned area, neighborhoods, to report any damage to report back to the county, obstructions, floods, down power lines, etc. **Keeping yourself safe and out of danger.** If you want to participate, please let me know as I will be doing this as well.

Training on the agenda soon is going to be Winlink. If you are interested, please download the Winlink and VARA HF programs onto your computer, what you will need is an HF radio with a soundcard external or internal, either works. A printer cable from your PC to your rig, this is my setup. You can also participate with a dual-band radio and a Digirig interface. I would like to do this training in April, either live

or online via Zoom, which logistically may be easier.

Simplex training is also being planned, which will consist of mapping who can talk to those on Simplex with no repeater or when all forms of communication are down. More training to follow.

When should we open a net? We should open an ARES net when the NWS puts out a severe weather warning until the warning expires. A net team will need to be put in place. Severe warning nets should be run from your home, do not leave your home to go to the club to open the net, stay with your family and safely in your home. You may have noticed a weekly mass notification cell text net test; this is a way of making sure you all are reachable, and they will continue weekly.

Quarterly testing of our emergency radio locations will begin in April 2025. An online log will be kept of each test. Those of you who want to participate will need to be background checked by BCI, which can be obtained from the Sheriff's department. For a fee, please go to the Sheriff's website to obtain a schedule of fees. BCI only is required. Badges for this group will be made. The Knox County Operations manual requires a background ground check. If you have a background check, please forward me a copy or show it to me in person at the next meeting if it is current within 5 years you are good, anything older will need to be renewed. No exceptions.

I am still reviewing and will be updating the Knox County Ares Operation Manual which will be available and posted after completion any changes will be posted for discussion. I have met with the County EMA Director, KCCH Security Director and the Knox County Dispatch Director. I have also talked via email with most of our surrounding community ARES Emergency Coordinators and have talked about some possible joint training this summer. Skywarn/Spotter training is a definite must. Please refer to this link. All the information you need to know is on this page. <https://www.weather.gov/cle/SKYWARN>. All Training certs should be emailed to me so I can keep a record of who has been through which training courses. this form is a handy tool for keeping track [https://www.arrl.org/files/file/ARES%20Taskbook%20July%202024%20\(improved\).pdf](https://www.arrl.org/files/file/ARES%20Taskbook%20July%202024%20(improved).pdf)

Members or newer ARES members who don't know what ARES requires or really is about and the training you should acquire please check out this link: <https://www.arrl.org/ares>.

If you are on Facebook, please check out Knox County Ohio ARES and join the page. All training updates will be posted there..



TM

**National Weather Service
Cleveland Ohio**

"Serving Northern Ohio and Northwest Pennsylvania"

Knox County Repeaters

K8EEN

146.790 PL 71.9

Type: Analog Only

Features: Weather Net, ARES Net at 9:00PM on Sunday EchoLink: 809800

444.600 PL 71.9

Digital ID 00 for C4FM/Fusion

Type: Automatic Mix mode, Analog and Yaesu C4FM/Fusion

Features: Backup to the 146.790 machine.

KD8EVR Repeater

442.100 PL 71.9

Type: Automatic Mixed mode, Analog and DMR

Color Code: CC7 (which is the digital PL of DMR)

TalkGroups with TimeSlots

TimeSlot1

Local 9 - Local Traffic Only

313964 - Knox, Morrow and Marion County Link

31395 - ARES USA only

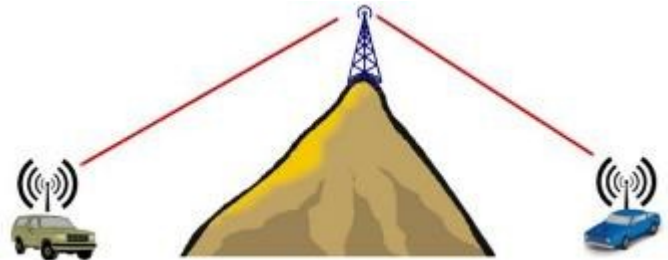
Timeslot2

Local 2 - Local Traffic Only

3139 - Ohio Statewide 10-minute limit

31391 - Northeast Ohio

31398 - EMCOMM



FM Repeater Nets In And Around Knox County

County	Net	Frequency	Day and Time
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
Knox	ARES Sunday Night Net	146.790 PL 71.9	Every Sunday 9:00 PM EchoLink K8EEN- R Node: 809800
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 Information 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

“Hello everyone, Tony Aristide, KE8OOE here and I am the new Knox County ARES EC.” Tony, KE8OOE

Miscellaneous Rambling

Terry, KI8N



What happened to February? Another month gone, another birthday to add to the years, and not much else accomplished. Looking forward to being able to get outside without being chased back in by the wind chill.

I participated in a couple of radio activities; a POTA activation in FL and played in the CQ 160-meter SSB contest. The CQ contest was fun, I only worked about 4.5 hours and made 175 contacts with 33 multipliers. It was the best I have done in this contest and beat my previous score by several thousand points. I have come to realize that I just don't have the patience and desire to sit in the chair for hours upon hour in these contests. I prefer to make a few contacts, enjoy the time, and get out before it becomes unfun. I do try to beat my previous year's scores, so it wasn't just a waste of time.

We spent five days in Florida and that was a good trip. We saw a family member I hadn't visited in several years, walked in the warm Gulf water, and just relaxed and took in the sights. As stated, I completed one POTA activation at US-12136 with the KX3 and Wolf River Coil. Then we went to Savannah, GA and spent a couple of days there revisiting locations. Most of the trip was very good and relaxing except for the drive home from Charlotte, NC. We left the same day the storm hit and through NC, VA, and WV it was snowing and icy making for a slow drive home. Amazingly the weather in OH when we crossed the river was sunny and clear. Cath and I need to take more trips and go somewhere as it is good to get away for a short time.

One other activity I have been working on is getting worked all states (WAS) on CW. I am just 5 states away from completion. I had one of them but I guess he doesn't log in LoTW so it isn't counting. I still need AK, HI, ID, NV, and UT. I just need to keep at it and eventually I will accomplish this goal.

Another thing I have been practicing is programming my FT-3 manually. Tony, KE8OOE stated an observation that during emergencies he had noticed hams were lost when trying to enter new frequencies/tones manually. I want to be ready in case there is a need to change fre-

quency, PL tone, or repeater during one of the upcoming training sessions if this is a scenario. I have also been doing this with the FTM-300.

I need your input for the Final Takeaway column in the newsletter. I am running out of ideas and need some input as to what would be interesting or helpful. Looking for topic suggestions that would be of interest to more than one or two hams. Let me know if you have anything at the next meeting.

Final thoughts, I bought tickets to Hamvention before the price increased. I plan on going that Friday and just wander around and take in a couple of the group presentations. I don't really need anything just want to see a few things in person. Especially the new transceivers from Icom; IC-7760 and the Yaesu FTM-510DR ASP and FTX-1F. Also hoping one of the retailers will have Anytone HT's and mobile units on display. I have been thinking about the AT-578UV III Plus.

Now back to your regularly scheduled day, me working on my ongoing project list, and hoping everyone is radio active!

"Be safe and Ham it UP"!



"Coffee: Because a good day never starts with a spinach smoothie." Unknown

Florida Sunset



Final Takeaway—Station Requirements

So far Final Takeaway has presented ham radio antennas and shack equipment. This month the topic is linear Amplifiers.

Ham radio amplifiers, also known as linear amplifiers, are used to boost the power output of amateur radio transceivers. They help extend the range of communication by increasing signal strength. Here are some aspects to consider.

HAM RADIO AMPLIFIER TYPES

Solid-State Amplifiers

- Use transistors (MOSFETs or LDMOS)
- More compact and efficient
- Instant-on operation
- Often require high-current power supplies



Tube (Vacuum Tube) Amplifiers

- Use vacuum tubes (e.g., 3-500Z, 811A)
- Can handle high power levels efficiently
- Require warm-up time
- More maintenance due to tube wear



Key Features to Look For

- Power Output: Ranges from 100W to over 1500W (legal limit in most countries)
- Frequency Coverage: HF, VHF, UHF, or all-band coverage
- Mode Support: CW, SSB, AM, FM, and digital modes
- Power Supply Requirements: Some run on 120V AC, others need 220V or a 12-48V DC power source
- Cooling System: Forced air (fans) or passive cooling
- Automatic Band Switching: Useful for modern transceivers

Popular Ham Radio Amplifiers

- Ameritron AL-811 & AL-1500 (Tube-based, high power)
- Elecraft KPA500 (Solid-state, 500W, popular with QRP operators)
- ACOM (Tube-based and solid-state)
- Expert 1.3K-FA (Solid-state, auto-tune, 1300W)
- RM Italy HLA-150 (Compact solid-state amp for mobile/portable use)

Usage Considerations

- License Restrictions: Ensure you follow your license class limits
- Antenna Matching: Use an antenna tuner if needed
- Harmonic Filtering: Some amps require additional filters
- Cooling & Ventilation: Prevent overheating for long transmissions

BASE STATION AMPLIFIERS

HF Amplifiers (1.8 – 30 MHz)

- Used for long-distance (DX) communication
- Often operate on 160m, 80m, 40m, 20m, 15m, and 10m bands
- Power ranges from 500W to 1500W



VHF/UHF Amplifiers (50 MHz and above)

- Enhance communication on 6m, 2m, 70cm, and higher bands
- Used for local, repeater, and weak-signal work
- Typically range from 100W to 1500W

Features	Tube (Vacuum Tube)	Solid State
Efficiency	High, but requires warm-up	More efficient, instant-on
Maintenance	Tubes need periodic replacement	Lower maintenance
Size and Weight	Larger and heavier	Compact and lightweight
Output Power	Can handle high power levels efficiently	Typically, max out at 1.5kw
Cost	Often more affordable per watt	More expensive but modern

HF Amplifiers

- Ameritron AL-811 – 600W, affordable tube amp for beginners
- Ameritron AL-1500 – 1500W, high-power tube amp with a 3CX1500A7 tube
- Elecraft KPA1500 – 1500W, solid-state, automatic tuning
- Expert 1.3K-FA – 1300W, solid-state, full coverage from 1.8 – 54 MHz
- ACOM 2020S – 1500W solid-state, full coverage from 1.8 – 54 MHz

VHF/UHF Amplifiers

- Mirage B-5018G – 2m band, 500W output (great for weak-signal work)
- TE Systems 1412G – 2m amplifier with ~375W output
- RM Italy LA-250V – 2m/70cm, 250W output, compact



Key Features to Consider

- Power Output: Choose based on your needs and legal limits (typically 1500W max)
- Cooling System: Tube amps need proper ventilation; solid-state amps use fans or heatsinks
- Auto-Tune Capability: Some modern amps auto-adjust for different bands
- Power Requirements: Some run on 120V, while higher-power amps require 220V
- Harmonic Filtering: Helps reduce interference and splatter
- Antenna Matching: Use a tuner if needed to prevent SWR issues

VACUUM TUBE AMPLIFIERS

Common Tubes Used in Ham Radio Amplifiers

- 811A – Found in entry-level amplifiers (e.g., Ameritron AL-811)
- 572B – A stronger upgrade for 811A amps
- 3-500Z – Used in higher-power amplifiers (e.g., Ameritron AL-80B)
- 8877 (3CX1500A7) – Found in high-power amps (e.g., Ameritron AL-1500)



Tube amps require a warm-up period and proper tuning to operate efficiently. They also need high voltage (often 2,000-3,000V) and good ventilation.

Powering On & Warm-Up

- Ensure the **amp is turned off** before connecting it to your transceiver.
- Set your transceiver to **low power output** (e.g., 20-30W drive).
- Turn on the amplifier and allow **at least 1-2 minutes** for tubes to warm up.



Tuning the Amplifier

Most tube amplifiers require **manual tuning** using **LOAD, PLATE, and BAND** controls. Follow these steps:

- Set the Band Selector to match your operating frequency (e.g., 20m for 14 MHz).
- Set LOAD and PLATE controls to approximate settings (check amp manual).
- Key the transceiver with a low carrier signal (e.g., CW or AM mode).
- Adjust PLATE for maximum RF output.
- Adjust LOAD to slightly reduce the plate current while maintaining max output.
- Repeat small adjustments to PLATE and LOAD for peak efficiency.

Proper tuning maximizes power while preventing excessive tube current.

Operating Safely

- Watch the Grid & Plate Current Meters – Avoid exceeding rated limits.
- Monitor SWR (Standing Wave Ratio) – Use an antenna tuner if needed.
- Use a Dummy Load for Testing – Never tune into an open antenna.
- Cooling is Critical – Ensure proper ventilation to prevent overheating.
- High Voltage Warning – Tube amps operate at lethal voltages; do NOT open the amp while powered.

Powering Down

- Reduce transceiver drive power.
- Allow the amplifier to cool down for **a few minutes** before shutting it off.
- Turn off the amplifier **before switching bands** or making major adjustments.

Advantages of Tube Amplifiers

- High power handling – Better efficiency at high output levels
- More forgiving with high SWR – Tubes can tolerate mismatches better than solid-state amps
- Long lifespan when properly maintained

Disadvantages

- Requires tuning – Manual adjustments needed for each band change
- Higher voltage and safety concerns – Risk of electrical shock
- Heat and power consumption – Requires proper cooling and high-voltage power

Final Tips

- * Check your license regulations to ensure you stay within legal power limits.
- * Regularly inspect tubes and cooling systems for wear and tear.
- * Keep an eye on tube performance – Tubes degrade over time and may need replacement.

SOLID-STATE AMPLIFIERS

Solid-state amplifiers use transistors (MOSFETs or LDMOS) instead of vacuum tubes. They are more compact, efficient, and require less maintenance. However, they are more sensitive to high SWR and overdrive, so careful operation is key.

Setting Up Your Solid-State Amplifier

- Ensure proper power supply – Many require 12V, 48V, or 220V AC.
- Check the cooling system – Solid-state amps rely on fans or heatsinks.
- Use a good antenna with low SWR – Many amps shut down if SWR is too high.
- Connect a dummy load for initial testing – Ensures safe operation before going on air.

Powering On and Operation

- Turn on the amplifier and let it initialize.
- Set your transceiver power to the correct drive level.
- Check automatic band selection or manually set the correct band.
- Monitor SWR and power output using the amplifier's display or external meter.
- Key the transceiver and verify proper power amplification.



No manual tuning is required! Solid-state amps are designed for plug-and-play operation.

Operating Safely

- Do NOT overdrive the amplifier – Excess input power can destroy transistors.
- Use an antenna tuner if needed – Solid-state amps prefer SWR below 1.5:1.
- Monitor temperature & fans – Some amps automatically reduce power if they overheat.
- Power down correctly – Always switch off the amp before disconnecting anything.

Advantages of Solid-State Amplifiers

- ◆ Instant-on operation – No warm-up required
- ◆ No tuning needed – Fully automatic band switching
- ◆ Compact & efficient – Smaller and lighter than tube amps
- ◆ Lower maintenance – No tubes to replace

Disadvantages

- ◇ Expensive – Solid-state amps often cost more than tube amps per watt
- ◇ Sensitive to SWR and overdrive – Can be damaged if not operated properly
- ◇ Less forgiving – Unlike tube amps, solid-state amps shut down instead of tolerating high SWR

Final Tips

- * Start with low power and increase slowly to avoid damaging the amp.
- * Use good quality coax and connectors to minimize signal loss and SWR issues.
- * Keep an eye on your amp's protection circuits – If it trips, investigate before continuing.
- * Follow your license regulations regarding power limits in your country.

HAM RADIO AMPLIFIER POWER LEVELS

Ham radio amplifiers come in a range of power levels, depending on your needs, band restrictions, and legal limits. Here's a breakdown of different power levels and their applications.

Low-Power Amplifiers (50W – 500W)

Best for: QRP stations, portable/mobile ops, weak signal improvement

Typical Use Cases:

- Boosting low-power transceivers (e.g., 10-100W radios)
- Operating in areas with strict power limits
- Reducing interference in crowded bands

Medium-Power Amplifiers (500W – 1000W)

Best for: General HF operation, contesting, DXing

Typical Use Cases:

- Providing stronger signals for DX contacts
- Improving weak signal readability in noisy conditions
- Enhancing contesting performance

High-Power Amplifiers (1000W – 1500W)

Best for: DXing, contesting, weak signal work, emergency comms

Typical Use Cases:

- Maximizing signal strength within legal limits
- Cutting through pileups in DXing and contests
- Reliable communication in weak-signal conditions

Legal Considerations

USA (FCC Rules, Part 97): 1500W PEP is the maximum limit for most amateur bands.

Other Countries: Some countries limit ham power to 400W, 1kW, or less, so check local regulations.

WHICH POWER LEVEL IS RIGHT FOR YOU?

QRP / Portable Use: 50W – 150W

Casual HF Use: 500W – 1kW

Serious DX & Contesting: 1kW – 1.5kW

Issues with using High Power ham radio amplifiers

Using high-power ham radio amplifiers (1000W–1500W) can greatly improve your signal strength, but they also come with challenges and potential issues. Here are some key concerns to keep in mind:

Electrical Power Requirements

Issue:

- High-power amplifiers require significant electrical power. Many need 220V AC instead of the standard 120V household outlets.

Solution:

- Ensure your shack wiring can handle the load (e.g., a dedicated 220V circuit).
- Use proper grounding to prevent electrical hazards.

Heat & Ventilation

Issue:

- High-power amplifiers generate a lot of heat, which can lead to overheating and reduced lifespan.

Solution:

- Use a well-ventilated area with fans or air conditioning.
- Ensure the amp's cooling system is functioning properly (e.g., clean fan vents).

High SWR & Antenna Matching

Issue:

- High-power operation requires an antenna system with a low SWR (Standing Wave Ratio). Poorly matched antennas can cause the amp to reduce power or shut down.

Solution:

- Use an antenna tuner if necessary.
- Regularly check and maintain coaxial cables & connectors to minimize signal loss.

RF Interference (RFI) & TVI

Issue:

- High-power transmissions can cause interference to TVs, radios, telephones, and even home electronics.

Solution:

- Use low-pass filters & ferrite chokes on cables.
- Keep your station properly grounded.
- Avoid operating near neighboring electronics if possible.

Overdriving & Distortion

Issue:

- Driving the amplifier with too much power can cause splatter, harmonic emissions, and distortion, which can interfere with other bands.

Solution:

- Keep transceiver drive power at recommended levels (typically 20-50W for full output).
- Regularly monitor transmitted signals with an oscilloscope or SDR.

Licensing & Legal Limits

Issue:

- Many countries limit ham radio power output (e.g., 400W, 1kW, or 1.5kW max in the U.S.). Exceeding these limits can result in violations and fines.

Solution:

- Always check local regulations before using a high-power amp.
- Avoid excessive power—only use what is needed for clear communication.

Safety Concerns (High Voltage & RF Exposure)

Issue:

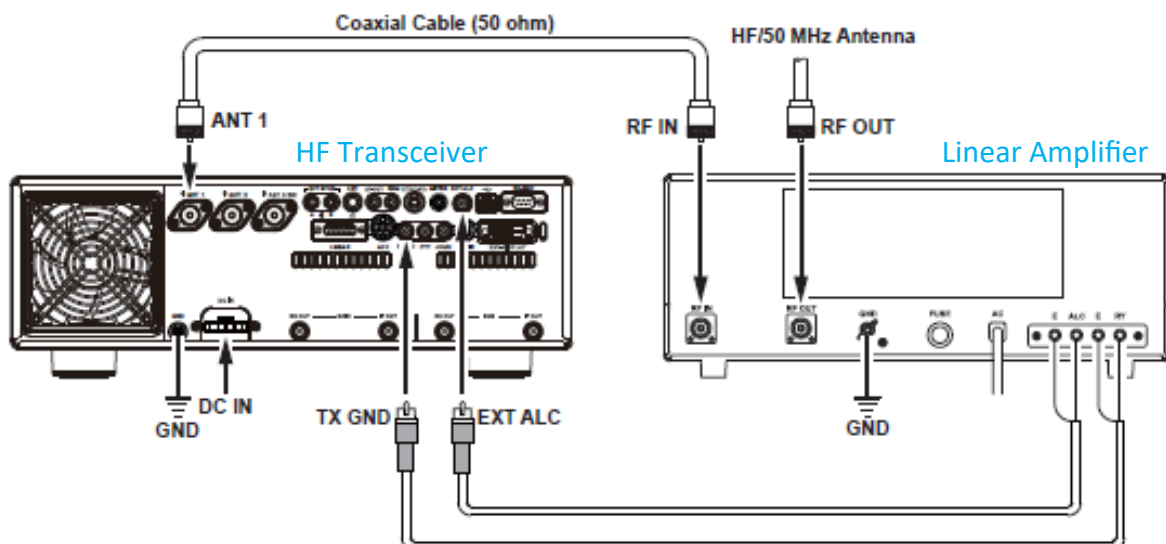
- High-power amps use dangerous high voltages (2000V-3000V), which can be lethal if handled improperly. RF exposure at high power can also be harmful.

Solution:

- Never open an amplifier while powered on.
- Follow RF safety guidelines, keeping a safe distance from antennas.
- Ensure your station is properly grounded to avoid shocks.

FINAL THOUGHTS

- * Plan your shack's power setup carefully.
- * Maintain proper ventilation and antenna tuning.
- * Use interference-reduction techniques to avoid bothering neighbors.
- * Operate legally and safely.



Ohio ARRL Sanctioned Hamfests

Ohio ARRL Hamfest gatherings and Conventions

[Ohio Great Lakes Division ARRL Sanctioned Hamfests.](#)

Or

<https://arri-ohio.org/hamfests/>



Training Class Schedule

G. Michael, KE8HGE



Sessions meet weekly, every Tuesday evening, starting at 6:30 pm.

Study Session Schedule, 2025

- ◆ Technician Class license:
February 25 to April 15, testing session April 16.
- ◆ General Class license
July 1 to August 19, testing session August 20.
- ◆ Technician Class license
October 28 to December 16, testing session December 17.

February Club Meeting Attendees

Frank, KC8EVS

Roger, KE8ICI

Kevin, KD8NGV

Ralph, W8LFR

Emery, W8TW

Bill, KD8WHQ

Evan, KF8APC

Barry, N8PPF

Tony, KE8OOE

Don, KB8QPO

Nathan, KE0RYO

Stephen, N8RLW

Michael, KE8HGE

Bill, KE8ZIG

Scott, W8HK

Tom, KD8HSA

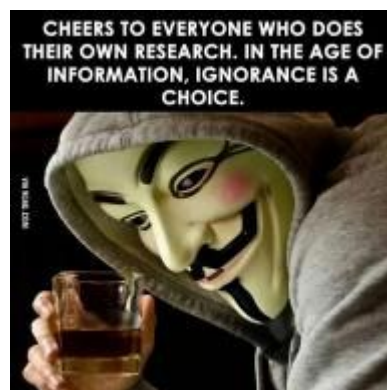
Dan, ND8J

Terry, KI8N

Don, W8PEN

Scott, N8SY

Jim, KD8IZT



“I prefer to make a few contacts, enjoy the time, and get out before it becomes unfun.” Terry, KI8N

BASIC ELECTRICAL EXAM

1. What color is the green grounding screw? _____
2. When hooking up a 200v heater, you must use 220v wire?
___TRUE ___FALSE
3. Electricity will leak out of pipes if they are not connected with rain tight fittings? ___TRUE ___FALSE
4. To trip a breaker, you must stick out your foot as it walks by. ___TRUE ___FALSE
5. When dealing with conduit the O.D. must be larger than the I.D. or the hole will be on the outside. ___TRUE ___FALSE
6. A keyless fixture cannot be unlocked ___TRUE ___FALSE
7. A breaker reads "20" on the handle. This means that it can only be tripped 20 times before it wears out. ___TRUE ___FALSE
8. If you plug a 110v appliance into a 120v line, 10 extra volts will leak out and make a mess. ___TRUE ___FALSE
9. The gauge # of a wire tells you how many outlets you can plug into it. ___TRUE ___FALSE
10. When pulling 4/0 wire thru a 1/2" PVC conduit, the "PVC" stands for "Pipe Very Crowded" ___TRUE ___FALSE
11. An OHM is a Hindu measurement of voltage ___TRUE ___FALSE
12. A Flush Mounted device may only be hooked up to a toilet.
___TRUE ___FALSE
13. High voltage wire is only used in the upper stories of a building and low voltage wires is only used in the lower floors and basement. ___TRUE ___FALSE
14. If you have a molded case breaker, the mold can be removed with soap and warm water. ___TRUE ___FALSE
15. Electrical Inspectors are also known as _____

Editors Notes



The MVARC Newsletter is delivered to club members via email containing a link to the MVARC webpage, 2025 Newsletters button.

We really **NEED** your input - help eliminate missing articles on club events or interests!

Submit an article as a Word, OpenOffice or text file attachment to an email. **"Do not"** submit a PDF file.

Contact email for the MVARC newsletter is: admin@mvarc.net.

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

President
Frank, KC8EVS



Vice President
Emery, W8TW



Secretary / Treasurer
Terry, KI8N



Director
Michael, KE8HGE



Director
Scott, N8SY



Director
Tyler, KF8AVA

No Photo
Available

Director
Evan, KF8APC

No Photo
Available



Web Page

MVARC.net

Facebook Page

<https://www.facebook.com/mvarc>

MVARC Email

admin@mvarc.net