

Mount Vernon Amateur Radio Club

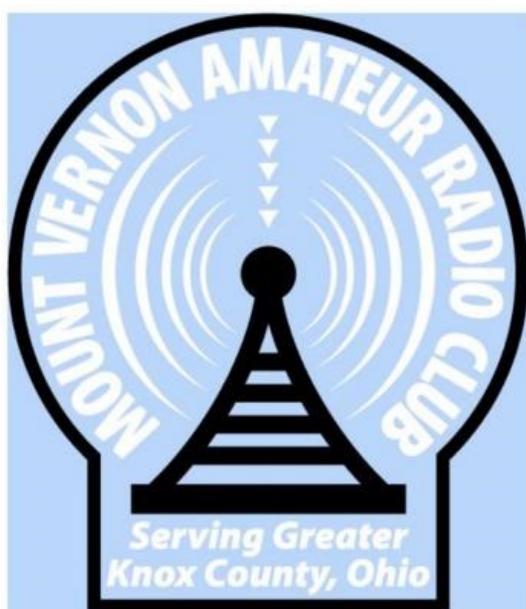
March 2024

2024 Edition 3



Inside this issue:

President's View.....	2
Meeting Minutes.....	3
MVARC Calendar.....	5
Radio Activity.....	6
Chasing DX in Winter.....	7
NAQP RTTY Contest.....	8
Miscellaneous Rambling.....	10
Ladder Line Build.....	11
FM Repeater Nets.....	14
Final Takeaway.....	15
Ohio ARRL Hamfests.....	16
MVARC Officers.....	17
Notes.....	17
Misc. Amateur Info.....	18



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 11th at 7:00 pm at the Academy Building.

President's View

Frank Counts, KC8EVS



Hope all are doing well. We are busy here as usual, which is good. It is time to start making plans for the summer. Club activities other than the contest

that Don and Roger have been working on (which have been great to get involved in and skills practice) have been few since OSPOTA in September. We pick up the end of April with NVIS, a week later, the Black Fork Gravel Grinder. Those are always fun to operate in. I see NVIS being conducted as we have, setting up and operating from one of the county parks. I would love to have more out in one of the parks setting up and operating during NVIS. More concerning NVIS and the Black Fork Gravel Grinder are to be discussed in the upcoming meetings.

I mentioned my antenna being down last month it's back up and working well. I found a new tree limb and it's back off the ground. Surprising how much better it works off the ground.

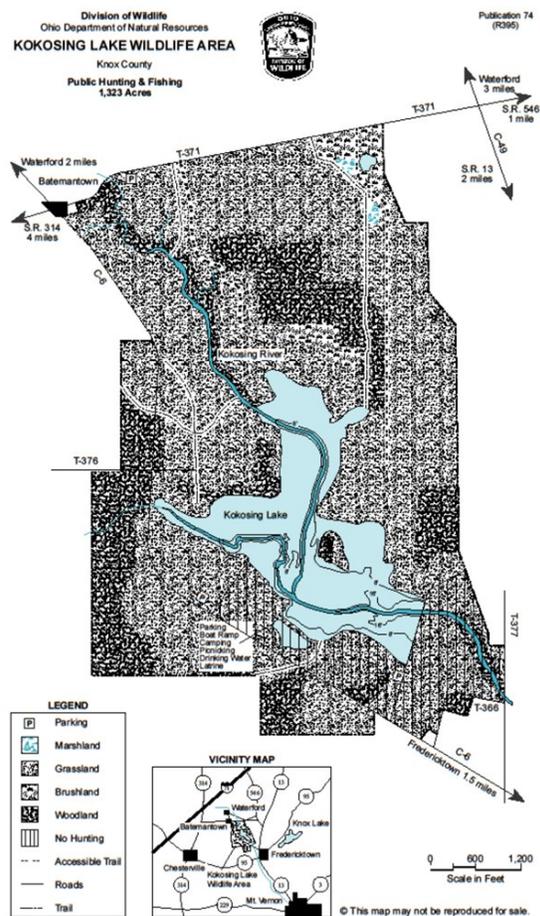
There have been several in the club that have participated in Parks on the Air (POTA). Terry, K18N is one and has racked up several contacts in Ohio and several other states. I have always enjoyed OSPOTA and NVIS, so I have decided to make it a goal to get out and operate more from as many parks as possible this year.

So far, I have only been to one park Kokosing Lake Wildlife Area (K-9472), but I have been there 4 or 5 times now and have a system for setting up and getting on the air. It is a lot of fun and challenging to get it all working. If you can't get out or don't want to drag out your equipment to some park in the middle of nowhere (well, we can pretend, where in Ohio are you in the middle of nowhere?) or you can sit at your home station and hunt the park activators. It is also a lot of fun and not always easy. Park

activators may not be running powerful stations with finely tuned antennas. Fifty watts into a compromised antenna is a big station for POTA. Don, W8PEN was out with me one day and was making contacts with his end-fed antenna stretched out across some bushes! Remember, you must carry everything you need to operate out with you. Look up the website pota.app. I will write more as the summer progresses and I get more experience.

March 11 will be here soon, so I hope to see you at the meeting.

73!



Membership Dues

If you haven't renewed for 2024 your membership dues should be paid at the March meeting or as soon as possible.

Bill Stroud

Bill Stroud, KD8WHQ



The February 2024 meeting of the Mount Vernon ARC was called to order by President Frank Counts, KC8EVS at 7:00 pm.

The minutes for the December and January meetings were presented.

No Additions or corrections to the minutes were noted. The minutes were approved as presented.

Treasurers Report

Terry, KI8N provided an account of the current balance of all bank accounts and expenditures through February 2024. He also provided a projected budget for this year. There were no additions or corrections, and the report was approved as presented.

Terry filed our 990 Tax Exempt Status with the IRS in February.

Committee Reports

ARES

The EMA held a tabletop workshop to run through the coming Eclipse. At this time the club will not be activated unless an emergency happens. They asked that on that day if club ARES members were not home to keep a handheld radio with you.

The ARRL is using a new hour tracking program to service. We need to report every hour that we do anything Ham Radio related other than making contacts. Examples meeting, Friday breakfast, training, working on club radios/antennas/repeaters, field day, POTA. More will be coming this next month.

ARRL

Scott, N8SY, was not at the meeting, nothing to report.

Repeaters

Roger, KE8ICI reported that the repeater was working. He will be putting the amplifier in and testing it later in the week. He has all the equipment that Steven had at his house. He is working on getting the 440 MHz repeater running then getting it installed at the hospital.

MESH / EchoLink

Don, W8PEN reported that EchoLink needs some work done on it on.

The node at the Academy Building is working and the hospital node is back online.

PIO

No Report—Steven, N8RLW was absent.

Old Business

Tech Classes / VE Testing

Michael reported that a Tech training class will start February 27 at 6:30 pm and continue every Tuesday through April 9. Testing will be on April 10. He has 4 or 5 students signed up.

Frank, KC8EVS and Don, W8PEN have been activating POTA.

New Business

Roger KE8ICI, Barry, N8PPF and Emery, W8TW will be taking inventory of the club's equipment.

Looking at setting up a tent for Mount Vernon's First Friday, possibly in August.

Coming Events

- * Solar Eclipse — April 8
- * NVIS Day — April 27, 10 am — 4 pm — Wolf Run Regional Park and Thayer Ridge Park
- * Black Fork Gravel Grinder — May 4 — [Black Fork Gravel Grinder](#)
- * Field Day — June 22—23 — [ARRL Field Day](#) — location TBD
- * Ohio State Parks On the Air — Sept. 7 - 10 am—6 pm — [OSPOTA](#)

The 50/50 drawing was won by Sean Lehman, KE8YUS.

A motion to adjourn the meeting was made at 8:00 pm by Roger, KE8ICI and seconded by Don, W8PEN. The motion passed.



“I have been a bit disappointed with the speed of our Local Mesh Network. “ Don, W8PEN

Personnel present at the 2/12/2024 meeting	
Michael Jacobs, KE8HGE	Tom Evans, KD8HSA
Emery Bennet, W8TW	Ralph Bower, KC8REB
Don Russell, W8PEN	Wayne Bower, WB8WB
Frank Counts, KC8EVS	Wendell Combs, KE8NUX
Sean Lehman, KE8YUS	Terry Windsor, KI8N
Shawn Bleiler, KD0DMJ	David Phillips, W8DEP
Roger Gorrell, KE8ICI	Don Bunner, KB8QPO
Bill Bullock, KE8ZIG	Barry Butz, N8PPF
Bill Stroud, KD8WHQ	Darlene Pudlinski, WS8W



Extra Class Element 4 Question Pool

The [2024—2028 Extra Element 4 question pool](#) goes into effect on July 1, 2024.

Contact Us

MVARC

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PMB #145
Mount Vernon, OH 43050

Email

admin@mvarc.net

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.



March 2024



Sun	Mon	Tue	Wed	Thu	Fri	Sat
					1 9:00 am— Breakfast McDonalds	2
3 9:00 pm ARES Sunday Night Net—Don (W8PEN)	4	5 Tech Training class 6:30 pm	6 4:45 pm Dinner	7	8 9:00 am— Breakfast McDonalds	9
10 9:00 pm ARES Sunday Night Net Day Light Savings Time	11 7 pm MVARC Meeting	12 Tech Training class 6:30 pm	13 4:45 pm Dinner	14	15 9:00 am— Breakfast McDonalds	16
17 9:00 pm ARES Sunday Night Net— Michael (KE8HGE) St. Patrick's Day	18	19 Tech Training class 6:30 pm	20 4:45 pm Dinner Spring Equinox	21	22 9:00 am— Breakfast McDonalds	23
24 9:00 pm ARES Sunday Night Net Palm Sunday	25 	26 Tech Training class 6:30 pm	27 4:45 pm Dinner	28	29 9:00 am— Breakfast	30 
31 9:00 pm ARES Sunday Night Net Easter						

Ham Radio Contest Calendar

Radio Activity

Don Russell, W8PEN



February was a busy month. There were a couple of projects I was working on, plus Frank (KC8EVS) got me interested in activating Kokosing State Wildlife Area (K-9472) for Parks on the Air. It has all been interesting but has kept me very busy.

The first project I am working on is the Extended Double Zepp Antenna for Field Day. I mentioned this antenna in last month's column, and it just seemed to take off like a jet airplane in my mind. The second one is related. There is need of ladder line to build The Extended Double Zepp Antenna and for various reasons, I decided to try building my own ladder line rather than buying some commercial stuff. See the article on this project elsewhere in the Newsletter.

So back to the number one project.

I read with interest the notes Terry (KI8N) posted about the [Extended Double Zepp Antenna](#). I did not realize that a 4:1 Current Balun was needed. I was under the impression that a 1:1 Choke Balun converting the balanced ladder line to unbalanced coax was recommended but not necessary.

After surfing the internet, I am still confused. Indeed, most of the information on the internet claims that a 4:1 Current Balun is needed. However, there were a few that claimed a 1:1 Choke Balun was used. At least one article simply tied the ladder line to the coax and was good to go.

Personally, it makes sense that you should not need a 1:1 Choke Balun. This is a balanced antenna. Equal lengths of wire on each side of the feed line. So, in theory, there should be no RF on the outside of the coax that needs choked off.

Another thought is that 4:1 Current Baluns are expensive unless you can build your own. I have not had much luck building my own.

So, I thought I would try the Extended Double Zepp antenna using my home brew ladder line and coax tied

directly to the ladder line without a Choke Balun. If I found that a Choke Balun was needed, I would use the old-fashioned method of coiling the coax at the ladder line to form my choke. I will have to check and see how many turns and what choke diameter to use. But I am confident that this would work effectively.

I put my antenna together using the formula from West Mountain Radio that Terry used last month. For 14.250 MHz, this was 43 ft and 6 inches on each horizontal leg. I added a bit to make room for insulators and any needed adjustment in length and made it 46 ft even. The ladder line stub is supposed to be 7 ft and 2 inches. I decided on 10 ft even and would trim for lowest SWR.

The antenna went together quickly using a center insulator and two end insulators. Build it like a dipole, only using the longer wire.

Up in the air it went. I attached a short piece of coax with a male connector directly to the ladder line and checked the SWR. 1.2:1 at 13.8 MHz, not bad.

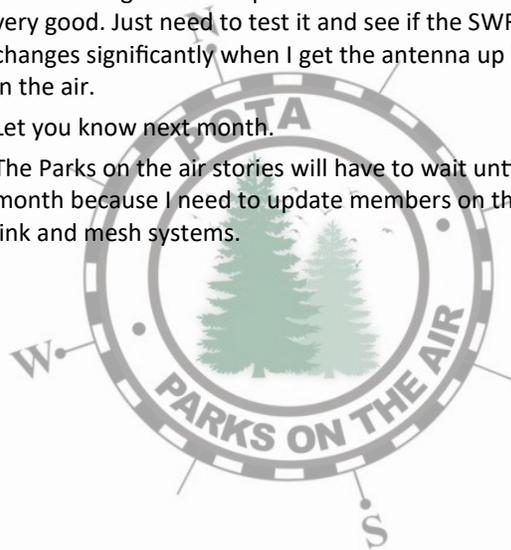
Rather than shortening the antenna wires as you would when tuning a dipole, I cut a few inches off the ladder line. This moved the resonance. SWR was now 1.2:1 at 14.030. Moving the right way!

A few more cuts and I had the antennas SWR at 1.2:1 on 14.250 MHz. SWR at 14.010 MHz was 2.5:1 and SWR at 14.350 MHz was also 2.5:1.

I had to take the antenna down so I could solder the coax to the ladder line. Then some bad weather hit before I could get it back up. But this antenna is looking very good. Just need to test it and see if the SWR changes significantly when I get the antenna up higher in the air.

Let you know next month.

The Parks on the air stories will have to wait until next month because I need to update members on the Echo-link and mesh systems.



“...a Tech training class will start February 27 at 6:30 pm and continue every Tuesday through April 9. Testing will be on April 10.” Michael, KE8HGE

Echolink is currently running fine. A few days ago, I found that the Spectrum modem has not been pulling its own weight. I was puzzled as to why my internet kept dropping throughout the day. It was bad enough that Echolink was having occasional issues too.

The modem finally bit the dust. Which is a good thing. The replacement modem is working perfectly, and I am hoping that is the end to any Echolink problems.

On the Local Mesh front. Everything is currently up and running. That is except for the 5G node at KCH. As NASA would say, "All systems are a go" or Captain Kirk would say "Turn off that damn alarm!"

The 5G at KCH will get fixed in time. We must arrange it with KCH to be allowed on the roof. We will simply swap this node for a different node.

I have been a bit disappointed with the speed of our Local Mesh Network. I am reviewing information on hand as to whether it would be a good idea to return all the 5G nodes to their original (commercial) software and use them as gateways back to the 2G nodes.

I would like to do this with the AREDN firmware but have not read anywhere that you can. Currently, even though we have higher speed nodes at 5G and the 2G nodes are directly wired to the 5G, the 2G nodes seem to be communicating between themselves and ignoring the 5G.

I would like to see a system where the users are on 2G and the high speed 5G transfers all the information between the 2G nodes. This might just necessitate returning the 5G nodes to their original configuration.

That's it for this month. Hope to see everyone at the March meeting. 73.

Chasing DX in Winter

Barry Butz, N8PPF

For a few years I have hunted for new countries, known as entities. I have collected 143 entities via CW, including more than 100 on each band of 10, 15, and 20 meters.

From November to January, I have talked to several new entities some of which haven't yet been confirmed. These contacts were on 10-, 12-, 15- and 20-meter bands. Some have been on the technician por-

tion of 10 meters. With today's good sunspots, radio has been good hunting for DX.

Whenever I contact a new place, I go to Wikipedia to learn about it. Some are very small with few natives; some are large countries with many people but few hams.

Here is the list of my new contacts, with a little info and links to their internet description.

11-04-23

OY1OF 28.615 MHz

Faroe Is

https://en.wikipedia.org/wiki/Faroe_Islands

11-23-23

4W8X 28.550 MHz

Timor - Lesle

https://en.wikipedia.org/wiki/East_Timor

01-14-24

E51JD 28.475 MHz

South Cook Is

https://en.wikipedia.org/wiki/Cook_Islands

01-20-24

7Q6M 28.302 MHz

Malawi

<https://en.wikipedia.org/wiki/Malawi>

01-24-24

TX5S 24.955 MHz

Clipperton Is

https://en.wikipedia.org/wiki/Clipperton_Island

01-15-24

JW5E 21.285 MHz

Svalbard

<https://en.wikipedia.org/wiki/Svalbard>

12-31-23

ZD7CA 14.195 MHz

St. Helena

https://en.wikipedia.org/wiki/Saint_Helena

01-12-24

VP8KCA 14.205 MHz

Falkland Is

https://en.wikipedia.org/wiki/Falkland_Islands

NAQP RTTY Contest

Don Russell, W8PEN



The club's first participation in an RTTY event ever. It didn't go too badly.

Unfortunately, I did most of the operating. That is a two-edged sword though. Yes, I like operating in contests. But I would like others to share my enjoyment by operating some themselves. Steve, N8RLW, was the only other operator, making maybe three contacts. I am truly puzzled by the lack of interest in these club activities. Okay, enough on the editorial.

We had a small group show up at the club house. Scott, N8SY, drove to Mt. Vernon from Lexington and stayed for an hour or so. Steve. N8RLW and Roger, KE8ICI balanced out the party.

Everyone was gone by 5:00 PM, so I locked up the building and had dinner with Darlene. Then was back at the operating table around 6:30 or so.

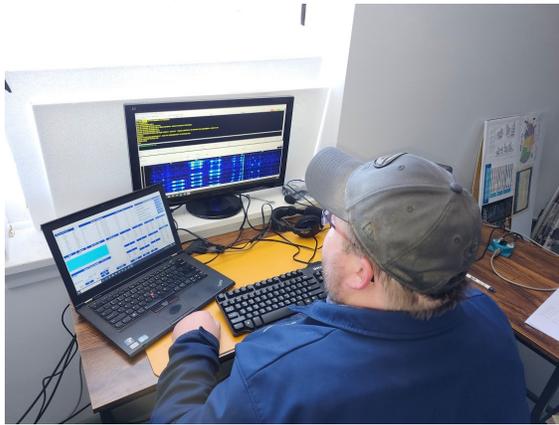
The screenshot shows the N3FJP's NAQP Contest Log 5.3.6 software interface. At the top, there's a menu bar with 'File', 'Settings', 'Band', 'View', and 'Help'. Below that is a 'Recent Contacts' table with columns for 'Rec', 'Call', 'Name R', 'St / Prv / Cnt', 'Cont', 'Date / Time', 'Name S', 'Brnd', and 'TrmlD'. The table lists 11 contacts from 113 down to 105. To the right of the table is a 'Score Statistics' panel showing: Total Contacts: 113, Total Multipliers: 81, Multipliers on This Band: 0, Total QSO Points: 9,153, QSOs / Hr (Last 20 min): 0, and QSOs / Hr (Last 60 min): 0. Below the table is a 'Call' field and a 'Name' field. A large cyan box says 'Ready to begin! Please select your band from the menu options!'. Below that is a 'Possible Duplicates' section for 'Massachusetts' with a total of 0. At the bottom, there are fields for 'Band: 160' and 'Mode: DIG'. On the right side, there's a map of the United States with state call signs displayed in various colors. The map shows call signs for states like CT, NH, MA, RI, ME, VT, AL, NC, FL, SC, GA, TN, KY, VA, AK, OR, AZ, UT, ID, WA, MT, WY, NV, CO, MO, IA, ND, KS, NE, MN, SD, Canada (NB, BC, NS, NT, QC, YT, ON, NL, MB, PE, SK, NU, AB), DE, MD, PA, DC, AR, NM, LA, OK, MS, TX, CA, HI, MI, WV, OH, IL, WI, IN. At the bottom right, there's a clock showing '1:26:34 PM' and '18:26:34 UTC'.

Equipment used was N7YG Digital Engine, N3FJP's NAQP logging software for RTTY, and the club's IC-7300 in digital mode. Our antennas were the dipole and OCF antenna in the attic of the building. These two antennas do a fine job getting out. We are fortunate that the building is as tall as it is, and we can have very stealthy antennas. We did have some issues with setup, but in the end, everything was up and running before the start of the contest. In fact, I made a few contacts to check things out maybe ten minutes before the contest started.

I was the only one there at the start of the contest and decided to see what 10 and 15 meters had to offer. Our first 33 contacts were on these bands. This took a little over two hours though. Operating RTTY does have a learning curve.

I think we did good ending up with 113 contacts.

"For a few years I have hunted for new countries, known as entities. I have collected 143 entities via CW..." Barry, N8PPF



RTTY Contest—Photos by Don, W8PEN

ROTOR **ROTATOR** **POTATER**



KNOW THE DIFFERENCE AND
ENUNCIATE CAREFULLY WHEN ORDERING BY PHONE!

**My Wallet if ham radio never
existed.**



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.

Miscellaneous Rambling

Terry Windsor, KI8N



I have been feeling well this month and was happy to finally get back to attending a MVARC meeting. It was good to see those in attendance. I still have some testing and another PET scan at the end of March but am praying that everything will turn out good and

I can be done with chemotherapy.



Towards the end of February I bought a NanoVNA-H4 to check my antennas, coax, and for ease in setting up when portable. I had been using an MFJ-259C Antenna Analyzer, which I still will use, but wanted the visual display and the extra capabilities of the VNA.

I had been going back and forth about getting a RigExpert antenna analyzer but bought the much less costly VNA.

For the last week I have been watching YouTube videos and following along with the VNA and my antennas as I attempt to learn some of the functions this new toy can perform. I definitely need some more adapters for SO-239 to SMA and BNC to SMA. I looked online to get some and the cost is ridiculous. Going to have to wait for a hamfest and pick some up there where usually the price is considerably less.

One eye opening item is how inexact the antennas on an HT can be. I checked 5 antennas, 2 were fairly good but the other 3 are not close to what they are supposed to be with a dual-band HT. On most the 70 cm band is far from being resonant where it is needed.

The worst is an 18" Diamond I had on my FT-3DR. The two that did look good are the rubber ducks that came with the radios.

I had planned to work the NAQP RTTY at the Academy Building with other club members but the cold temps and possible number of people kept me from leaving the house (I still have paranoia about getting sick). Instead I worked it from home. I like working RTTY contacts and in about 7 hours made 210 contacts with 124

multipliers. Didn't really push myself but mostly searched and pounced. I understand Don's comments about lack of interest in club activities regarding operating contests from the club station and hope in the near future I will be participating and assisting with contest contacts.

Later in this newsletter Don wrote an article about building ladder line. I also ran into one of the items he mentions—too costly to purchase ladder line at a ham retailer. I fabricated some ladder line in early February for an extended double Zepp 6-meter antenna I built. Don describes how he used Bic pens and I used plastic 1/4" tubing to make the spreaders. Both will work just as well, depends on what you have on hand. I have the antenna hung but haven't really tuned it yet. Will be using the VNA to test it soon.



With the fairly nice weather I was able to get out to Mohican State Park (K-1977) and activate it 3 separate times for POTA. Since I get tired easily, I did not go for lots of contacts but aimed for around 25 each time. I also used the Icom 7100 with Hustler Resonators the first activation, the Elecraft KX3 with its AX1 antenna on 20-meters at the second activation and for the third I used the KX3 and an MFJ-1899T multi-band antenna. Not sure how often I will use the MFJ antenna as it is somewhat difficult to accurately tune. But I did make around 25 total contacts, SSB and FT8, using it. Next time I venture out with this antenna I will be taking the VNA to tune it for the frequencies I will be using.



My favorite portable antennas are Hustler Resonators three up with a VP-1 adapter mounted on a 54" Hustler mast (MO-3) which I then put on a tripod (MFJ-1819) and raise another 10 feet (I modified the mast to get it higher). This combo plus using 4 elevated ground radials cut for the specific band being used and each held up by plastic electric fence posts seems to get out well. I have worked European and South American countries from several parks with the KX3 at 12 watts on 17, 15, and 10-meters. The only issue with this combo is portability, lots of items to carry although set up takes less than 10 minutes.

I will be in Missouri soon, visiting family I haven't seen since last year, and am taking the KX3 with the AX1 antenna and a 9AH LifePO4 battery to activate a couple of parks close to where I am. Last spring this combo worked really well in several Missouri parks.

"Be safe and Ham it UP"!



Ladder Line—Build Your Own

Don Russell, W8PEN

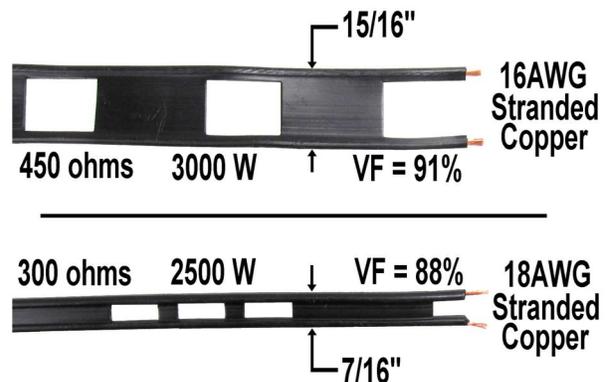


After Mentioning building an Extended Double Zepp antenna in last months "Radio Activity" column, I decided to build a test version to see how well one would work in the real world of amateur radio.

I have enough #14 wire to build a couple of these antennas. However, I was running short on ladder-line. I could probably scrounge up enough for two antennas, but I thought I should just order 100 feet or so to have it on hand for other projects.

Off to the DX Engineering web page I go. 450-ohm ladder line sells for \$1.18 per foot. OMG! That translates to \$118 per 100 feet. I thought that was pricey for ladder line. So, I went to the MFJ web page. A bit more reasonable at \$70 per hundred feet, but I did not want to pay that kind of money unless I really had to. The wire used in the MFJ ladder line was #18. A bit small in my opinion. At least DX Engineering's ladder line was #16 wire.

I had read a few articles on the internet on how to make your own ladder line. There are several very good ideas out there on this subject. One of ideas involved using the plastic tube of an ink pen as the line spacer. I



always thought this was a good idea. I have no clue where this article is now. It has been many years since reading it. But I remember the basics.

The basics: You buy a bunch of cheap ink pens and disassemble them. You cut the plastic tube into two or three pieces. Then using wire ties, you secure the wire to each side of the plastic spacers.

I decided to give it a try.

Step one is to secure the material. You will need lots of pens, wire ties, and some wire.

I suggest that you look in your junk box for wire. #14 or #16 stranded wire is ideal. If you must have new, go to one of the big box stores. Lowes and Home Depot sell 500 feet rolls for around \$65. That is a little under \$0.13 per foot. Or you can buy 100 feet for around \$40 at \$0.40 per foot. I think I will buy the 500 foot roll.

I chose to use the #14 THHN stranded wire and I bought the 500 foot roll.

A cheap option is speaker wire. But sometimes you can just get too cheap, so I wouldn't recommend using speaker wire.

You will need lots of pens to tear apart. I found Bic pens at the Dollar General store for 10 pens for a buck. Perfect for what I want. I will be cutting the plastic into four one-inch pieces, so I will get 40 spacers per pack. Good deal. If these pens are out of stock, there is a similar, finer point one for \$1.50 that has the same plastic housing.

Next on the shopping list is Nylon Zip Ties. I had some 8-inch cable ties in my box, so I didn't need to purchase any. A brief look at Rural King shows 100 pieces of 8-inch cable ties for around \$2.49. Lowes wanted \$5 for the same thing.

So, these are the three basic items needed to make ladder line.

At these prices, a 50-foot ladder line would cost:

\$13.00: 100 ft of #14 wire: 50 ft X 2 (Presuming you buy the 500 ft roll)

\$04.00: 4 packs of pens (10 per pack, \$1 per pack)

\$02.49: wire tie

\$19.49: Total cost.



A good deal cheaper than the commercial product. If you substitute #16 wire, the cost of wire goes down to \$8, putting the price at \$14.49.

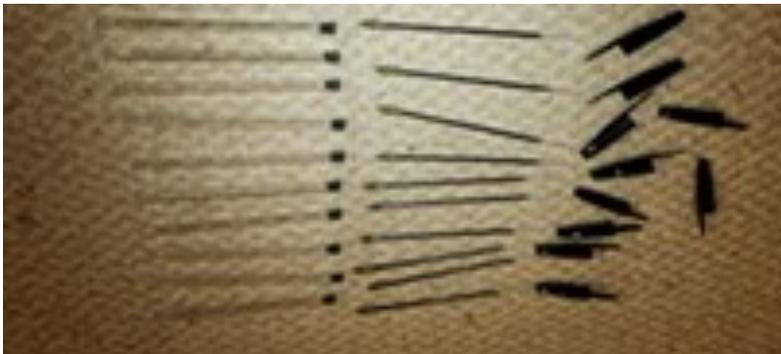
The initial cost will be higher because you are buying the 500 feet roll of wire. However, after the project, you will still have 400 feet of wire to make antennas or more ladder line.

I am always looking for wire on the cheap. The best places to look are yard sales and thrift stores.

For about three hours of your time, you can have a quality ladder line that is likely better than at least the MFJ product and at a very good price.

Step two is cutting the pens for the spacers. I chose to use one-inch spacers. You can get 40 spacers from a pack of 10 Bic pens for the price of \$1.00. I put a spacer every six inches. Ten feet of ladder line will take 20 spacers. Fifty feet of ladder line will take 100 spacers.

Start first removing the cap and ink tube from the plastic housing.



I used a miter saw to make the spacers. First measure four one-inch sections of one pen. I used electrical tape to secure the pens so that they would not move while sawing. The idea is to have four, one inch plastic spacers from each pen. A fine-tooth saw should be used for the cut. See the picture below.



When all the spacers are cut, it is time to start assembling your ladder line. Cut off two fifty-foot sections of your wire. Set the wire aside for now.

Assemble the spacers and wire ties. Run the wire tie through the spacer, and then loop the tie back into the spacer hole and secure the spacer as usual. I like to assemble all the spacers in one sitting. Then it is a simple matter to insert the wires into the spacers about 10 spacers at a time.



So, insert about 10 spacers onto the wires and shove them up to the beginning. Now, tighten the spacers. The spacers need to be tight enough around the wire so that they do not slide out during handling. I used a pair of pliers and a little muscle, and the spacers were snug enough and didn't move. Space the spacers every six inches. If using #16 wire, you may need closer spacing. The idea is to keep the two wires about an inch from each other. Don't worry if it is not exact. And the finished product:



I made two sections of ladder line. They were both ten feet long and are going to be used as the matching section for the Extended Double Zepp antennas I am going to experiment with.

Since I already had enough wire and ties for the project, my total cost was \$4.00 for the pens.

Next month, I have another idea on how to use the plastic housing of these cheap pens. Please stay tuned. You may find it interesting.

This ladder line project turned out good, I think. I will not hesitate to build however much ladder line I require.

Perhaps my one concern is how it will last during the Winter months. I think it will be just fine, but if moisture gets in the plastic spacers and freezes, they may fall apart.

It may be a good idea to seal the spacers on each side with silicon.

I hope you enjoyed this article, whether you intend to build your own ladder line or not. It shows what ham radio is all about - experimenting and building your own stuff.



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
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

Final Takeaway

Ladder Line

I found a webpage, KV5R.com that has excellent information regarding ladder line usage, building, and myths. The purpose of ladder line: *"To efficiently feed a non-resonant multi-band antenna."* Harold Melton, KV5R.

Definition of ladder line also called open-wire line; *"Consists of parallel, symmetrical wires with insulating spacers at regular intervals to maintain the line spacing. The dielectric is principally air, making it a low-loss type of line."* ARRL Antenna Book, 22nd Edition.

One of the myths that rings true is antennas must be resonant to be efficient and effective. Coax suffers with high losses at high SWR while ladder line does not so resonance and SWR can be ignored until it gets to a tuner where it will be matched to 50 ohms the radio expects.

Ladder line myths;

1. Ladder line radiates. No more so than coax. If ladder line is used on a balanced center-fed dipole the power in each conductor is equal and opposite and no RF radiation.
2. It's too hard to work with. You have to keep it away from metal. Yes, ladder line has to be kept from running against metal. However, using PVC pipe to make stand offs will keep ladder line away from metal edges. The general rule is the standoff length should be twice the width of the line.
3. It's too hard to bring into the shack. Use an ugly balun outside the house and connect the ladder line to it and then bring coax into the shack from the balun.
4. It flops around in the wind and breaks too easy. With proper twists oscillations can be prevented or minimized. Ensure the ladder line is properly terminated with strain-relief.
5. It messed up my electronics with RFI. Use a length of ladder line that is not a multiple of a half-wavelength on any band. 40, 80, and 100 foot lengths work well. A non-resonant feed-line will present high impedance to common mode current.

One question is whether a 4:1 balun is needed. According to KV5R, *"No reason to use a 4:1 anywhere in a multi-band dipole. It will be mis-matched everywhere and lose all choking ability. Bring ladder line down to a 1:1 choke at or near the tuner."*

Ladder line is not particular about open wire spacing. Anything from 1 to 6 inches is acceptable. 1-inch #14 line is 370 ohms. 1-inch #18 line is 450. 6-inch #12 is about 600 ohms. The spacing should not be over 1 percent of the highest-frequency wavelength, and that's the only real consideration with ladder-line spacing

Building ladder line, no need for glue - the wires don't move!

This example used cheap 1/4" irrigation tube, and put two black cable ties through the middle in opposite directions.



Ohio ARRL Sanctioned Hamfests

The current listing of [Ohio Great Lakes Division ARRL Sanctioned hamfests](#) March through April, 2024.

03/10/2024

[WINTERHAMFEST](#)

Location: Elyria, OH

Sponsor: Northern Ohio Amateur Radio Society

Website: https://www.noars.net/?page_id=1062



03/17/2024

[Toledo Mobile Radio Association Hamfest and Computer Fair](#)

Location: Perrysburg, OH

Sponsor: Toledo Mobile Radio Association

Website: <https://w8hhf.org/hamfest/>



04/13/2024

[Cuyahoga Falls Amateur Radio Club 68th Hamfest](#)

Location: Cuyahoga Falls, OH

Sponsor: Cuyahoga Falls Amateur Radio Club, Inc.

Website: <https://www.w8vpv.org/hamfest.php>

04/13/2024

[Mid-Ohio Valley Amateur Radio Club](#)

Location: Bidwell, OH

Sponsor: Mid-Ohio Valley Amateur Radio Club

04/27/2024

[Tusco Amateur Radio Club Hamfest, Electronics, and Computer Show](#)

Location: Dover, OH

Sponsor: Tusco Amateur Radio Club W8ZX

Website: <https://www.w8zx.net/hamfest>

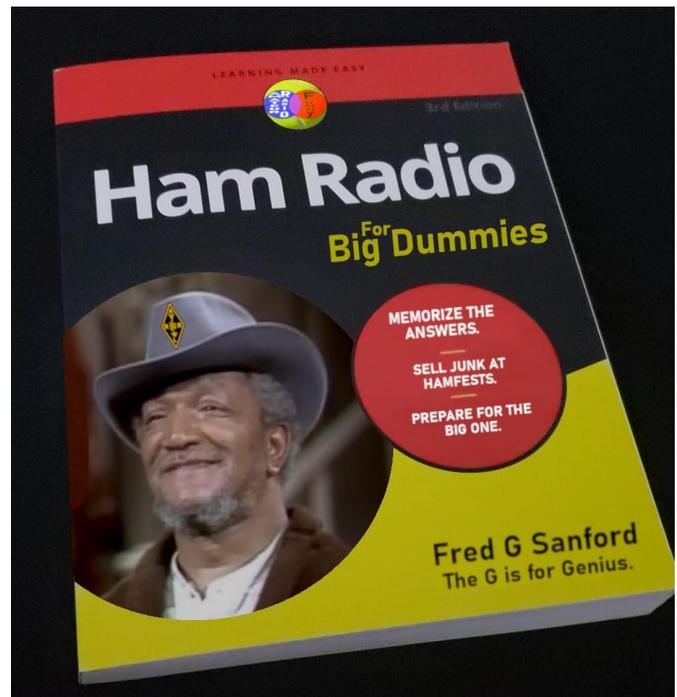
04/28/2024

[Athens Hamfest](#)

Location: Athens, OH

Sponsor: Athens County Amateur Radio Association

Website: https://www.ac-ara.org/?page_id=25



Editors Notes

The MVARC Newsletter is delivered to club members via email containing a link to the MVARC webpage, 2024 Newsletters button.



Thanks to all for your assistance with the MVARC Newsletter; in 2023 we were selected as fourth best newsletter in the Ohio Section.

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

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

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Miscellaneous Amateur Radio Information

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—OHDEN

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



“I had read a few articles on the internet on how to make your own ladder line. There are several very good ideas out there on this subject. One of ideas involved using the plastic tube of an ink pen as the line spacer. ”
Don, W8PEN

COFFEE'S READY!

