The Mount Vernon Amateur Radio Club
PO Box 372, Mount Vernon, Ohio 43050

February, 2017

Meetings are held the 2nd Monday of each month at 7:00 pm
at the Knox County Chapter of the American Red Cross,
300 North Mulberry Street, Mount Vernon, Ohio

K8EEN Repeater: 146.790. MHz (600Khz with PL of 71.9 Hz)
K8EEN-R Echolink Node: 809800
K8EEN Repeater: 444.600 MHZ (+5 MHz with PL of 71.9 Hz)

INSIDE THIS ISSUE:

Presidents View

It is February already! I hope all is well at your QTH. As usual it has been busy here, not leaving me much time to put into my radio projects. I hope you are faring better. I did manage to get my mesh node up. Not as high as I originally planned but up in the air for the time being. Actually I have two up, one near the shack and the other out near the chicken coop. The connection between the two is great but not with anyone else…so where to go from here. More height would help and maybe a directional antenna. My problem here is partially the terrain and probably more likely trees. In some respects it's a nice problem to have, as they do make great supports for wire antennas but they also block signals in the microwave range. So I need to get higher, I'm working on that and hopefully will have something up higher in a few weeks. Below are a couple of pictures of what my nodes look like.

The Mansfield Mid Winter Hamfest is this month, on Feb 19, and the gates open at 7am. So if you don't have anything to do, you might plan on attending.

Hope to see you at the meeting on Feb 13 at 7pm the usual place the Red Cross. If you can't attend the meeting there are always a few of us that get together through the week at Southside Diner on Wednesdays at 5pm, and Hardee's on Friday's at 10am. Also, Allison's on the second Saturday of the month at 9am. Hope you can make it sometime through the month.

Frank KC8EVS

Emergency Preparedness

By Patrick Valentino, KD8PSM
Knox County ARES
Emergency Coordinator

In a disaster or emergency situation, Knox County Emergency Management Agency (EMA) may decide to activate Amateur Radio Emergency Services (ARES) and deploy Mobile Command to the incident. Mobile Command has the capability to enhance or reestablish communications. This Knox County EMA asset leverages radio communications and internet access to communicate with federal, state, and local partners. It may be necessary for ARES to operate from Mobile Command.

Additionally, this specialized vehicle augments the capabilities of the County's EOC by providing

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communications and space for the on-scene incident commander and staff. Please plan to tour Mobile Command from 7:00 PM to 8:00 PM on Thursday February 23rd at the American Red Cross of Knox County, 300 North Mulberry St. Mount Vernon, Ohio 43050

Notes from the Editor:

If you receive our Monthly Newsletter by mail and have a email address, please consider accessing our Newsletters online. Our mailing list has doubled in the last year, (which is great, which means our club is growing), but it also increases our ink, paper, envelopes and postage costs.

You can access our Newsletter from our MVARC Club website below:

http://www.mvarc.net/LinkClick.aspx?fileticket=0cnb6dmJEeM%3d&tabid=57&mid=375

You may print it from there if you wish and explore past issues of our Newsletters as well. If you don't have a computer or email account, we would be happy to send you each edition by mail.

Thank you for your time,

-Bill, KC8BB -Newsletter Editor

The Mount Vernon Amateur Radio Club will be holding a License Exam on February 25 at 9:00 a.m. at the Red Cross Building.

Skywarn Spotter Training

The National Weather Service will be offering Spotter training for Knox County thru the Emergency Management Agency. Training will be on March 14, 2017 @ 6:00 p.m. at the Knox County Memorial Building (basement), 112 East High Street, Mount Vernon, OH. For those interested in weather, spotter training or Amateur Radio Emergency Service, please plan to attend. No pre-registration needed and presented at no charge. After the training, a Spotter Certificate is available online at: http://www.weather.gov/cle/SKYWARN_schedule#certificate

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Minutes of the MVARC January 9, 2017 Meeting

Meeting called to order by KC8EVS at 0004 UTC.

Motion to approve December minutes made by K8AEC, 2nd W8TW. Approved.

Motion to approve January 9th, 2017 treasurers report made by K8AEC, 2nd N8PPF. Approved.

Motion to transfer funds from our existing Certificates of deposits to our Savings accounts made by W8PEN, 2nd KC8UR. Approved.

Motion to reimburse W8PEN $50.00 for material cost for upcoming Technician Class made by W8TW, 2nd KE8ANS. Approved.

Motion to purchase a Touch Tone Microphone for the FT-847 made by N8PPF, 2nd KE8ANS. Approved.

W8PEN reported on both repeaters. VHF still operating as usual. UHF now installed at KCH, and we are experiencing some problems with the duplexer. This problem is being addressed, and he also stated we may need to consider a better higher gain antenna once the duplexer problem has been solved.

ARES

KD8PSM gave a brief update about the on-going equipment installation at the EMA office.
He also ask that members be sure to get him copies of any ICS course certificates you may have completed.

Presidents Report

Due to holidays, we are behind on getting the Club Handbook done, along with scheduling classes on proper operation of the club station and Go Boxes.

He reported on the following activities planned for the year 2017; NVIS Day, April 22nd, Earth day April 23rd. Field Day June 24th and 25th. Daniel Emmett Days special event operation in early August. And lastly, The Ohio State Parks on the Air September 9th, 2017.

Other Business

KC8EVS also noted that N8IOJ (Kathleen Dean) was requesting another demonstration for the Cub Scouts on January 26th. It was suggested that due to the short notice, and the other commitments the club had on that date, that we try and see if she could find another date.

W8PEN reminded members that the Technician Classes were starting January 12th, and would run for 6 to 7 weeks.

N8PPF ask that the club consider purchasing Band Pass Filters to be used during Field Day. It was suggested that more research on this be done.

Members were informed of the upcoming VHF ARES contest on January 14th. More information on this can be found on the ARRL Ohio Section Website.

Motion to adjourn made by K8AEC, 2nd KB8QPO. Approved

We had 20 members and 1 guest present.

After the meeting adjourned, W8PEN gave an excellent presentation covering our local MESH Network and the equipment required to make it work.

Respectfully submitted,
N8IBR

COMMENTS OF ONE CONTESTER

Recently a few MVARC Members (N8PPF, KE8ANS, W8PEN, and myself N8IBR) participated both as individuals and as the "MVARC Contesters" in the North American QSO Party sponsored by the National Contest Journal. While band conditions were not great (welcome to the era of the Solar Minimum) we still managed to post acceptable scores during this 12 hour contest.

While I was disappointed in my personal results which were no where near past scores, I still had a good time. In 5 & ½ hours on 5 bands (160 to 15 meters), I had 116 QSO's, with 59 multipliers, for a total of 6844 points. Not bad for poor band propagation, and lightning static later in the contest making 40, 80, and 160 meters very difficult to use in the evening.

While I prefer great band conditions, and easy contacts, I guess I enjoy the challenge of trying to make a contact, be it easy or difficult. Also, learning to operate under poorer band conditions like we are seeing on the HF bands now, helps to prepare you for operating during less than ideal emergency conditions. Those of you with ARES interests, these type of operating events could be considered a training aide along with being a fun.

I encourage members to participate in any contest when they can. You can go to the ARRL website and find numerous contests listed. If you receive their "QST" publication, they also have a page listing various contests sponsored by numerous groups from across the USA and around the world.

And, don't think you have to be a General class or higher licensee to participate. There are many monthly contests listed for the Technician class operators also. The only drawback on most of the Technician class contests is that, to participate in many of these contests you need a radio capable of Single Side-band or Morse Code to participate.

But these stations can be modest. I have operated some of these contest with 10 to 20 watts output, and home-brew antennas. While naturally I didn't have the highest scores, I did do surprisingly well. So, don't give up hope. If you don't have a rig capable of SSB or CW, ask around. Who knows, another club member may have a VHF or UHF multi-mode rig they aren't using.

Contesting can be a great way to experiment with a new antenna or rig. I know many other members (myself included), are constantly trying different homebrew projects out during contest.

I hope I have encouraged some members to give contesting a try. It can be fun, and there are even contest out there that are very short, time wise. I have seen some as little as 4 hours, so don't think you have to give up huge amounts of time to participate. So if your family takes up most of your time, remember many of these events can be squeezed in between other family functions, thus allowing the both of best worlds. Family and Ham Radio. I can testify to that having to work my contest operations around family functions the entire time I have been a Ham Operator.

Now that I am older and an empty nester, I do have more time available, but that may be short lived, as here come the Grandkids. So you may just find me operating more of the shorter contest like I did in the past to get my Ham Radio fix.

And remember this one thing, you don't have to work the entire contest period to have fun. A few minutes here and there can add up to a great time.

Jim Williams-N8IBR

Radio Activity

By Don Russell, W8PEN

Boy, this month has been incredibly busy for some members of our club. My only regret is we do not have more members helping out. Much progress has been made with the ham radio room at the EOC (Emergency Operations Center). The ham radio station at the Red Cross has been improved and is working well. Our new 440 MHz repeater has been worked on and the improvement is very noticeable. Our local ham radio Mesh Network is finally taking off and growing. We need one more high profile node to tie everything together and we will be in great shape. Finally, the Technician Class course has about ten students and progressing very well.

Station at the EOC

Knox County ARES Emergency Coordinator, Pat Valentino KD8PSM, has been working hard to get the radio room at the EOC upgraded. There were many things that were not quite right with the station. One power supply was being used by all the radios. Not necessarily a bad thing, however, the power supply was located in another room making the cable run to the radios very long. I do not believe this power cable was shielded. There was no grounding location in the room at all. This left the equipment and antennas susceptible to power surges and lightening strikes. There was also a lot of noise during receive on the HF bands. As much as 10 db over 9. People could hear us but we could not hear them.

Working with advice from his ARES leadership team (KC8EVS, KC8UR, KC8BB, KE8ANS, and W8PEN), Pat has installed a separate metered power supply for each station. These power supplies are located in the rack sitting between the VHF/UHF and the HF station. The power supply cable to each radio is very short. Power supplies are interchangeable so if one breaks down we will not be caught short handed. A huge ground buss has been installed. Lightening arresters have been installed to help protect the equipment.

So far, the VHF/UHF station is up and running. The HF station requires a bit more work, but should be ready by mid February. When completed, the HF station will be capable of SSB, CW, and digital modes.

Red Cross Station

The HF station at the Red Cross is working well. When first installed, the stations receiver was picking up a lot of noise from somewhere. We tried using an MFJ noise canceler with limited success. It was finally discovered that the power supply for our Mesh Node was generating most of the noise. Once we changed this power supply out for a standard linear power supply, the noise was reduced considerably. The Yaesu FT-847's DSP noise reducer seems to remove what noise is left with degrading the receive performance.

We also switched out HF radios, replacing the Yaesu FT-900 with an FT-847. This a good upgrade and allows us to operate on any band from 80 meters to 440 MHz We are working on getting a DTMF microphone for this radio, but have not had any luck finding a new Yaesu brand microphone that will work.

There is a problem with the dual band antenna. The SWR on 2 meters is very high, while the SWR on 70 cm is very low. We will need to take apart the antenna to determine a fix. However, most of us working on this project agree that it would be a good idea to replace the antenna with a triband antenna covering 6 meters, 2 meters, and 70 cm. This would bring our station up to date with the Ohio Section ARES request of incorporating 6 meters into their communications plan.

In the future, we would like to get the clubs R5 antenna back up somewhere. We would also like to get another FM radio that covers the three bands of interest. That way we would have an HF station with VHF/UHF backup, and a separate VHF/UHF station for regular use during ARES functions. Whether this new radio needs to be digital or not remains to be determined.

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440 MHz Repeater

This new repeater, which was installed on the roof of KCH hospital last month is finally living up to expectations. We were able to get the duplexer tuned properly and this made a world of difference.

Next in line here is to put up a higher gain antenna. We are working on a few possibilities but don't expect much to happen until Spring on this.

I have been requesting members to try this new repeater out immediately following our Sunday Night Net on 2 meters just to get a feel for it. Please try out this repeater out. We need to learn its capabilities. The frequency is 444.600 (plus 5 MHz) with a PL of 71.9. I monitor most of the time, but not always around the radio.

Mesh Network

Our Mesh Network has grown immensely in the last two months. Recently, Barry N8PPF and I installed a link node hoping to get KC8UR on the Network without using the internet. This project was partly successful. Much of the time the link works just fine. However, there are times when the link is not very strong and we either do not have a connection or the connection is very slow.

We are considering what we my try next. There are a few options. One is to install an identical link node at KC8UR. This would surely solve the problem since both sites would then have directional high gain antennas. But it would also put another node on the list. Not a bad thing, but repetitive nodes can make status screen look confusing. Might be worth using 900 MHz for this link, but that would also require an extra node at each site. We do have two 900 MHz units we can try. Maybe not until Spring though.

An upgrade to the KC8BB node may fix the situation anyway. We have plans on replacing the KC8BB nodes antenna with one of higher gain. We are doing this because this node is already seeing the Red Cross node most of the time, but the signal is not strong enough for a solid connection. If we are successful here, then we can remove the N8PPF to KC8UR link altogether, or at least turn it off until needed.

I am working on a server for the network. This server would allow a better implementation of the Web Page I have up. I should also be able to run an email client and a file server. If I could get this working, it would go a long way in making this Mesh Network usable.

I have also expanded the telephone system. Phones are ready to go for the Red Cross and KCH. This will be very useful.

Hoping to get a node at the EOC. Then we will put a phone there too. That could be very valuable.

I am always looking for local hams wishing to join our Mesh Project. If you would like to put up your own node, let me know. The only thing I request is that if you put up a node you leave it on 24/7. I expect a new node with all new equipment (radio, antenna, and cables) would cost around $150. Let me know if you are interested in joining this interesting aspect of our hobby. Every node we put up benefits the entire system. Wouldn't it be great for our group to be able to provide video of a disaster site back to the EOC? With enough links, we should be able to do this from anywhere in Mt. Vernon and possibly Knox County.

See you at the meeting.

An Easy to Build Fan Dipole For 20 and 15 Meters

By Don Russell, W8PEN

It has been a while since I have written a true antenna article. This one has been in the makings for a while.

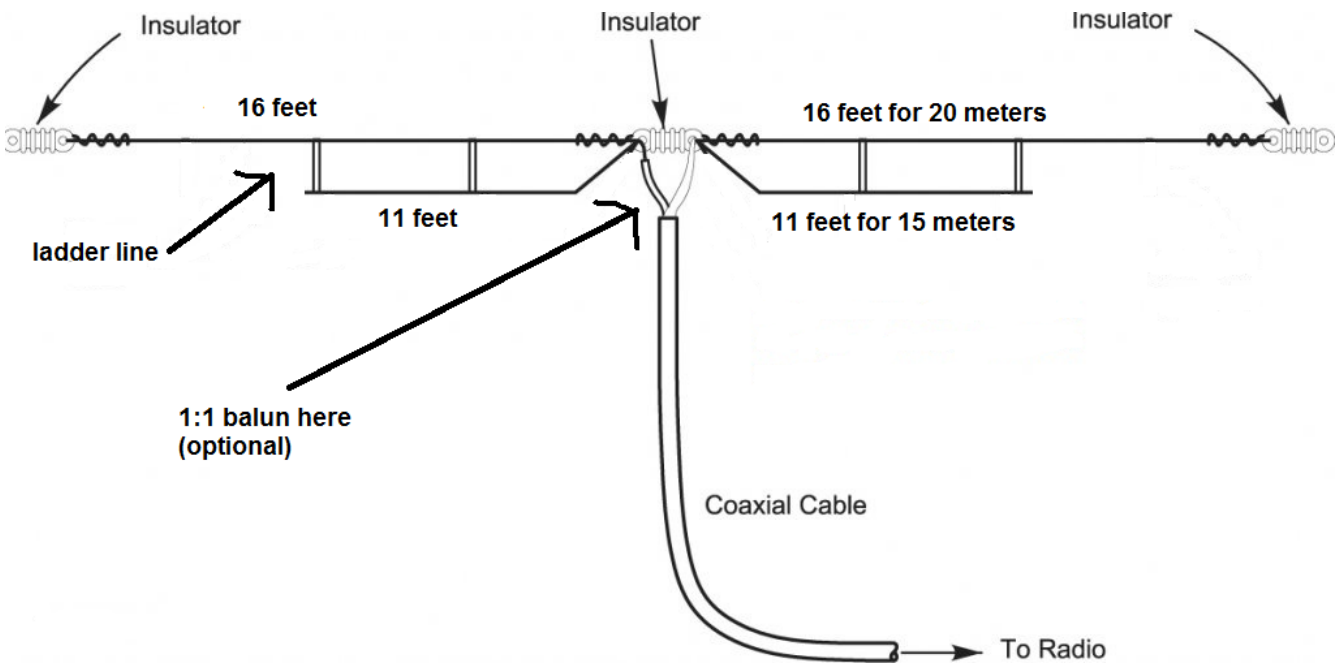
Previous readers will know that I have been trying to come up with the ultimate wire antenna for 20, 15, and 10 meters. I have tried just about everything. Quarter wave verticals, half wave verticals, ground-planes, loop antennas, and dipoles. I keep coming back to the simple dipole. I am convinced that a high dipole beats most other antennas in simplicity and performance. Notice the key word: HIGH. For working DX or even medium range domestic stations, one needs an antenna with a low take off angle of the radio waves.

Low antennas let you communicate, but their radiation pattern is generally straight up or at a high take off angle. This is why NVIS antennas need to be comparatively low. An NVIS antenna can work close in stations well at 10 to 20 feet or lower.

For the DX'er in us, the higher the antenna, the lower the take off angle of a signal. A good height for a dipole antenna would be half a wavelength or more at the operating frequency. On 20 meters a half wavelength is about 35 feet. This would be an excellent starting point for fan dipole starting at 20 meters.

What exactly is a "fan dipole"? A fan dipole is no more than several dipoles fed at the center and using the same coax for each dipole. The dipoles are spread out (or fanned out) to provide enough separation so that each antenna operates independently of each other. There is a lot of conversation as to how much separation has to be had in a fan dipole. Most believe an inch or two is all that is needed.

Thus I present my simple 20 and 15 meter fan dipole. I made mine out of some ladder line I bought at the Mansfield Hamfest last year. I cut the ladder line for a half wavelength on 15 meters. Then I added wire to the top section of the ladder line so that the top section became a 20 meter dipole. Cut in half and put an insulator and coax in the middle and you are basically done.



I have this antenna up 45 feet and it works really well for me. One advantage a dipole antenna has over "gain" wire antennas is that the signal radiates broadside to the wire. On "gain" wire antennas you have a lot of small, but high gain lobes. The problem is, you do not know where the lobe will be so it is hard to aim a long wire antenna in any particular direction. You put it up and hope for the best. I have my dipole running North and South so I get my major radiation East and West. I am planning on building another fan dipole to be placed East and West. Then, at a flip of my antenna relay box, I can have my signal radiate max North/South or East/West. Not bad for a fairly cheap antenna. I am excited about redoing my "Wire Farm" this Spring.

While not really necessary, if you want your radiation pattern to be as predictable as possible, then you should put a 1:1 balun at the feed point. Alternatively, you can use a choke balun made of RG8-X by making 6 turns about 5 inches in diameter. I usually use the choke balun and just use whatever coax I am feeding the antenna with.

This design will work on other bands too. Use the formula 468/freq (in MHz) to determine the length of your desired antenna. For example, one could make an 80 – 40 meter dipole: 468/3.9 MHz = 120 feet and 468/7.2 MHz = 65 feet. That would be the overall length of each antenna section. Just divide by 2 to get the length for each side. This formula works for all ham frequencies, including the WARC bands.

There is no reason to use ladder line either. It just makes it easy to build a two band antenna. You can use half inch pvc pipe as spreaders and add as many bands as you wish. There are lots of five band fan dipoles out there. There is also no need for spreaders if you tie each antenna off at a different point. Just remember to keep the wires separated by a couple of inches. The wires do not have to be under each other. Spread them out in different directions more separation. Just make sure each antenna for a particular band runs in a straight line. And yes, this antenna can be used as in inverted V antenna. It does not have to be parallel to the ground.

For further guidance on building a fan dipole for your choice of frequencies, talk to me at the meeting.

By the way, I am considering a fan dipole system for the Field Day CW station. It is about time we tried something different.

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CONTESTING FOR FUN

By Barry Butz N8PPF

In mid-January the MVARC Contesters entered the North American QSO Party (NAQP) sideband version. Team members were W8PEN, N8IBR, KE8ANS, and N8PPF. Band conditions were way less than favorable but we made some respectable scores. Also, with other things going on, none of us worked the whole time. I believe Don and Jim made the best showings while Terry and Barry made about as many the contacts. It will be interesting to see where we landed in the club scores. If poor to fair conditions were widespread, we might place well.

Coming up in February are several interesting contests, including the ARRL School Roundup and CW DX and NAQP RTTY version. Several states have their QSO Parties, which are for CW, SSB, and Digital. Have fun on the air!

Scout Meeting and Friday Breakfast Pictures

The 2 pictures below are taken from our recent Cub Scout meeting in Apple Valley on Communication in our world. They show Jim Williams, N8IBR and the Cub Scouts talking on a portable radio to Emery Bennett, W8TW in Mount Vernon. We also gave a demonstration on Morse Code, giving each member their name in dots and dashes. They all thought that was special to hear their name in code.

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The picture below is some of our members at our weekly breakfast at Hardee's restaurant. We have a lot of fun discussing various aspects of our hobby, as well as weather, computers, sports and other problems of the world. It is a good way to start our day. If you have a chance to share an hour or so, please drop by and visit. -Bill, KC8BB

Shown in picture above from left: Don Blizzard W8UMH, Scott Yonally N8SY , Bill Stroud KD8WHQ, Scott Fields K8AEC, Jim Williams N8IBR, (hidden are Tom Evans KD8HSA, Don Russell W8PEN) and Frank Counts KC8EVS.

February, 2017

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1 5:00 pm Dinner at Southside Diner	**2**	**3** 10:00 am Breakfast at Hardee's	**4**
5 9:00 pm ARES Sunday Night Net on K8EEN **KC8BB –Bill**	**6**	**7**	**8** 5:00 pm Dinner at Southside Diner	**9**	**10** 10:00 am Breakfast at Hardee's	**11** **9:00 am** Breakfast at Allison's Finer Diner
12 9:00 pm ARES Sunday Night Net on K8EEN **KE8ANS –Terry**	**13** **7:00 pm** **MVARC Monthly Meeting**	**14**	**15** 5:00 pm Dinner at Southside Diner	**16**	**17** 10:00 am Breakfast at Hardee's	**18**
19 9:00 pm ARES Sunday Night Net on K8EEN **W8PEN – Don** **7:00 am Mansfield Mid Winter Hamfest, Richland Co. Fairgrounds**	**20**	**21**	**22** 5:00 pm Dinner at Southside Diner	**23**	**24** 10:00 am Breakfast at Hardee's	**25** 9:00 a.m. MVARC License Exam at the Red Cross Building
26 9:00 pm ARES Sunday Night Net on K8EEN **KD8HSA –Tom**	**27**	**28**	**1 March** 5:00 pm Dinner at Southside Diner	**2**	**3** 10:00 am Breakfast at Hardee's	**4**