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

October, 2016

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
KD8EVR Repeater: 444.600 MHZ (+5 MHz with PL of 71.9 Hz)

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Emergency Preparedness

REF: 2016 Special Event Station

Dan Emmett Music and Arts Festival
August 12th and 13th

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(The following email was received by N8IBR on August 26, 2013)

Just received a beautiful acknowledgement of my QSO with K8EEN on August 13, 2016.

Born and raised in Georgia and we sang "Dixie" all the time growing up.

I want to thank you and The Mt Vernon Amateur Radio Club for putting on this Special Event, celebrating the life of Composer, Daniel D. Emmett.

The next time I hear "Dixie" it will have an even more impact now knowing who composed it.

73 from the Heart of "Dixie"

Bill, K4WP

Bulloch County, Georgia

Just a reminder about our upcoming MVARC monthly meeting. Patrick Valentino will be sharing the following presentation:

At the October, 2016 membership meeting Patrick Valentino - KC8PSM will share with the Knox County Amateur Radio Club, how the ARES Leadership Team is developing a planned Amateur Radio response that assist local agencies and organizations respond to a disaster or emergency situation. Please plan to attend.

Regards

Patrick Valentino - KD8PSM

Naming our Newsletter

After viewing several Amateur Radio Clubs newsletters, I would like to give our MVARC Newsletter a name. There has been several names come up in conversations, many with Mount Vernon or Ham Radio in the title, such as:

Mount Vernon Transmitter; Relay; Static, or
Radio Activity.

Ham Radio Gazette

Ham Radio Journal

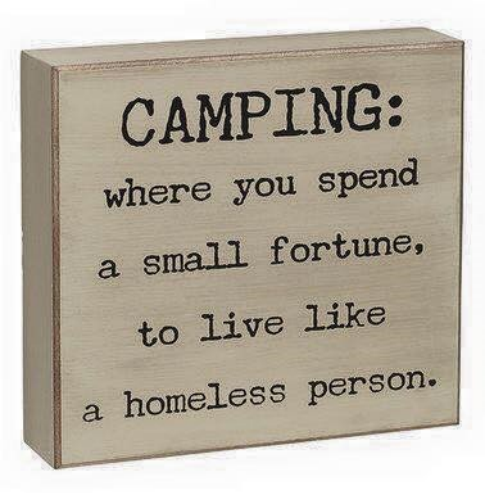
The K8EEN Radiogram or some variant

Perhaps we could have a contest and the winner would win a prize.

Think about it and I will bring it up at our meeting on October 10.

73,

-Bill, KC8BB



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Meeting called to order by KC8EVS at 2304 UTC.
Motion to approve August Meeting Minutes made by W8UMH, 2nd W8PEN. Approved.
Motion to accept September Treasurers report made by W8TW, 2nd W8PEN. Approved.
W8PEN gave a report on both repeaters. VHF OK. UHF may have a new home in the future, a possible antenna site at Knox Community Hospital is being explored.

President's Report

President presented some ARES information. KD8PSM is working on having separate meetings for ARES members. These meeting would be in addition to the regular club meetings. It was also mentioned that the ICS-100 and ICS-700 courses would be the minimum requirement to meet local needs. More to follow in the future.

KC8EVS mentioned that at the October meeting, we will need to form a nominating committee for next years officer candidates.
We also will need to set up a committee to work on the annual Christmas dinner.
He noted that he and KC8BB were still working on a re-write of our membership handbook.
He suggested we hold training sessions on both our GO BOXES and our Club Station. This would ensure that when called upon to provide communications to our served agencies, we would be able to do so efficiently.

Odds and Ends

N8IBR gave a brief report on our Daniel Emmett Special Event Station. While we didn't make as many contacts as hoped due to bad band conditions, overall he stated it was a success and hopes the group will do it again next year. Thanks to KD8HSA, W8TW, W8UMH, W8PEN, KC8UR, KC8BB, KD8TNS, KE8ANU, KC8EVS, and N8IBR for their efforts in this event.

KD8HSA gave report on The Ohio State Parks On The Air event we put on at The Over Look in Mohican State Park. He reported we had 6 members present, who made 59 contacts to 12 State Parks and one National Park. The 6 members were: KB8HSA, W8PEN, W8UMH, AC8PT, W8TW, and N8IBR. Band conditions were up and down, and we secured operations early due to bad weather approaching. We consider this event a success also, and hope the membership will do it again next year.

W8PEN reported that he had received an inquiry into connecting into our MESH network from a member of the Mansfield club. He's not sure how possible it is, but if the stations quoted terrain is correct, it may work. More later.

Inquiry from the Newsletter Editor

KC8BB asked if the membership was interested in re-naming our newsletter? And how would we go about doing it? Bring your ideas on this to our next meeting.

Motion to adjourn made at 0004 UTC, by W8TW, 2nd KC8BB. Approved.
KC8BB won 50/50 drawing.
We had 9 members present.

Respectfully Submitted
N8IBR Secretary MVARC

PBX Phone System for a Mesh Network

By Don Russell, W8PEN

One of the many interesting things that can be done with a local mesh network is to install a PBX phone system. Imagine a network that connects all local hams simply buy using the common household telephone. Okay, I heard someone say "but that's not ham radio". Sorry to bust your bubble, but ever since the development of the internet, hams communicate in more ways than just via the airwaves. Take for example Echolink. This is a very popular ham radio system that connects hams all over the world using the internet. Sure, there are lots of Echolink stations that use RF. But one can just as easily link computer to computer on Echolink. A telephone system on a Mesh Node Network is similar to Echolink in that it uses both the internet and RF. I would like to use RF as much as possible though. To jump start our Network, I have conceded that some of our nodes need to be connected via the internet. As we grow and get a few high profile nodes online, we can gradually switch nodes from the internet to RF. I consider a high profile node as one on a high tower.

There are many advantages to having a phone system operational on the new local mesh network. Of course, if you have a phone installed, you can simply call any of your ham friends that also has a phone installed. You have to be connected to the mesh network to do so however. As a public service, we will be able to easily set up phones with three digit numbers to be used out in the field. As long as a node can connect to at least one of the other nodes on a network, you can talk to any phone that is installed on the network. Of course, in a natural disaster situation where cell phones and regular phone service may be down, we would be able to set up phone service from the EOC directly to the disaster site, or any other site for that matter. For example, we could install phones at each Red Cross shelter, the EOC, and Red Cross headquarters. We would be able to do this anywhere that we need a phone and can get back to the Mesh Network.

Locally, I have set up a PBX Phone Server using a small Raspberry Pi computer and Asterisk software. The software was free and the Raspberry Pi cost under $100. I am setting up phone numbers based on the last three digits of ones callsign. For example, my call, W8PEN is 736. All you have to do is look at the dial pad and punch in "pen", or 736. So far we have six phones going. Those currently with phones are N8IBR, W8TW, AC8PT, KE8ANS, and W8PEN. Additionally, there is a test phone set up that hams needing to test their phones over the network can dial in and leave a message on the answering machine.

The phone system is expandable and any number of phones can be connected. There is a limit on how many phones can be used simultaneously however. I think this is somewhere between eight and 10 phones can be used at any one time. This is mainly based of limitations of the Raspberry Pi computer. But I think this is plenty of power for now. Later, if needed, we can graduate to a faster computer.

Not all phones work with this system. A standard analog phone will not work. An analog phone is the phone you most likely have at the house. You would need an analog phone adapter to use an analog phone. Most IP phones will work, however, some phones are easier to set up than others. An IP phone is one that would normally be connected to the internet. Most, if not all businesses now use IP phones. This is why I am pushing for those wanting to use a phone on our mesh network to buy Grandstream brand IP phones. I have been using a Grandstream GXP-2000. It is very easy to set up, sounds good, and looks good. It is not oversized, so it fits neatly on your desk or table in the shack. I believe any of the Grandstream GXP-XXXX will work on our mesh network. The Grandsteam GXP-2000 sells used for around $25. They do not manufacture this phone anymore so you have to buy them used.

PBX Phone System for a Mesh Network, continued on page 5

PBX Phone System, for a Mesh Network continued from page 4

Another option is to use a Grandstream HT-701 analog phone adapter. I have been testing two of these. They are easy to set up and work fine with any analog phone. I am using one of these adapters for the test phone. The test phone is an analog phone which has an answering machine on it. This works quite well for testing the phones on the Mesh Network. The HT-701 typically sells for around $35 new.

Another reason to stick with Grandstream GXP-XXXX phones is because if the PBX went down or one just wanted to bypass the PBX, these phones allow direct IP to IP dialing. So, in effect, you don't actually need a PBX server. The Server just makes it easier to use the phones and in the future will allow some advanced features to be used.

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Radio Activity

By Don Russell, W8PEN

Welcome to October. The last few months have been busy ones for club members. We have a handful of real go getters in our club. Sometimes it seems like we are leaving people out of the things we do. This is not intentional. Please, if you would like to be more "radio active" in club activities, let President Frank Counts, KC8EVR, or any of the officers of the club know about your interests. If you are interested in helping out with the Mesh Network, let me know. In fact, those interested in the Mesh Network should try to make it to the October meeting. We should all sit down and talk about what is happening and how you can help out or set your own node up.

The HF station at the Red Cross is up and running. Now we need some operators to train. If you would like to be included in this group, please let me or Jim Williams, N8IBR know. We are looking for local club members who do not have an HF station at home. You would be able to come to the Red Cross and operate the station once you are trained. The logistics still have to be worked out though. Even if you have your own station, please consider learning the ins and outs of our Red Cross station. We need experienced hams to help train the others.

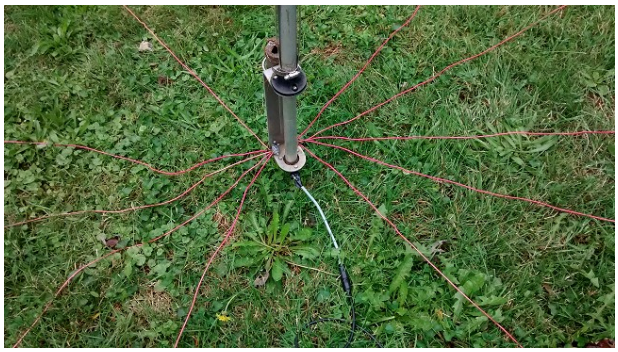
I hate to add one more thing to my list of "things to do", BUT…….

There is an EME (Moon Bounce) contest October 22 and 23rd. Moon Bounce is something I have been wanting to do for a long time. I have an antenna that should work for 2 meter EME. The club has a Yaesu FT-847, which should work fine for moon bounce. I also have a 160 watt 2 meter amplifier to use. If you are interested in trying a Field Day style EME operation during this contest let me know. We would need someone experience in the digital mode because I think that is the only way we would be successful. Even if we were not successful, it would give us experience for trying it again sometime. Again, let me know at the meeting if you wish to participate in this. There is not much time to prepare for this. One thing that would be nice is if we had a field with an open view to the moon.

Radio Activity, continued on page 6

20 Meter Vertical

Last month I mentioned that I was thinking about installing a 20 meter vertical to see if this antenna would improve my contesting results. The so called "Contest Season" in right around the corner. If one recalls, Dave Phillips, W8DEP gave me a couple of Hustler 4BTV 40 – 10 meter vertical antennas. I was either going to rebuild the antennas or simply use the bottom section and a piece of aluminum tubing to create a simple 20 meter vertical antenna.



Ten Radials on the ground

20 Meter Vertical

I decided to build a simple 20 meter vertical antenna. This consisted of the base of the Hustler 4BTV, which was about five feet long, and a 12 foot section of aluminum pipe I just happen to have in my antenna "junk" pile". This pipe just happened to fit nicely into the base section so all I had to do was insert and tighten the hose clamp. Total length of the antenna was about 16 feet. Just right for a quarter wave vertical on 20 meters.

I decided to ground mount this antenna and run radials on the ground. I had a piece of four foot pipe that I pounded into the ground leaving about a foot for mounting the vertical antenna. I used a level to keep the pipe straight while I pounded it in. If this becomes a permanent antenna, I may remove this pipe and reinstall it using some cement. But for now, it is working perfectly. With only 16 feet of pipe for the antenna, no guying is required.

I put in ten radials to start. Number 14 wire just laying on the ground. Planning on another ten later if I feel the need. I will also bury the radials if this turns into a permanent installation.

Initial SWR check at the antenna showed an SWR of 1.5 to 1 through the entire 20 meter band. With a vertical antenna, this could be mean that the antenna is a dummy load with all the power being lost in the ground, or it tunes up nicely and radiates effectively. The only way to really tell is to try it out on the air.

So into the shack I went to give my antenna a test drive. An SWR check in the shack showed about the same results as out at then antenna. Switching between my other two antennas (an 80 meter loop and a 160 meter windom), I found that the vertical was actually hearing better. Still, the proof would be in the transmitted signal.

Radio Activity, continued on page 7

I found a station calling CQ. Just happened to be a National Park in California that I had not worked yet. So I gave him a call and he came right back. He gave me a 59 plus signal report. Just what I was looking for. So, this antenna already paid a dividend by working a National Park station I could not even hear on the other two antennas.

I have made about ten contacts with this antenna since installing it. Several were National Parks that I had not worked yet. Some were random stations calling CQ. Mostly I got good signal reports so in the short term I am happy with this antenna. The long term will prove itself out over the next couple of months working some contests.

I am already thinking of possibly putting another 20 meter vertical up. You can phase two vertical antennas to get additional gain in different directions. I am even thinking this can be done with wires and rope. But that will be for another article.

I am saving all the pieces of these two hustler antennas in case I want to go ahead a rebuild the antennas for 40 – 10 meters. This is a good possibility, as it would give me a good vertical for DX on those bands.

Mesh Network Update

Once again, progress has been slow. But there are some positive signs that things are coming together.

I have been hard at work developing a PBX phone system for the network. Please see my article on the phone system elsewhere in this newsletter. A group of us has been busy setting up nodes, whether internet tunnels, or true RF nodes. So far we have nodes set up at AC8PT (Granville), N8IBR (Johnstown), KE8ANS, W8TW, and W8PEN (all in Mt. Vernon). We also have a node at the Knox County American Red Cross (AC8PT).

Soon, I am expecting a node to be installed at Knox Community Hospital. I am waiting for approval on this. Also, we are still working on getting a node on Arlin's tower (KD8EVR). We have installed a node at KC8UR (Brandon), however, we are having problems with it and it is not operational right now. Before Winter begins, we should have a node at KC8BB and KC8EVS. I think we will be able to get all these nodes talking to each other. I am really excited about these developments.

Currently we have six phones in service. W8TW, N8IBR, AC8PT, KE8ANS, W8PEN (I have two. One for my use and one being used as a test phone). I am also planning on a phone at the Red Cross, and the hospital if we have a node installed there.

Now that I have a handle on the PBX phone service (I still have much to learn though), my thoughts are turning to setting up video conferencing. This should be a really big challenge for me personally, but I am determined to get this done.

I encourage all members to help out with our local mesh network. If you can get a node up 20 or 30 feet, I believe you have a very good chance of reaching my node or Barry's node (N8PPF). The Node at the Red Cross should be reachable for those within a couple of miles. This is pretty much line of site stuff, but I am finding that the signals do go through a fair amount of trees. Terrain is a big problem though.

Radio Activity, continued on page 8

If you wish to set up a node, just let me know. I can bring my mobile mesh setup to your location and we can run some tests before you purchase anything.

Mesh Antennas

A few months ago I said that a 2.4 GHz antenna for the mesh network should be fairly easy to build. Well, I finally got around to experimenting with this idea. I built a collinear 2.4 GHz antenna out of old copper wire I had laying around. It is about two feet long and supposedly has a gain of about 6 Dbi.

I have it up and running on a node right now. It is on my deck atop a 5 foot mast. I am picking up the N8PPF node without a problem and at about the same signal strength as all the other commercial antennas I have tested. So, yes, If you don't want to spend money on an antenna, this homebrew antenna may work for you.

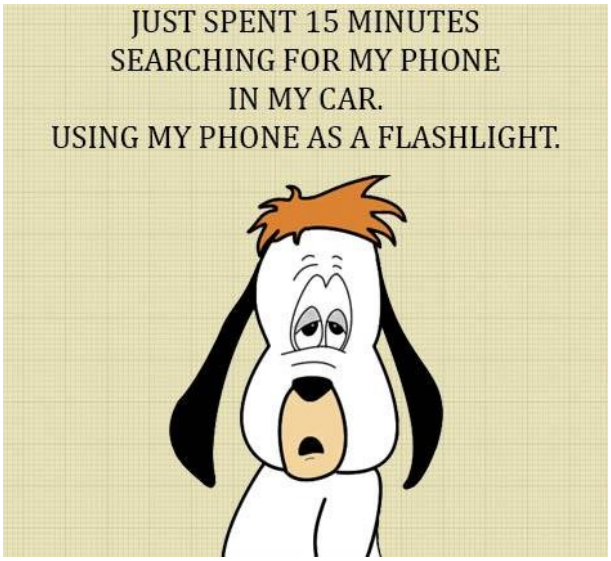
I am going to do more testing with this antenna by using it on my mobile set up. Currently my mobile antenna is a commercial 8 Dbi gain antenna. I should see similar results using the homebrew one. I will keep everyone informed.

440 MHz Repeater

Just a little update on our newest repeater. This repeater is working well. It has good coverage to the North and NorthWest, and West. Not so good East through South.

Along with the request to put a mesh node at the hospital, I have asked if we could put the 440 repeater there also. There is an unused tri-band antenna already installed at the hospital that would allow us to test the coverage from the hospital location and, if it works out, we can then install a dedicated 440 MHz antenna at a later date.

That is enough for now. My fingers are getting tired…… See you all at the meeting.



Should U.S. ham tests be given abroad?

By Dan Romanchik, KB6NU

A couple of weeks ago, I received an e-mail from a reader who wanted my opinion about a thread on the Ham RadioHelpGroup mailing list. The e-mail that started the discussion was a message from an American living in Italy who wanted to take the Technician Class exam. In her e-mail, she told of her troubles finding a test session, and then when she did find one, what she perceived as "irregularities" in the testing process. Reading the thread was a little disconcerting, and I blogged about this issue (http://www.kb6nu.com/u-s-amateur-radio-license-exams-given-outside-u-s/).

I understand why foreign national go to the trouble of taking the U.S. license exam. Some of them even buy my study guides. About a year ago, for example, I swapped some e-mail with a guy from Malaysia about why he purchased my study guide and why he wanted a U.S. license. He said that it was because a neighboring country offered reciprocal operating privileges to U.S. licensees, but not Malaysian licensees! He mentioned that he tested for the license in Thailand.

Basically, my Malaysian friend was using the U.S. licensing process to circumvent the Malaysian licensing process. Australians seem to do this, too. Apparently, according to one of the VKs who commented on the thread, getting a U.S. Tech license is easier than testing for an Australian Foundation license. So, some Australians get a U.S. Tech license first, then get the Australian government to issue them a VK Foundation license based on the reciprocal operating agreement between the U.S. and Australia.

Another reason that some outside the U.S. obtain U.S. amateur radio licenses is the challenge. That's the reason Martin Butler, M0MRB/W9ICQ, of ICQ Podcast fame, gave when I spoke to him about this recently.

Are these reasons "good enough" to continue this program of licensing non-U.S. citizens? My first reaction was that no, it's not good enough, and I questioned whether or not the ARRL VEC should sanction non-U.S. VEs and whether or not the FCC should even allow testing outside of the United States.

I didn't see the need for conducting these test sessions or the desirability (to the U.S.) of licensing foreign nationals. I reasoned that not only was there a greater possibility of test fraud, this program could lead to foreign authorities claiming that the U.S. was meddling in their affairs.

This post garnered a lot of comments. Several of them took me to task for voicing this opinion and were in favor keeping the current licensing program in place. There were a variety of reasons.

One of the reasons in favor of using the U.S. licensing process is that in many countries, amateur radio license exam sessions are not very frequent. Another is that they often are quite expensive. This creates an artificial barrier to getting an amateur radio license. Using the U.S. licensing system breaks through this barrier and allows many more to enjoy amateur radio.

Of course, for everything to be on the up and up, the foreign authorities would have to condone the use of U.S. license tests. Apparently, this is the case in Thailand and Australia. I don't know about Italy, but I'm guessing that the authorities there don't really care about Italians obtaining U.S. licenses.

Perhaps the best comment came from Thida, HS1ASC/KH6ASC. He noted that the tests in Thailand were administered very strictly, and says, "The U.S. may lose some call signs, but what the U.S. and U.S. hams get from us is goodwill, very positive feeling. Everyone who gets U.S. license is so proud, and others look at them respectfully." Since Part 97.1(e) lists as one of the purposes of amateur radio, "Continuation and extension of the amateur's unique ability to enhance international goodwill," I'm now all in favor of offering U.S. ham tests abroad.

Dan, KB6NU, is the author of the "No Nonsense" amateur radio license study guides, and blogs about amateur radio at KB6NU.Com, and you can contact him by e-mailing cwgeek@kb6nu.com. When he's not pondering the vagaries of the U.S. licensing system, you'll find him working CW on the HF bands.

October 2016

Sun	Mon	Tue	Wed	Thu	Fri	Sat
2 9:00 pm ARES Sunday Night Net on K8EEN **KC8BB –Bill**	**3**	**4**	**5** 5:00 pm Dinner at Southside Diner	**6**	**7** 10:00 am Breakfast at Hardee's	**8**
9 9:00 pm ARES Sunday Night Net on K8EEN **W8PEN –Don**	**10** **Columbus Day** **7:00 pm MVARC Meeting at the Mt. V. Red Cross**	**11**	**12** 5:00 pm Dinner at Southside Diner	**13**	**14** 10:00 am Breakfast at Hardee's	**15**
16 9:00 pm ARES Sunday Night Net on K8EEN from the EOC office **KE8ANS –Terry**	**17**	**18**	**19** 5:00 pm Dinner at Southside Diner	**20**	**21** 10:00 am Breakfast at Hardee's	**22**
23 9:00 pm ARES Sunday Night Net on K8EEN **KD8HSA –Tom**	**24**	**25**	**26** 5:00 pm Dinner at Southside Diner	**27**	**28** 10:00 am Breakfast at Hardee's	**29**
30 9:00 pm ARES Sunday Night Net on K8EEN **W8PEN –Don**	**31**	**Nov 1**	**2** 5:00 pm Dinner at Southside Diner	**3**	**4** 10:00 am Breakfast at Hardee's	**5**
6 9:00 pm ARES Sunday Night Net on K8EEN **KC8BB –Bill**	**7**	**8**	**9**	**10**	**11** **Veterans Day** 10:00 am Breakfast at Hardee's	**12** 9:00 am Breakfast at Allison's Finer Diner