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

February, 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: 442.100 MHZ (+5 MHz with PL of 71.9 Hz)

INSIDE THIS ISSUE:

Mesh Network update

By Don Russell, W8PEN

While the arrival of Broad Band Ham Net in the Mount Vernon area has been at a snails pace the last few months, there are some noteworthy events happening. I am not expecting to get our two or three nodes up and running before Spring sets in. This might actually have been a blessing, because I have taken it upon myself to revise some of our goals. You can, in part, blame this on Scott Keys, AC8PT. Scott is working on a mesh project for the Findley, Ohio club. He has brought up some valid points that need to be considered before we proceed with our project.

First, a couple of updates:

Several months ago everyone was concerned about what the FCC was going to do regarding firmware updates to the routers that we have been using for BBHN Mesh. We were worried that the FCC was going to require manufacturers to "lock" the firmware on their equipment, or make regulations so that the manufactures would have to do so just to protect themselves.

Many were afraid this would spell the end to BBHN, as no new equipment would be available. Personally, I feel that the manufacturers know what a huge consumer base hams can be and they are not going to pass up dollar signs by locking their Firmware.

Even so, I have been interested in the Raspberry Pi, HSMM (High Speed Multi Media) project for some time. This project involves programing the Raspberry Pi Micro computer with the BBHN Mesh software, thus eliminating any need for commercial routers or access points.

So, I took the plunge and bought a Raspberry Pi 2 microcomputer kit which I thought would have all the items I would need to program BBHN Mesh onto it.

Very short story. Everything went well. However, I could not see or connect to the nodes I have up. My nodes could not see the raspberry pi either. After several hours of playing around with it, decided that the wifi dongle that came with the kit did not play well with BBHN Mesh. I ordered another one which I thought would work. I am happy to advise all that the new wifi dongle worked perfectly and I can now see all the nodes in my area (including N8PPF's) and they can see the Raspberry Pi. Fantastic I say!

With this success, I have decided that the FCC will not slow us down! Sure, the Raspberry Pi has its own problems. One of which would be how to weather proof it and run power up a tower. However, these problems exist with the Linksys routers too and that has not stopped anyone from using them.

The second item that I have been working on is setting up a telephone system for the mesh using a standard IP Phone. This is not exactly plug and play, but after some research, I am confident that it can be done.

This would be a big plus for our supported agencies if we could support their own IP phones over our network if everything else was down.

Mesh Network Update continued on page 2

Mesh Network Update continued from page 1

Yes, you can make calls using unlocked Basic Talk boxes, but it would be a weak point if we tried using these to support our agencies. Just my opinion.

To use these IP phones, a PBX service would have to be installed on the mesh network. I have found that this will not be all that hard. Raspberry Pi to the rescue again. They have developed software which runs on the Raspberry Pi and creates the PBX on the mesh. Nice. And reasonably cheap.

This would give use two service available on the mesh network. One, VOIP over the internet using IP phones, and yes, we can use Basic Talk interfaces as well.

Two would be chat rooms in which you type on a keyboard much like the digital modes. That is just a start. We will be able to add other features such as video conferencing, file servers, and email clients. Anything that can be done on the internet can be done right on our own mesh network.

One last update. As I said, Scott Keys, AC8PT, and I have been talking quite a bit about this. There is a spin off group from the BBHN group. In fact, it comprises of most of the original group that started BBHN. This group has invested their time in supporting the Ubiquiti line of access points and have done away with Linksys support. Personally, I think that was a wise move. The Linksys routers do not have enough memory for the ever increasing features that hams want on the mesh network. Using the Linksys routers is limiting the growth of the BBHN mesh service.

This group is called AREDN (Amateur Radio Emergency Data Network). Their main goal is to provide a system that effectively supports the ARES.

One of the big factors that put me in favor of using the AREDN firmware is that they have created channels using only the ham bands. Non hams cannot use these frequencies, thus our mesh network would not be interfered with by regular users of wifi routers. They call these channels 0, -1, and -2 and they only work on Ubiquiti equipment. A real solid reason to abandon the Linksys routers.

In addition, I talked to Bob Kenyon, K8LJ, the other day. He seems to be interested in establishing a mesh network in Granville, Ohio. So we might have a neighbor we can link to. That would be fun.

I can't wait to get a couple of nodes up on high towers so we can actually get some of these ideas off the ground.

See you at the meeting.

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MINUTES OF THE JANUARY 11TH 2016 MVARC MEETING

Meeting called to order at 7:00 PM by KD8HSA.
Motion to accept December 2015 minutes made by AC8PT, 2nd KD8WSI. Approved.
Motion to accept January 2016 Treasurers report made by K8AEC, 2nd KC8BB. Approved.

COMMITTEE REPORTS AND OLD BUSINESS

W8PEN reported repeater operating normally.
As previously discussed by KC8EVS, both Secretary and Treasurer now have Post Office Box Keys.
Now that the Go Box projects have been finished, W8PEN and others suggested we re-visit the past issue of purchasing a back-up repeater.

NEW BUSINESS

AC8PT moved, W8PEN 2nd the club purchase 2 (two) tables to sell accumulated items at the February 21st, 2016 Mansfield Ham Fest. Approved. 9 members also requested advanced tickets be purchased. KC8UR was asked to order tables and advanced tickets. If you requested advanced tickets, be sure to be at our February 8th, 2016 meeting to pick up and pay for your tickets.

It was announced that AC8FV would no longer be able to act as Net Control on our Sunday Night Nets. He was the net control the second (2nd) Sunday of each month. It was mentioned that a few members had expressed interest in filling that position, but as they weren't present at the meeting, existing net control stations would take turns filling that position until the volunteers could confirm their availability and receive training.

KD8HSA stated that KC8EVS had been ask if the club would be willing to participate in a Hobby demonstration event in March. More information will be available at the February meeting. Many members expressed an interest in participating.
KD8HSA remarked that he did not have all of the information concerning the recent contact made with KC8EVS from the EMA office. He stated KC8EVS would give a report at our next club meeting.
N8IBR asked, as he was now responsible for the club roster, all dues be sent to the ATTN: SEC-MVARC. He will then forward the monetary funds to the Treasurer.

Motion to adjourn by KD8FXX, 2nd KD8WSI. Approved.

There were 12 members present.

Respectfully submitted,

N8IBR, Secretary-MVARC

JUST A REMINDER, IT IS TIME TO PAY YOUR 2016 CLUB MEMBERSHIP DUES, IF YOU HAVEN'T PAID THEM ALREADY.

SECRETARIES COMMENTS TO THE MEMBERSHIP

At the start of the Year 2016, I would like to congratulate the membership on an outstanding 2015. The club was involved in numerous events like Marathons and Bicycle races. We participated in numerous operating events, like Field Day, NVIS Day, and The Ohio State Parks on The Air to mention a few. We also participated in ARES simulated emergencies training sessions.

The club sponsored 2 licensing classes and testing sessions. The results of those classes were outstanding. Due to the licensing classes last year we saw the area's Amateur Radio population grow considerably. And it looks like this year's Technician Class may have the same result.

Many of our members participated individually in some operating contest, then turned their scores in as a collective group titled "The MVARC Contesters", with good results. It looks like they will be doing these events again this year, with even more folks participating. These events can be lots of fun. Feel free to look into these operations and join in, even if you can only do limited participation.

The one thing as a club we have been lax in as a club is, paying our membership dues on time. If you haven't paid you dues for 2016, I ask that you please consider doing so soon. Your dues not only support our various club functions, but they also help maintain our club sponsored repeater K8EEN.

At present we only have 27 paid members for the year 2016. This is less than half of the paid membership from last year. I realize that membership numbers are constantly in flux, but I wouldn't think that we would have that major a difference in numbers from one year to the next. Remember, "Our dues are to be paid by the December meeting of the previous year to remain in good standing".

When you send your dues in, please send them to "ATTN: SEC-MVARC". This year, I am responsible for maintaining our membership data base, and to make sure we show you as paid, and the club has your correct information, be sure to send things to my attention. Once I have received your information, I will forward your dues to the club Treasurer to be deposited into the clubs account.

After March of 2016, if I haven't received your dues, I will not show you on the active membership roster. So, to remain a member in good standing, please get your dues in.

The club records show the following members have paid their dues for the year 2016:

N8MNQ (LIFE MEMBER), W8TW, KC8BB, KB8QPO, N8PPF, KC8EVS, KC8VTA, KD8WSI, KD8HSA, K8AEC, KE8ANV, KB8QPP, N8RPZ, N8RDH, AC8PT, KE8ANQ, KE8ANY, W8PEN, KC8UR, KB8WHQ, KD8PSM, N8OGX, N8IBR, KE8ANS, KD8UEB, KD8EUP, & KD8AFT.

If you feel you have been omitted in error, please contact me so we can check things out.

N8IBR, SECRETARY-MVARC

Contesting for Fun
By Don Russell

HF J-Poles

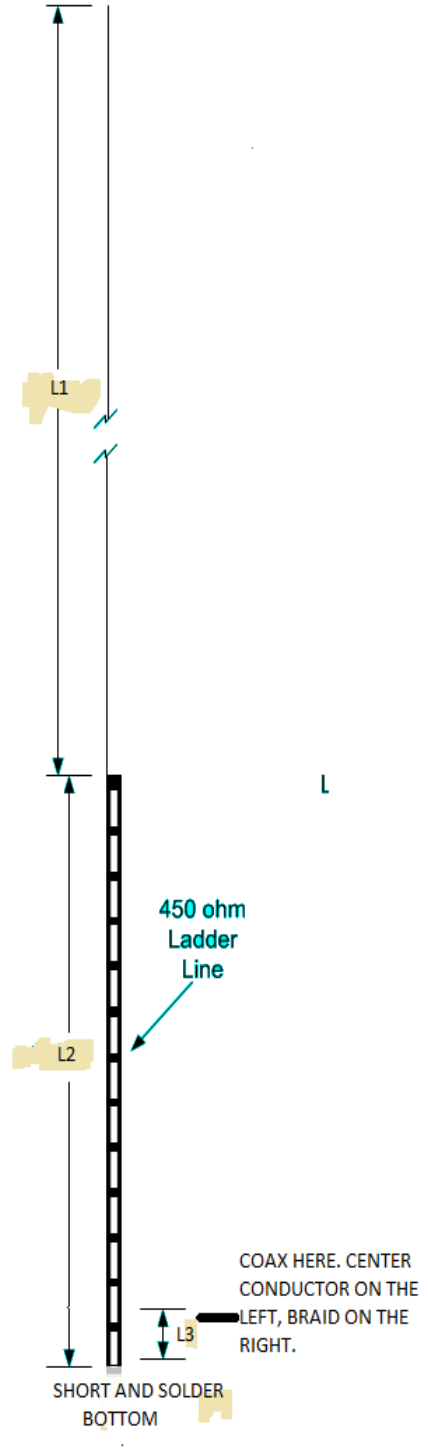
As mentioned in the January Issue of "Contesting for fun" column, I have been experimenting with J-Pole antennas. J-Pole antennas are ½ wavelength vertical antennas that are advertised to require no radial system for good performance. The J-Pole also has a very low take-off angle of radiation, which is good if one wished to work DX. These are the two major advantages over the common ¼ wavelength vertical antenna, which requires an extensive radial system to perform well and has a slightly higher angle of radiation. That being said, a ¼ wavelength vertical antennas is well known for their DXing ability due to a low take off angle. The J-Pole antenna is simply a bit better in this regard.

I have thought about building a J-Pole antenna for some time. There were several factors that delayed me in checking out these antennas. One reason was the length of this antenna. Since it is ½ wave length, it is twice as long as the standard vertical. The matching section adds another ¼ wavelength to the length of the J-Pole. So you are talking about a J-Pole of about 50 feet for 20 meters. That is a pretty tall order for the average ham (no pun intended). A second reason was that according to the information I was reading, the spacing between wires on the matching section was approximately 12 inches, which ruled out using ladder line or TV line as in the typical 2 meter J-Pole. One would have to cut spacers out of PVC pipe or wood and the whole assembly would probably be flimsy.

Then I read where one ham tried ladder line in spite of the calculations and the matching section worked just fine. I read that the matching system did not necessarily have to be vertical, just the ½ wavelength radiating section. That cut the 20 meter J-Pole down to a reasonable 33 feet in height. I was also eying my pine trees which have matured and are at least 30 feet with some approaching 50 feet.

With those two concerns out of the way, I decided to try a 10 meter J-Pole, which would be about 24 feet in length. Using the chart from this website: http://www.wb5cxc.com/hf_jpoles.html I built my first HF J-Pole. After assembling the antenna, I strung it up in my shortest pine tree and the feed point was at about eye level. Perfect. A check of the SWR showed that this antenna was resonant at about 26.5 MHz Not good. You are supposed to adjust the match section for lowest SWR, which means sliding the feed line up and down for minimum SWR. That meant I would have to redo my soldered connection at the feed point of the antenna after each adjustment. I decided to try shortening the top section a bit to see what happened. Taking abut 5 inches off the top of the antenna dropped the SWR to under 1.5:1 at around 28.3 MHz. Very nice.

It was around 10:30 in the morning and I wanted to see just how well this antenna would perform. I fed the antenna into the shack and checked out the 10 meter beacons just under 28.3 MHz. I was hearing three beacons: California, Arizona, and Washington. Changing antennas to both my Loop antenna and the Windom antenna resulted in the beacons fading away. I could only hear the beacons on the J-Pole. That was indeed encouraging. While I have heard the beacons daily, the band has been quite with very few signals on the band so I have not had a chance to actually make a contact with this antenna.



Next up was the 15 meter J-Pole. It was about 32 feet in length so I picked the appropriate tree. One thing I might mention is that the tap on the matching section for my antenna was 12 inches rather than the 8-7/8 inches shown on the web page chart. I also added about 6 inches to the length of the radiating wire. SWR was under 1.5:1 throughout the band.

This antenna I did get to try out and seemed to work well, although most of the stations were stateside and I am looking for the antenna to work DX. Several signal reports of 59 were had. A couple were 59 plus. The one DX station I worked was in France. While he did not give me a signal report, I did break a small pileup on the first call. I am encouraged with these results.

After a few days I decided to go for all the marbles by building a J-Pole for the money band, 20 meters. This antenna was just under 50 feet long when completed. As I said earlier, you are supposed to be able to run the ½ wavelength wire vertical and the matching section horizontally. I tried this. he matching section runs horizontally to the next pine tree at about four feet off the ground. SWR was excellent! Under 1.2:1 for the whole band. But how did it perform?

I decided to take the 20 meter J-Pole for a ride in the Canadian RAC contest. This is a smaller contest and stations would not mind pausing to give me a true signal report. I worked 33 stations in about two hours of casual operating. Signal reports varied from 53 to 59 plus.

HF J-Poles continued on page 6

HF J-Poles

continued from page 5

I was able to run a frequency for a while and had stations calling me (by calling CQ). Overall, I am pleased with the results. My next serious contest event will let me know if the J-Pole antennas are worth the effort.

J-Pole antennas are easy enough to build. It took me maybe an hour to assemble each of the antennas for 20, 15, and 10 meters. Just like their 2 meter cousins, the HF J-Pole would be easy to wrap up and store in a go box or an out of the way place in the shack. They can be easily strung up in the nearest high tree, requiring only one support. I can see this antenna being an effective emergency communications antenna.

A 40 meter J-Pole is very possible. The vertical height would be around 65 feet and the matching section would be around 35 feet run horizontally. An 80 meter J-Pole would be more problematic.

Readers may just want to give the HF J-Pole a try. I will let you know in next months newsletter how it plays out for contesting.

J-Pole lengths:

Band	L1	L2	L3	Total Length
20M	32'-9"	15'-6-1/4"	13-3/4"	48'-4"
15M	21'-10"	10'-4"	12"	32'-2"
10M	16'-3-1/4"	8'	6-1/8"	24'-3-1/4"

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A Note from the Editor

Hello fellow Hams,

A short note to let you know of our Facebook page, "Mount Vernon Amateur Radio Club". I have recently been given Editor capabilities for our club page. I have been adding some of our recent activities, including the monthly meeting, breakfast times and our current Radio Class.

One item I found in searching other club's Facebook pages, the Mansfield group (Intercity), shared our Mount Vernon News article of the Ham Radio Classes in January. I thought that was a very nice gesture on their part, so I put their February 21st Hamfest notice on our page. I made a shortened version of Mansfield's Hamfest and is on page 8 of this newsletter. I hope many of you are able to attend, particularly our technician class members who may be able to find some used equipment at a reduced price.

I hope to include more activities, events and pictures of our club's members participation in various events with the club. I also will add noteworthy activities and events and other happenings relating to Ham Radio around the State and country. Any suggestions would be welcomed and appreciated.

73,

-Bill Bradley, Newsletter & Facebook Editor

KC8BB

Club Items for Sale

The Club has the following items for sale from Larry Heltzer's Estate. Some of it has been checked out, some not. These items will be available at the February Meeting. What does not sell will be sold at the Mansfield Hamfest. Note that items are marked as $price/$member price. First price is the items estimated value and the second price is what a club member can get it for. All proceeds will go into a repeater fund for a backup repeater system.

1.	MFJ-1278B Multi Mode Data Controller. Untested:	Make Offer
2.	Radio Shack Digital Multi Meter with PC interface:	$20/$10
3.	Heathkit Electronic Switch. Untested:	$15/$5
4.	Heathkit VTVM IM-13. Untested:	$30/$15
5.	Primer Scope Mark 1. Tested. Not working:	Make Offer
6.	Radio Shack PRO-2040. Tested and working:	$40/$20
7.	Luxor Satellite Receiver (commercial) Untested:	Make Offer
8.	Koss Electronics T-5 Speaker/Headphone switch:	$10/$5
9.	Bencher CW Paddle. Tested:	$50/$25
10.	Victoreen Model 1A Geiger Counter. Tested:	$30/$15
11.	J-38 Straight Key. Working but cosmetic defects:	$20/$10
12.	Radio Shack Realistic 40 channel CB HT. Untested:	Make Offer
13.	Kenwood TH-28A 2 meter HT. Untested. No antenna or charger:	Make Offer
14.	Radio Shack Frequency Counter. Tested, Dim display:	Make Offer
~~15.~~	~~RG-8X coax with fitting on one end. 50-100 ft.:~~	~~$20/$10~~ SOLD
16.	RG-8X coax with fitting on one end. 50-100 ft.:	$20/$10
17.	RG-58 coax with fitting on both ends. 50Ft:	$10/$5
~~18.~~	~~W8AMZ Dipole kit. Looks like 20 mtrs:~~	~~$20/$10~~ SOLD
~~19.~~	~~Yaesu E-DC-SB power adapter (car) :~~	~~Make Offer~~
20.	Yaesu NC-288 charger:	Make Offer
21.	No. 8 wire, 10-20 feet:	Make Offer
22.	Braided Ground Strap, 10-20 feet:	Make Offer
23.	Andrew type L44PW “N” Connectors:	Make Offer
24.	Swan 1200X Linear Amplifier (500 – 600 w out). Untested:	$250/$150
25.	Palmor Linear Amplifier (CB?):	Make Offer
26	Astron 20 amp power supply:	$75/$40
~~27.~~	~~Radio Works 80 mtr special windom antenna:~~	~~$50/$25~~
28.	Kenwood TS-140 HF Transceiver. Works:	$250/$200
29.	Palstar AT2K KW antenna tuner. Mint.	$400/$300

From Bob Granstaff's donation:

Yaesu FT-901 HF Transceiver. Really nice but will not transmit.

If someone wants to take a look at if and fix it for the club let me know: $300/$200

There is still more. Mostly coax and antennas

Mid-Winter Hamfest & Computer Show

Mansfield, Ohio

Sunday, February 21, 2016

Richland County Fairgrounds

750 North Home Road

Gates Open at 7am

Forums and VE Test Session

9:00 am—Ohio Army MARS Forum

10:00 am—ARES Forum

11:00 am—OSSBN Forum

12:00 noon Digital Forum

12:00 noon VE Test Session

(Pre-registration for test is required, e-mail steve@n8smb.com to register)

Visit us at www.iarc.ws

Sponsored by the Intercity Amateur Radio Club, Inc.

Membership Form

Club dues run from January 1 until December 31 and are collected during the last quarter of the year. You can mail in the dues to the address below or bring them to a meeting. Dues are prorated for new members at the time of application. Visit our Web Page at www.mvarc.net

Dues Schedule: $12 regular

$10 for second member in the same family, for those over 65 years of age, and for those living outside Knox County

Mount Vernon Amateur Radio Club
PO Box 372
Mount Vernon, OH 43050

Name_____Call-Sign_____

Street_____

City_____State_____Zip Code_____

Phone Number_____License Class_____

ARRL Member (Yes/No)_____ E-Mail Address_____

Members are entitled to a free MVARC E-Mail address. Would you like one?

Yes_____ No_____ If yes, please enter password_____

Other Comments:_____

The Mount Vernon Amateur Club Newsletter CQ, is published monthly by the Mount Vernon Amateur Radio Club. Editor: Bill Bradley, KC8BB

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February 2016

Sun	Mon	Tue	Wed	Thu	Fri	Sat
	1	2 Groundhog Day	3 5:00 pm Dinner at Southside Diner	4 7:00-9:00 pm Ham Radio Class at Red Cross Bldg.	5 10:00 am Breakfast at Hardee's	6
7 9:00 pm ARES Sunday Night Net on K8EEN **KC8BB –Bill**	8 **7:00 PM MVARC meeting at the Knox County Red Cross Building**	9	10 5:00 pm Dinner at Southside Diner	11 7:00-9:00 pm Ham Radio Class at Red Cross Bldg.	12 10:00 am Breakfast at Hardee's	13 9:00 am Breakfast at Allison's Finer Diner
14 Valentines Day 9:00 pm ARES Sunday Night Net on K8EEN **KE8ANY Bobby**	15 Presidents Day	16	17 5:00 pm Dinner at Southside Diner	18 7:00-9:00 pm Ham Radio Class at Red Cross Bldg.	19 10:00 am Breakfast at Hardee's	20
21 7:00 am Mansfield Hamfest, Richland Co. Fairgrounds 9:00 pm ARES Sunday Night Net on K8EEN **KD8WSI –John**	22	23	24 5:00 pm Dinner at Southside Diner	25 7:00-9:00 pm Ham Radio Class at Red Cross Bldg.	26 10:00 am Breakfast at Hardee's	27 9:00 a.m. Ham Radio Exams at Red Cross Bldg.
28 9:00 pm ARES Sunday Night Net on K8EEN **KD8HSA –Tom**	29	**March 1**	2 5:00 pm Dinner at Southside Diner	3	4 10:00 am Breakfast at Hardee's	5