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

November, 2017

Meetings are held on 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, OH 43050

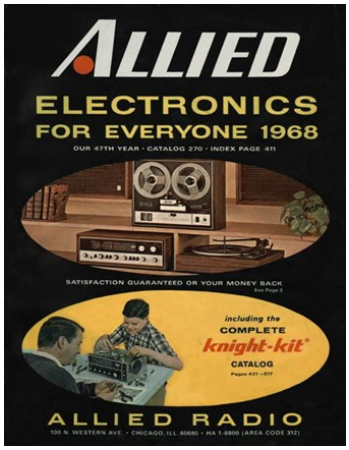
K8EEN Repeater: 146.790. MHz (600KHz with PL of 71.9 Hz)
K8EEN-R Echolink Node: 809800
K8EEN Repeater: 444.600 MHz (+5 MHz with PL of 71.9 Hz)

INSIDE THIS ISSUE:

Catalogs are about possibilities

By Dan Romanchik, KB6NU

When I was a kid, I used to regularly get catalogs, such as the Allied Radio and Lafayette Radio catalogs shown below, and pore over them for hours. Even if I couldn't afford to buy the latest Knight-Kit or Lafayette shortwave radio, I could imagine what it would be like. These catalogs were chock full of possibilities.



I spent many hours poring over the Allied and Lafayette catalogs as a kid.
These two are from 1968, when I was 13 years old.

So, you can imagine how I felt when, last Thursday, I found both the Autumn/Winter 2017 DX Engineering catalog and the 2018-2019 Newark Electronics/element14 catalog in my mailbox.

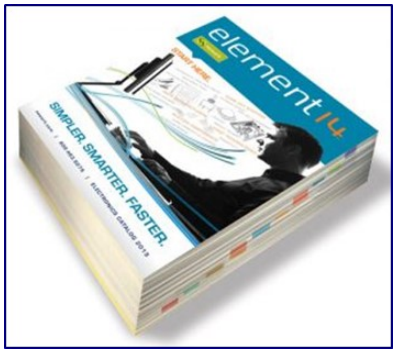
Catalogs, continues on page 2

DX Engineering has really taken the amateur radio world by storm over the last ten years or so. I probably don't have to tell you about that. If you're an active amateur radio operator, I'm sure that you have heard about—and probably ordered from—DX Engineering.

I think that DX Engineering did a very smart thing by investing the money in a print catalog. There's something about browsing a print catalog that is just more satisfying than browsing online.

DX Engineering has just about everything you need to have fun with amateur radio. The one glaring omission? They still don't carry my study guides!

The Newark/element14 2018-2019 catalog is a completely different beast. Amateur radio operators are only a small part of Newark/element14's market, but one nonetheless. They have, for example, attended the Dayton Hamvention for many years.



As such, the catalog is not a "ham radio" catalog, but if you build stuff at all you'll find something of interest in its 1,799 pages. It includes nearly any kind of electronic part that you might need.

The section that you might want to start with is the "makerspace" section. In this section, you'll find Raspberry Pi's, BeagleBones and even micro:bits. They really have everything though, including passive and active components, connectors, cable and enclosures.

Like I say, these catalogs are all about possibilities. You can search each company's website and find the parts they carry quickly and easily, but that experience is just not the same as browsing a print catalog and daydreaming about what you might find there.

So, get your own copies—they're free—and page through them. I'd be surprised if you didn't run across something that you didn't know about before, and it gave you some ideas about your next amateur radio project.

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October 9, 2017

Frank, KC8EVS called the meeting to order at 7 pm.

August Meeting Minutes accepted: Motion by Barry, N8PPF and seconded by Bill, KD8WHQ.

No treasurer's report this month with the passing of Secretary/Treasurer Jim Williams, N8IBR (SK). Barry, N8PPF reported in information on bank accounts.

17 MVARC members in attendance including one new member, Nick W8NIX.

Repeaters:

Email from Don, W8PEN reporting both repeaters are working.

Mesh:

Email from Don, W8PEN, reporting Mesh network is working. The Mesh network was used to transfer documents during the SET exercise on September 20, 2017. Mesh node has been removed from Tony's, KC8UR home.

ARES:

SET exercise went well. ARES members met at the Red Cross Training Center September 20, 2017 in conjunction with a 6 state Black Swan exercise. MVARC ARES tested the call out system, response, assignments and simulated deploying to areas within Knox County.

Old Business: September 2017

Tom, KD8HSA reported on the Ohio State Parks on the Air event that eight MVARC personnel attended and worked both HF radios for a total of 72 contacts. The MVARC go box was exercised to ensure it was working.

Frank, KC8EVS working on MVARC Handbook and will have a copy at the November meeting.

Barry, N8PPF taking pictures for the web site. Anyone he has not taken please let him know at the November meeting.

New Business:

MVARC Christmas Dinner is scheduled at the Fiesta Mexicana Express, 997 Coshocton Rd. The dinner is scheduled on December 10, 2017 – time to be provided at November meeting. Emery, W8TW to make reservations with restaurant. Motion made to accept by Bill, KC8BB and seconded by Terry, KE8ANS. Motion passed.

MVARC Meeting Minutes, continues on page 4

Discussion of interest in participating in Winter Field Day (https://www.winterfieldday.com/) scheduled January 27/28, 2018. MVARC personnel could use the facility and radios at the Red Cross Training Center. This is not an ARRL event like Field Day but could be fun and provide an opportunity to use the equipment to verify its operation.

Barry N8PPF printed and mailed certificates for the Dan Emmitt days special event to all contacts that had requested a certificate; approximately 8 so far. Barry brought a copy of the certificate which was passed around so all club members in attendance could see.

The nomination committee is working on personnel interested in 2018 Election of Officers. The committee members are: Bill, KC8BB, Barry, N8PPF, and Terry, KE8ANS. If anyone is interested in becoming a MVARC officer, contact one of these members. Motion made to nominate Terry, KE8ANS as acting Secretary/Treasurer to fill the remainder of the year. Motion by Tony, KC8UR and seconded by Emery, W8TW. Motion passed.

Discussion of Jim, N8IBR (SK) equipment for sale. Email was sent prior to meeting.

Noted that Don, W8UMH had fallen and broke shoulder and had pneumonia. He was convalescing at a rehab facility in Hilliard. Bill, KC8BB had visited Monday afternoon of the meeting. Follow up: Don, W8UMH passed away and became a silent key (SK) Tuesday October 10, 2017.

Discussion regarding setting up radios at Red Cross facility; installing R5 antenna, setting up 2M radio at separate location by HF radio, install a sound card for digital operation.

Tony, KC8UR used club HF station to show Greg, KE8GFK information regarding MARS operation.

Adjournment

Motion to adjourn by Bill, KC8BB and seconded by Bill, KD8WHQ. Motion passed and meeting adjourned at 7:40 pm.

By Don Russell, W8PEN

Wow! What a busy month for me ham radio wise. I have really gotten involved with meteor scatter operating. Been working my tail off trying to get my 2 meter equipment to work on meteor scatter. With limited success I might add. This is about to change.

However, there is much to report about club projects. So I will save my meteor scatter ramblings for another article, hopefully placed somewhere in this months newsletter.

Repeaters

As of this writing the 2 meter repeater is down. This is something I have not had to say for over 10 years. The cause of the failure was not the repeater. The SWR on the repeater antenna was 5:1 and this caused the power amplifier on the repeater to fail. New components have been ordered to repair the repeater. The repeater will not be back on the air until repairs to the repeater are complete and the problem with the antenna resolved.

Club members are encouraged to use our 70 cm repeater on 444.600 MHz The split is plus 5 MHz and the pl tone is 71.9.

It is nice to know that the club has a backup repeater at KCH. Yes, this repeater is being used on 440.600 MHz, but it is easily changed to 146.790 MHz if needed. That is one of the reasons why we bought this repeater. However, if we are to use this repeater on 2 meters we would have to resolve the antenna issue first. I am hoping that we will have the 2 meter repeater back up In running in short order.

Update: After further investigation, it has been determined that the repeater antenna is working properly. One of the cables used to test the antenna proved to be at fault. The 440 MHz repeater has been removed from service and reprogrammed to the 2 meter repeater frequency. This is why be bought the Yaesu Repeater to act as a backup, in case the 2 meter unit failed.

General Upgrade Class

I am happy to report that the General Upgrade Class had concluded. All our students passed their General test Saturday, October 28th.

This was the first of which I hope to be an annual upgrade class. Together, the students and instructors worked through some difficulties. In the long run, the problems faced during this first course will help to improve classes that follow.

It has been an enjoyable experience for me. I often stated that these students were smarter than the instructors.

Upgrading to the General Class amateur license were: Steve Marshall KE8GFV, Michael Jacobs KE8HGE, Louie Wilkinson KE8HNF, Don Bunner KB8QPO, and Lori Randall KE8GFZ.

In addition to our newly licensed Generals, Bill Stroud KD8WHQ passed his Extra Class test.

Congratulations to all!

Radio Activity, continues on page 6

Local Mesh Network

Unfortunately, due to my interest in meteor scatter, the mesh network has suffered a little bit. Currently, the nodes that are up and running are: W8PEN-SOUTH (my node), N8PPF-2 (Barry's node), AC8PT-RED-CROSS, AC8PT-KCH, and K8EEN-AUX. The Auxiliary node is supposed to be a link to KC8BB-2. However, this node comes and goes. These are our RF nodes. Meaning they are in the network using 2.4 GHz RF and not via the internet. Nodes that come and go right now via what is called internet tunneling are KE8ANS, KC8EVS, AC8PT, and W8TW. We need to spend some time and get all the nodes back on the network.

Louie, KE8HNF is working on setting up a node in Fredericktown. This is interesting because it may allow us to link up with a small group just starting out located in Mansfield. Mary KE8GFY is also working on setting up a node on East Gambier Street in Mt. Vernon. Every node helps, whether it is a local node on a small tower or on the roof, or a major node like the one at KCH.

We are also hoping to have a small node at the EOC. Since the KCH node is so close to the EOC, this node could be low profile. Just needs to see the KCH node reasonably well. This would be ideal because then we can have mesh phones at the EOC, KCH, and the Red Cross. If regular phones go down and the mesh network survives, then we will still have communications between the "big three".

Our local mesh network is always going to be a work in process. To be honest, those putting up nodes are doing so for the benefit of the ARES and local community. Once a node is up, there is not much else to be done with it. Yes, you can play with mesh phones, video servers, email servers, web pages, etc. But once everything is going, you just let'r run.

Our current abilities on the mesh network are the mesh phones and the email server. We do have a web page going. This is the neat thing. If you like to design web pages, please let me know. We can host multiple web pages. All members that can access at least one node could have their own web page to set up. Of course, I would have to figure out how that all works.

Club Station

There is still work to be done on the club station. For one, we need to get the R5 vertical antenna back on the tower. Winter is fast approaching, but we should have some good days left to do this. We also need to set up the HF station for easy access and the VHF/UHF station needs to be set up in the other window.

The inside project would only take a few hours of time. The tower work might take a bit longer as we would have to rearrange the mesh antenna and the 2 meter antenna. But the project should not be too difficult.

ARES

While on the matter of the club station, I should mention the ARES. We have made huge strides in being ready for any type of disaster event that may take place in Knox County. These opportunities have been presented to us thanks to Rod Cook, Regional Director of the Ohio Red Cross and Pat Valentino KD8PSM, our relatively new Knox County EC. Rod has encouraged us to set up a viable station at the Red Cross, which we are in the process of doing.

Radio Activity, continues on page 7

His only request is that we be there, when he needs us. A very reasonable expectation. Pat has been working hard to provide training for ARES members. The club station, our mesh network, the EOC, KCH, and Red Cross are all important components in our ARES strategy.

I encourage all local hams new and old to be part of the solution. Pat, and more importantly Knox County, needs our service. Please consider joining and participating in the Knox County ARES. Remember, not too long ago members were complaining that the Knox County hams were being ignored by our served agencies. This is no longer true and we need to step and to the plate and do our thing.

Having Fun With Meteor Scatter

As most readers know, I have been experimenting with Meteor Scatter for a few months. This is an awesome mode of communications and has dominated my ham radio time recently. So much so that I have had to force myself to stop for a while and work on some local mesh modifications I have been wanting to do.

Reader be aware. Meteor Scatter is not a mode in which one communicates with. Basically you call a station or call CQ. A station answers and gives a computerized signal report based on the signal to noise ratio (not RST). Your computer determines the signal report although the operator does have the option to change this report if the need arises.

An example would be if K8EEN answers my CQ: W8PEN K8EEN EN80 +2.

This means that K8EEN heard my CQ and answers, giving me a signal report of a +2. Notice that there is no DE between the calls as there would be in CW. Also note that the EN80 is the grid square of K8EEN. I would answer him with: K8EEN W8PEN EN80 R+1.

This indicates that I have received and confirmed his report and sending him back a +1 signal report.

Once K8EEN receives my report: W8PEN K8EEN EN80 RRR. This confirms the QSO and one can log it as a contact. However, a 73 is usually sent both ways: K8EEN W8PEN EN80 73 and then W8PEN K8EEN EN80 73. The 73 is not necessary since confirmation has already been sent both ways. I usually send four or five 73 sequences so that the other station knows I got the RRR. It is much easier to log into a web chat page called PJ (Ping Jockey). This is where all the meteor scatter buffs hang out. The procedure is to copy and paste the RRR transmission onto the page so that if the other station is online, he will see for sure that the contact can be logged.

So the whole contact sequence would be this:

CQ W8PEN EN80

W8PEN K8EEN EN80 +2

K8EEN W8PEN EN80 R +1

W8PEN K8EEN EN80 RRR

K8EEN W8PEN EN80 73

W8PEN K8EEN EN80 73

Meteor Scatter, continues on page 8

Any comments are not made during the contact. Comments and conversations are held on PJ, and normally after the contact has been confirmed. No information about the contact is allowed on PJ until after the RRR is received.

There are variants to this contact sequence that account for contest exchanges and the shorter burst of 2 meter meteor scatter, but this is the basic information needed for a complete QSO: Both stations send the correct callsign, both stations receive and confirm a signal report.

Even though all comments are made on the internet chat page, this way of making contacts is fun and addictive. This short sequence can take a few minutes to a few hours to complete. Usually on 6 meters, the contact can be made in five or ten minutes, although I had one last 45 minutes. Meteor tails reflect 50 MHz signals longer than they do on 144 MHz and upwards giving more opportunity to decode a signal. Some 2 meter meteor scatter contacts that I have listened to have lasted in excess of two hours.

While there are other computer programs that have meteor scatter modes, the single most popular program is WSJT-X written by K1JT and using mode MSK-144. There are two really nice articles in the October and November issues of QST magazine describing this software. MSK-144 is a mode where each station transmits for 15 seconds and then listens for 15 seconds. This allows for a wait time for the receiving station to receive and decode a short ping from a meteor tail. A short ping sounds much like a fire cracker going off to me. It is a neat sound. Depending on which way you are listening (N E S W) you either send first or second. First is the top of the minute so you would transmit from 00 seconds to 15 seconds. Then you would receive from 15 to 30 seconds, transmit again for 30 to 45 seconds, listen from 45 to 00 seconds and then start over again. If you were transmitting second, then your transmissions would start at 15 and 45 seconds.

Basically, if you are point Eastward, then you transmit first. If you are pointing Westward, then second. If you have an omni directional antenna, then I guess you sequence the timing to whatever area you are trying to reach. When answering a CQ, the program determines what your sequence will be based on the other stations timing. Your computer clock should be accurate to within a second or closer to use this mode.

What equipment does all this take? Well, 6 meters is pretty easy. Most modern day transceivers include 6 meters as one of their bands. You would need a soundcard interface. Most newer transceivers are starting to include a USB interface which eliminates the need of the soundcard interface. A 100 watt transceiver on 6 meters would allow you to make many contacts. Be sure to check your transmitter duty cycle time. MSK-144 has about a 70 percent duty cycle, so if in doubt, you should run 50 – 70 watts. I began with 50 watts and made plenty of contacts. Since then, I have increased to 100 watts because my Kenwood TS-590s is rated at 100 percent duty cycle.

On 6 meters, a three to five element beam works very well. A simple dipole works well too. I have talked to many hams that used a dipole 20 feet in the air. When I first started, I did not have my beam up. I made lots of contacts using my 160 meter windom. Contacts were out to about 1400 miles and using 50 watts. It all depends on the meteors.

2 meters, as I am finding out, is much more difficult. I am still in the process of setting up a viable station for 2 meter MS and hopefully EME.

I intended this article to be about my experience in setting up a meteor scatter station. However, I thought a little background material might be more useful to Newsletter readers. Next month I should have my 2 meter station completed and perhaps worth another article being written.

If you are interested in getting on the air with this interesting mode, let me know. I can help guide you through. As I found out, a lot of the information on the Web about meteor scatter is a bit dated and makes it confusing to know what procedure should be used.

As I start, I would suggest just monitoring the PC chat page at : https://www.pingjockey.net/cgi-bin/pingtalk

November, 2017

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
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 **W8PEN – Don**	**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 **KE8ANS – Terry**	**20**	**21**	**22** 5:00 pm Dinner at Southside Diner	**23**	**24** 10:00 am Breakfast at Hardee's	**25**
26 9:00 pm ARES Sunday Night Net on K8EEN **KD8HSA —Tom**	**27**	**28**	**29** 5:00 pm Dinner at Southside Diner	**30**	**1 December** 10:00 am Breakfast at Hardee's	**2**
3 9:00 pm ARES Sunday Night Net on K8EEN **KC8BB -Bill**	**4**	**5**	**6** 5:00 pm Dinner at Southside Diner	**7**	**8** 10:00 am Breakfast at Hardee's	**9** 9:00 am Breakfast at Allison's Finer Diner
10 Christmas Dinner & Club Monthly Meeting at Fiesta Mexicana. Time: TBD 9:00 pm ARES Sunday Night Net	**11** **(Fiesta Mexicana Express -997 Coshocton Rd Mt. Vernon)**	**12**	**13**	**14**	**15**	**16**