The Mt. Vernon Amateur Radio Club
April, 2015 Newsletter

Meetings are held the 2nd Monday of each Month at 7:00 PM at the Knox County Chapter of the American Red Cross, 300 N. Mulberry Street, Mt. Vernon, Ohio

Local Ham Community

K8EEN Repeater: 146.790 Mhz (-600 Khz With PL of 71.9 Hz)
K8EEN-R Echolink Node: 809800
KD8EVR Repeater: 442.100 Mhz (+5Mhz With PL of 71.9 Hz)

Sunday Night ARES Net at 9:00 P.M. on The K8EEN Repeater
Wednesday S. Main St. Wendy's Dinner at 5:00PM
Friday Breakfasts at Hardy's at 10:00AM

Volunteers Needed for Earth Day Challenge

The Kenyon College "Earth Day Challenge" half marathon will be April 19, 2015. The club and Knox County ARES has been supporting the communication needs of this event for many years and will do so again this year.

Operators will be needed between the hours of 7:00AM to 12:00PM. If you want to help out, please send an email to Emike McCardel at mccardelm@gmail.com so he will know how many hams will be available.

New hams are especially welcome to participate and will be paired with experienced operators as a training exercise.

Program for the April Meeting

At the April meeting of the MVARC scheduled for Monday April 13 2015 the presentation will be a DVD video of three speeches that were given at the ARRL National Convention.

Last July, the ARRL celebrated their Centennial.

Members who attend the meeting can vote on which three speeches they want to hear. All three speeches are 110 minutes long.

Featured speakers include:

Calendar of Events
Mt. Vernon Amateur Radio Club

April 13: **Mt. Vernon ARC meeting. 7:00 PM Monday, April 13 at the Knox County Red Cross Training Center, 300 N. Mulberry St, Mt. Vernon, Ohio**

Announced Dxpenditions:
http://www.ng3k.com/Misc/adxo.html

April 8: **Dinner at Wendy's on S. Main St. 5:00 PM**

April 9: **General Class Course at the Training Center**

April 10: **Breakfast at Hardy's on Coshocton Rd 10:00 AM**

April 11: **Breakfast at Allison's Finer Dinner, 11587 Gilchrist Rd. 9:00 AM**

April 12: **ARES Sunday Night Net at 9:00PM on the K8EEN Repeater. NCS: AC8FV**

April 15: **Dinner at Wendy's on S. Main St. 5:00 PM**

April 17: **Breakfast at Hardy's on Coshocton Rd 10:00 AM**

April 19: **Kenyon College Earth Day Challenge half marathon. Contact Emike McCardel, KC8YLD, mccardelm@gmail.com to volunteer your services.**

***** Continued on Page 2 *****

- KK4INZ FEMA administrator
- K1JT "Gazing into the Future---Dxing Weak Signals and beyond"
- K5UR ARRL First Vice President

Hope to see all of you there.

Tony KC8UR
MVARC Treasurer

VE Test Session May 2nd

The General Class course is gaining steam with 11 to 14 students at any one time. Current plans are to finish up the course on Thursday, April 30th and do VE testing on Saturday, May 2nd.

VE testing for all license class will be held May 2, 2015 from 9:00AM to 12:00AM at the Knox County Red Cross Training Center.

The success of this course has virtually guaranteed that the club will sponsor another General course next year. The last two weeks of the course has been a little rough, however, experience gained from this course will help make future courses a bit easier.

Dual band twin lead J-Pole

I love building antennas. That being said, I've only ever built one that actually worked the way it was supposed to, my G5RV. I've worked the world on some wire pulled from my well when it was struck by lightning...go figure.

Lately I've been wanting to get better results from 2 meters and 70 cm. I've been using a mobile mag mount that I stuck to an old cement trowel that I nailed under my deck....yep, an upside down antenna, 6 feet off the ground. Although this worked great for the local Mount Vernon repeaters, I couldn't get much else. So I decided enough was enough and I was going to homebrew my own.

My new antenna had to meet three criteria; cheap, cheap and cheap. I found a great set of plans on the internet. No investment in the plans...great. Thankfully Jim, KD8UT and Don, W8PEN, had mercy on me; Jim supplied a 2 foot piece of RG-174 coax and Don gave me an old piece of foam 300 ohm TV twin lead...so far so good.

Calendar of Events
Continued from Page 1

April 19: ARES Sunday Night Net at 9:00PM on the K8EEN Repeater. NCS: KD8WSI

April 22: Dinner at Wendy's on S. Main St. 5:00 PM

April 24: Breakfast at Hardy's on Coshocton Rd 10:00 AM

April 25: NVIS Antenna Day at Ariel Foundation Park 9AM - 7PM

April 26: ARES Sunday Night Net at 9:00PM on the K8EEN Repeater. NCS: KD8HSA

April 29: Dinner at Wendy's on S. Main St. 5:00 PM

May 1: Breakfast at Hardy's on Coshocton Rd 10:00 AM

May 2: VE Test Session at the Training Center from 9:00 AM to 12:00 PM

May 3: ARES Sunday Night Net at 9:00PM on the K8EEN Repeater. NCS: KC8BB

May 6: Dinner at Wendy's on S. Main St. 5:00 PM

May 8: Breakfast at Hardy's on Coshocton Rd 10:00 AM

May 9: Breakfast at Allison's Finer Dinner, 11587 Gilchrist Rd. 9:00 AM

May 10: ARES Sunday Night Net at 9:00PM on the K8EEN Repeater. NCS: AC8FV

May 11: Mt. Vernon ARC meeting. 7:00 PM Monday, May 11 at the Knox County Red Cross Training Center, 300 N. Mulberry St, Mt.Vernon, Ohio

May 13: Dinner at Wendy's on S. Main St. 5:00 PM

May 15: Breakfast at Hardy's on Coshocton Rd 10:00 AM

May 31: ARES Sunday Night Net at 9:00PM on the K8EEN Repeater. NCS: W8PEN

June 27: ARRL Field Day June 27 – June 28, 2015
http://www.arrl.org/field-day

The twin lead J-Pole has been around for years. I found the plans here:

http://work-sat.com/Antennas_files/FONG-DBJ1.pdf

The twist on this design is the RG-174. It's used as a

small stub match to bring 70 cm into resonance. I followed the plans exactly, except that I shortened the matching stub to 4.25 inches from the stated 5.25 inches. This was based on the comments below the main article.

I encased the antenna in white 3/4 inch SCH 40 PVC pipe with a SO-259 chassis mount at the bottom. Note: the 3/4 end plug (flat) was not big enough for the So-259 mount, so using an adapter I went to a one inch PVC plug. This was a VERY tight fit; I had to use my dremel tool to scallop out the holes (inside) so the nuts would fit on the 4-40 machine screws.

After assembly I zip tied my telescoping 16 ft mast on the deck and put the antenna up. I don't have antenna analyzer or SWR meter for 2 meters or 70 cm, so I'm not gonna worry about it; my key up times are very short on FM anyway.

The performance was pretty amazing. I hit the following repeaters full quieting; Mt Vernon, Canal Winchester, Pataskala, Columbus and Mansfield. I imagine that it'll do even better once I get it up on the chimney.

So there you have it. A nice antenna that works well and I only spent $22.00 on the PVC pipe and fittings.

Oh, I almost forgot. My wife, after seeing my masterpiece, put her hands on her hips and informed me she DID NOT want to see any more ugly antennas on the house. I agreed and told her she was the boss...no problem. After she went back in the house, I lowered the mast pipe, got a roll of red electrical tape, and made that sucker look like a 6 foot candy cane. Man, I love ham radio.

MVARC MARCH 9TH, 2015 MEETING MINUTES

Meeting called to order at 7:04 PM by KC8EVS President.

Kathleen Dean, KC8VTA spoke about the recent Amateur Radio demonstration given by club members at a recent meeting of Cub Scout Troop 344 in Howard, Ohio. She presented the club with a Thank You card and Note from herself and the Cub Scouts. She then presented the club with 2 door prizes which were won and greatly appreciated by N8IBR and KE8AFT.

Motion to approve February minutes made by KD8WSI, 2nd-AC8PT. Approved.

Motion to accept March Treasurers Report made by KB8QPO, 2nd-KD8WSI. Approved.

KC8UR mentioned that he had not received the information to pay the club Domain Name bill. We need to contact KB2SAI to get that information.

OLD BUSINESS

W8PEN reported Repeater working ok.

Introductions done for new members.

Discussed SKYWARN class held previous week.

Go Box committee reported still waiting on radio equipment to determine construction needs.

W8TW reported he had purchased Coffee maker and supplies approved at February meeting.

NEW BUSINESS

After lengthy discussion on its pros and cons, the group determined that the club would not purchase one of the Yaesu Fusion Analog/Digital repeater systems at this time.

KC8EVS then appointed a committee of W8PEN and N8PPF to determine the need and cost of a possible back up Analog repeater for the club.

The group was reminded about the upcoming General Class study group that will start Thursday,

March 12th at 7 PM. Classes will be held at the Red Cross Annex building. The course is expected to last between 6 to 8 weeks, with a VE session to follow 1 to 2 weeks after the end of the course. W8PEN advised at present 11 people had expressed interest in the course.

The group was reminded about the upcoming NVIS antenna event on April 25th. All members are encouraged to participate.

KC8EVS stated he had not heard whether or not the club would be ask to assist at the Earthday Festivities being held on April 19th in Gambier.

KC8EVS stated he had obtained the right for the club to operate from Mohican State Park in the 'OHIO STATE PARKS ON THE AIR' event to be held September 12th.

KC8EVS mentioned the club needs to start planning for our June 27th and 28th Field Day operation.

It was mentioned that the club webpage needed to be updated.

W8TW moved, and KD8WSI 2nd, that the club reimburse W8PEN $45.00 to cover the Welcome to Ham Radio Package he prepared for the graduates of the recent Technician Class. Approved.

Motion to Adjourn meeting K8AEC, 2nd-KD8WSI. Approved.

There were 19 people present. 18 members, 1 guest.

50/50 drawing of $6.00 won by KC8VTA.

Respectfully submitted,
N8IBR Secretary MVARC

Radio Activity

By Don Russell, w8pen

New Hams: Your First HF Antenna

Welcome to the world of Ham Radio new hams. You have bought your first dual band HT and had some experience talking through the repeaters. Perhaps you have helped communicate during a public service event, checked into a net or two, maybe handled a bit of traffic. Many of you are studying to upgrade their license to the General Class. Some of you passed the Tech and General at the same sitting. Then some of you have no desire to upgrade, but would like to try out their privileges on the 10 Meter band using SSB. Maybe you have bought one of those multiband radios that cover 160 meters through 70 cm's or just an HF rig hoping to get on the 10 meter band.

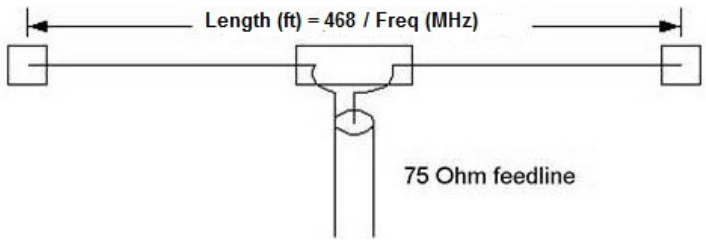
The question is: Just what kind of antenna do I need to make contacts on the shortwave bands? Should I buy a commercial antenna or build my own?

The confusion is almost as big as "what radio should I buy". Not many are inclined to spend big money on a starter radio. Likewise with their first antenna. I have good news. You can easily build your own antenna very cheaply. It will be a very good antenna that you can "work the world" with if you so desire. It is an antenna that many old timers still use. If you don't wish to build your own, there are many companies that manufacture these antennas at a fair price. This is not a magical antenna. It is called a dipole antenna.

A dipole is simply a length of wire cut to a half wavelength of the frequency you wish to operate on. The antenna is then separated exactly in the middle, where coax is connected between two wires. On the ends, there is an insulator and then rope is used to "hang" then antenna at each end. The coax feed line goes directly to the radio. No need for an antenna tuner since the dipole will be resonate on your desired frequency.

The only downside to a dipole antenna is that it is a single band antenna. If you wish to operate more than one band, then you will need a separate dipole for each band. But there are ways around this issue.

The dipole should be placed as high above the ground as possible. 30 feet is good. Higher is better. However, even a dipole at 15 to 20 feet will make plenty of contacts.



The Dipole Antenna

The formula to determine the length of a dipole is:

Length in feet = 468 / F (Freq in MHz.)

This is different from what it says in the General Class license manual. I believe this formula is for insulated wire, which shortens the antenna slightly.

Here are approximate lengths of a dipole per band:

160 Meters:	260 feet
80 Meters:	134 Feet
60 Meters:	87 Feet
40 Meters:	66 Feet
30 Meters:	46 Feet
20 Meters:	34 Feet
17 Meters:	26 Feet
15 Meters:	22 Feet
12 Meters:	19 Feet
10 Meters:	17 Feet
6 Meters:	9.4 Feet

While 160 and 80 meter dipoles are pretty long, 60 meters through 10 meters are very reasonable and should fit in a typical city lot. Dipoles use a support on each end and are installed horizontally. The ends could be the eve of a house, a tree limb, or a tower or mast support. Lots of hams use the eve of their house on one end and a tree on the other end. During Field Day, the club puts up dipole antennas between two trees.

As one can see by the drawing, a dipole can be fed with 75 ohm. The typical ham dipole antenna is fed with 50 ohm coax. There are two reasons for this. One is that at lower elevations, a dipole has a typical impedance of closer to 50 ohms. Second, most ham transmitters expect to see 50 ohms at the transmitter end.

The wires can be just about any wire you have laying around. Standard number 12 or 14 stranded electrical wire is very common. You can get this at Lowe's or Home Depot or maybe even Walmart for around 30 cents a foot. Or buy a 500 ft roll for around $35.00. You can buy standard antenna wire from Universal Radio (the Candy Store) in Reynoldsburg, Ohio for 20 cents a foot.

Antenna insulators can be had for about a buck a piece or less. Or you can make your own from ½ inch PVC pipe.

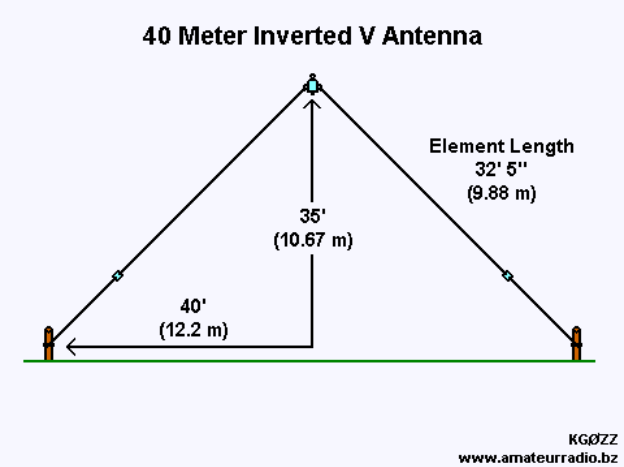
Coax will be the most expensive. RG-8X will run 36 cents a foot at Universal Radio.

So, lets figure up a price list for a 40 meter dipole:

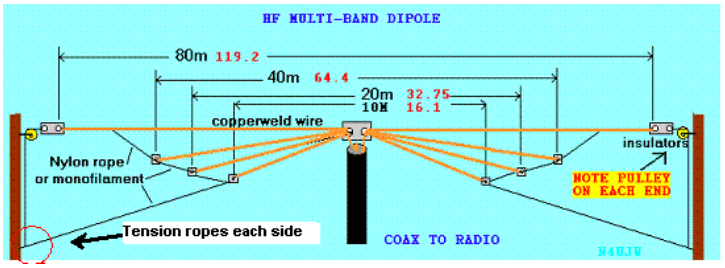
70 feet #14 stranded wire:	$21.00
3 insulators:	$03.00
100 Ft RG-8X coax:	$36.00
Total:	$60.00

Not bad for an antenna that will work both domestic and DX stations. Remember, 20 meters, a popular DX band? A dipole antenna for this band is only 35 Feet long, so subtract $10 if you want to build a 20 meter dipole. Also, Just about any wire will do, so check around the house, or at garage sales. If I see wire at garage sales or odd lot stores at a decent price, I buy it just in case I need it in the future.

One variation of the dipole is called an inverted V. An inverted V is simply a diple that looks like an upside down V. The apex is 20 to 40 feet and the ends drop down to as low as 7 feet. Still a very good performing antenna.



Not satisfied with only one band? There are two variations of a dipole. The first and cheaper variation of a dipole is called a "fan dipole". It is simply several dipoles fed with the same coax in the middle. The ends are separated by a foot or so to keep the wires from being too close to each other.

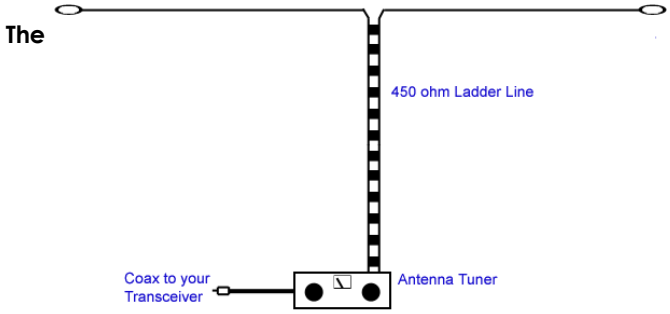


The Fan Dipole

Another variation of a multiband dipole is called a Doublet antenna. It is simply a dipole cut to the lowest frequency one wished to operate on and feed with ladder line into a tuner and then to the radio. Many hams never use more than a doublet antenna. It is one of the most effective wire antennas out there.

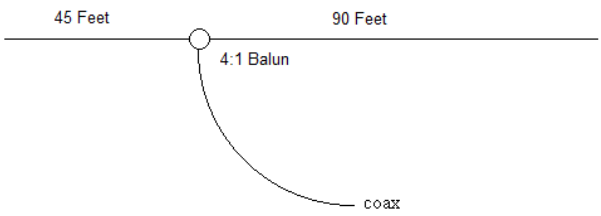
A 135 foot wire can be used on 80 – 10 meters with very good results. The downside is that one needs to buy an antenna tuner cable of tuning the antenna, so add about $200 to the cost of this antenna. If you

have an internal antenna tuner in your radio, that will usually not have enough tuning range to tune a doublet antenna. Also, ladder line requires careful treatment. It needs to be kept away from metal objects.



Doublet Antenna

One last antenna that should be mentioned is the Windom antenna. A Windom antenna is a Dipole antenna fed off center, usually about one third from one end. You also need to add a 4:1 balun at the feed point so add about $30 to your cost. Other than that you fed it with coax just like a dipole.



The 80 Meter Windom Antenna

Like the Doublet antenna, an added expense would be an antenna tuner. The Windom antenna is not a close enough match to the transmitter to attach directly to the rig. However, if your radio has an internal antenna tuner, that would be just fine.

A popular version of the 80 meter Windom is the 40 meter Windom. It is just a bit shorter. The short leg should be 23 Feet and the long leg should be 43 Feet. This antenna works well of 40 – 10 meters.

That is it. A wrap up of some very simple to build antennas that can get a new ham on his/her way to enjoying the HF bands without breaking the bank. See me at the club meeting if you have any questions about these antennas. I love talking about antennas.

Should We Weep For Amateur Radio?

By Dan Romanchik, KB6NU

On an amateur radio mailing list that I subscribe to, one fellow wrote, "I weep for the state of amateur radio in the US, since this dispatch is apparently necessary…" He then pointed to an article on the ARRL website that reminded hams that while their local time may be switching to daylight time, Universal Coordinated Time did not change

(http://www.arrl.org/news/view/change-local-clocks-this-weekend-but-not-utc).

The implication, of course, was that we have dumbed down ham radio so much that a reminder like this was necessary.

This thread went on and on, eventually garnering 17 different replies. Before it morphed into a discussion of whether or not DST is a good idea in the first place, the replies echoed the sentiment in the original e-mail:

"It's become a push button, nanny state world, what do you expect, competence?"

"We are truly in a time of appliance operating, not only in ham radio, but in practically every aspect of our lives".

At first, I had the same reaction. I thought to myself, "How dumb are we getting in ham radio, if guys have to be reminded that UTC doesn't change when we switch to daylight savings time?" After thinking about this for a while, though, I've completely change my mind on this.

I work with a lot of newcomers to amateur radio, and many of them just don't know how UTC works. This is not their fault—they just haven't had the opportunity

to deal with UTC. What these old timers (old farts?) didn't realize is that the ARRL article is not directed at them, but at the newcomers to ham radio.

I'll even go one step further. It's easy for us old-timers to be dismissive of newcomers' lack of knowledge, and then complain that amateur radio is getting dumber, but knee-jerk reactions don't usually help anyone involved. A much better approach would be to roll up your sleeves and teach them something. The only way newcomers are going to get to be old timers like us is if we help them learn stuff like this.

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When not teaching newbies about UTC, you'll find KB6NU working on updates to his "No Nonsense" study guides, teaching one-day Tech classes, or blogging about amateur radio at www.kb6nu.com.

NVIS Day Coming April 25, 2015

"Sure, But Does That Emergency Antenna Really Work?"

The Mt. Vernon Amateur Radio Club will be participating in the Ohio Section ARES "NVIS Antenna Day" April 25, 2015 at the Ariel Foundation Park. We have the large shelter house reserved from 9:00 AM to 7:00 PM. We are hoping to have a club picnic during this event. More details at the club meeting.

Those wishing to build an antenna for this event should contact Don Russell, W8PEN, at w8pen@arrl.net or come to the meeting.

We hope to try several different antennas. Since Ariel Foundation Park does not have any mature trees, we will be using antenna masts not to exceed 10 – 15 feet in height.

From the ARES E-Letter, January 21, 2015

Ohio ARES is sponsoring the *NVIS Antenna Day*, April 25, 2015. We are encouraging groups in every Ohio county to devise several portable NVIS antennas that they think will perform, and then test them on the air. The program grows out of an annual antenna party in Ashtabula County, which is both an operating event and a great time in early spring to break out the hamburgers and have some fun. They have found a vast difference in actual antenna performance, and have been able to narrow down their choices for a real emergency setup.

The *NVIS Antenna Day* will begin at 10 AM Eastern time. We will operate on both 40 and 80 meters, operating at 100 watts as you might during a real emergency. While a typical session might go through the afternoon, there is no official closing time. It is not necessary to set up a completely portable or remote station, although the location should have enough room for several antennas and be in a fairly quiet RF environment. This is not a contest for QSO rates and points; rather it's aimed specifically at determining the best of several NVIS antennas through signal reports, and through coverage. A group could make several contacts with the same station as they try different antennas. Stations at key locations such as the Ohio state EOC will be on the air.

Groups should compile a list of their top three antennas with descriptions and photos. Ohio ARES will see if any particular antenna design bubbles up as the top performer across the entire state.

Antenna experimentation is an integral part of the hobby and the outcome will benefit each ARES group or club by helping to create an arsenal that can be deployed during a real emergency. It could be a great time to test potential Field Day antennas, too. This is open to all hams as we hope they will become interested in joining their local ARES organization. - *Stan Broadway, N8BHL, Section Emergency Coordinator, Ohio*

AFFILIATED CLUBS COORDINATOR REPORT

By: John Myers, KD8MQ - ACC
kd8mq@arrl.net

From the Ohio Section Journal, March 2015

Hi everyone,

Wow, what a difference a month makes! The weather has warmed up, and the snow is disappearing! Spring's almost here, so it's time to start planning for some club activities.

I was recently tuning around on 40 meters, and happened upon K8PI, running a special event station for PI day. K8PI is the club call for the Dial Radio Club. Some members had opened up their shacks up to some fellow Hams who either don't get on HF very often, or are unable to from their home QTHs. It was a spur of the moment thing, and voila, they had a club event. Sometimes that's all it takes. In talking to Ed (I didn't get his home Callsign), I could tell he was excited about some of the new things their club was doing.

While club meetings are a necessary part of most clubs, I believe it's the extra-curricular activities that keep things interesting. The types of activities vary from club to club. But, some events can interest a broad section of your membership. The upcoming NVIS Antenna test that Ohio ARES is promoting is one such example. It can apply to contest, and general interest clubs as well as clubs who are more Emcomm

related.

Most clubs seem to have a lot of fun participating in ARRL Field Day. This is great. There are also some other local contests here in Ohio which lend themselves well to that type of operating; namely the Ohio QSO Party in August, and a couple weeks later the Ohio State Parks on the Air Contest.

I'm not trying to make everyone into contesters. The point is to get everyone out of the meeting room, and into socializing while enjoying Ham Radio. Rent a pavilion at a park, or invite folks over to your house, and operate from your shack, or your back yard. Just remember that the most crucial gear for any portable Amateur Radio operation are grills, coolers, and lawn chairs. A bonfire? Even better! So, now you have the fixins for a class A Ham radio event. Those who want to operate can operate. Those who want to socialize can socialize. There's something for everyone!

Last year, my home club held a NAQP-RTTY picnic at my QTH. We cooked out, and socialized for most of the evening. Those who wanted to try out a new mode gravitated to the shack, where we were set up for the NAQP-RTTY contest. We only made a handful of QSOs, but that only tells part of the story. It's fair to say that everyone seemed to have a great time socializing. Yes, spouses were invited, and encouraged to attend.

I could also mention the Highland ARA who holds a monthly Saturday Brunch at the Hillsboro McDonalds. They aren't the only ones. Canton ARA, Silvercreek ARA, the list goes on. They all do a regular brunch. That's all it takes; thinking outside the meeting room!

Looking at the latest numbers from the affiliated clubs database has me encouraged. Back in December, we began sending out monthly e-mails to clubs who were close to, or past due in renewing their annual reports. The number of clubs who are current with the league has gone from 49% in December, to 72% as of March 14th. This is just awesome! Thank you to all who have responded by updating their club information with the league.

We've seen a jump in special Service Club renewals over the same period. Since the first of the year, we've gone from 9 Special Service Clubs to 12. The number of Special Service Clubs in arrears has dropped as well. Again, I'd like to thank all who have renewed, and gotten current.

So, this means, I'll stop hammering you on this subject, right? Not on your life! There are advantages to keeping up to date, and I don't want to lose any clubs over what's likely a clerical issue. Again, if you have any questions, ask me. E-mail me at kd8mq1@gmail.com, or call me. My phone number is on the ARRL-Ohio Website. If you do call, be prepared to leave a message, and I'll get back to you.

You've likely seen the announcement that Amateur Radio in the US has hit a new High. We are now at 726,275 Hams as of the end of 2014. There were 33,000 new licenses issued last year. Now the question is what are we doing to make them active club members?

Lastly, I'd like to congratulate the Cuyahoga Falls ARC who just had their 75th anniversary of ARRL affiliation on March 1st.

Let's look at what some of the clubs around Ohio are doing:

Dayton – Dayton ARA seems to be in full Hamvention mode, planning for Amateur Radio's biggest weekend. But, their latest newsletter has pictures from their Santa Event a few months back. Members of DARA brought Christmas a bit early to about a dozen kids at the Children's Medical Center in Dayton.

The Portsmouth RC is but one of many clubs sponsoring VE exams. They recently had one gentleman drive down from Wooster to pass his test.

Delaware ARES is raffling off three Honda EU2000i Generators. More information can be had at www.delares.org/raffle/.

The West Central Ohio ARA appears to be getting involved in Kit building, with WSPR Radio kit being mentioned in their latest newsletter

From the Mt. Vernon ARC's latest newsletter, we learn that their technician class has just graduated 13 New Hams.

In the Portage County ARS Newsmagazine", we see that several hardy souls braved the sub-zero wind chills during last month's Freeze Your Acorns Off Special Event. Yours truly was described as a lunatic for engaging in this event. I did not argue the point.

And finally, my Home club the Alliance ARC raffled off a Yaesu HT at our last meeting. Field Day planning has begun, as well as several "extra-curricular" activities over the warmer months of the year.

And that's all I have for this month. Remember to "Think Outside Of The Meeting Room"!

Till next time, 73 DE KD8MQ

STATION CALLSIGN: _____

HF Log Sheet

PAGE____ OF_____

DATE	UTC		FREQ	MODE	POWER	CALLSIGN	QTH	RST		COMMENTS
	ON	OFF						SENT	RCVD	

US Amateur Radio Bands

US AMATEUR POWER LIMITS

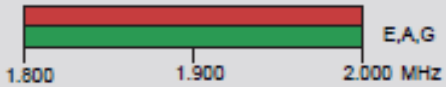
FCC 97.313 An amateur station must use the minimum transmitter power necessary to carry out the desired communications. (b) No station may transmit with a transmitter power exceeding 1.5 kW PEP.

Effective Date March 5, 2012

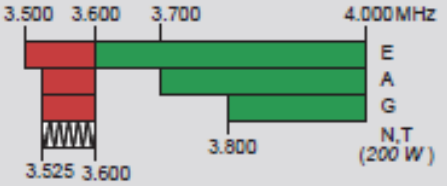
Published by:
ARRL The national association for AMATEUR RADIO®
www.arrl.org
225 Main Street, Newington, CT USA 06111-1494

160 Meters (1.8 MHz)

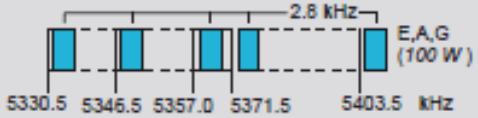
Avoid interference to radiolocation operations from 1.900 to 2.000 MHz



80 Meters (3.5 MHz)

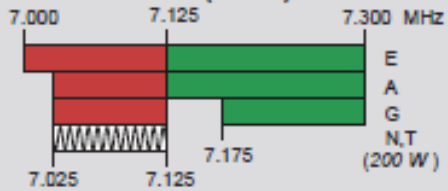


60 Meters (5.3 MHz)



General, Advanced, and Amateur Extra licensees may operate on these five channels on a secondary basis with a maximum effective radiated output of 100 W PEP. Permitted operating modes include upper sideband voice (USB), CW, RTTY, PSK31 and other digital modes such as PACTOR III as defined by the FCC Report and Order of November 18, 2011. USB is limited to 2.8 kHz centered on 5332, 5348, 5358.5, 5373 and 5405 kHz. CW and digital emissions must be centered 1.5 kHz above the channel frequencies indicated above. Only one signal at a time is permitted on any channel.

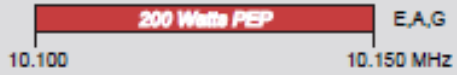
40 Meters (7 MHz)



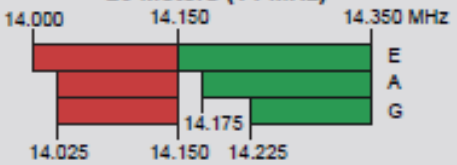
Phone and image modes are permitted between 7.075 and 7.100 MHz for FCC licensed stations in ITU Regions 1 and 3 and by FCC licensed stations in ITU Region 2 West of 130 degrees West longitude or South of 20 degrees North latitude. See Sections 97.305(c) and 97.307(f)(11).
Novice and Technician licensees outside ITU Region 2 may use CW only between 7.025 and 7.075 MHz and between 7.100 and 7.125 MHz. 7.200 to 7.300 MHz is not available outside ITU Region 2. See Section 97.301(e). These exemptions do not apply to stations in the continental US.

30 Meters (10.1 MHz)

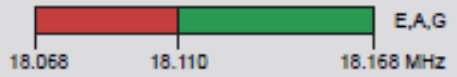
Avoid interference to fixed services outside the US.



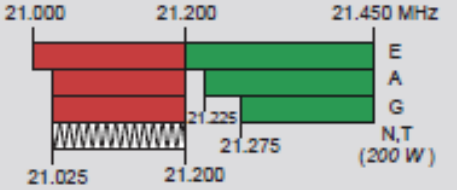
20 Meters (14 MHz)



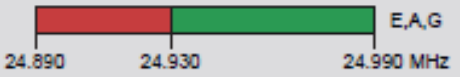
17 Meters (18 MHz)



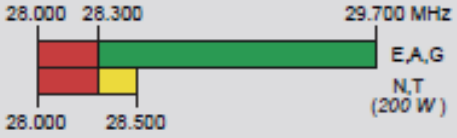
15 Meters (21 MHz)



12 Meters (24 MHz)

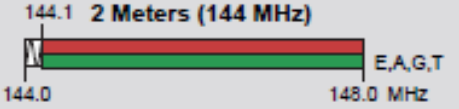


10 Meters (28 MHz)

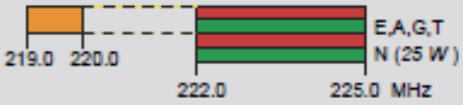


6 Meters (50 MHz)

2 Meters (144 MHz)

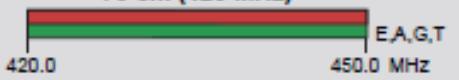


1.25 Meters (222 MHz)

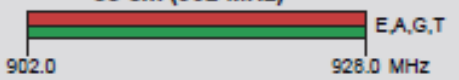


*Geographical and power restrictions may apply to all bands above 420 MHz. See *The ARRL Operating Manual* for information about your area.

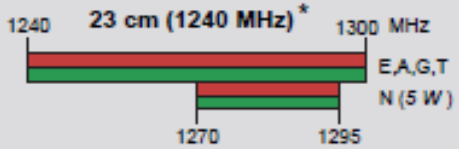
70 cm (420 MHz)*



33 cm (902 MHz)*



23 cm (1240 MHz)*



All licensees except Novices are authorized all modes on the following frequencies:

2300-2310 MHz	10.0-10.5 GHz *	122.25-123.0 GHz
2390-2450 MHz	24.0-24.25 GHz	134-141 GHz
3300-3500 MHz	47.0-47.2 GHz	241-250 GHz
5650-5925 MHz	76.0-81.0 GHz	All above 275 GHz

* No pulse emissions

KEY

Note:
CW operation is permitted throughout all amateur bands.

MCW is authorized above 50.1 MHz, except for 144.0-144.1 and 219-220 MHz.

Test transmissions are authorized above 51 MHz, except for 219-220 MHz.

- RTTY and data
- phone and image
- CW only
- SSB phone
- USB phone, CW, RTTY, and data
- Fixed digital message forwarding systems only

E = Amateur Extra
A = Advanced
G = General
T = Technician
N = Novice

See *ARRLWeb at www.arrl.org* for detailed band plans.

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