

December 2016

Wavelengths

Xenia Weather Amateur Radio Net

Club Callsign: W8XRN

147.1650+ (123.0) (Analog Only)

443.1000+ (123.0) (Analog + System Fusion)

An online version of Wavelengths can be found at

<https://sway.com/j6Y2Lw4C91GzsAEv>



President's Message

We have closed another fiscal year for XWARN. At the November election, the previous slate of officers was re-elected except Secretary. My wife, Karen, has volunteered to perform the duties, although she cannot hold the office due to not holding an amateur radio license. This detail is not negotiable, but it's good to have a willing volunteer to record the minutes. We also have new committee chairs for the newsletter — Jason Bowman (WG8B) — and for membership — Phil Verret (KA8ZKR). Please pass along words of encouragement to all of the committee chairs.

Looking back on the year behind us, one of the more memorable events was the t-shirt sale at Hamvention. What is particularly notable is the great success that caused us to shut down early on Saturday due to lack of shirts. Hopefully, this is the start of a tradition. Please note that Janice Crawford, who has done a remarkable job of leading the sales operation for a number of years, will not be able to do it this coming year. So we will all need to pitch in to make the sale a success. I do expect all able-bodied members to help staff the booth at some time during Hamvention.

Another interesting sequence of events was led off with the change we voted to the bylaws allowing a simple vote of the membership to set the meeting time. We proceeded to move the meeting start time up to 7:00 PM, but voted it back to 7:30 a couple of months later. I guess we would never know how it would have been if we had not tried it.

On May 19, 20, & 21, 2017, Hamvention will take place at the Greene

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Calendar

Dec 10 (Sat): Xenia Hometown Christmas 5k Walk and Run

Dec 12 (Mon): XWARN Holiday Party at the Golden Corral (2490 Commons Blvd. Beaver Creek 45431) starting at 6:00 PM.

Dec 31 (Sat), Resolution Run (5k) Beaver Creek H.S. DARA will sponsor Ham License exams at the school before the race

Editor's Note: Public Service Events serve two purposes for amateur radio clubs. First, for those of us who intend on supporting real emergencies, public service events serve as practice and training and let us know our equipment is still working. Secondly, they allow us to quietly advertise amateur radio to the public hoping to encourage others to get their license and participate.

Club Contacts

- President, Bob Baker, N8ADO
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Mike Crawford, KC8GLE
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- Newsletter, Jason Bowman, WG8B
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An amateur radio volunteer at the Butte Fire.

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County Fairgrounds. XWARN will be officially involved through our t-shirt booth, but, unofficially, I hope that we will serve as hosts to present the guests with a generous helping of Xenia hospitality. For those of you who are not already on the volunteer list for Hamvention, let Mike Crawford or myself know that you wish to join in. Six hours gets you an admission ticket, a ball cap, and an invitation to the volunteer banquet.

We are entering a slow period as far as public service events go, but I encourage all of you to keep your equipment well maintained and at the ready should an unexpected weather event require our assistance.

Our next meeting is superseded by the XWARN Holiday Party to be held at the Golden Corral (2490 Commons Blvd. Beaver Creek 45431) starting at 6:00 PM. We have the party room to the right of the main entrance reserved for our use. I hope to see everyone there. Bring the family.

Bob Baker (N8ADO)

Amateur Radio in Action

November's Amateur Radio Emergency Service Newsletter (<http://www.arrl.org/ares-el?issue=2016-11-16>) reminds us of two things. First, the ability to access the phone system through amateur radio repeaters, a.k.a. autopatch, is still an important capability for emergencies, especially out west in remote areas. Second, selecting the most efficient and appropriate means of communication is key. As the recent fires in California demonstrated, you can have a large disaster and still have the regular communications paths available. Served agencies are not necessarily looking for amateur radio operators rather communications specialists. Sometimes they just need warm bodies to fill jobs having nothing to do with communications! If possible, I would encourage everyone to take the AUXCOMM course when offered to understand how amateur radio capabilities can be integrated with served agencies better by understanding their requirements and needs.

Project of the Month — Ruggedized Radio



To start off this new newsletter feature, the new editor offers up his ruggedized radio project. I maintain a set of briefing charts (https://docs.google.com/presentation/d/1wZWzx9tuUo3glq7ulzFXWqD-mnpITfxluCtjpPbS_Nk/edit?usp=sharing) with many more details that I can put here.

The motivation? I had a mobile radio in my car, but I also wanted to have 50W anywhere — my car, bike, house, or field — without having to buy another expensive radio.

I started off with a small weather-proof case available from MCM Electronics. I added various water-resistant connections so that I could actually use the radio out in the weather. Because portable equipment gets thrown around, even by the owner, everything on the inside is mounted on an aluminum back plate mounted on rubber isolation mounts.



The original design was only powered externally. However, for version 2.0, I was able to rearrange and simplify components to incorporate an internal 10,000mAh LiPo battery. It is this configuration that I hiked with beaconing my APRS position for over 23 miles!

Because my radio can only take about 15.8V, I can only charge the LiPo battery to about 75% capacity. So now I am working on how to fit an 8400mAh Lithium Iron Phosphate (LFP or LiFe) battery in there. They have lower energy density than LiPo batteries, so they are bigger for the same energy. But they have the virtue of being very close to a standard lead acid battery in terms of voltage. So I can fully charge them. They are also much safer batteries. They won't explode or catch fire like LiPos do.

Finally, I'd like to stress that this isn't a "go" box. It is one radio jammed into the smallest weather-resistant container that would still fit everything inside. "Go" boxes are typically much larger and have more capabilities. However, my creation is modular by its nature and can be one part of a "go" kit if needs be.

Jason Bowman, WG8B

XWARN Mission

The mission of the Xenia Weather Amateur Radio Net (XWARN) amateur radio club is to conduct weather spotting nets during severe weather and other communication services for the City Of Xenia and all other Greene County communities.

In this capacity, we are set up to provide communication services as required to the Greene County Ohio Public Service Agencies and other local government entities. The communications services provided to the supported agencies may be for emergency purposes or to simply enhance their communications abilities. On an as needed basis XWARN provides similar services to various government entities of our surrounding counties.

Additionally, XWARN provides communications support to various community organizations in support of marathons, 5K runs, 10K runs, bicycle events, etc. to provide health and safety assistance to the participants and sponsors of said events.

In support of these goals, XWARN operates and maintains amateur radio repeaters and other equipment in Greene County.

Meeting Minutes—November 14, 2016

At 7:30 President Bob Baker, N8ADO, called the meeting to order. We recited the Pledge of Allegiance and had introductions. There were 22 members present.

Cracker Barrel: Bob Baker, N8ADO, has 20 amp batteries for sale @ \$20. Andy Margraff, KC8AZW, has a 40' tower and 12' dish if anyone wants it. Jim Simpson, WB8QZZ, reported that the Dayton VA ham club is starting up if anyone is interested in joining. They are looking for Elmers. Bill Blake, KD8RLB, asked for help with the Boy Scout Merit Badge Trail Drive in March and the Boy Scout Jamboree.

Minutes: Dick Bray, W8IHG, made the motion to accept and Jim Simpson, WB8QZZ, seconded. Motion passed.

Treasurer's Report: The report is on the XWARN website. John King, KA8OYH, made the motion to accept and Don Conover, N8PPW, seconded. Motion passed.

Public Service: Mike Crawford, KC8GLE, reported that at the Beavercreek Fire Department open house there were a lot of kids. On December 10th is the 5K Ugly Sweater Run & Walk. On December 31st is the Resolution Run.

Trailer: Mike Crawford, KC8GLE, said that we have 4 new chairs in the trailer.

Repeater: Jim Simpson, WB8QZZ, the 440 repeater is running well.

Website: None

Membership: None. We need someone to take over the membership list.

Newsletter: Need someone to take over the newsletter.

Old Business: Jim Simpson, WB8QZZ, made the motion to waive the requirement to have a ham license to be interim secretary until a full time Secretary can be found. John King, KA8OYH, seconded. Motion passed. Dick Bray made the motion to elect Bob Baker, N8ADO, as President; Brett Boggs, NV8I, as Vice President, Steve Mackey, N8ILR, as Treasurer; and Karen Baker as Secretary. John King, KA8OYH, seconded. Motion passed.

New Business: Christmas Party will be December 12th at Golden Corral in Beavercreek at 6:00. The DARA Christmas Party will be at the Legacy Center in Xenia on December 9th at 6:00. Bob Baker, N8ADO, asked if anyone had any goals for 2017. There weren't any mentioned.

Dick Bray, W8IHG, made the motion to close the meeting and go to Frishes and Jim Simpson, WB8QZZ seconded. Motion passed.

Respectfully Submitted

Phyllis Haller, Secretary, KC8QCK

This Month With Larry

Wow! Tomorrow is the day we set aside to reflect about all we have to be thankful for, most of us have a lot to be thankful for me, I am blessed with a great family and friends. While I'm in failing health unable to do as I once did, I still feel blessed.

As I look back on 2016 I have lost a lot of fellow co-workers and friends. One of the things I'm thankful for is my friend Doug. He was handed a hard life right from the start with many setbacks during his 50 plus years, the latest of which is the loss of part of his left lung due to cancer. It has been a very busy year with many hospital stays **BUT** I am happy and thankful to report he is doing very well and on the road to recovery.

Some of the things radio-wise I've done this year is once again helped out during Hamvention not knowing it would be the last time at Hara Arena and supported several cross country races and 5K runs/walks. While I enjoy doing all the events, the one I like doing the best I wasn't able to do this year - "Young's Bike Ride", a two day fun-filled event. I and three of my friends did get to participate in the Ohio State Parks On The Air contest. I have also been involved with the National Parks On the Air, a year-long celebration, ending on December 31, of the 100 years the national parks have been in existence.

My latest adventure is joining the Dayton Veterans Hospital Radio Club. It has taken many months to get things organized but it looks like we will be up and running the first of the year. There are so many people involved that trying to thank them all would fill a page. One person that stands out is Jim Simpson, WB8QZZ. Jim has given tireless amounts of time installing towers and antennas and running coax into the radio room. We at the VA owe him a big **Thank You**. While the DVARC W8DVA radio club isn't running just yet, we are looking for volunteers to run the radios and act as elmers for the veterans at the facility. You don't have to be a veteran to join. But, the VA being a government run entity, there are rules that need to be followed. They are simple rules but rules never the less. The person to contact to get started is Chris Geib, W8CWG, at cwgeib@att.net. I encourage everyone to join. It will be a chance to help veterans having a hard time. After serving you and me, we owe them a lot. Let's demonstrate our thanks for our freedom.

73

Larry Baker, KB8EMD

Back to Basics — Antennas and Feedlines

Nothing is more important to the performance of radios in general than the antenna and feedline. Get either of them wrong and it won't matter how much power you use. Get them correct and even a few watts will cause miracles to happen.

We all learned about standing wave ratio (SWR). However, a good SWR doesn't necessarily mean you have a good antenna! It just means very little power is getting reflected back to the radio. So where's the power going if it isn't going where you want it? Typically up above the horizon when we typically want it to go more to the horizon. Think about the whip antennas for HT radios that are advertised as having low SWR but still can't hit a repeater.

Just as important as the antenna is the feedline. The major determinant in minimizing feedline attenuation is the diameter of the coax — the larger the diameter the lower the attenuation. The second major determinant is length of the coax. However, we usually have little control over the length. We usually increase the diameter of the cable until the attenuation is at an acceptable level for whatever the run length is at our highest operating frequency (higher frequencies have more attenuation than lower frequencies). Quality of the coax is not a major determinant in attenuation until the frequency

is about 1GHz or higher. Times Microwave has an online tool (<http://www.timesmicrowave.com/calculator/>) that lets you select the coax, run length, and operating frequency and then calculates the total efficiency including connectors. I try to aim for efficiencies 80% or higher or about 1dB of loss. Sometimes it isn't possible to get lower losses without breaking the bank.

Jason Bowman, WG8B

Regularly Scheduled Nets

Daily (Sunday through Saturday)	1030, 1615 and 1845 Ohio Single Sideband Net Primary: 3972.5 KHz LSB Alternates: 3968 & 7272 KHz LSB
Sundays	1900 Newcomers & Elmers Net (Cincinnati) 146.670 (-)(123.0) 2000 BARC Weekly Net Primary: 147.045 (+) (no PL) Alternate: 443.675 (+)(no PL) 1900 Ohio ARES HF Net Primary: 3875 KHz LSB Alternate: 7240 KHz LSB
Tuesdays	1900 Ohio ARES HF Net Primary: 3875 KHz LSB Alternate: 7240 KHz LSB 1945 Ohio Digital Emergency Net Primary: 3580 KHz USB Alternate: 7072 KHz USB 2000 MoCoARES Weekly Net 146.640 (-)(123.0) No Net on last Tuesday of even months) On 2nd Tuesday: Voice + Data Net on 444.250 (+)(123.0) 2100 GCARES Net (Voice/Data/Mesh) Primary: 146.910 (-)(no PL) Alternate: 442.725
Wednesdays	2000 Ohio District 3 ARES Net 145.110 (-) (67.0) 2000 Beginners Net 444.87 (+)(94.8)

Club Call: W8XRN

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«FNAME» «LNAME» - «CALL»
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Wavelengths

Wavelengths is published monthly by the Xenia Weather Amateur Radio Net. Our meetings are currently held on the 2nd Monday of each month at **7:30 pm** at the Greene Memorial Hospital Auditorium. You can find additional information about our organization at www.xwarn.net. We welcome new and experienced Amateur operators and those interested in becoming an Amateur operator to attend our meetings.

Editor's Note

Hey everyone from your new newsletter editor! I hope to introduce some new ideas right away. The first change you'll notice immediately is the picture on page 1. I hope to have a new weather or disaster related picture every month to remind us what the club's mission is. Second, I'd like to find recent examples of amateur radio supporting real emergencies so that our served agencies understand what we can and can't do. Third, I'd like to add a "Project of the Month" — basically a few paragraphs and a photo of an interesting project that someone in the club is working on. Fourth, I am going to add a "Back to Basics" section to help distill key technical aspects of our hobby into something more understandable for the masses. Finally, I'd like to publish an online version of this newsletter using Sway. Sway is a much more friendly format for online viewing, especially with mobile devices, and will allow the newsletter to grow beyond where it is now. I'd like to continue receiving articles or ideas for articles from Larry but also encourage the rest of the club to contribute. Just send stuff my way and I'll see what I can do.

Jason (WG8B)