



Official Publication of the  
West Allis Radio Amateur Club

# Hamtrix

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Volume 63, Issue 2 February, 2016

## FEBRUARY CLUB HAPPENINGS

### February Club meeting will be Upstairs.

See pres shack for details

#### Club Meeting

St. Peter's Episcopal Church,  
7929 W. Lincoln Avenue, West Allis  
February 9, 2016 **7:00pm**

#### Program

Hex Beams

Mike Johnson, WO9B, and Bill Reed, N9KPH

Join us for a pre-meeting dinner  
at Johnny V's Classic Cafe  
1650 S 84th St at 5:00pm



#### NUT NET

3.985mhz

Monday-Saturday

8:15am CT

#### Milwaukee-Florida Net

Every Day on 14.290 Mhz

7:00AM - 9:15AM ET

6:00AM - 8:15AM CT

### Wisconsin QSO Party

March 13, 2016 - 1800Z to 0100Z March  
14

(1:00PM CDT to 8:00PM CDT on Sunday,  
March 13)

(The first day of Daylight Savings Time)



#### WARAC 2-meter net

Every Wednesday at 8pm

MATC repeater 147.045 standard offset  
127.3 Hz CTCSS

Club jackets and hats!

Go to club Web site and click on  
The GOLD MEDAL IDEAS block

[For more info or click here](#)



## The President's Shack February 2016

We've made it to February, the days are getting a little longer and the ground hog didn't see his shadow. There's hope for Spring!

**Important Note: the upcoming club meeting will be** in the gathering area **upstairs** rather than in the usual basement room.

Since the next day is Ash Wednesday, the church has an annual Shrove Tuesday dinner in the basement. We encountered a similar scheduling conflict once before and the upstairs area worked out well for us. And we will have our usual after-meeting coffee and donuts (paczki?).

If you've been on the air at all lately, you've heard chatter about **Hex Beams** and worked people using them. So the program for the upcoming meeting will be a chance to find out more about this antenna, thanks to Mike Johnson, WO9B, and Bill Reed, N9KPH. Also, in anticipation of WIQP, we'll also talk about the **Morse Runner CW practice program**.

This Saturday (Feb. 6) is the **Minnesota QSO Party**. MNQP is a short-format, one-day contest similar to our Wisconsin QSO Party on March 13. Unlike WIQP, it **starts early - 8:00AM**, then runs for ten hours until 6:00PM.

QSO parties in adjacent states are interesting because they are close enough to give the feel of a local contest, so MNQP is a great chance to **get some practice for WIQP**. The Minnesota Wireless Association crew does a fantastic job putting on MNQP. It's not the biggest, but it is certainly one of the best state parties. Take advantage of it and have some on-the-air fun!

Our March 8 meeting is *before* the Wisconsin QSO Party this year, so **WIQP will be the main topic** of that meeting. We'll cover some basic

**operating techniques and strategy** and we'll look at what the data tells us about previous year's events. We'll hear about various member's specific plans including yours, if possible. Also, we'll take a look at **logging programs**. I would like this to be a discussion more than a program, so bring your questions, comments, insights and experiences. Visitors welcome!

How about someone (or a group of someones) activating our club call, W9FK for WIQP? Anyone interested in doing this?

Remember, our club is the sponsor of WIQP and we are proud of it! And one of the unique things about WIQP is that there's something for everyone from big-gun contesters to casual little pistols. So let's get everyone on the air. **What do you need to be ready on March 13?** Bring your questions to the March meeting or sooner. If you need help, let us know. We'll have a help session at the March meeting.

Have you paid your dues for 2016? If not, you need to "pay" a visit to our Treasurer, Howard.

And, as always, don't forget our before-meeting dinner at **Johnny V's Classic Café, 1650 S. 84th St.** at 5:00PM.

See you at the meeting! Bring a friend!  
Tom, K9BTQ

### From the editor

Lots of things are happening! The club meeting will be upstairs. We did a NPOTA activation out at Lapham Peak State Park. The Ice Age Trail passes through the park (one of three National entries Wisconsin has to activate). It was fun.

I'm regularly on the morning nut net. It seems more and more people are finding us. Up to 20 people check in from Wisconsin, Michigan and Illinois, depending conditions. We even have a check in from Arizona. Of

# WARAC General Meeting Minutes

January 12, 2016

## Introduction

The meeting was called to order at 19:03 by President, Tom Macon (K9BTQ). Overall meeting attendance was 22, plus 1 visitor.

## Future Programs

February '16: Hex beam – Mike Johnson (WO9B)

March '16: WIQP

April '16:

## Tonight's Program

The evening's program topic is a tutorial on DX Labs Suite Spotting/DX software - Steve Dryja (NO9B)

Members discussed various logging programs and easy ways to enter data from paper logs.

## Business

Phil Gural (W9NAW) gave an initial Swapfest summary. Overall attendance was up slightly from last year.

The Club received several vintage radios for resale. The list will be published in Hamtrix.

Motion was made and accepted to approve the December general meeting minutes as published in Hamtrix.

Steve Dryja (NO9B) gave the status of the club Queen of Hearts raffle. Has cards, needs tickets.

Howard Smith (WA9AXQ) & Tom Macon (K9BTQ) mentioned membership renewal form & dues reminder.

10-meter contest logs due today. Chuck (W9WLX) will give additional details after compiling data.

Mike Johnson (WO9B) promoted W.A.R.A.C. participation in the National Parks on the Air event. 1st weekend in June is a recommended date due to free admission to the State park.

Wisconsin QSO Party(WIQP) is on March 13th. Consider going 'mobile' or 'portable'

Howard Smith (WA9AXQ) plans his 3rd Heathkit article in Hamtrix.

Steve (NO9B) described progress of a dual-time nixie display clock.

The meeting was adjourned at 20:20.

Respectfully submitted,  
Erwin von der Ehe (WI9EV)  
Secretary, W.A.R.A.C.  
2016-01-12

# **W.A.R.A.C. Board Meeting**

## **January 26, 2016**

Howard Smith (WA9AXQ), called the meeting to order at 19:11.

Present: Tom Macon (K9BTQ), Steve Dryja (NO9B), Howard Smith (WA9AXQ), Erwin von der Ehe (WI9EV), Dave Garnier (WB9OWN), Al Hovey (WA9BZW), Frank Humpal (KA9FZR) and Guest Phil Gural (W9NAW).

There was no December, 2015 board meeting, so this meeting includes activity and updates from November, 2015.

Howard (WA9AXQ) gave the monthly Treasurer's report. The general fund and scholarship fund are in good shape.

Phil (W9NAW) gave Swapfest summary & showed Swapfest pictures. We had a discussion regarding the scholarship table and other operational topics.

### **Programs**

February, 2016: Antennas & Hex beam by Mike (WO9B)

March, 2016: WIQP

April, 2016: Kermit Carlson (W9XA)?? Tom will contact re topic & possibility of presentation

May, 2016: Pizza Night & Auction

June, 2016: Field Day 2016 – Chuck Dellis (W9WLX)

### **Future Program Ideas**

DSP examples using MathCad® by Steve (NO9B)

Spotting by Gary (W9XT)

Three-phase power monitors by Steve (NO9B)

FM38 Repeater System by Dave (KA9WXN)

Badger Weather Net – Sullivan

SO2R Contest operating – Mike (WO9B)

Logger 32 – Ron Gorski?

### **Other Items**

Amendments to W.A.R.A.C. Constitution and Bylaws were discussed and changes recommended for final draft. Potential changes were reviewed.

Tom & Erwin will update membership database content. Also, make a procedure for use. Also, improve some features in progress.

Steve (NO9B) announced that he and Karen Burris (KC9WQL) will succeed Phil in Swapfest organizing. A smooth transition is anticipated

The "Search for the Queen of Hearts" game is illegal in the state of Wisconsin. Steve (NO9B) is investigating implementing a conventional 50-50 raffle for adding extra interest to meetings and

**Board meeting next page**

## Board meeting

raising some money for the club.  
2-meter net continues and needs some more check-ins.  
Meeting was adjourned at 21:28.

Respectfully submitted,  
Erwin von der Ehe (WI9EV)  
Secretary, W.A.R.A.C.  
2016-01-26



## Tale of W9FK NPOTA first activation. by Frank KA9FZR

On January 30, 2016 Mike Johnson WO9B (honorary ring leader of the group) herded up his followers Bill Reed N9KPH and Frank Humpalka KA9FZR. We braved the January winter weather (40 degrees windless and overcast) and headed for Lapham Peak State Park.

We hoped to do a NPOTA (National Park on the Air) activation of the Ice Age trail, which goes through the park. Mike and me had scouted out sites after the swap fest to get some idea of what was needed. As with all good plans changes were needed immediately. The parking lot we were planned to operate from was full. So we looked for an alternate! It turned out there was an empty parking lot that fit our needs.

In a short time we had Mikes QRP CW station set up. This is the same set up he is planing to use for the Wisconsin QSO party so it was a shake down for that future operation also. Soon Mike was in the middle of a pile up trying to sort out calls on 20 meters.

Next on the list was to assemble Bills buddy pole to set up our SSB station. We initially used Bills Yaesu Ft-857 at 25 watts on 20 meters, with Mike shifting down to 40 meters. We also shifted to my Yaesu FT-817 at it's 5 watts. Both 25 watts and 5 watts put us into the middle of a mini pile up. For me that was a new experience so had fun being on the receiving side of a pile up.

Together we put 53 contacts in the log almost evenly divided between CW and SSB in about a hour and a half of casual operating.. We were heard on West and East Coasts, Down south and in between. A good testimony to simple antennas and good propagation.

We had a ball doing it. I was surprised how few unexpected problems came up. We really worked good as a team and spent most of our time operating, not solving problems. Would we do it again? I would say yes probably at the drop of a hat. If we do we would welcome anyone else who would like to come along!



# **Tales from HeathKit**

## **By Howard, WA9AXQ**

The value proposition for HeathKits was that they would provide a well designed, good performance electronic device, but you would have to assemble it. The price was usually less than an equivalent assembled unit from a competitor. So, your new device arrived as a box of parts, and a detailed instruction manual. Your time and skill would produce the final product. And, if you religiously followed the detailed instructions in the manual, the probability of it working 'out of the box' was very high. And, you got the bragging rights for doing a great job assembling the kit.

When engineering completed a project, they had a couple of prototypes of the final product that they had built. They also had a list of the parts that were needed, and fabrication drawings of the metal work that was needed for cabinets, brackets, etc. These items were provided to the 'Manual Department'. The task for the Manual Department was to develop the instructions used to assemble the unit. They also had to decide how to package all of those parts to fit into some kind of cardboard box that would be the shipping container. Doing all of that typically took more time than the actual engineering. And, as all of you know, the assembly manual was a work of art. It was highly illustrated, easy to understand, and was absolutely correct. It was all done using traditional drafting techniques because the PC based drawing tools did not exist yet.

This article is about how to make sure that the parts were correct, the assembly manual was correct, and the final outcome would always be a kit that worked the first time it was turned on. They had a No Smoke policy!!

The Proof Build program accomplished this. There were usually 3 phases to the Proof Build Program, pre-proof, proof, and post proof. The pre-proof build was done primarily to check out the parts and the assembly manual. The parts were generally in a box, but not packaged as the kit would be, and the assembly manual was a rough draft. Generally, 5 or 6 persons would do the pre-proof build. There was an initial meeting to kick off this effort where the requirements of the proof builder were discussed. They had to mark up the assembly manual with any wrong parts, awkward assembly sequences, general mistakes, etc. When they were all done, the completed units would be returned for evaluation by both the Manual Department and the Engineering Department. The follow up meeting was held to discuss the issues that came up during the proof build process. These issues resulted in changes to the draft manual, changes to the parts or the mechanical items. When this phase was done, the decision was made to either proceed to the next stage, or to basically rev the design, the manual, etc. before proceeding.

Assuming that the pre-proof build went well, then the proof build stage was next. This time, the product was all packaged the way the customer would receive it. The parts were organized by type or assembly, the cabinet and the hardware were also packaged to fit into the shipping container, and the manual was now in the galley proof stage. This time, the proof builders received a sealed box for the kit, just like a customer would. The proof build process was much the same, except there was the expectation that everything would go well, without any surprises. The follow up was similar to the pre-proof build with one interesting exception. After the returned

product was evaluated, it was returned to the proof builder. For the next year, the unit could be called back to the factory at any time and for any reason. After the end of the year, the unit then belonged to the proof-builder. Kind of a nice thought! You build it, and then it will become yours. The only other strings were if some potential customer wanted to talk about a particular kit, the proof builder was obligated to talk with the customer and answer his questions.

The final stage, the post proof build would happen sometime after the product was in production. This was usually just one or two proof builders, and was primarily a check on the production staff to see that they had put all of the parts in the box, and that the packing was done properly.

Heathkit was very serious about having the kit work the first time. They paid attention to lots of details. For example, if an adjustable coil was used as part of a tuned circuit it was pre-tuned to correct frequency. Same was done for the CANs in the IF of a receiver. The whole RF front end, mixer, and IF section for the Mohawk Receiver was a pre-assembled and aligned unit that was bolted to the chassis and its cables were plugged into sockets on the chassis just to be sure that the Mohawk worked the first time.

When I spent the summer of 1968 working at HeathKit, the SB220 Full KW Linear Amp was ready for the proof built process. They were having problems finding people to do the proof build because they needed Hams with a General, an Advanced, or an Extra class license so the unit could be placed on the air when the proof build was completed. I had my General class license, but they did not allow part time summer students to do proof builds. I was disappointed.

I have one more tale to tell next month.

73...

Howard, WA9AXQ

### **Fast Log Entry (FLE)**

Ron Gorski N9AU mentioned at the last meeting that there was a free program that you can down load to reduce some of the headache of converting paper logs to digital logs. From what I can see it doesn't require you to reenter any data that stays the same from line to line. Even that alone would save lots of work. The program can be found at [DF3CB.com](http://DF3CB.com) under Fast Log Entry (FLE)

# 2016 Hamfest Pictures



**Ticket sellers working hard to get the crowd through the turnstiles**

**Swapfest in full swing**



**Eyeball QSO's always popular**

# ROLLING INTO THE 2016 WIQP

By Mike Johnson, WO9B

A year ago my whole ham radio focus was to operate in the WI QSO Party. I had not put a signal on the air in 15 years, so with a little help from my friends at WARAC, I managed to put a station on the air. What a great time we had operating with the club call sign, W9FK. Along with Bill, N9KPH and my son, KD9CVA, we did over 400 QSO's in a Multi-Multi setup with a couple of wire antennas. OK, sure, we got gob smacked by W9EAU who has owned the category since the pyramids were built, but heck, what did we know.

I clearly recall making the statement that after the WIQP was over, all my equipment would be tossed back into storage. Bill, N9KPH, was nice enough to go along with my boast. Tom, K9BTQ, however was, shall we say, politely skeptical. Well, not exactly. He laughed and called me on it right away. Mea Culpa.

So what to do for 2016? Well seeing as this is the NPOTA year, I've really been working to put a station together that I can drag out to do an Activation. I picked up a YouKits HB-1B CW only QRP radio in early December and have been operating with it ever since. This little radio has really proven to be a nice performing rig. It has a very good receiver with adjustable IF passband for tuning out the QRM. It has an internal lithium battery and an exterior connection so additional batteries can be plugged in. I've been operating battery only for about a month, having repurposed a number of older Li-on batteries from our RC airplanes. It transmits at 4 watts or so and is functional over a wide range of voltages. So far so good.



All right, so how to operate? I've always been envious of Phil, W9NAW and his hotel room portable operation. The idea of operating from a less popular county than WAU is very appealing. I've got no antenna that's suitable for mobile and I don't really want to hole up in a motel room so I hit upon doing a "Rover" operation. Never done one before. I notice not a lot of the mobile guys do it Roving style, so I am pretty sure they know something I don't. Time to go find out exactly

what that is...so that's the plan.



First problem, I don't have an antenna. And I'm going to need one for NPOTA ...time to start building. Reading about the QRP SOTA operations, the End Fed antenna is very popular because it works and is easy to setup. So off I go to Google (Sorry Steve) which turned up [http://earchi.org/92011endfedfiles/Endfed6\\_40.pdf](http://earchi.org/92011endfedfiles/Endfed6_40.pdf). The parts list and directions couldn't be easier to follow. Picked up the toroids from Toroid King

<http://www.kitsandparts.com/toroids.php> for \$2 (but had to buy 5) and the wire and box from Home Depot. Had the SO-239 on hand and the misc hardware was another \$2 or so. I did splurge on the antenna wire and got some super light weight 26 awg stuff from The Wireman, <https://thewireman.com/> which cost \$15. Finally I got my hands on a 20' Shakespeare Wonderpole from Amazon for \$20. So for under \$50, I'm all set on the antenna. Guess what? It works on 20 thru 80. Dang.

There is only one more element to go for the complete contest setup. I need a way to log and use N1MM. Turns out N1MM works really well with a very common keyer chip called WinKey. What a stroke of luck, there is an Arduino keyer project that includes a WinKey emulation <http://blog.radioartisan.com/arduino-cw-keyer/> So I put together a breadboard version to test it out. It works. Well mostly. I have yet to get it all going because the Arduino Uno that I have is a wee bit short of memory. I need to get an Arduino Mega and then it will all come together. With the Uno however, I have the keyer sending CW through the QRP radio and the memory keyer functions working like a charm. I've got a bunch of QSO's using the prototype and operate the Thursday evening QRP Fox Hunt on 80 Meters with it. I'm doing really well on the Fox Hunts BTW with a score of 13 out of 16 for the season. Those QRP hunts are a lot of fun. You should give them a try.

So all the pieces are in place. Almost all the pieces. I spent an evening working out a route that takes me to Clark, Wood, Jackson, Monroe and Juneau Counties, all of which are a heck of a lot less popular than Waukesha. I am all set to run the WIQP this year as a Rover. If the weather is a nightmare, I'll go and setup in another county, but for sure I'm going to hit the road. And I only need 150 QSO's to do decent in the QRP category.

Wish me luck. Better yet, I can use your QSO!! Come find me on 20, 40 or 80.

Radios currently in the clubs inventory. If you have any interest in them contact Steve Dryja NO9B email [sd3534@zoho.com](mailto:sd3534@zoho.com) or phone 262-679-1664



Hallicrafters  
S-53



Hallicrafters  
S-38B



Hallicrafters  
Sky Buddy S-19r



Hallicrafters  
S-40A



Hallicrafters  
Sky Buddy 5-T



Hallicrafters  
Speaker R-46A



Hallicrafters  
S-120A



RCA  
ACR-175



Hallicrafters  
SX-25 Super Defiant



Hallicrafters  
S-20R Sky Champion



Hallicrafters  
S-95



Hallicrafters  
S-38C



Hallicrafters  
Sx-43

Ham Radio on the Internet  
(click on red web address)

Anyone can submit websites for this column. I'll check them out and include them. The editor

This sites were sent in by Ron N9AU well worth reading.

For about ten years, I taught classes at trade shows on the topic of power and grounding for audio and video contractors. Slides for those sessions are at

<http://k9yc.com/InfoComm-PowerSystems2012.pdf>

<http://k9yc.com/InfoComm-Grounding2012.pdf>

An extensive "White Paper" on the topic is at

<http://k9yc.com/SurgeXPowerGround.pdf>

Earlier in this thread I posted a link to a tutorial I have given at Pacificon and at several ham clubs on the topic, this time focused on ham installations. I'll post it again. It's exactly what Matt is looking for, and it's what any ham ought to be studying carefully.

<http://k9yc.com/GroundingAndAudio.pdf>

73, Jim K9YC

### Editor

course part of that distance is covered by the INTERNET. It still amazes me what we are doing as ham radio operators. Everything from Space to, if I remember right, there is away to transmit signals under ground for the people who hang out in caves. Of course we transmit in between those boundaries all the time. An exciting time for us.

Not much more to say this month

73

Frank

### Officers and Board

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***See our Web Page or contact us  
for more information on***

- WARAC Memorial Scholarships
- Wisconsin QSO Party
- Midwinter Swapfest
- Worked all Wisconsin Counties Award
- Amateur Radio Classes

WARAC holds meetings on the second Tuesday of each month and board meetings on the fourth Tuesday of each month. Meetings are held at 7:00 PM at:

**St Peter's Episcopal Church  
7929 W. Lincoln Avenue  
West Allis, WI**

Entry is off the alley at the rear of the church.  
A wheel chair ramp and chair-lift are available.