



Official Publication of the  
West Allis Radio Amateur Club

# Hamtrix

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Volume 63, Issue 8 August, 2016

## AUGUST CLUB HAPPENINGS



### 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



### Club Meeting

St. Peter's Episcopal Church,

7929 W. Lincoln Avenue, West Allis

August 9, 2016 7:00 pm

### Program

Flex Radios

presenter Chuck W9WLX

with help from Dave WB9OWN and Mike WO9B

[Join us for a pre-meeting dinner](#)

[at Johnny V's Classic Café](#)

[1650 S 84th St at 5:00pm](#)

## Awards dinner October 23, 2016

[see page 6 for details](#)

### WARAC 2-meter net

Every Wednesday at 8pm

MATC repeater 147.045 standard offset

127.3 Hz CTCSS

if repeater down try 146.55 simplex

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 August 2016*

Lots of stuff happened in the ham radio world in July. We now have a new ARRL Central Division Director, Vice Director and Wisconsin Section Manager.

Central Division Director Dick Isely has retired and former Vice Director Kermit Carlson, W9XA, has been appointed to replace him. Carl Luetzelschwab, K9LA, of Fort Wayne, Indiana, replaces Kermit as Central Division Vice Director.

Here in Wisconsin, Patrick Moretti, KA1RB, of Dousman is the new Wisconsin Section Manager replacing Gary Sorensen, W9ULK. Locally, Amateur Electronics has closed and will reopen as Ham Radio Outlet in about a month. And regular attendees of the Dayton Hamvention are buzzing about the recent announcement that the event will move to the Greene County Fairgrounds in Xenia, Ohio, about 15 miles southeast of Dayton.

Use your favorite search engine to find out more about these news items and, of course, we'll be talking about them at the upcoming club meeting.

If you follow ham radio equipment trends at all, I'm sure you're hearing a lot about FlexRadio these days. And if you were at our Field Day, you saw W9WLX Chuck's "Star Wars" station, a Flex 6500/Maestro setup.

So for our upcoming August meeting, Chuck will demonstrate and give us the full story on the Flex 6000 series software-defined radios. Several members - Dave, WB9OWN, and Mike, WO9B, have various Flex radio models, so they will add to the discussion. Bring your curiosity!

Thanks Skip Voros, WD9HAS and Gregg Schultz,<sup>2</sup>

W9AWX for the great weather and Skywarn presentation at our July meeting. Thanks also to Chuck, W9WLX, for last month's Field Day wrap-up and for a great job as FD chairman.

As always, we are looking for ideas for club meeting programs. Better yet, we are looking for program presenters. How about some suggestions?

As you know, the Packer football season is about to begin and that means our annual Awards Dinner can't be far away. In fact, it's a little earlier this year - October 23. It will be at the same location, Carl's Catering on Loomis Road in Greendale. Save the date!

As always, please bring your stories, on-air activities, travel experiences, etc. for the open discussion portion of our meeting. And don't forget our usual 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.**

We were on vacation in July. We went out to my sons home in Granby Colorado. This is a new house for him as he is starting his medical practice after finishing his residency.

We drove out, with the dog so I was able to take some ham radio equipment along. His house is at the top of a hill. That lead to some interesting operating I was able to get on in the morning. I didn't have any luck but was almost heard out in California. Being at the top of a hill had a surprising problem. The wind really came up around 11 am to the extent that the chairs on the deck were moving. I usually cut any operating short when it came up.

It was fun to try and experiment with different ways to string my end fed Zepp antenna. It really did make a lot of difference which way I strung it on how hard it was to tune. Sometimes I wasn't even able to tune it on twenty meters which seemed to be the only band with any traffic on it when I was listening.

It was fun experimenting even without contacts.

**Page 9 editorial**

# **WARAC General Meeting Minutes**

## **July 12, 2016**

### **Introduction**

The meeting was called to order at 19:03 by President, Tom Macon (K9BTQ). Overall meeting attendance was 17 members, plus 2 presenters/visitors.

### **Future Programs:**

Flex 6500 SDR Demo by Chuck, Dave, JohnW

### **Tonight's Program:**

Skywarn, Severe Weather Spotting - Skip Voros (WD9HAS) & Gregg Schultz (W9AWX) – Milwaukee Area Skywarn Association

Field Day wrap-up – Chuck Dellis (W9WLX)

### **Business**

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

Dues increase was presented and discussed:

Individual Members: \$20.00

Family Membership: \$25.00

Retired: \$15.00

Associate: \$15.00

Student: \$15.00

Motion was made & seconded to vote on dues increase. Motion & second were withdrawn after the ensuing spirited discussion.

The Board will reconsider the dues increase, and re-submit with further explanation as appropriate.

Tom Seizer (K9SQU) reported on the WK Club Field Day activity.

Steve Dryja(NO9B) commented on South Milwaukee Swapfest.

The meeting was adjourned at 21:05.

Respectfully submitted,  
Erwin von der Ehe (WI9EV)  
Secretary, W.A.R.A.C.  
2016-07-12

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

## **July 26, 2016**

Howard Smith (WA9AXQ) called the meeting to order at 18:57.

Present: Tom Macon (K9BTQ), Steve Dryja (NO9B), Howard Smith (WA9AXQ), Erwin von der Ehe (WI9EV), Frank Humpal (KA9FZR).

Howard (WA9AXQ) gave the monthly Treasurer's report. The general fund and scholarship fund are in good shape. Carl's Catering down payment for the Awards Dinner was paid.

The dues increase proposed at the July 2016 General club meeting was nixed by the membership. The justification of any dues increase is tabled.

Tom Macon (K9BTQ) gave a review of the club manuals. Still need to review latest versions.

Tom (K9BTQ) is working on wrapping up the Wisconsin QSO Party.

Swapfest 2017: Committee is progressing on plans.

Awards Dinner: Date is Sunday, October 23rd. Plaque designs were discussed.

### **Programs**

August, 2016: Flex R6500 Software defined radio

September, 2016: ???

October, 2016: Elections + ???

### **Future Program Ideas**

Kermit, ARRL

FM38 Repeater System

Logger 32 logging software

SO2R Contest operating

Constitution & Bylaws update is postponed.

### **Other Items**

2-meter net continues either on the repeater or simplex. Repeater reliability was discussed.

Replacement of the club video projector was discussed. WiFi connectivity is desirable

Meeting was adjourned at 21:13.

Respectfully submitted,

Erwin von der Ehe (WI9EV)

Secretary, W.A.R.A.C.

2016-07-26

## IceAge trail NPOTA activation #4 Bill N9KPH

On July 30th, our club held its fourth NPOTA activation on the Ice Age Trail at Lapham Peak. The weather couldn't have been any better - mid 70's, low humidity a light breeze, and shade when it was needed. Our stations were manned by Tom (K9BTQ), Frank (KA9FZR), Mike (WO9B) and Bill (N9KPH). Mike gets extra credit for riding his bike to the park from New Berlin. That's about twenty miles give or take!

We arrived about 10:00, threw up the Buddipole, hooked up my Yaesu 857 and started operating on 20 meters shortly thereafter. After about half an hour of cloud warming, I finally decided to spot the station on DX Summit. A few minutes later, the floodgates opened with Frank and Tom pretty quickly racking up sixteen contacts mostly to the south and southwest. The farthest contact was Arizona. Not too bad using only 50 watts.

Mike held true to form and hiked farther up the trail to test the QRP/CW waters. Unfortunately, he didn't make any contacts. Must have had something to do with the exertion during that long bike ride.....

We even had the pleasure of entertaining a few visitors who stopped by to see what we were up to.

Operations wrapped up with a customary lunch stop. And, yes, Mike graciously accepted a ride home.

For those of you who haven't considered joining us on one of these activations, I'd say think about giving it a go. This is as easy going as it gets!

(Editor note if you are interested in coming along we normally announce when we are doing an activation on the two meter net. With the repeater down we come up on 146.55 simplex on wednesday at 8pm. If you are out of simplex coverage send an email to mike WO9B (mike@palomonet.com) or me Frank KA9FZR fhump@milwpc.com and we will put you on the mail list.)



# WARAC Annual Awards Dinner

Sunday, October 23, 2016  
5:00 PM QSO Time – 6:00 PM Dinner

Carl's Catering and Banquet  
5110 Loomis Road  
Greendale, WI

## WARAC Activities

the year in review

Swapfest

Field Day

WIQP

more

## Presentation of:

2016 Scholarship

Years of Membership Awards

Contest Awards

2016 Member of the Year

## Dinner Menu

*Sliced Roast Beef in au jus and Boneless chicken breast with Honey Dijon glaze*  
Served buffet style with potato, vegetable, assortment of salads, bread, beverage,  
and dessert. Tax and gratuity included. Cash bar.

## Program

Wisconsin Interstate Network by Len Kreyer (N9QIP)

### Awards Dinner Reservation Form

Sunday, October 23, 2016

5:00 PM QSO Time – 6:00 PM Dinner

Name _____	Call _____
Number attending _____	Amount (\$18 Each) _____

Sign up Deadline: October 18

Make checks payable to:

W.A.R.A.C, Inc.

Bring form and money to club  
meeting or mail to:

Howard Smith

4760 S Woodlawn Pl

Greenfield, WI 53228

## 50 Ohms: The Forgotten Impedance

Posted by: Steve Lampen on August 27, 2012

If you play with coax, short for coaxial cable, you probably know this it is available in a number of different impedances. The most common is 75 ohm, like video cable or antenna cable, but in fact our products range from 32 ohms up to 124 ohms.

Why all these different numbers? It's not an accident of course, and there is a reason for each one. Today, we're going to take a quick look at 50 ohm coax cable.

Belden makes hundreds of 50 ohm cables, including a whole line of ultra-low loss versions (Belden 7805 to Belden 7977). The two largest versions (Belden 7976 and 7977) are shown in the photograph below. They are HUGE. The 7977 has a diameter of .600" six-tenths of an inch! This is the largest coax cable that we make.

But first of all, why 50, or any other number? The answer can be shown in the graph below. This was produced by two researchers, Lloyd Espenscheid and Herman Affel, working for Bell Labs in 1929.

They were going to send RF signals (4 MHz) for hundred of miles carrying a thousand telephone calls. They needed a cable that would carry high voltage and high power. In the graph below, you can see the ideal rating for each. For high voltage, the perfect impedance is 60 ohms. For high power, the perfect impedance is 30 ohms.

This means, clearly, that there is NO perfect impedance to do both. What they ended up with was a compromise number, and that number was 50 ohms.

You will note that 50 ohms is closer to 60 than it is to 30, and that is because voltage is the factor that will kill your cable. Just ask any transmitter engineer. They talk about VSWR, voltage standing wave ratio, all the time. If their coax blows up, it is voltage that is the culprit. So why not 60 ohms? Just look at the power handling at 60 ohms - below 50%. It is horrible! At the compromise value of 50 ohms, the power has improved a little. So 50 ohm cables are intended to be used to carry power and voltage, like the output of a transmitter. If you have a small signal, like video, or receive antenna signals, the graph above shows that the lowest loss or attenuation is 75 ohms.

Still, I get a lot of feedback from people who use 50 ohms for small signals; you can see above that they are taking a 2-3 dB hit in attenuation. Excuses I hear are "It's too late to change now!" or "That's the impedance of the box itself." This is especially true of most test gear, which is universally 50 ohms. You have to buy a matching network to use it at 75 ohms or any other impedance. But there are lots of applications where 50 ohms is the best choice.

Belden 7977 mentioned above, can carry more than 5 kW at 30 MHz and more than 600 watts at 6 GHz. So even a cable this small could be used for TV or FM low power, boosters, translators, two-way radios, life-safety such as police/fire, RPU, many ham frequencies, microwave transmitters up to 6 GHz, and probably hundreds of other applications where signal are being delivered with high voltage and high power.

Most often, these signals end up in antennas. For instance, the sections in transmitters where small output power sections, like an exciter, are fed to a larger power section also require 50 ohm cable. That might be where the physically smaller 50 ohm cable might be used.

For many of these cables, they come in three versions: for outdoor applications, for riser-rated indoor applications, and for water-blocked applications such as direct burial or under-water applications. Some are even approved for shipboard ABS approvals.

These shipboard versions are also LSZH or low-smoke zero-halogen, which is often a requirement in some European countries. You can get more information and samples by contacting Belden customer service at 1-800-235-3361 (1-800-BELDEN-1) or just drop me a line at [steve.lampen@belden.com](mailto:steve.lampen@belden.com).

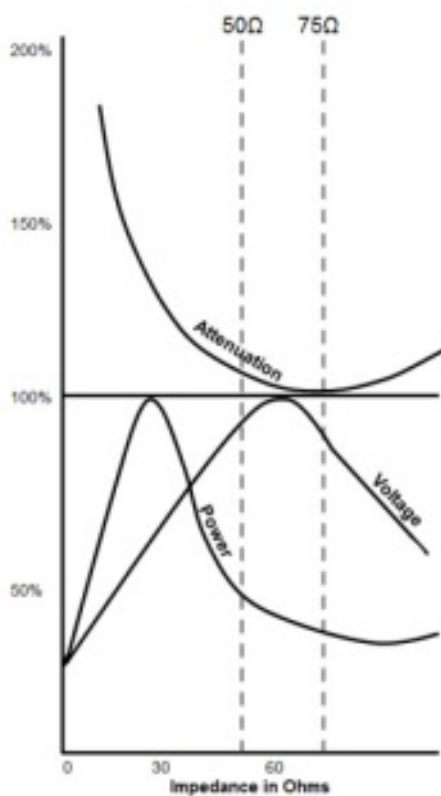


Figure 2-8 Coax impedance and loss  
84



## **Report from Dave Garnier WB9OWN on his encounter with some Hams activating a NPOTA location while on vacation in July.**

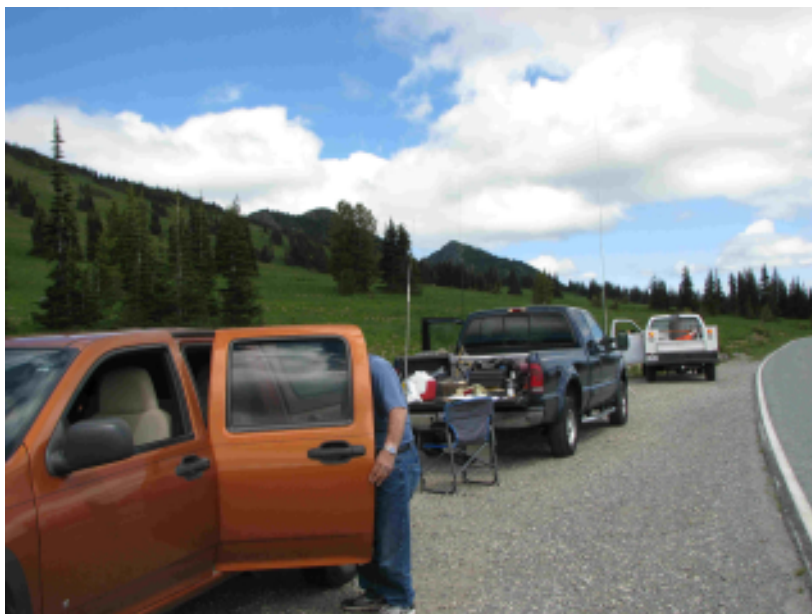
Guys,

I stopped the car and backed up into the nearest parking spot at the entrance to Sunrise Visitor Station at Mt Rainier... These guys had just finished operation because they drained their battery... The 2 guys I talked to had a hard time believing that I too was a ham too at this "chance encounter."

They were bashful for the camera but I told them I would tell my club members about this chance encounter. The one ham said they were from the Redmond WA ham club, a email to WC7Q ought to elicit more information. BTW, the white truck behind the operating station were some NPS park employees, the guys thought they were keeping an eye on their operation. This was a really discreet operation, they were operating right at the gate to Sunrise Visitor Center

This is the 8th day of our 21 day vacation and there's still more to be seen... So far we have seen 7 NPS parks, unfortunately these have been quickies (drive by shootings) but there's is always next year!!!

73 Dave - wb9own



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

Interesting site on thoughts about the lack of sunspots and where the sun is in its life

<http://www.forbes.com/sites/brucedorminey/2016/06/27/sun-has-likely-entered-new-evolutionary-phase-say-astronomers/#7bcc2945278e>

Another propagation site. Sort of fun to watch and to see how it matches to what you hear on the radio.

<http://www.bandconditions.com/>

### Editorial from pg 2

Sort of like National Parks On The Air activations. Four of us went on another one July 30. We are getting the equipment sorted out and keeping it down so it is easy to carry to the site and set up. Like most things practice makes perfect. Now if we could get the sun a little more active we would be all set!

Frank KA9FZR



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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.