



Official Publication of the
West Allis Radio Amateur Club

Hamtrix

[click here to go to web site](#)

Volume 62, Issue 3 March, 2015

MARCH CLUB HAPPENINGS

Club Meeting

St. Peter's Episcopal Church,
7929 W. Lincoln Avenue, West Allis
March 10, 2015 **7:00pm**

Program

Tom K9BTQ will be talking about WIQP
Mike WO9B will talking about propagation
and Reverse Beacon Network
(see Mikes article on pg 9&10)

[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 15, 2015 - 1800Z to 0100Z

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 March 2014

We're into March and hopefully Spring is right around the corner.

In addition to our normal activities this time of year, our club is involved in Radio Merit Badge instruction for Boy Scout Troop 580 at Mt Hope Lutheran at 86th and Becher. A big thanks to Erwin, WI9EV, Frank, KA9FZR and Mike, WO9B for putting this project together.

The first class was on Tuesday, March 3rd, with three more on the 10th, 17th and 31st. The first three classes are presentations on merit badge material and the fourth class will be final Q & A plus live 2-meter QSO's. More about this at the upcoming meeting.

The Wisconsin QSO Party falls after the March club meeting this year, so we'll be talking about WIQP at the upcoming meeting. We'll focus on operating strategy and logging software, plus anything else anyone wants to bring up about the QSO Party. Look for a separate WIQP article in this Hamtrix.

Also, Mike, WO9B will talk about propagation and the Reverse Beacon Network (RBN). (This will be a little later in the meeting because Mike will be at the merit badge class).

So let's get everyone on the air and bring your questions to the meeting. If you need help with anything, now or after the contest, please let us know.

At the last meeting we watched some video clips of WIQP operation. Since then I found some good videos of phone mobile operation in the 2015 Minnesota QSO Party by N0HJZ. Excellent audio quality. Go to <http://www.youtube.com> and search for N0HJZ, then look for Watonwan County.

Don't forget that Amateur Electronics' annual Superfest is coming up **March 21, 9:00 AM to 3:00 PM** (just one day, Saturday). Go to <http://www.aesham.com/aes-superfest> for the whole story. And, as usual, we'll need people to man our club table.

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

Another month so it's time for a Hamtrix. This month we finished Tom Nickel's KC9KEP article on his homemade sideband transmitter and how he has it set up with his receiver.

Mike Johnson WO9B wrote a nice article on DX-clusters. If you want to know if you are getting out with your antenna they are a big help.

Other things of interest I just built a pixie transceiver from a kit. It did power up without any magic smoke coming out of it! It seems to work with a dummy load in that I can hear my FT-817 when I key it on frequency and the FT-817 can hear the pixie when it is keyed. MY first test on the antenna wasn't as good. I was able to hear the local radio station real well. And I found out it doesn't give me a tone when I key it. There will be more on this project in coming editorials.

73
Frank

WARAC General Meeting Minutes

February 10, 2015

Introduction

The meeting was called to order at 7:06 pm by President, Tom Macon, K9BTQ. Overall meeting attendance was 16 including 2 visitors.

Program

The evening's program was a three part series of short presentations:

Demo Project for Arduino Micro-Controller board by Howard Smith WA9AXQ. Sign up for a group buy of an Uno board, Project Book with Steve, NO9B

Erwin, WI9EV and Frank, KA9FZR updated the group on the Boy Scouts Radio Merit Badge program.

Tom, K9BTQ presented a video presentation on the upcoming Wi QSO Party operations.

Business

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

Swap Fest Wrap Up: 2016 Swapfest will be in the round building, same as this year. Jan 9th, mark the date.

2015 Membership Applications and dues should be completed. All non-life members need to fill out the renewal form and return with the annual dues.

Wisconsin QSO Party is 1 month away. Stay tuned for more info as it gets closer. Next month's program is dedicated to the contest.

MRAC and MAARS Swap Fest is Feb 14th. AES Superfest will be March 21st.

Need to perform an audit of the Clubs Books for 2013. Two volunteers are needed. Bill Reed, N9KPH, volunteered. Tom will make another volunteer selection for the January Audit.

Next month's meeting will be all about the WiQSO Party. Tom discussed upcoming meeting programs ideas.

Revised 2014 Membership Booklets are available at the meeting. Members welcome to a copy.

Announcements

2 meter net every Wednesday at 8:00 pm on 147.045, + offset, PL 127.3. Join in!

CQ Tuesday, 1:00 pm, 3rd Tuesday, in Waukesha at the New China Buffet.

The Nut Net breakfast is at Genesis Restaurant, 8:30 am, 4th Tuesday of the month.

Dinner at Johnny V's, 5:00 pm before the WARAC club meeting.

The meeting was adjourned at 8:49 pm.

Respectfully submitted,
Mike Johnson, WO9B
Secretary WARAC

WARAC Board Meeting

February 24, 2015

Howard Smith, WA9AXQ, called the meeting to order at 7:05 pm.

Present: Tom Macon, K9BTQ, Steve Dryja, NO9B, Howard Smith, WA9AXQ, Erwin von der Ehe, WA9BZW, Frank Humpal, KA9FZR and Mike Johnson, WO9B. Phil Gural, W9NAW was also present.

Membership Renewal Forms and Dues

HOWARD Smith WA9AXQ forwarded one member application and indicated another is in the works.

Swapfest 2015

Phil, W9NAW presented the final financial results for the swapfest.

Swapfest 2016

The contract for the Arena Bldg has been signed for Jan 9th. Phil is looking into an offsite location for the VE Testing. Options were discussed to for outreaching to additional vendors to enhance ticket and vendor sales. Other possible fund raising ideas were discussed.

Radio Merit Badge

Erwin, WA9BZW finalized presentation dates and details for Troop 580. BSA Modules will be presented on Tuesdays throughout March. The last Tuesday will be the hands on demonstration and may need additional club members to assist.

WI QSO Party

Tom, K9BTQ is working on finalizing the VPN for data handling of log submittals; Tom noted reflector activity is low at this time; Tom is looking to gather in the planned mobile operations.

2015 Budget

Howard presented the revised budget and will incorporate the Swapfest results and finalize for 2015.

Programs

March – WIQP, Arduino Group

April –3 Phase Power Monitors, High Altitude Balloons (possible)

May – Pizza Night, Auction Evening

June – Field Day, Chuck W9WLX

Future Program Ideas

Milwaukee Astronomical Society (early spring)

Logbook of the World

Spotting – Possibly in the Fall

FM38 Operations

DSP presentation

Yaesu Fusion System

Craig Jig Fastener System

Club Operations Manual

Secretary Documents were updated.

2012 , 2013 and 2014 Audit

Howard will prepare a package to be sent to Bill, N9KPH. Tom will determine another volunteer.

Other Items

2 meter net has been well attended.

Meeting was adjourned 9:49 pm.

Respectfully submitted,
Mike Johnson, WO9B
Secretary WARAC

Wisconsin QSO Party - 2015

By Tom Macon, K9BTQ

Our club is the sponsor of WIQP and proud of it! As it says on our WIQP website, WARAC has sponsored this annual event since 1979, which makes the 2015 WIQP our 37th annual.

This on-the-air operating event is popular with stations in Wisconsin, across the country and the world. I encourage all WARAC club members to participate and proudly mention they are members of WARAC.

A unique thing about WIQP is that there's something for everyone, from big-gun contesters to casual little pistols. Remember that the overall goal is for everyone to have fun.

We talk a lot about CW, mobiles and activating counties because a lot of entrants are attracted to our Party by this competition, but it's not for everybody. There are lots of other ways to participate – phone, casual QSOing and VHF operation, too.

So we want everyone! The more stations participating, the more QSO's will be made, and that makes it more fun. Be sure to read the **Rules**, get on the air and **join the party on Sunday, March 15 - 1:00 PM to 8:00PM.**

At the upcoming meeting we'll talk about the in's and out's of the QSO Party, with emphasis on strategy. We'll also talk about logging software, especially version 3.5 of the N3FJP logger. Go to the WIQP web page and look under Logging Software for details on using N3FJP's WIQP logger. By the way, if you're running a version earlier than 2.0, please upgrade.

Any and all questions are fair game. If you have something you're wondering about, please bring it up! Meanwhile, please visit the WIQP website at <http://www.warac.org/wqp/wqp.htm>.

No article about QSO parties is complete without talking about county activation. Our party is an opportunity to work some of the "rare" Wisconsin Counties, but they can't be worked if they are not on the air. We need to get activity in all Wisconsin counties. To find counties that are less likely to be on the air, look at Activate All 72 Counties (<http://www.warac.org/wqp/activate.htm>) on the WIQP website. In addition to the table there, you can download 2014 and 2013 activity data in spreadsheet format.

Those of you working toward your Worked All Wisconsin Counties Award (WAWC), also sponsored by WARAC, can use this as the place to find many Wisconsin counties on the air at the same time. WIQP QSO's count for WAWC (as long as the station worked submits a log). So please make plans to be on the air – Sunday, March 15! Just seven hours of fun!

And, when it's over, don't think you didn't do well enough to submit your log. Every year we receive logs with just two or three QSO's. Again, if you need help, bring your questions to the meeting or contact one of our WIQP team members: Chuck, W9WLX; Howard, WA9AXQ or Steve, NO9B or myself.

Continuation of Tom Nickel's KC9KEP article from last Month

Imagine that you'd like to transmit at 3760 KHz for a QSO. Just plug in a 3760 KHz crystal, right? Nope! Here's what happens: The transmitter's suppressed carrier frequency crystal for lower side band is 9.00015 MHz. This frequency has to be heterodyned (or "mixed") with another stable oscillator to become converted to 3760 KHz. Simple subtraction indicates that a 5240.15 KHz crystal is required. Prior to the advent of digital tuning, it didn't matter too much exactly what frequency you QSO-d at, as long as you were at the same frequency as your recipient .. and that you weren't operating on an illegal frequency!

My solution to remedy this quagmire? The NorCal FCC-1 & FCC-2 Direct Digital Synthesis VFO kit⁶. I suppose to a tube-purist, this may be "cheating", but it resolves the issue of tube VFO drift as well. I feel it justifies stepping out of the "hollow state" realm this one time.

Among the plethora of abilities of the FCC-1/FCC-2 is the ability to be programmed for any offsets desired. So, one can simply dial in the desired operating frequency and the PIC controller will take care of any messy math for you. During my first QSO with the Nut-Net, I was informed that I was a little off frequency. To solve this, all I needed to do was to rotate the knob to bump up my transmit frequency by 100 Hz .. on the fly. I went from 9.985.000 to 9.985.100 by moving the cursor under the 3rd digit and rotating the rotary shaft knob to fix my operating frequency. Problem solved!

⁶ <http://www.norcalqrp.org/fcc2.htm>



Misc. Requirements - Other items needed are the ubiquitous antenna tuner, an SWR meter, microphone, and optional current tap in the transmit coax. The current tap samples a minute portion of the transmit signal that can be monitored by a scope and spectrum analyzer for viewing modulation and

transmitter purity.

My antenna is a relic that was left over from my crystal radio receiver experiments – an inverted "L" wire antenna. I was surprised to discover that the lowly wire antenna can support transmitting quite well, particularly considering its low cost of installation.

Transmitter operation – The transmitter offers 3 modes of operation, and 3 selections for monitoring transmission operation. Of course, power and USB / LSB selection is provided as well.

The 3 modes of operation are; Operate, Calibrate and Tune.

Operate - places the set in readiness to be controlled by a key. In my case, control is done by the T/R Controller.

Cal - position unbalances the balanced modulator but keeps the output stage biased off. This is handy to "spot" oneself on the receiver so that we're ready to receive on the same frequency.

Tune - position also unbalances the balanced modulator but turns on the final at an adjustable level for tune up.

Tune up follows the age old method for tube amp finals, dip the cathode current (which is displayed on the meter) and load with the output capacitor. This is

a good time to peak the antenna tuner



and check your SWR for minimum.
 The Meter can then be switched to monitor relative RF output level, or grid current.
 Since this transmitter's final is biased AB₁, the meter should deflect only on occasional audio peaks and serves as an over-modulation indicator.

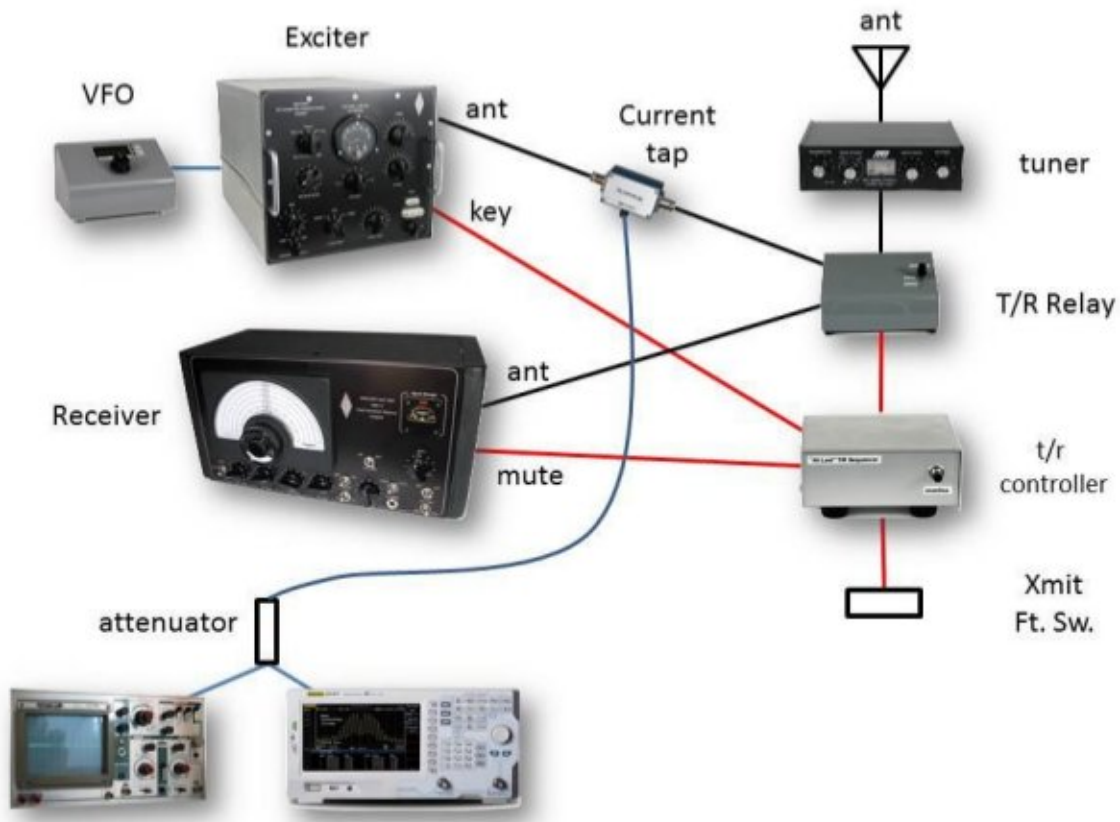
Receiver Operation – The receiver will be close to receiving the correct frequency now that it has been “calibrated” to the transmitter.
 Of course, the SSB mode must be selected, and the BFO on (which I always leave in the same position.)
 I set RF gain midway, and bring up the Mixer, IF Gain and value to a comfortable level.
 From that point, it's a matter of occasional tweaking as atmospheric conditions change.

Transmitting – So, that's about it. I use a footswitch to trigger the T/R controller and watch my signal level on the scope while watching grid current to avoid over modulation or splatter.

To date, I've joined the morning Nut-Nets in Wisconsin. A transmission to Rhinelander gave me a “ten over nine” signal report. Not bad for a single 6DQ5 color TV sweep tube!

Future Plans – I may break a few more rules and add a frequency counter to my receiver in a covert fashion of course! The paper dial indicator does not have the accuracy of a digital readout.

HBR-11 and 1962 ARRL HF Crystal Filter SSB Transceiver Station Interconnection Diagram



Fun with DX Clusters

Mike Johnson, W09B

As I approach the 2015 WIQP, my Holy Grail of Ham activity for this year, I've been working on a check list of stuff getting me in shape to play on the big day. Shaking off the rust from too many inactive years, it has been a fun, and frustrating journey as I wander into the brave new world our internet/computer fueled hobby has become. So many new toys and so little time. One of those cute little corners of internet tech is the DX Cluster or Spotting Network. They are certainly not new, but boy have they come on since my last encounter via 2 Mtr Packet in the early 90's.

Prior to getting up close and personal with the N1MM contest logging software, I was very happy to log into any of dozens of internet based clusters. My favorite is at <http://dxwatch.com> which allows me to filter the hits by band, mode and spotting location. You can set up a free account and save your filters just to make it easy. Back in the day, I used to think of this as "shooting fish in a barrel". Operating today, well, it is just another of those windows that run on the computer in the shack.

Hello, W09B! If you aren't W09B, please [log in](#) or [register](#) if you are a new visitor.

[show/hide my last filters](#)

no filter selected, showing all spots rows to show: 15 ▾
send a spot / search spot by callsign

de	dx	freq	obs	time
EA5DNO	TF3JB	14004		1931z 17 Feb
I4LCK	C6ATS	21240	[LoTW] CQ UP %	1931z 17 Feb
I27DJS	FK8IK	7180	[OC-032] OC-032 UP	1930z 17 Feb
9A6ZZ	N4H	14262	cq,cq	1930z 17 Feb
UT9NA	S58N	1838	[LoTW] CQ RTTY	1930z 17 Feb

And that was just great. Or at least it was until I started to fuss around with N1MM. Then things got interesting. N1MM uses a Telnet version of the DX Cluster to generate multiplier spots. Once you start messing with Telnet, the next thing you bump into is something called a Skimmer and then something called the Reverse Beacon Network. These two deals really add a ton of info to your operating by telling you what bands are open and to where they are open. Let's take a look at both of these.

REVERSE BEACON NETWORK

welcome main dx spots nodes downloads about contact us



Google
Terms of Use Report a map error

160m / 80m / 40m / 30m / 20m / 17m / 15m / 12m / 10m / 6m / 2m
world wide / zoom to US / zoom to Europe / zoom to North Atlantic

[show/hide my last filters](#)

band: 160m,80m,60m,40m,30m,20m,17m,15m,12m,10m / mode: cw rows to show: 15 ▾
cancel filter selection / search spot by callsign

de	dx	freq	cq/dx	snr	speed	time
N4ZR	ZP6CW	21027.0	CW CQ [LoTW]	13 dB	26 wpm	1957z 17 Feb
K1TTT	EA1WH	14042.0	CW CQ [LoTW]	17 dB	25 wpm	1957z 17 Feb
UD4FD	R8AU	3528.8	CW CQ	19 dB	23 wpm	1957z 17 Feb
DF7GB	OM8VL	3545.0	CW CQ	15 dB	22 wpm	1957z 17 Feb
HB9DCO	G2XV	7030.0	CW CQ	28 dB	14 wpm	1957z 17 Feb

So what is a Skimmer? It is a station set up to listen on one or more bands. The whole band. And what they listen for is CQ's, typically either CW or RTTY. They then take the CQ's they hear and upload it to the DX Cluster Network. Effectively what we end up with is a world wide network of stations listening and reporting CQ's. And there are a lot of them. <http://reversebeacon.net> is currently reporting 119 Skimmers online. The information is presented both graphically and by list. It is literally an up to the moment propagation report. From what is shown to the left, looks like a good time to be chatting with South America or western Europe and west Africa. 15 Mtrs seems to be the hot band. You gotta believe 20 is in play as well.

If that wasn't enough for you, there is another neat trick these Skimmers can do. Unfortunately you will need to leave the comfort of your internet browser and jump into the fun world of Telnet. It is not as bad as it sounds, but the payoff is really pretty cool. Telnet is an old non-graphical command line computer communication technology. Been around for ever. I use a program called Putty which is a free download from the aptly named <http://putty.org> It is very small and runs directly as an .exe file. If you've come this far, you can down load it and easily figure out how to make it work.

So why go to all this trouble? Well, the neat deal is that a Telnet interface with the DX Cluster allows you to control the "hits" the cluster is reporting to a much finer degree than afforded the internet based systems. And by finer degree, I mean right down to reporting a single station. That would be you!!

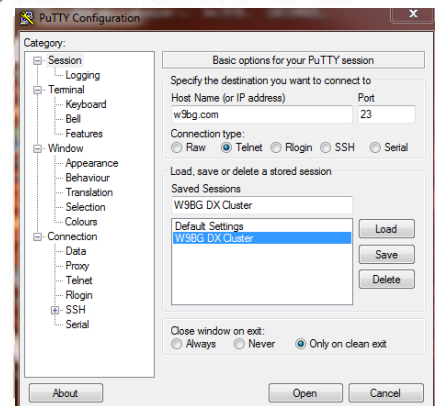
So what we end up with is a report from all these Skimmer stations on just your signal. To the right is a report of how my signal was heard on 20 Mtrs. Interpreting my 14.0317 CQ, I made it all over the US with no problem. I also made it into Germany, England Sweden and Iceland. The report also includes a signal strength. To get this, all I had to do was

```
DX filter set to: call = wo9b
DX de F5MUX-#: 14031.8 WO9B CW 10 dB 25 WPM CQ Waukesha 1709Z
DX de VE2WU-#: 14031.6 WO9B CW 23 dB 26 WPM CQ Waukesha 1710Z
DX de W1NT-#: 14031.8 WO9B CW 7 dB 25 WPM CQ Waukesha 1710Z
DX de KM3T-#: 14031.6 WO9B CW 29 dB 24 WPM CQ Waukesha 1710Z
DX de W3OA-#: 14031.7 WO9B CW 30 dB 24 WPM CQ Waukesha 1710Z
DX de K7EG-#: 14031.6 WO9B CW 8 dB 25 WPM CQ Waukesha 1710Z
DX de N4ZR-#: 14031.7 WO9B CW 16 dB 25 WPM CQ Waukesha 1710Z
DX de WE4S-#: 14031.7 WO9B CW 12 dB 25 WPM CQ Waukesha 1710Z
DX de DF7GB-#: 14031.7 WO9B CW 10 dB 25 WPM CQ Waukesha 1710Z
DX de DL9GTB-#: 14031.6 WO9B CW 16 dB 25 WPM CQ Waukesha 1710Z
DX de AA4VV-#: 14031.7 WO9B CW 17 dB 25 WPM CQ Waukesha 1710Z
DX de K1TTT-#: 14031.7 WO9B CW 20 dB 25 WPM CQ Waukesha 1710Z
DX de GW8IZR-#: 14031.6 WO9B CW 20 dB 25 WPM CQ Waukesha 1710Z
DX de KO7AA-#: 14031.7 WO9B CW 14 dB 25 WPM CQ Waukesha 1710Z
DX de WA7LW-#: 14031.6 WO9B CW 17 dB 25 WPM CQ Waukesha 1710Z
DX de SE0X-#: 14031.7 WO9B CW 9 dB 25 WPM CQ Waukesha 1710Z
DX de TF3Y-#: 14031.6 WO9B CW 17 dB 25 WPM CQ Waukesha 1710Z
DX de W4KKN-#: 14031.6 WO9B CW 35 dB 25 WPM CQ Waukesha 1710Z
```

call CQ, and the scanners picked it up and reported it to the DX Cluster Network. How cool is that? If you are working QRP, this is really good information.

Admittedly, the Telnet approach is a bit more hands on so I won't bore you with all the details. For those wanting the Reader's Digest version of how to do the above, here it is:

1. Log into a DX Cluster via Putty. I use the W9BG Cluster located in Madison. To the right is what the logon screen looks like in Putty
2. You will need to sign in. It is just entering your call sign.
3. To limit the screen output, you will need to enter the following command: `set dx filter call=wo9b`
4. Go to the band of your choice and call CQ. I will do a couple of 3 x 2 calls.



That's it. If everything is set up correctly, you should get a series of reports on your call just like the one shown above. That's pretty neat. Oh, and do enter your call in lieu of mine when logging into W9BG and setting up the filter, of course.

For more information on the DX Cluster commands and the telnet interface, you can go to the following website: <http://64.128.19.154/Home.aspx> They will have more information than you will ever need.

Good luck and have a great time.

Ham Radio on the Internet

All new this issue (click on red web address)

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

"The New DXer's Handbook"

Second Edition

<http://www.k7ua.com/>

Free download good ideas for any operating.

Passwords again!

http://securitywatch.pcmag.com/security-software/332517-survey-hardly-anybody-uses-a-password-manager?mailingID=A5989BB558DC496AB6B72A1381FE28B7?mailing_id=1183795

Article on hearing aids and wireless

http://www.wirelessdesignmag.com/articles/2015/03/hearing-aids-tune-wireless-world?et_cid=4445376&et_rid=353748193&location=top

Officers and Board

President

Tom Macon, K9BTQ

Vice President

Steve Dryja, NO9B

Secretary

Mike Johnson, WO9B

Treasurer

Howard Smith WA9AXO

Directors

Frank Humpal, KA9FZR

Erwin von der Ehe, WI9EV

Al Hovey, WA9BZW

Newsletter Editor

Frank Humpal, KA9FZR

fhump@milwpc.com

Webmaster

Tom Macon, K9BTQ

West Allis Radio Amateur Club, Inc.
Tom Macon, K9BTQ
3547 S. 95 St
Milwaukee, WI 53228



WEST ALLIS RADIO AMATEUR CLUB, INC.

PO Box 1072
Milwaukee, WI 53201
W9FK
<http://www.warac.org>

***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.