



Official Publication of the  
West Allis Radio Amateur Club

# Hamtrix

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Volume 60, Issue 12 December, 2013

## DECEMBER CLUB HAPPENINGS

**Club Meeting  
December 10, 2013**

### **Program**

Phil W9NAW will talk on the Swapfest  
plus a video on  
Contest Radio Performance by Rob Sherwood,



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

ARRL Ten Meter Contest Dec 14 & 15 see pg 5 for more info  
Swapfest January 4, 2015 see pg 7 for more info  
Open source Ham Radio pg 8  
Field day results pg 9

**Merry Christmas  
and Happy (fill in the holiday )  
to all**

WARAC 2-meter net  
Every Wednesday at 8pm  
MATC repeater 147.045 standard offset  
127.3 Hz CTCSS




**NEW** 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 December 2013*

The ARRL 10 meter contest is coming up on the weekend of December 14-15, 2013. As most of you know, our club sponsors a "piggy-back" contest just for our members that enter this contest. To participate, all you need to do is to submit your log to the ARRL as usual and also submit your log to Chuck, W9WLX. During the contest, work as many club members as possible for points in the club competition.

Recently, Chuck emailed a membership list to help you identify our club members on the air. If you need a copy or have any other questions, bring 'em to the upcoming meeting or contact Chuck.

The piggy-back 10 meter contest was Chuck, WA9PUB's brainstorm a number of years ago and we have been doing  ever since. Last year, Chuck, W9WLX picked up the reins and is now doing the log checking, etc. Thanks to Chuck and Chuck for continuing our private little contest for all these years.

Our Swapfest is less than a month away! Saturday, January 4, 2014. Chairman Phil will take us through the details of the upcoming event. Everyone's help is needed to pull off our Swapfest, which is our big fundraiser of the year. Anybody is welcome to help – you don't need to be a club member, or even a ham. Just be there! The more help we have, the more time we'll each be able to spend looking for treasures. So be there, dark and early!

The main program for this meeting will be a video on Contest Radio Performance by Rob Sherwood, NC0B. As you probably know, Rob does benchmark testing on all major radios and rates their performance. His receiver test data is on his website at <http://www.sherweng.com/table.html>

This video is from Sherwood's presentation at the 2013 Contest University at Dayton and it will be presented by Howard, WA9AXQ, one of our resident radio experts.

I recently had the opportunity to invite Luis, XE2B, to our December meeting and he has said he will be there. He is in Milwaukee for a couple of weeks and is interested in meeting other hams, especially those involved in contesting. Look up Luis on QRZ.com to find out more about him.

It's time to start making plans for the Wisconsin QSO Party! Make sure Sunday, March 9 is on your calendar and start thinking about possibly operating mobile or setting up a portable station in another county.

Congratulations again to Paul Hass, KC9JET, our 2013 Member of the Year. Since he was unable to attend the dinner, he received his plaque at the November meeting.

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**

For your convenience I have added pdf buttons to any of the web sites in red. If they sound interesting and you're reading this on your computer you can double click on them and they should work. If you're reading a paper copy of Hamtrix they will probably not work! If they do let me know. Hi Hi

As I'm sure everyone else is, I'm busy getting ready for the holidays. At the Nov meeting I gave myself an early gift and bought a used Yaesu VX-170 that was for sale (with the money going to the scholarship fund). I can use my FT-817 as a sort of portable vhf radio. But since it doesn't have all the power saving features handytalkies usually have it doesn't last to long on internal batteries.

*continued on pg 9*

# **WARAC General Meeting Minutes**

## **November 12, 2013**

### **Introduction**

The meeting was called to order at 7:09 pm by President, Tom Macon, K9BTQ. Overall meeting attendance was 28.

### **Program**

The evening's program, QRP Operation with the Elecraft KX3, was given by Dick Wood, W9JBE.

### **Business**

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

License classes are underway at AES on Saturdays. The Extra Class sessions are just beginning.

The WARAC Swapfest is just around the corner. Advanced tickets are for sale--see Phil Gural, W9NAW. Cards are being printed for notification of the early date in 2015, January 3, for distribution at this year's fest. More effort is needed to get the word out about the early date. Soliciting new vendors is underway with nothing definitive to report right now.

The ARRL 10 meter contest will take place on December 14 & 15. The friendly club competition will be held again this year. ARRL rules apply with extra points for working club members.

### **Announcements**

Paul Hass, KC9JET, was presented with the Member of the Year award by Frank Humpal, KA9FZR. The award was presented at the general meeting as Paul was not able to attend the awards dinner.

Congratulations to Jim Laures, KC9ZUG, for getting his ham ticket. Jim's primary interest is CW and we hope to hear him on the bands soon.

Louie Golembiewski, W9GSV, was onboard the honor flight to Washington DC, November 2. Thank you Louie!

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 at Country Buffet

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

Johnny V's is the place for the WARAC pre-meeting dinner. The dinner starts at 5:00 and everyone is encouraged to participate.

Meeting was adjourned at 8:50 pm.  
Respectfully submitted,  
Chuck Dellis, W9WLX  
Secretary WARAC

# **WARAC Board Meeting**

## **November 26, 2013**

Howard Smith called the meeting to order at 7:01 pm.

Present: Tom Macon, K9BTQ, Steve Dryja, NO9B, Chuck Dellis, W9WLX, Howard Smith, WA9AXQ, Frank Humpal, KA9FZR, Leroy Hass, KC9NST, and Erwin von der Ehe, WI9EV.

### **Chairman of the Board Election**

Howard Smith was re-elected chairman of the board. Tom Macon made the motion, Steve Dryja second, and a majority vote was made.

### **Swapfest eMail List**

The Email list from the 2013 swapfest compilation has been completed. A reminder email with a link to the flyer will be sent the second week of December. Phil to approve the email verbiage. There are no known swapfest issues at this time.

### **WAWC**

There does not seem to be a template available. A new template will need to be designed and Tom Macon will work with Mike Johnson to complete.

### **Programs**

December—Swapfest by Phil Gural, W9NAW.

January—Sherwood Engineering from Contest University or Dean Jeutter, K3GGN, Spotting.

February—Wisconsin QSO Party and/or Sherwood Engineering from Contest University.

Future Program—Power Quality.

### **Budgets**

2014 Budget and the 2011 audit report will be available at the January board meeting. 2012 & 2013 audits are pending. Tom Macon to appoint an auditor once Howard has it prepared.

### **Miscellaneous**

The December, 2013, Board meeting is cancelled due to the date conflict with Christmas Eve. Howard Smith made the motion and Steve Dryja second. Majority vote carried.

No new actions on the WARAC Operations Manual.

There was a discussion regarding the Scholarship email response from Mary Hobart, ARRL Foundation.

The meeting was adjourned at 9:15 pm.

Respectfully submitted,  
Chuck Dellis, W9WLX  
Secretary WARAC

# **Are You Ready for the ARRL 10 Meter Contest?**

**By Chuck Dellis, W9WLX**

WARAC 10m Contest Chairman

The ARRL 10 meter contest takes place this weekend, starting at 0000Z on December 14 and concluding at 2359 on December 15. Once again this year, the West Allis Radio Amateur Club will have its friendly club competition.

The standard ARRL contest rules for contests below 30 MHz apply. Additionally, take a few minutes to fill out the club contest form and submit it and your log to participate in the club event. You are awarded 5 additional points for every club member worked and any logs submitted electronically will automatically be checked for club member call signs.

If recent propagation trends continue, the 10 meter band may provide conditions for an active contest. 10 meter aficionados typically rely on E and F layer propagation as their QSO enablers. Recent solar activity has provided a higher ionization density of the F region allowing the higher HF frequencies to be reflected.

Another phenomenon that occurs at 10 meters is sporadic E. According to the Space Environmental Services Center, sporadic E is defined as transient, localized patches of relatively high electron density in the E region of the ionosphere which significantly affects radio wave propagation. The reason sporadic E occurs is not completely understood and the behavior of mid-latitude sporadic E is unpredictable. The scientific community has come forward with theories and hypotheses, yet they continue to be surprised by unexplainable results.

It is generally accepted that sporadic E occurs most often in the summer with a secondary occurrence during the winter, though the summer activity is 5-8 times that of winter. The peak activity is centered close to the solstices. During the winter peak, sporadic E is most common just after sunset.

So how does this play out for a 10 meter contest in December? Well, there are three elements of sporadic E that factor into a December contest. First, the contest happens close to the winter solstice, one of the peak times of sporadic E activity. Second, although it may be most common just after sunset during the winter, sporadic E can occur anytime, day or night. And lastly, single hop sporadic E propagation at 10 meters is around 1300 miles. Along with the other propagation types, it is not unusual to hear loads of activity on 10 meters in December. When 10 is open, high power and a big antenna are not required. Pick up your microphone, key, or both and join in the fun.

# 2013 West Allis Radio Amateur Club 10 Meter Contest

Summary Sheet for WARAC sponsored contest portion

Saturday, December 14, 0000Z to Sunday, December 15, 2359Z

Rules: ARRL General Rules and Rules for HF contests apply.

Operator Name: \_\_\_\_\_ Call Used: \_\_\_\_\_

Entry Category (Check one) CW Only: \_\_\_\_ Phone Only: \_\_\_\_\_ CW & Phone: \_\_\_\_\_

Power Level (Check one) QRP \_\_\_\_\_ (0-5 watts) Low Power: \_\_\_\_\_ (5-150 watts) High Power: \_\_\_\_\_ (>150 watts)

## Scoring

CW QSOs \_\_\_\_\_ X2 = \_\_\_\_\_ CW Points  
 Phone QSOs \_\_\_\_\_ X1 = \_\_\_\_\_ Phone Points  
 CW Points + Phone Points = \_\_\_\_\_ Contact Points

Class	Power Range	Power Multiplier
QRP	0-5 Watts	2.0
Low	5-150 Watts	1.5
High	>150 Watts	1.0

Contact Points \_\_\_\_\_ X Power Multiplier \_\_\_\_\_ = \_\_\_\_\_ Total QSO Points

## Bonus

Number of Club Members Worked \_\_\_\_\_ X5 = \_\_\_\_\_ Club Member Points

Total QSO Points \_\_\_\_\_ + Club Member Points \_\_\_\_\_ = \_\_\_\_\_ Final Score

Send this summary sheet and a copy of your log to:

Chuck Dellis  
 3542 S. Massachusetts Ave.  
 Milwaukee, WI 53220-1118

Or submit electronically at [cjd@wi.rr.com](mailto:cjd@wi.rr.com)

## SWAPFEST 2014 IS COMING

Well, Black Friday and Cyber Monday are behind us and now it is time to get the other Christmas activities started. Soon after the start of the new calendar year it will be time for the WARAC 42nd Annual Midwinter Swapfest. The date is January 4, 2014.

Pre-event preparations such as caterer, license testing and security have been initiated and advance table reservations will soon begin. Once again, we will pre number all the tables on the day before and allow some sellers to set up ahead of time on Friday afternoon.

Taking a break from all the Christmas activities may be a good way for all of us to sort out any unused electronic parts or radio equipment and think about selling or donating them. More about this subject is mentioned below .

We will have ARRL represented again. We are expecting that the Central Division Director and Vice Director as well as the newly appointed Wisconsin Section Manager will attend. Tables have been reserved for them in the South Hall. As time permits, please stop by and say hello to them. It is also a good time to renew your ARRL membership as Gary, W9ULK, usually has a special offer for this occasion.

The following information is being included as a review for all club members.

Advance Tickets are available. Club members are encouraged to take some advance tickets and sell them to their fellow ham friends. Besides, they save a \$1 by doing it this way. See Phil at the December club meeting. This helps the overall attendance numbers and provides more income for the club.

Do you want to sell something? There are a couple ways you can do this. If you want to sell equipment, you need to bring it to John, K9IAC, in the South Hall who has a table for this

purpose. Otherwise, along the east wall in the East Hall, there are several tables for electronic parts/components with the selling being coordinated by Louie and Steve. In any case, it is a good idea to provide a write-up sheet providing your name, call, selling price and other details. Also, Louie will take donations for the WARAC Scholarship Fund.

How can you help at this event? We need every WARAC member to be available and willing to help with the many duties that are necessary for this event to be a success. Please talk to Phil at the December general meeting or call him. If you have friends that would like to help and don't mind working at 6 AM, bring them along too. We are encouraging members to arrive about 5:30 AM. Please wear your WARAC hat/badge and, if available, bring your HT (tuned to 147.40 MHz simplex). All volunteers will be given a door prize ticket and coffee/donuts will be provided as well as a lunch ticket.

The reputation of our Swapfest is well known and we should have another successful event. Thank you for your support in making this all happen,

Phil, W9NAW  
Swapfest Chairperson



# Open Source Ham Radio

## By Howard Smith WA9AXO

Have you ever wondered what was 'under the hood' in your Ham Transceiver? Have you ever asked yourself 'why did they do it that way'? Or perhaps, 'I think I could have done that better'? Would you like to find out?

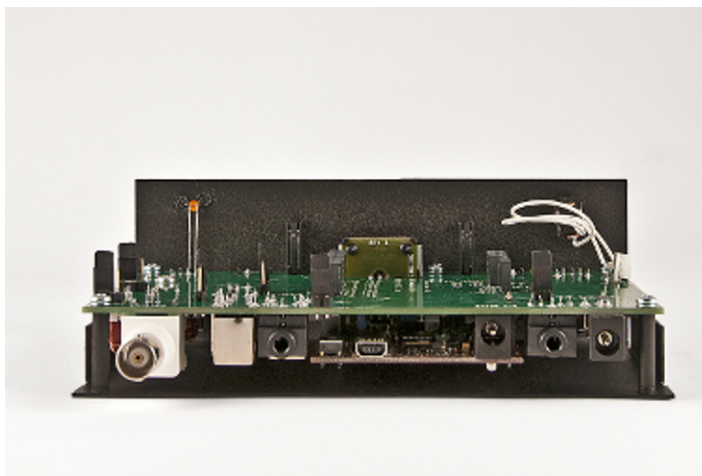
While it certainly takes a pro to create the firmware in a transceiver like the TenTec Orion 2, with its pair of 32 bit floating point Digital Signal Processors (DSP) and a Motorola 68K derivative processor, a much smaller transceiver might be a lot of fun. A QRP CW transceiver on a couple of popular bands, like 40m and 20m, could meet these requirements. Such a transceiver could use a processor to do the main control for the unit, such as managing an encoder to do the main tuning, and the synthesizer to provide transmit and receive local oscillators. Other features that could be added include an LCD to display frequency and other information, a CW keyer, or maybe a beacon transmitter. But, trying to make it a true Software Defined Radio (SDR) would probably be too complex, especially if the IF filtering was to be done with a DSP. The DSP filtering algorithm requires a very good understanding of the underlying math, which is probably beyond the interests of most Hams.

The new rage in hobby programming using the Arduino hardware and its firmware development suite continues to grow. The development suite uses a language similar to the 'C' language, and



provides many library functions that interface with the peripherals that are part of the Arduino hardware. This makes the programming task easier to do, and definitely more fun. Several years ago, I gave a presentation to the club on a simple CW Keyer using the Arduino processor. The presentation was based on an article in QEX magazine. Now, suppose that the processor in this QRP Transceiver was an Arduino compatible processor, but much more powerful. Microchip Semiconductor provides the ChipKit UNO32, an Arduino compatible unit with a 32 bit CPU. Microchip Semi also provides an equivalent firmware development suite, which is a free download, that runs on Windows XP, 7, and 8.

TenTec (<http://www.tentec.com/rebel-model-506-open-source-qrp-cw-transceiver/>) currently offers the Rebel 506 QRP CW transceiver for \$199. The Rebel 506 has the features that I mentioned above. It has a very good analog RX and TX. The RX includes 3 selectable crystal filter bandwidths, and the QSK is vintage TenTec! The source code for the ChipKit UNO32 is available for download from the TenTec website under the standard open source firmware license. With the hardware also being open sourced, the Eagle PCB files for the actual printed circuit board can be downloaded as well.



There is also a very active Yahoo group, TenTecRebel506, providing a way for the various users to exchange ideas, firmware, etc. This group has already provide a new *continued on pg 9*



firmware version that supports a number of new features, including support for a number of LCD panels, a Keyer, software controlled band selection (requires an additional board), and work is being done on a CW decoder and the additional board needed to do the tone decoding. The firmware created by this group is also available for download. TenTec is also active in this Yahoo Group. Anybody can join the group, and become as active in the project as they want.

There are several other groups doing similar things. One other one is TAPR (<http://www.tapr.org/>), which manages the HP SDR radio project (<http://www.openhpsdr.org/>).

## 2013 Field Day Wrap-up

By Chuck Dellis, W9WLX, FD Chairman

The Field day results were published in the December QST. Here is how the West Allis Radio Amateur club performed.

We had a total of 867 QSOs, 478 on phone and 389 CW. Our QSO score was 2512 plus 450 bonus points, giving a total of 2962 points. Unfortunately 75/80 meters underperformed due to thunderstorms. In spite of the QRN, we did a decent job of keeping the HF stations in operation for the 24 hour period. Thanks to all involved!

Here is the breakdown of our performance. Overall, out of 2548 entries, WARAC was 559. That puts us in the top 22% of all participants, slipping 2 points over last year. Out of all stations operation in the 2A class, WARAC was 121 out of 399, placing in the top 30% of all 2A entries, 3 point down over last year. For the WI Section entries, WARAC was 15 out of 46, putting us in the top 33% statewide, 16 points off of last year's Wisconsin ranking.

Let's see what we can do to trend our score up next year. Please contact Chuck Dellis, W9WLX with any suggestions you may have for Field Day 2014. Whether you're a new or seasoned operator, join us for Field Day 2014 and help us ratchet up the score!

## Editor

One thing I noticed about the radio is that the manual is bigger than the radio! It might reduce the portability of the radio if you have to lug the manual around with it. I may have to learn some of the basic features. The fact that it is drop proof and water resistant are the most important features, for my lifestyle. Too many of these so called "consumer products" are designed to be used indoors. I wonder what the engineers are thinking or maybe what type of life they lead. I also have two wireless outdoor temperature monitors that say "don't expose to moisture" one has to wonder.

Well enough silliness. I hope everyone has a great and safe Holiday season. Hope to see you at the meeting and Swapfest.

73

Frank

### Officers and Board

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Tom Macon, K9BTQ

#### Vice President

Steve Dryja, NO9B

#### Secretary

Chuck Dellis, W9WLX

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#### Directors

Frank Humpal, KA9FZR  
Erwin von der Ehe, WI9EV  
Leroy Haas KC9NST

#### Newsletter Editor

Frank Humpal, KA9FZR  
[fhump@milwpc.com](mailto: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.