



FEEDBACK

February 2015

Your Story:

Do you have a story, humorous or otherwise about amateur radio? If so, please contact the newsletter editor (wr8g@arrl.net) and get it published in FEEDBACK.

If you would like to place a classified ad to sell or purchase amateur radio related items, please contact the editor.

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With Just a WSPR

By Dan Romanchik, KB6NU

It's really amazing what you can do with computers in amateur radio, and there's been an explosion in the number of digital modes. One interesting mode that I've recently been introduced to is WSPR, which is short for Weak Signal Propagation Reporting. The protocol and the original WSPR program was written by Joe Taylor, K1JT, and is designed for sending and receiving low-power transmissions on the HF bands to test propagation paths.

I won't try to cover all the technical details here. There are several sites that cover them pretty well:

* Wikipedia: WSPR (http://en.wikipedia.org/wiki/WSPR_%28amateur_radio_software%29)

* G4ILO's Shack: WSPT - Distant Whispers (<http://www.g4ilo.com/wspr.html>)

I was introduced to WSPR by my friend, Joe, AC8ES. He posted a message to our club mailing list asking if anyone had a toroid core that he could buy to make a QRP balun for 10 MHz. When I asked what he was going to use it for, he said that he was making a WSPR transmitter with a Raspberry Pi, and the balun was for the dipole he built for it. He said that he'd gotten roped into doing this because he'd attended a local Raspberry Pi users' group, and when he mentioned he was an amateur radio operator, they encouraged him to try this project.

How could I refuse a request like that? I have a whole kit of ferrite cores, and after some back and forth, we found a small core that he could use.

The software he chose is WsprPi (<https://github.com/JamesP6000/WsprPi>). It's described a "Raspberry Pi transmitter using NTP-based frequency calibration." It uses a GPIO port to generate WSPR signals anywhere from 0 to 250 MHz. Joe said that there are several Raspberry Pi programs that run WSPR, but that he chose this one because it seemed to have more features than the others.

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Figure 1 shows Joe's setup. Since the output generates a square wave, a low-pass filter is needed to filter out the high-frequency components. As you can see, the GPIO output is fed through a 0.1uF decoupling capacitor into a Mini-Circuits 10.7MHz low-pass filter, then to a 1:1 balun, which is connected directly to the dipole elements.

Joe says, "The antenna is just a dipole taped up to the walls of my living room and hallway." As you can see he made the balun and dipole from 24 ga speaker wire.

The performance of this setup has been kind of amazing. In one e-mail, Joe reported, "Your toroid seems to be working well. Got the balun and antenna finished and executed seven WSPR transmissions from the Raspberry Pi. The WSPR reporting website WSPRNet (<http://wsprnet.org>) came back with a couple dozen reception reports; typical distance is ~300+ miles, max was 593 miles." In a second e-mail, Joe writes, "Did a few more beacon transmissions and checked the WSPR signal reports again. Someone picked up my 5 mW signal from 1010 miles away in Canada."

Joe's turned into quite a WSPR fan. He's even written an Android app - WSPRnet Viewer (<https://play.google.com/store/apps/details?id=com.glandorf1.joe.wsprnetviewer.app>) to retrieve and displays report from www.wsprnet.org. Tapping on a specific report displays more details about it, along with a world map that shows transmitter and receiver locations.

Unfortunately, I don't have a Raspberry Pi, or I'd try this as well. I do have a BeagleBone Black, but there doesn't seem to be software that I can download and install as easily as the Raspberry Pi software. That being the case, this might be a good excuse to purchase one of those new, cheaper RPis.

When he's not digging through his junk box or teaching amateur radio classes, KB6NU writes about amateur radio at KB6NU.Com. He has just released The CW Geek's Guide to Having Fun with Morse Code. The book is available on Amazon.Com or on KB6NU.Com.

Board Meeting 2/03/2015

Attendees: Steph W8AEZ, John W8JRD, Diane KD8wxa, Don W8RVT, Jay N8ARR. Officers absent: Gary N8QC, Brian W8BDM.

Called to order at 1700.

Treasurer's report was not available and several checks were on hand for table rental.

Hamfest 2015 – John W8JRD had several reservations on hand, checks included. We want to have a few tables available for walk-in sellers. At this point we have about 25 tables reserved. The QRP club has requested a room to hold a meeting. Jay has left a message for Ron Underwood but hasn't heard back as yet.

VE session – The next sessions will be on February 26th at the Maple Methodist Church Babcock Room, and on March 14th at the Hamfest at Wings Stadium Annex.

Repeater – Don W8RVT brought up the Yaesu DR-1 digital/FM repeater is for sale for \$500 from Yaesu. The sale is only for club purchase. Terry N8LN has downloaded the order form and has started the process, filling it out. The board did not vote as there weren't all board members in attendance for discussion

Other business – The Kenwood TS-440 from Louie's estate has been handed over to Don for checkout and cleanup. The plan is to replace the Icom in one of the trailers so that all operators would be using the same radio regardless of which system they work.

Science Fair at Kellogg Elementary School on 40th St. – Steph and Jay are planning on being there on the 26th of February with an Echolink system as well as an HF radio and a Buddipole antenna. We will also have some flyers from the club and, if found, some from ARRL, along with a CW oscillator for fun.

Meeting adjourned at 1750.

Respectfully submitted,
Jay Jarrett, N8ARR

Meeting Minutes 01/15/2015

Meeting called to order at 7:00 p.m.

Pledge of Allegiance

Introductions

Officers present – Gary N8QC, Stephanie W8AEZ, John W8JRD, Brian W8BDM, Diane KD8WXA, and 19 members in attendance total.

Secretary's report was accepted.

Treasurer's report was accepted.

Committee reports:

Skywarn – Training is February 28th Lakeview Middle School 10am

Hamfest 2015 – Six applications received so far. Currently working to secure ID Tags and Signs. We have also been promised it will make in QST.

Field Day 2015 – Decided on Sonny's Pull Pork

VE session – Reminder that these sessions are normally on 4th Thursday of each even month @ 7pm, except December this year. Also planning to have a session at Hamfest and Battle Creek Emergency Services is having one at Public Works Building (Kendall Street) on March 7th.

Repeater – Nothing to report

Old Business:

PBR1 – Governor signed on January 10th.

A special thanks to all of the old board members for their time and dedication to their rolls.

New Business:

Club is participating in Kellogg Elementary School, Math and Science Expo on February 26th. Any

club member wanting to help, please contact Stephanie W8AEZ.

It was brought to the clubs attention that Yaesu is offering DX-1 digital repeater systems to amateur radio clubs for ~\$500 and the deadline is March 31st.

Meeting adjourned at 7:32 pm.

Respectfully submitted,
Brian Marsh W8BDM, Secretary
Hamfests

02/28/2015: DARC Hamfest

Dugger, IN
Dugger ARC

03/08/2015: Sterling Rock Falls Hamfest
Sterling, IL
Sterling Rock Falls Amateur Radio Society
<http://w9mep.org>

03/14/2015: Michigan Crossroads Hamfest and Radio Swap
Kalamazoo, MI
Southern Michigan Amateur Radio Society
<http://www.w8df.com/hamfest>

S.M.A.R.S. W8DF Club Repeaters

Southern Michigan Amateur Radio Society
2 Meter Repeater 146.660 MHz -600KHz offset, PL 94.8
2 Meter Digital/DStar 146.79/19 (-600KHz Offset)

70cm Repeater 443.950 MHz
+5MHz offset, PL 94.8

1.25 Meter Repeater 224.240 MHz
-1.6MHz offset

70cm and 1.25 meter repeaters are linked.
Also available via echolink.

W8DF-5 144.39Mhz Digipeater/Igate
Find it on www.aprs.fi



Other Area Repeaters:

Skywarn/ARES/RACES (WX8BTL)

2 Meter: 147.12, +600KHz offset, PL 186.2

70cm: 442.350, +5MHz offset, PL 94.8

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SOUTHERN MICHIGAN AMATEUR RADIO SOCIETY

FEEDBACK

(HAMFEST, Continued from page 3)

03/14/2015: Terre Haute Hamfest
Brazil, IN
Wabash Valley ARA
<http://w9uuu.org>

03/15/2015: HAMFEST 2015
Jefferson, WI
Tri-County Amateur Radio Club - W9MQB
<http://w9mqb.org>

03/15/2015: TMRA's Hamfest and Computer Fair
Perrysburg, OH
Toledo Mobile Radio Association
<http://www.tmrahhamradio.org>

03/21/2015: West Michigan Youth Club Hamfest
Lowell, MI
West Michigan Youth Club (Lowell Area Schools)
<http://www.westmichiganyouthclub.org>

03/28/2015: 32nd Annual Columbus ARC 2015 Hamfest
Columbus, IN
Columbus Amateur Radio Club
<http://carcnet.net>

03/28/2015: MOVARC HamFest
Gallipolis, OH
Mid-Ohio Valley ARC
<https://sites.google.com/site/midohiovalleyarc/>

04/04/2015: Portsmouth Radio Club Hamfest
Portsmouth, OH
Portsmouth Radio Club
<http://portsmouthradioclub.org>

Club Meeting
3rd Thursday of every month
Maple United Methodist
Church
342 Capital Avenue NE
Battle Creek, MI 49017

SKYWARN Coffee
1st Saturday of every month
Immediately after Siren Test
Coney Island, N.E. Capital
Battle Creek, MI

BLB Luncheon
2nd Thursday of every
month
Coney Island, N.E. Capital
Battle Creek, MI

SMARS Breakfast
2nd Saturday of every month
Coney Island, N.E. Capital
Battle Creek, MI

SMARS NETS

Before Lunch Bunch
Monday—Friday 11:30 AM, 146.66

Sunday Evening 8:00 PM, 146.66
Monday 7:00 PM, 147.12 (Skywarn)
Monday 8:00 PM, 224.24 / 443.95
Wednesday 7:00 PM, 224.24 /443.95
Wednesday 8:00 PM, 28.365
Saturday 8:00 PM, 224.24 / 443.95

Please see page 3 for offsets and PL tones

Upcoming events:

Club meeting: February 19th @ 7:00 PM

Siren test: March 7th @ 1:00 PM

SKYWARN Coffee: after siren test

SMARS Breakfast: March 14th@8:30 AM

BLB Lunch: March 12th @ 11:30 AM