Big Rapids Area Amateur Radio Club

Jan – Feb 2015

Presidents Message

Since there wasn't a newsletter before the January meeting, I need to catch up on some old details. Hope you had a very Merry Christmas and best wishes for a happy New Year. Thanks to several people involved with the Christmas Pot Luck dinner. Jim and Cathy Woolen were able to pick up the items we had available for the dinner and deliver them to the potluck. Mike and Patricia McKay took on the task of organizing the silent auction. Sorry I missed it. Reports are that the food was wonderful and the auction was quite successful. I may not know the contributions of others but their efforts are appreciated, thank you.

The weather for the January meeting was snowy and slippery. Although there were only nine in attendance we had an interesting meeting and discussed many issues for the 2015 year.   The program on how to build a "Time Domain Reflectometer" went well and if members are interested it can be presented again at a future date.

The program for the February meeting will be a summary of the activities of the "Geek Group" presented by Chris Boden. If interested you can get a preview of what they do by visiting "thegeekgroup.org". There are also many YouTube videos produced by this group.

Winter is a great time for ham radio. Little projects that I have put off are on the ToDo list. I am trying to pull together a program on FM modulation for the March meeting. So far things have not proven as easy to build as I had hoped. But I will preserver and have something ready for next month. Have a great winter it only lasts another 7 weeks.

Dan, WA8AEN
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January 2015 BRAARC Meeting Minutes
Submitted by Mike, KD8DIB

7:15PM Call to order
Net Controls needed: email
KD8DIB@braarc.net to sign up.
Treasurers report by Jens, KC8OIV
KD8DIB to contact Jeff, WD8DLK to check six meter repeater.
Ham in a Day scheduled for April 11, 2015:
Contact Jeff K8OE
Program: Build a Time Domain Reflectometer by Dan, WA8AEN.
http://en.wikipedia.org/wiki/Time-domain_reflectometer
8:25PM Meeting concluded.

Announcements:

Saturday, January 31, Breakfast at Sharon's in Rogers Heights at 9:00A.M.

Thursday, February 5, Regular BRAARC meeting at Big Rapids Public Safety, 7:00P.M.

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How do we promote better operating practices? Dan Romanchik, KB6NU

A lament that I often hear is that many amateur radio operators either don't seem to understand the importance of good operating practices or just don't care about them. Just this morning, a reader sent me an e-mail saying, "I think there are too many hams out there that don't how to call a station on split frequency. It's amazing that we have so many dummies out there."

I wrote back, saying, "Maybe we need another type of Official Observer, called the Operating Observer. This group would note when operators aren't following good operating procedures and send people gentle reminders." Of course, as soon as I hit Send, I knew this wasn't a very good idea. As my reader noted, this would be a thankless job, and chances are the poor operators would simply ignore the notices, anyway.

Even so, there must be some way to encourage good operating procedures. One effort to promote better operating procedures is the DX Code of Conduct (http://www.dx-code.org/). This is a list of 13 suggestions to make DX operation, particularly pileups, less chaotic. The website includes a small image that you're supposed to post to your website to show that you support the Code. While this is certainly a step in the right direction, I wish there was something that we could do to be more proactive in improving operating practices.

There is, of course, the ARRL Operating Manual. This publication is now is in its tenth edition and is a valuable source of information about how to operate properly. The problem is only a fraction of the amateur radio operators on the air have a copy, much less read it.

Another attempt at promoting good operating practice is the ARRL's A-1 Operator's Club (http://www.arrl.org/a-1-op). While a noble effort, I think that this program really requires more promotion. In addition to being more aggressive about finding A-1 operators and bringing them into this "club," the ARRL should use it to promote better operation. Perhaps a series of videos with the A-1 Ops logo showing how to operate split or how to properly call CQ would help improve operating practices overall.

Talking about videos, I'd be surprised if there weren't already some YouTube videos that illustrate good operating practices. If you know of any, please e-mail me. It would be great to have a list of really good ones that I can send to people who want information on how to operate better.

What do you think? Do we need to be more proactive about encouraging hams to use good operating practices? If so, how do we go about it? What do you do to encourage better operating practices?

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When not worrying about the state of amateur radio operating practices, you'll find KB6NU working on updates to his "No Nonsense" study guides, teaching one-day Tech classes, or blogging about amateur radio at www.kb6nu.com.

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 WsprryPi (https://github.com/JamesP6000/WsprryPi). 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.

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 BeageBone 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.

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Last Month's Technical Question:

A bleeder resistor is across a filter condenser rated at 8 mfds. Resistor is carrying 25ma at 450 volts. It dissipates approximately:

a.   18 watts   b. 4.5 watts   c. 11 watts   d. 2 watts   e. 33 watts

Ans: condenser has nothing to do with the answer. Power = VxI = 450x0.025 = 11.25W c. 11 watts

This Month's Technical Question:

If a power supply fails, anew high vacuum tube glows red-hot, and smoke curls from around the filter choke. . . . .
   a. The transformer secondary has shorted
   b. The filter choke has an open turn
   c. One of the filter capacitors has shorted
   d. A bleeder resistor has opened
   e. There is a crystallized ground connection

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8	2	5	9	3	6	1	4	7
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7	5	9	8	2	1	3	6	4
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Solution to December puzzle

Items Worth Noting

Hello, All… Please share this request with those around the Mecosta County area.

Harmful interference is being experienced on 155.550 MHz and/or 154.710 MHz. This is causing a disruption to county services. Please turn on your receivers and monitor these frequencies for any interference. It may sound like data transmissions.

Please report your observation back to me. If possible include time, date, frequency, type of interference observed, signal strength, duration of interference, your location, and any other information you feel is important in determining where this interference is being generated from. If possible recordings of the interference could be helpful too.

As I get more information, I will share it with this group.

Thanks!
Mike

FYI. This might be an agenda item for February:

The BR City Council has approved an expansion of the theater downtown Big Rapids, including more parking. The more parking part will be by eminent domain of several properties on Warren Street, basically behind the theater.

One of those properties is the Red Cross building. In case the Red Cross is not able (or willing) to stop that, BRA-ARC will need to work with them to move or recreate a radio station if and when they move. I believe there is also a tower behind the building.

The item was in the Big Rapids "Pioneer" a couple weeks ago and I have been trying to get hold of one of the city commissioners that I know to ask if they are aware of the Red Cross offices.

I'll let you know what I find out.

73

Bruce, WB8TVD

Club Christmas Potluck