

Big Rapids Area Amateur Radio Club

September 2015

PO Box 343 Paris MI 49338 Pres. Dan Astleford Web Page: www.braarc.net Editor: Phil – phildolly@power-net.net



Presidents

Message

Greetings,

Big Bad Wolf race appears to have been cancelled for 2015. The reason given was low registration for

this year. If interested check

<https://www.facebook.com/pages/Big-Bad-Wolf-Adventure-Challenge-and-5K/130001960419451>.

Both repeaters seem to be having their own problem lately. The two meter repeater is intermittently losing its ears. Some mornings I can trip it with a one watt signal and the next morning I hit it with 40 watts and nothing happens. The 440 machine seems to have much lower power output than it used to. It is also reported to have a cooling fan that isn't working. Sounds to me like a couple of trips are in order to view the problems first hand.

We will be discussing our way forward at the September meeting.

The September meeting will also feature the election of officers. If you are interested in any of any the positions or if you know someone that is thinking about it please let it be known. New Blood can be a great thing.

I would like to thank the club members for a great year as president. It has been eye opening and a real pleasure.

Thanks,
Dan (WA8AEN)

In This Issue:

Pg 1 – President's Message

Pg 1 – Announcements

Pg 2 – Aug Mtg Minutes

Pg 3 – Board Mtg Min.

Pg 5 – KB6NU Article

Pg 6 – KB6NU Article

Pg 7 – Tech Question

Announcements:

Saturday, August 29, BRAARC breakfast at Sharon's Restaurant, Roger Heights, 9A.M.

Thursday, September 3, BRAARC Meeting at Big Rapids Public Safety Bldg, 7P.M.

Minutes From The Meeting – 6 August 2015

Bruce Werner, WB8TVD, More-Or-Less Permanent Secretary

Here's what you missed if you were not at the meeting on 6 August 2015:

Dan, WA8AEN, opened the meeting at 7:05 pm with 19 in attendance.

Dan introduced our program speakers for the evening:

Tim AC8NI and Chris KD8SLU (TVD: It took a few times for the secretary to fathom Tim's "AC" prefix, but he got it eventually).

Both are from SATERN (Salvation Army Team Emergency Radio Net) in Kent County.

They introduced the function of SATERN and noted that we do have a local group in Big Rapids. The Traverse City and Glen Arbor groups are still in operation following some heavy weather in that area. SATERN is the communication volunteer unit in support of the Salvation Army service units that respond to disasters of more than very local scope. In other words, Salvation Army might respond to a house fire, but would not normally need communications assistance. If there was a wider, regional event, there might be need for radio operators in various capacities. In addition to communicating, some radio operators may be called on to help in other functions where there is a shortage of manpower or as regular Emergency Disaster Services (EDS) members when communications is not needed. All SATERN members are trained as EDS responders as well.

Much of the Salvation Army's response is to help first responders in the field with food, shelter, clean and dry socks and other needed material and aid. Shelters for victims are normally opened and staffed by the Red Cross, but there is definite interaction.

The local SATERN unit is always accepting applications and information inquiries. Communications can be local, regional, national and, in some cases, via the Internet. Regular traffic nets are set up and run daily for training and practice. Much HF communication today relies on digital modes, but voice is used on HF and VHF/UHF as well. APRS is used on V/U.

SATERN information and links to local coordinators is available at: <http://www.saturn.org/>

Club Reports:

The July meeting minutes were approved as published in the latest newsletter.

The treasurer's report was accepted as published.

Jens noted that the insurance will be due soon.

Jeff, Emergency Coordinator, reports that he is trying to install an HF antenna at Central Dispatch. It is a vertical with no radials required.

Repeaters: The 6 Meter repeater still resides in Dan's basement. It seems to be working fine where it is, but he isn't sure what will happen when it is reinstalled at Jeff's (WD8DLK) location.

2 Meters seems to be running fine.

440 has been reported as being weak. No further details were provided.

Jeff (K80E) notes that a FEMA grant was submitted for a new Kenwood repeater and a new Yaesu repeater. The question was asked about modes on digital repeaters. Jeff noted that Yaesu (perhaps even Kenwood) has announced an add-on board to their repeater to include ICOM's D-Star digital with their own C4FM. It would make it accessible by analog and both FM digital modes.

We still need a volunteer to take over the administrative half of the newsletter. Phil is willing to continue doing the editorial work.

Dan has submitted the "first cut" of the Special Services Club (SSC) renewal form. We are now in good standing as an SSC.

Dual Band C4FM/FM Digital Repeater, on sale now for \$500, normally \$1800. Many of these have been purchased by other clubs in Michigan and no problems are known. The DR-1X has a built in power supply and some controller functionality but can also use an external controller such as our CAT 1000. Two options include the MH-42C6J microphone (about 42\$), and the FVS-2 Voice Guide Unit (about 32\$). The temperature specs are -4 to +140 F which should be sufficient. Since the repeater fund has \$1993 in it currently, the Board moved and seconded to recommend the general membership approve the immediate purchase of the DR-1X repeater along with the microphone and voice unit. If approved, the unit should be installed as soon as possible due to the 1 year warranty. It was also decided to keep the phone line at the 2m repeater site for autopatch functionality (roughly \$40 per month). This means we will need to continue to use the CAT1000 controller.

2b. Problems with the 440 MHz repeater were discussed. The output power may be lower than normal, it may have problems with the squelch, and the external fan is going out. Mike may have spare transceivers. The Board moved and seconded to recommend the general membership approve the immediate purchase of the DR-1X repeater along with the microphone and voice unit. If approved, the unit should be installed as soon as possible due to the 1 year warranty.

2c. Problems with the 6m repeater were discussed. It is an old GE MASTR unit and has had receiver problems. Mike and Dan removed the unit from the site in Rodney and it is currently at Dan's house. However it seems to be working there. It was decided to move it back to the Rodney site and see how it performs. It was decided to let the 6m repeater be experimental and try to maintain it with minimal resources.

2d. The prospect of a privately installed repeater at an abandoned cell phone tower was discussed. Having another repeater that services the east side of the county could be very useful for ARES/RACES. But it seems like the club has its hands full with the 3 existing repeaters and that it should stay focused on them for now. Also there was some concern about the ability to get a new 2m frequency pair from the repeater coordinator.

3a. The upcoming election of club officers was discussed. Dan is willing to serve as president again if no one else wants to.

3b. The Big Bad Wolf race this year has been cancelled due to low registration.

3c. The Crop Walk is Sunday October 4 and Tom agreed to lead the communications effort.

Jeff Sell
K8OE

How much performance do you really need?

By Dan Romanchik, KB6NU

A reader recently e-mailed me:

“Just a quick question – Are you still in the thinking stage about getting an Elecraft K3? Great rigs, aren’t they?”

“What I would like you to think about, though, is how many contacts you log in one year’s time. If you log 100 per year (check your log) then your cost will be \$50 per contact for that year. If you log 500, then your cost will be \$10 per contact. If you keep that rig for three years, and log 500 contacts over that time, then you will have spent \$10 per contact.

“Now, consider what that rig will be worth in three years. Will there be something come along that just blows the K3 away in terms of performance?”

I replied:

“K3s are great radios. I’ve just purchased a used KX3, though, so I am not planning on getting a K3 in the near future. I have purchased a 50-W HobbyPCB amp to use with the KX3, so I’m not going full QRP.

“I make a lot of QSOs/year. My average over the last 13 years is more than three per day, and that doesn’t include contacts made with other call signs, such as the club station, or on Field Day. I’m sure that my cost/QSO will be low enough to justify my investment. :)”

“In addition, rigs seem to keep their value pretty well. I’d guess that you can sell a three-year-old K3 for at least 80% of what you paid for it. I think that one of the reasons that an Elecraft K3 is worth the investment is that Elecraft provides such good customer support, and that they are continually improving their radios. For example, they just came out with a new synthesizer board, with better RF specs, for the K3.

“I don’t see anyone coming out with a radio that blows the K3 away in terms of performance in the near future, although I might be wrong. FlexRadio has perhaps the best chance of doing that, but you’ll have to buy into the Flex user interface philosophy to take advantage of that. I think that Elecraft and Flex, plus the three Japanese manufacturers, will make incremental performance improvements over the coming years, leapfrogging one another as they bring out new models.

“One thing to think about is how much performance is overkill? Just like you can now buy a computer that has way more computer power than the average user will ever need, I think that most of these high-end radios offer way more performance than the average ham will ever need. It’s cool to look at the Sherwood Engineering receiver tests and see that your rig is in the top ten, but will the average ham actually notice the difference? My guess is probably not.

“Thanks for sparking my thought process on these issues.”

My guess is that most amateur radio operators don't think about what the rig will be worth in three years when buying an HF transceiver. Instead, they're looking at what the radios that are currently available cost, and when there's a big price difference between two models that appeal to them, they're trying to figure out if the higher price is warranted. In many cases, the lower-priced model wins out. It's not because the more expensive radio isn't better, but it's not that much better.

It all goes back to how much performance you actually need. Yes, you can probably do more with a \$10,000 radio than you can with a \$1,500 radio, but is it really worth the added expense? In other words, are you going to have more fun with a \$10,000 radio than you are with a \$1,500 radio?

Let me know what you think. E-mail me at cwgeek@kb6nu.com.-----

-----[When](#) he's not agonizing over what radio to buy, Dan operates CW on 30m and blogs about amateur radio at www.kb6nu.com.



Antenna Analyzers You Can Hack

By Dan Romanchik, KB6NU

I'm a nut for antenna analyzers. I think that they are one of the most useful things a ham can own.

I've often wondered why there aren't more DIY antenna analyzer projects, though. Perhaps it's because designing measurement circuits isn't easy. An antenna analyzer has to have a signal source as well. Even so, an antenna analyzer doesn't need a whole lot of accuracy to be useful, so you would think that more builders/hackers would tackle a project like this.

I do know of one antenna analyzer kit on the market. The VK5JST Antenna Analyser Kit (<http://www.ahars.com.au/about/kits/>) costs about \$110 USD. I actually purchased this kit a year or so ago, and it looks like a great unit. The unit seems well-designed, and it comes with a plastic case, unlike many projects these days, but I haven't yet gotten around to building it.

I've also recently found out about an Arduino-based antenna analyzer project (<http://hackaday.com/2015/08/06/40-antenna-analyzer-with-arduino-and-ad9850/>). It uses an AD9850 module as the signal source. The approximate cost for all the parts is about \$40, and you can experiment with the code, if you like. If you have the time and inclination, this project might be worth taking a hack at. [[NOTE TO EDITORS: A photo of this project can be found at <http://www.kb6nu.com/wp-content/uploads/2015/08/analyzer.jpg>]]

Another antenna analyzer project from Australia is the VK3YY antenna analyzer (or "analyser" as they spell it there). It uses an Arduino Nano. The interesting thing about the blog post in which VK3YY describes the project (<https://vk3yy.wordpress.com/2014/09/29/antenna-analyser-project/>) is that you can follow his design and experimentation process.

Yet another analyzer

While I'm talking about antenna analyzers, let me mention another one that I've just found out about: the IW2NDH Antenna Analyzer (<http://www.iw2ndh.com/>). This antenna analyzer isn't a kit, but at \$175 seems to be a good deal. This unit has a frequency coverage of 2 – 160 MHz, and can be used as an antenna analyzer, signal generator, and a scalar network analyzer.

Apparently, this started out as an Arduino project. As Maximo, EA1DDO, pointed out on the radioartisan Yahoo Group, there is source code for this project on GitHub (<https://gist.github.com/jackdev23/7876502>), and a schematic is available on the Union de Radioaficionados Espanoles (URE) website (<http://www.ure.es/media/kunena/attachments/2420/Schematic.jpg>).

=====

When not writing about antenna analyzers, Dan, KB6NU, actually builds an antenna now and then. You can often find him on the HF bands (mostly 40m and 30m), working CW.

Last Month's Technical Question:

When properly operating a transistor in an amplifier, the:

- a. Collector is usually forward biased
- b. Collector is usually reverse biased
- c. Base is reverse biased
- d. Emitter is neutralized
- e. None of the above.

Ans: a. Collector is usually forward biased

This Month's Technical Question:

If an ammeter calibrated in amperes is used to measure a 3000-milliampere current, what reading would it show?

- A. 0.003 amperes
- B. 0.3 amperes
- C. 3 amperes
- D. 3,000,000 amperes

#####

4	9	7	8	2	1	5	6	3
8	5	6	9	3	4	7	1	2
1	2	3	5	6	7	4	9	8
6	4	2	7	5	3	1	8	9
5	3	8	1	4	9	2	7	6
7	1	9	6	8	2	3	4	5
2	7	5	4	9	8	6	3	1
9	6	4	3	1	5	8	2	7
3	8	1	2	7	6	9	5	4

8	1		7		4			
2		3					7	1
7		5		3				
			6				3	4
		2	8			9		
			9	5	7	2	6	
9			2	6	8	3		7
		6	4				9	2
					1			

Solution to last month's puzzle



BREAKFAST

Sharon's Restaurant

9:00AM

Saturday, August 29



Come order from the menu or enjoy the
breakfast buffet!!!

