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BARA

Facts

Newsletter of the Binghamton Amateur Radio Association

November 2008

Website: <http://w2ow.org> OR <http://www.wtsn.binghamton.edu/bara>

The President's Corner

Greetings! This month I'm involved in two different projects. On the surface they may seem to differ widely, but there's a link.

Several months ago, at the local mineral & gem show, I picked up a sample of galena. For those of you for whom the word "galena" doesn't evoke instant recognition: this is the basic component of old crystal radio "cat's whisker" detectors, used before the invention of germanium diodes (or, for that matter, tubes!) to demodulate AM signals. Since childhood I'd been interested in fooling around with a cat's whisker, but never actually saw one outside of a museum display. So I figured some day I'd fashion my own. Why? I don't know, just curiosity & the desire to explore interesting natural phenomena, I guess.

A few days ago I found myself with a couple of spare hours, so I hunted down some hardware from Home Depot's plumbing section & hunkered down in my shop to fashion my cat's whisker. My wife happened to hand me a small, nicely finished piece of wood a few days before, which looked to be perfect for a base. I got a couple of terminal posts at Unicorn Electronics (lucky for me, within walking distance of my house), and Voila! One beautiful looking detector. Now I just have to build the rest of the radio. I found a fabulous resource for copies of crystal radio plans out of old magazines and government bulletins (at www.crystalradio.net), so when I get a few more hours I'll start winding some coils around oatmeal boxes or toilet paper tubes and try out my detector. (Anyone have an old set of high-impedance headphones to loan? I have one of those 1960-style plastic earphones, but I'd prefer a setup that's more true to the era.)

My other project involves a growing interest in decoding satellite signals (using a receiver hooked up to a computer). I discovered the ability a couple of years

ago to decode weather images from the "APT" satellites which frequently pass overhead. My receiver doesn't have quite the bandwidth to decode them clearly, but I found it exciting nonetheless to receive signals directly from space (the thrill might seem trivial to those of you with satellite TV or Sirius/XM receivers — and yes, I have a GPS unit which also receives satellite signals, but there's just no challenge involved!) More recently I discovered the ability to receive OrbComm satellite telemetry data using the same receiver (my trusty Icom R7500), but the strings of numbers that result aren't as interesting.

Then a couple of weeks ago I lent a hand to Drew Deskur (KA1M; his father "Kaz" was an amateur satellite pioneer) to adjust some amateur antennas up at the Kopernik Observatory, and Drew demonstrated for me how easy it was to receive signals from the International Space Station. As it turned out, space tourist Richard Garriot (W5KWQ), who made millions in the video game industry, was aboard, and was sending out slow scan TV images on the 2 meter band (145.800 MHz). When I got home I not only decoded some images, but also caught some voice communications.

From turn-of-the 20th century crystal radios to 21st century satellite communications could hardly be a bigger jump, eh? But the fact is, these are just two aspects of the amazingly broad diversity of interests that are encompassed by our amateur radio hobby. I love talking about

these kinds of things with fellow-minded folks, so I hope to see a bunch of you at our next general meeting.

— 73 de allen lutins KC2KLC

QRP and the Hustler by John Carrington, WB2SGS Prologue

After retiring in 1995 I began an annual drive to visit my brother in Texas. In order make the most of the trip

I took various routes to and from the Dallas area and reunited with Army Buddies, friends and relatives. I always took my TS 520S and IC 22S (later replaced with an HT). I would set up portable as opposed to mobile in a variety of places along the way and make less than an occasional QSO.

My antenna, Hustler resonators and HO2, was mounted on a magnet and placed on the roof of my Dakota. Normally I would operate from the driver's seat with the Kenwood beside me riding shotgun. This made for uncomfortable CW operating, but the inefficient antenna made contacts sparse....

Fast-Forward to 2008

Recently I discovered QRP and since I already possessed a 30 meter Hustler resonator I bought a MFJ9030 QRP rig. After many DX contacts in the shack using a Carolina Windom I moved the operation to the Dakota and the Hustler. The 520S is considered a 100 watt transceiver and the 9030 a 5 watt rig. You might see where this is leading. If I can not make a plethora contacts with 100 watts (on bands other than 30 meters), will I be able to do so with 5 watts using the same magnet mounted antenna and 30 meter resonator? The answer understandably but, disappointedly was no.

While some of this frustration was going on I bought a FT817. As you know this is a multi-band, multi-mode, multi-culture and multi-watt (5 watts max) radio. It is about one third the size of my 1960s Heathkit CB and was designed with the backpacker/portable operator in mind. I hooked this to my Windom (the FT817 not the Heathkit CB) and became Operator-Of-The-Month, if not on my block at least in my household. I became multi-banded, although single-modem the first evening on the air. As the weeks went by I was getting 4-3-9 and better reports from England east to Russia including countries that were not countries in the 1960s, south to Columbia, west to Oregon, north to Nova Scotia and the Azores and Morocco as well. This QRP stuff is addicting and exciting.

Being the self proclaimed O-O-T-M on Bear Swamp Road is in itself a fete. You know what would be even better than that? Being the self proclaimed O-O-T-M in Davy's Dutcher's parking lot adjacent to Davy's Last Chance Saloon in downtown Chenango Forks, NY. The glory...the humanity of it. Imagine from Heathkit builder in Utica to O-O-T-M on the north bank of the Tioughnioga River in downtown Chenango Forks, NY. Talk about exciting, eh! A little Canadian

lingo there for the multi-culturists among us. The problem is of course the mobile/portable antenna. What to do with that antenna!

The first thing you do or at least I did was email Bob Handel, K2FU. I asked Bob if I were to:

1. mount the antenna on the Dakota roof with 4 radials
2. mount the antenna on a three foot tripod with 4 radials
3. mount the antenna on the ground with 4 radials

Would the antenna be more effective?

Bob replied in part, "I don't think you will get too much improvement from adding radials to the antenna when it's mag mounted to the roof of your truck. If you feel ambitious you could add say 4 radials of 1/4 wave to the base and see if you notice a difference.

"With the antenna mounted to a 3 foot tripod you now have no ground plane for the antenna to work against. I would strongly suggest 4 elevated radial spaced at 90 degree intervals.

"This will certainly improve the antenna's efficiency. I would think the same antenna would be effective in a ground mounted situation, again with at least 4 radials attached to the base and lying on the ground.

"With the added radials you will get increased efficiency at least in the non-mag mounted cases."

So after a brief stroll through the Yellow Pages looking for a store that sold radials I ended up at Kost Tires on Upper Front Street in Binghamton. I told them I needed four radials. They said if it was for my Dakota it would cost \$800 installed. I yelled, "No, Hustler and HO!" For some reason they got quite incensed about my choice of words and made me leave the store. I figured this was to be a do it your self project and went to Lowes and bought a few meters of zip cord and a bunch of crimp type electrical connectors. I guess the solder type do not exist anymore...what ever was I thinking?

Back home I found a site on the web to compute the proper length of my radials. I have five Hustler resonators: 10m, 15m, 20m, 30m and 40m.

Radial Length for Each Band		
Band	Radial Length	Length Cut

10m	2.538m	2.538m
15m	3.380m	0.842m
20m	5.058m	1.678m
30n	7.062m	2.004m
40m	10.146m	30084m
The Cut Length is attached to the radial to build up to the Radial Length. Two radials are required.		

The beginnings of the 10m radials are attached to the coax shield at the antenna base and the ends will have a male electrical connector crimped and soldered to each.

The beginnings of the 15m radials will have a female electrical connector crimped and soldered to each and the ends will have a male electrical connector crimped and soldered to each. Same procedure for 30m and 40m radials.

Before I unzipped the various radials I identified each with their frequency.

We now have twenty pieces of wire. Four of which are permanently mounted at the antenna base. If I refine this project all radials will have male and female banana plugs and sockets including 10 meters for ease of connecting the pieces together. I store the radials on a 1"X6" board short enough to fit in the Dakota bed. The wires are held in place with binder clips and if they are too long they wrap around the end of the board.

On 10-07-08 I set up my contraption with the mag mount on the Dakota roof in my own driveway at about 1200 feet in elevation, radials for 30 meters stretched out and held aloft by four foot long fiberglass dowels (whose original purpose had something to do with horses and electric fences) and at 2155Z worked EI6IZ with 2 watts. My report was 529. Not too shabby! On 10-09-08 at 2144Z I worked EA1FGN/qrp on 20 meters with 4 watts. My report was 559. Once again... shabbyless.



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Epilogue

So now it is time for the *piece de resistance* (a little French there for those of us suffering from Francophilia). Off to the north bank of the Tioughnioga River near its confluence with the Chenango River in down town Chenango Forks, NY. The Dakota is in position pointed northerly at the large American flag adorning Dav's Last Chance Saloon, the Hustler is placed on the roof (in the pickumup world this is known as "HOC" or Hustler over cab, the radials are out, the key is inserted in the FT817 and I am ready to answer EA2IF, Guru, who is calling CQ.

I hear, "Hey, Boy! Whatchoo got dare. CB ain't it, foo." I am sick. My dream of O-O-T-M in the



parking lot of Davy's Last Chance Saloon in downtown Chenango Forks, NY has turned into a nightmare of vast proportions in the form of the Williams Brothers. To say the Williams Brothers are churlish cretins would do churlish cretins an injustice. Oscar Williams led the way with Wayne and Dwayne in tow.

Oscar says, "Well, Good Buddy...CB ain't it?" Wayne says, "Ain't it?" Dwayne says, "CB...CB...CB...ten-fo, foo." I said, "Yea, CB and ten-four to you, too. Oh, Oscar your good buddy Chelsea was just here looking or you and went into Davy's."

Drool actually dribbled off Oscar's chin as he chanted over and over and led the way to Davy's, "Chel-sea, Chel-sea, Chel-sea." Wayne and Dwayne followed along punching each other in the ribs and whispering, "Oscar got gerl fren." O-O-T-M at Davy's Last Chance Saloon will have to wait to an early Sunday morning when the behemoth, awe inspiring Williams Brothers will still be tucked in the king size bed they share with their mother and sisters.

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First Class

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Next General Meeting

7:30 PM, Wednesday, November 19th
Town of Binghamton Town Hall, 279 Park Avenue, South of the
Ross Park Entrance

Board Meeting

7:00 PM, Wednesday December 3rd
Conference Room, WSKG Studios, 501 Gates Road, Vestal

Exam Session

7:00 PM Monday, November 24th
Vestal Public Library, Route 434 Vestal

BARA Dues

\$18/year Single Member; \$27/year Family

Local Repeater Nets

146.73 MHz STAR Net (NTS Feeder) Every
Evening at 6:30 PM Local Time
146.82 MHz BRAT Net (Informal BARA) Sunday Evening at
8:00 PM Local Time



**BARA, The Binghamton Amateur Radio
Association is an ARRL Affiliated Club**

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