



# The BAARCer



September 2016

For Anyone Interested in Amateur Radio

Page 1 of 8

**Club Call Sign: WØUJ**

**BAARC REPEATERS**  
53.110 MHz- 123.0 Hz

Main Repeater in Crosby  
**147.225 MHz+ Crosby**  
Tone 110.9 Tx only

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146.700 MHz-  
Tone 141.3 Hz

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145.130 MHz- Echo  
Link-Node Nr. 233515  
AllStar Node 42508

~~~~~  
147.030 MHz+ Crosslake

~~~~~  
443.925 MHz Gull Lake+  
Tone 110.9 Hz

~~~~~  
444.925 MHz Crosby

**Packet:** 145.010 MHz  
MNBRD, BRDBBS  
144.390 MHz WØUJ  
APRS I-Gate Node

**Officers for the Year  
are listed by name  
and title on Page 2—  
top of the Minutes —  
each month.**

**Some of the BAARC Picnickers and some of the Fox Hunt Crew—8-20-16 at Lum Park.** Although it was a cool day—low 60s—members had a good time. Clearly, some were prepared for cool breezes by wearing jackets.



**Pictured l-r: Al WØRC, Ron KØGOP, Lyle KØLFV (General Picnic Organizer), Shirley KØDCW, TJ KØTEG (Fox Hunt Organizer—he hid the “critter”), Bob K6RCO, Mitch ADØHJ (set up a digital station at the site), Stephan KEØCXG, and Nick KØNJR.** According to TJ, Al, Shirley, and Mitch found the “fox” at 1058. They were followed by Terry KIØFW at 1150. Terry enjoyed being a hunter this time, rather than just providing the “fox” and hiding it. That morning Lyle made a fast trip after the usual Club breakfast earlier to then reserve our sheltered spot for the event. Also he brought the Club’s generator, which powered several HF and VHF stations at the site, where many devices and antennas were experimented with for satellite, VHF, and HF communications. As usual, attendees brought their own lunches and refreshments. Needless to say, everyone had fun. Photo WØKO.

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of the BAARCer**

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**— Events Calendar —**

**Sat., Sept. 3, Club Breakfast @ 9 @ Northwind Grille—Brd.**

**Sat., Sept. 17, Club Breakfast @ 9 @ Northwind Grille —Brd.**

**Sat., Sept. 24. Fargo Hamfest.** Red River Valley Fairgrounds, West Fargo—same place. Also VE testing. <www.rrra.org>

**Thurs., Sept., 29-Monthly Board & BAARC membership Mtgs. @ 4 & 7 @ Brainerd Fire Hall**

**Join/Rejoin—Still only \$20 Dues/ Year—Please get your check in to Doug WØDWB, BAARC TREASURER  
15912 Olsen Lane, Brainerd, MN 56401**

## More Photos from Picnic and Fox Hunt Event—by WØKO



## Baxter Triathlon—8-28-16-BAARC Member Participation



The BAARC again supported the Baxter Triathlon on Sunday, August 28, with 11 volunteers. We covered 12 intersections and the beach area. Dave KØISZ was Net Control; Dave KBØWGO served as our Police Rover; TJ KØTEG and Ron KØGOP were rovers. Also, we had Rick NØSEH, Ken NØKEN, Lyle KØLFV, Geoff NØCNC, Orcy WØQT, and Bob K6RCO manning all of the intersections! In fact, most of the operators manned two intersections this year. Terry KIØFW was our beach/start/finish line rover during the race. Thanks to everyone who helped. Our Club support was much appreciated. Photo and Text provided by TJ Graves, KØTEG, BAARC Community Events Coordinator. (Sorry, Not Everyone who participated could be pictured)

## DX and the Paper Chase

I'm neither a scientist nor a propagation guru, but I can relate to you that HF band conditions were not so good during the past 30 days. Yes, there were occasional openings...I worked Cuba (CO8LY) on 30-meters CW for my DX fix for the month. Thank you, Lord, for CW. Recently I was able to procure some vintage gear from an estate sale. One of the items is a WWII CW key that also belonged to a Ham radio operator. The key is a J-44 in fair condition. My goal was to restore and use it, but it looked so good with 70 years of patina that I decided to check all the parts and make sure it functioned correctly and then reassemble it. During the takedown, I noticed the manufacturer was EF Johnson, Waseca, MN. To some of you "old timers" this will ring a bell—reminiscent of the Viking radio gear of yesteryear built by the EF Johnson Co. post WWII. Now I have a collectable piece of WWII, Ham Radio and Minnesota history, that deserves to be preserved. The J-44 CW key is displayed with my station equipment. This is a great hobby. Sit down at your station when the bands are open and call CQ. You may even hook up with some exciting Ham radio history. So long from my station in Huntersville for now. Best 73 es gud from Bob WØZPE.

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**Free Tailgate Hamfest** on 8-27-16 at the Crow Wing County Fairgrounds was deemed a success by Lyle KØLFV, BAARC VP and event organizer. On Sunday's Net Lyle said that some 10-12 sellers participated and 40-50 visitors/buyers showed up despite the early threat of rain. He said: "Sale of donated items from our recent Tailgate/Hamfest were very good considering the number of attendees. Prior to our Tailgate, a total of \$550 was sold and at our Tailgate an additional \$485 was sold. The majority of items sold were from the donations of Bill KH6OO and Sons. Certainly, the month of August was a very good one for the sale of donated items earned by the BAARC amounting to \$1,035. **Yes, Lyle. Thanks again to all hams for the super effort for the Hamfest and the concurrent and successful VE testing.**

## **HAARP Facility to Reopen in 2017 under New Ownership—from ARRL**

Alaska's High-Frequency Active Auroral Research Program (HAARP) facility will reopen in 2017. The sprawling facility now is under the ownership of the University of Alaska Fairbanks (UAF), and the UAF Geophysical Institute is preparing HAARP for a new sponsored research campaign that's set to begin early next year, UAF Researcher Chris Fallen, KL3WX, told ARRL. UAF describes HAARP as "the world's most capable high-power, high-frequency transmitter for study of the ionosphere."

Built in three phases, starting in the early 1990s and continuing through 2007, at a cost of some \$300 million, HAARP over the years has inspired a wide range of conspiracy theories that became grist for late-night radio talk shows. Some have claimed that HAARP's transmitters and 30-acre antenna farm -- capable of generating up to 5 GW ERP -- have been used to control the weather, while others have argued that HAARP has caused earthquakes.

The FCC recently granted two Part 5 Experimental Service licenses for HAARP ionospheric research "across multiple bands." WI2XFX will cover experiments in discrete parts of the HF spectrum, including 2650-2850; 3155-3400; 4438-4650; 4750-4995; 5005-5450; 5730-5950, and 7300-8100 kHz. A second Experimental license, WI2XDV, covers ionospheric research between 1 and 40 MHz.

HAARP is aimed at studying the properties and behavior of the ionosphere. Operation of the research facility was transferred from the US Air Force to the University of Alaska Fairbanks last August, allowing HAARP to continue exploring ionospheric phenomena via a land-use cooperative research and development agreement. -- *Thanks to Chris Fallen, KL3WX, Steve Floyd, W4YHD, and UAF*

**Also see p. 5 for the latest on this news item.**

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## **From Radioworld—thanks to John WØWY for the relay. New law signed:HR336.**

Section 2110 requires the FAA to issue regulations within the next year requiring "covered towers" to be "clearly marked." And what's a "covered tower"? That would be a structure that:

Is self-standing or supported by guy wires and ground anchors

- Is 10 feet or less in diameter at the above-ground base, excluding concrete footing
- Is at least 50 feet above ground level and not more than 200 feet at its highest point
- Has accessory facilities on which an antenna, sensor, camera, meteorological

instrument, or other equipment is mounted or

- Is located (a) outside the boundaries of an incorporated city or town; or (b) on land that is (i) undeveloped; or (ii) used for agricultural purposes

· Congress helpfully defines "undeveloped" land as area over which the FAA

"Administrator determines low-flying aircraft are operated on a routine basis, such as forested areas with predominant tree cover under 200 feet and pasture and range land."

**The law also expressly excludes any structure that: Is adjacent to a house, barn, electrical utility station or other building or within "the curtilage of a farmstead"**

- **Supports electric utility transmission or distribution lines**

- **Is a wind-powered electrical generator with a rotor blade radius that exceeds six feet or**

- **Is a street light erected or maintained by a federal, state, local, or tribal entity**

- **See more at: <http://www.radioworld.com/article/faa-to-require-marking-for-some-towers-200-feet-or-less/279288#sthash.sgKbEzpb.dpuf>**

- **Editor's Note: Surely, there will be more info on this and how it will affect the average ham stations' towers.**

## Amateur Radio Sleuthing Pins Down Source of Strange RF Interference—*from ARRL Letter*

Police in Evanston, Illinois, contacted the ARRL Lab, after an apparent interference source began plaguing wireless vehicle key fobs, cell phones, and other wireless electronics. Key fob owners found they could not open or start their vehicles remotely until their vehicles were towed at least a block away, nor were they able to call for help on their cell phones when problems occurred. The police turned to ARRL for help after striking out with the FCC, which told them it considered key fob malfunctions a problem for automakers, although the interference was affecting not just key fobs but cell phones -- a licensed radio service. ARRL Lab EMC Specialist Mike Gruber, W1MG, feels the FCC should have paid more attention.

"This situation is indicative of what can happen as a result of insufficient FCC enforcement, especially with regard to electrical noise and noncompliant consumer devices," Gruber said.

Evanston authorities worried that a serious situation could develop if someone were unable to call 911, putting public safety at risk. They also were concerned that the RFI could be intentional and indicate some nefarious or illegal activity. Given the seriousness of this situation, Gruber contacted Central Division Director Kermit Carlson, W9XA, to ask if he could look into the matter.

On June 2, Carlson met with an Evanston police officer, her sergeant, a local business owner, and the local alderman, and he quickly confirmed that the 600 block of Dempster Avenue in Evanston was plagued with an odd RFI problem. Carlson determined that the problem prevailed along a set of eight on-street parallel parking spots in the downtown commercial district of the North Chicago suburb.

Carlson employed a Radar Engineers 240A Noise Signature Receiver and UHF Yagi antenna to survey the affected block. Since key fobs typically operate at around 315 MHz and 433 MHz, he looked on both frequencies. The survey identified several noise sources in the affected block, but in particular a strong signal in the middle of the block. The interference source turned out to be a recently replaced neon sign switching-mode power supply, which was generating a substantial signal within the on-street parking area just across the sidewalk, between 8 and 40 feet from the sign.

The problematic power supply interference also disabled Carlson's cell phone when he was within a few feet of the device. Carlson anticipated that further investigation would show that the harmful interference could disrupt licensed radio services in close proximity. The troublesome transformer was not replaced, but the building owner agreed to turn off the sign should problems arise.

Carlson called the Evanston case "a particularly alarming example of radio interference," especially since local authorities considered it a public safety matter. "This situation demonstrates the electromagnetic compatibility problems that are evolving in an atmosphere of noncompliant, unintentional RF-emitting devices," he said.

A return visit to the area with calibrated antennas and equipment capable of measuring the radiated signal strength with quasi-peak detection is planned for later this year. Since the initial visit, several other instances of unexplained key fob malfunctions have been reported in the Greater Chicago area. -- *Thanks to Kermit Carlson, W9XA, and Mike Gruber, W1MG*

## Now Free of HAARP, US Air Force Still Wants to Tinker with the Ionosphere

A lot of radio amateurs bemoaning the recent spate of poor HF conditions would love to have a way to improve propagation -- perhaps without even having to rely on the whims of the Sun. The US Department of Defense has been thinking along the same lines. An August 9 [article](#) in *New Scientist* reports that the US Air Force is exploring a plan to bombard Earth's upper atmosphere with ionized gas dispersed from CubeSats. According to the *New Scientist* article by David Hambling, the Air Force hopes to improve long-distance radio communication by "detonating plasma bombs" in the upper atmosphere, and the military branch has contracted with corporate and university researchers to figure out how to make this a reality.

## Preparing for the three FCC Ham tests—ideas from W1UL

*Recently Urb W1UL sent me an e-mail offering **for free** to our readers an improved method of studying and test taking that has a high pass rate, according to Urb's group. From his own teaching experience and VE work, he developed a time-saving method available on his website that I said I would get out to our members, who can then also pass them along to others. Potential hams can use these tools along with the usual class instruction, self-instruction, or in any combination. I am just passing along info that our members can use. I have edited Urb's detailed e-mail to communicate the basic ideas. The readers also can go to his website for the rest. —WØKO*

Urb said that during the period following the actual tests and the beginning of the meeting he would chat with candidates about their experience with the test. A surprisingly large number said something resembling, "I recognized an answer but couldn't remember if it was a correct or incorrect answer." Recalling Urb's own learning from one of his early teachers, he determined simply that what the test takers encountered was confusion between the correct answer and the distractors. The wrong answers on a multiple choice test are called distractors for a reason. The desired solution goal was to eliminate the confusion.

The conventional license preparation websites modality is to keep taking practice test composed of questions and all four possible answers from the entire question pool. Thinking "outside the box" on this one was easy. Don't waste time and risk confusion studying incorrect answers. The first version of the W1UL Ham Cram eliminated incorrect answers in study mode. A candidate selects one or more sub-elements and the system lists them as: Question one—Correct answer to question one. Question two—Correct answer to question two, and so on.

There is a very subtle but highly significant difference between the one answer method and the four-answer version. With four answers the student has to memorize the correct answer from a grouping of four answers for the entire question pool. With the one answer version the student only has to establish an association between the question and the correct answer. Making associations is much easier and infinitely more effective than memorization. I suggest a candidate look for the key word or phrase in the question and then look for the key word or phrase in the answer. Good memory is simply associating something you know with something you don't know. For example, if you were to find out that your SS number is the same as my phone number, you will never forget my phone number.

By FCC decree the question pool for each class of test must contain at least two times as many questions as appear on the actual test. Each class of license has five different tests which the VE team selects at random during a VE session. The Technician and General test have 35 questions for a total of 175 questions. The Extra tests have 50 questions for a total of 250 questions. There are currently 412 questions in the Technician pool, 461 in the General pool and 705 in the extra pool.

There are at least 20 different website offering practice exams including, QRZ.com and ARRL.org to name a few. These practice tests are much the same with some occasional nice feature such as retesting on questions a candidate misses or skips. They all use the entire question pool of question with each containing four multiple choices. The next problem to be solved in the evolution of the W1UL Ham cram was could we come up with a way of NOT using the entire question pool .

**Continued from p. 6—W1UL’s method and website.**

To date, the W1UL ham-cram.com has served up over 40K test preparation sessions and is increasing at a rate of over 1,000 prep sessions a week.

**Ham Cram Phase Three, the W1UL Ham Cram Version 2.0**

**Ham Cram Version 2.0 will represent a substantial increase in user features and flexibility. The systems analysis and database structure are virtually finished. Programming will begin shortly.**

**The basic study sessions and practice tests, which are the lifeblood of the site, remain unchanged. A major enhancement gives the candidates the ability to track their results while they pursue their quest for a ham radio license or an upgrade to their current license. One of the major features of Version 2.0 upgrade is the ability to create a practice test containing only questions which were previously answered incorrectly or not answered at all.**

**Two historical reports to be added are the listing of all study sessions showing the date of the session, subelement(s) covered and elapsed time. The second progress report lists practice test taken, subelement(s) covered, length of time to take the test, score, questions correct, questions incorrect and questions skipped.**

**The new version also features a monthly newsletter and random drawings for FREE ham gear.**

**If you have any ideas for enhancements to the ham cram website please use the feedback form on the website. <a href="http://ham-cram.com/contact/feedback.php">**

**Your suggestions are greatly appreciated. I almost forgot, the W1UL ham cram system is FREE.— *-Info provided by Urb W1UL, along with some editing by Fritz WØKO.***

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**Tuskegee Airman, Congressional Gold Medal Recipient Julius T. Freeman, KB2OFY, SK—from ARRL**

Tuskegee Airman and Congressional Gold Medal recipient Julius T. Freeman, KB2OFY, of Spring Garden, New York, died on July 22 after suffering a heart attack. He was 89. Originally from Lexington, Kentucky, Freeman served during World War II as a medic with the famed 332nd Tuskegee Airmen. He was a frequent speaker at schools and civic organizations.

In 2007 President George W. Bush awarded Freeman and the other "Red Tails" the Congressional Gold Medal, although Freeman was too ill to attend the ceremony, which honored the estimated 16,000 or more Tuskegee Airmen. Freeman once again embraced his military past, visiting schools and educating youth about the role that the Tuskegee Airmen had played.

**SUNDAY NIGHT NCS OPS**

09-04-16	Rick	NØBJN
09-11-16	Doug	WØDWB
09-18-16	TJ	KØTEG
09-25-16	Jay	KAØDYN
10-02-16	Rick	NØBJN
10-09-16	Doug	WØDWB
10-16-16	TJ	KØTEG
10-23-16	Dave	KCØTGT
10-30-16	Jay	KAØDYN

Can't make the schedule? Find a substitute operator. BAARC Sunday Night Net Control Coordinator is Fritz WØKO. To volunteer: w0ko "at" arrl.net

**Would you like to take a turn at NCS?**

**ARRL names BAARC "Special Service Club."**

Our thanks to the Club leaders who made this happen and to Skip KSØJ of the MN Section of the ARRL for his section leadership help.

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**Congratulations, SKIP KSØJ: Summer Section Manager Election Results**

**Announced on 8-23-16. After ballots were counted at ARRL headquarters, incumbent Jackson of Inver Grove Heights won handily over Ann Foster, KØANN, of St. Anthony.**

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**Happy Labor Day to all current workers and those retired. --Enjoy your holiday !**

United We Stand



**First Class Mail**  
Address Correction Requested

Brainerd Area Amateur Radio Club  
c/o M. Fritz Bertelt WØKO  
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Brainerd, MN 56401