



The BAARCer



November 2014

For Anyone Interested in Amateur Radio

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Club Call Sign: WØUJ

BAARC REPEATERS

53.110 MHz- 123.0 Hz
147.225 MHz+ (main rpt)
 145.130 MHz- Echo Link
 Node number 233515
 443.925 MHz + 110.9 Hz
Packet: 145.670 MHz
 MNBRD, BRDBBS
 144.390 WØUJ APRS
Crosslake 147.030
 MHz+
Crosby 146.700 MHz-
 Tone 141.3
Crosby 444.925 MHz +
<http://brainerdham.org>

OFFICERS

President + WWW

Editor:

Steve Mott **NØCRM**

Vice President:

Lyle Amundson **KØLFV**

Secretary:

Ron Finger **KØGOP**

Treasurer:

Doug Bergsnev **KDØERE**

Director-at-Large:

John Luce **WØWY**

Trustee + BAARCer

Editor: Fritz Bertelt
WØKO

Scott Heide (1) with John Luce making the ARMER Presentation.



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More Details and Photos on p. 6 of 10-30-14 Program.

— **Events Calendar** —

Sat., Nov. 1, @ 9—Club Brkfst. @ Northwind Grille in Brainerd

Sat., Nov. 15, @ 9—Club Brkfst. @ Northwind Grille in Brainerd.

Thurs., Nov. 20, @ 4 and 7 P.M. Monthly BAARC Board first and Membership

Mtg. last.— @Brainerd Fire Hall. (Note: Week earlier because of

Thanksgiving)

ELECTION of 2015 OFFICERS
Bring in your 2015 Dues and Ballot

Listen for Activity Updates on our Sunday Night Nets

**Encourage New Membership: Dues are still only \$20/year—a bargain for
all you get. See p. 5— E-mail Doug for info: djbdesk@gmail.com**

Thursday-October 30, 2014 - 4:00 PM - BAARC Board Meeting Minutes Brainerd Fire Station

President: Steve Mott, NØCRM
Vice President: Lyle Amundson, KØLFV
Treasurer: Doug Bergsnev, KDØERE
Secretary: Ron Finger, KØGOP

Past Presidents: Charles Lane, W5CCL; Al Doree, WØRC
Director-At-Large: John Luce, WØWY
Repeater Trustee: Fritz Bertelt WØKO
Emergency Communications Director: John Luce, WØWY

Attendees: Steve NØCRM, John WØWY, Al WØRC, Ron KØGOP, and Roger WØWUG.

Secretary's Report: September Meeting Minutes were published in the October 2014 BAARCer; no corrections were noted. The website and Google Calendar were updated for October. Membership roster shows 60 current/paid 2014 members.

Motion to accept: John WØWY, **Second** Al WØRC, **Passed.**

Treasurer's Report: An abbreviated report relayed to the board in the Treasurer's absence. Additional insurance coverage information was also given by phone during the meeting. John WØWY submitted a bill for \$170 from Granite City Electronics for Club ARMER mobile radio programming (2 units).

Motion to accept: John WØWY, **Second** Al WØRC, **Passed.**

Membership Meeting Program: Steve NØCRM reviewed recent and future Club programs and events. A November 20 meeting is planned to include a program on the Club's recent purchase of 3 Yaesu Digital 2m VHF repeaters and compatible mobile and portable radios. Future Club meeting dates over the holidays are planned for 18 December, and 29 January.

Upcoming Events: The next Club events will be the **Jaycee's Ice Fishing Event** on January 24, and the **27th Annual Sled Dog Race** in Emily, Outing, and Remer on February 14. Event Chairmen and 6-10 operators are being sought for each event.

Digital & Emergency Communications: Discussed were future Club remote base station locations and possible changes to the SKYWARN reporting structure for the 2015 storm season. A set of keys were secured by John WØWY and turned over to Al WØRC for access to the Club repeater equipment in the top floor of the HRA High-Rise in Brainerd.

An antenna site for a possible repeater location for use during the annual **Sled Dog Event** was noted for further exploration.

The board meeting was adjourned at 5:15 PM.

Thursday- October 30, 2014 - 7:00 PM - BAARC Membership Meeting Minutes Brainerd Police Station

Attendees: The President opened the Club membership business meeting at 7:00 PM with 29 members and guests present.

Information supplemental to Board Meeting Minutes: Club Officers who have agreed to be placed on the 2015 ballot were announced. An invitation for other nominations was made, with no additional names received.

Scott Heide from Crow Wing County Sherriff's Department presented an informative program on the ARMER system. A hands-on demonstration provided members with an opportunity to familiarize themselves with operation of these radios as they might be used to communicate with civil authorities during a Club event.

Following the program, Club members were also invited to tour the Dispatch Center in the nearby County Law Enforcement Building.

--Respectfully submitted by **Ron KØGOP**, Secretary

DX and the Paper Chase

The leaves have turned to magnificent colors. Up North they are falling at warp speed as we enjoy a lingering Indian summer. The other shoe will be ready to drop any day now and...winter will be in charge. It seems that as the leaves and pine needles drop, signals seem to go out much easier. Not the least bit scientific but signals are much better than the propagation gurus give them credit for. There's plenty of available DX to go around including Christmas Island and Norfolk Island both of which are not on the air regularly. I've enjoyed working more and more CW chasing DX. It's fun to bust a CW pileup, but it's even better and easier as the DXpedition has been QRV for a while. That's when you hear the melodious CQ and you answer for a good DX contact. Most of the modern rigs come with a keypad that allows you to set up a program and access the program by punching in a number. My keypad is programmed with my call sign. A touch of the button and WØZPE is sent at any predetermined CW speed I set. Generally, my automatic sending is set at 20 WPM and this seems to get the job done. As soon as my automatic call is acknowledged, I shift over to my paddle to complete the CW contact. I'm looking forward to many good contacts both CW and phone as the winter sets in. What a great indoor hobby to spend the winter with. The magic of DX is what it's all about. Don't forget to sit down at your station and call CQ because someone somewhere in the world is listening for your call. That's it from Huntersville for now from my station to yours, 73 es gud DX from **Bob/WØZPE**.

Former BAARC Member SK: Becky Savey, KC7OPP, of Pine River passed away in October at age 57. She held the General class license. You may remember both Becky and husband RJ AAØRJ when they first came to the area and were members. On behalf of the BAARC Fritz has sent a card expressing our sincerest condolences to the family.

Radio Amateur is Among Nobel Prize in Chemistry Winners

A California radio amateur and ARRL member was among the [three winners](#) of the Nobel Prize in chemistry. **William Moerner, WN6I**, of Los Altos, a chemistry professor at Stanford University, will share the prestigious award equally with two other researchers -- Eric Betzig and Stefan Hell --for their work in high-resolution microscopy, or nanoscopy.

For many years scientists had believed that an optical microscope could never yield greater than 0.2 micrometer resolution. The three scientists overcame that limitation through what the Nobel panel called "the development of super-resolved fluorescence microscopy."

As a Stanford University news release [explained](#), "Optical microscopy was long limited by the presumption that it could never obtain a better resolution than half the wavelength of light. Moerner, Betzig, and Hell circumvented this limitation through the clever implementation of fluorescent molecules, which made it possible for optical microscopes to operate at the nanoscale and visualize individual molecules moving within cells."

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**Note to the few who get the BAARCer via SNAILMAIL:** Can you save the Club money and time, by now agreeing to receive the monthly 8-sided copy via our Club's website? Postage rates and duplication costs rise—not to mention the volunteer time by your Editor, Trustee, and official duplicator, assembler, and mailer—HI! Thanks for helping out.—de WØKO—



# Brainerd Area Amateur Radio Club

## Official Ballot for the Election of Officers for the Year 2015

Circle the Choices or Write In a Name

**President: Steve Mott, NØCRM**

**Write-In:** \_\_\_\_\_

**Vice-President: Lyle Amundson, KØLFV**

**Write-In:** \_\_\_\_\_

**Treasurer: Doug Bergsnev, KDØERE**

**Write-In:** \_\_\_\_\_

**Secretary: Ron Finger, KØGOP**

**Write-In:** \_\_\_\_\_

**Director-at-Large: Al Doree, WØRC**

**Write-In:** \_\_\_\_\_

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**Please print and bring the marked ballot to the Thursday, November 20, 2014,  
7 P.M. Membership Meeting at the Brainerd Fire Hall.**

**The Ballots must be in the hands of the Secretary at Meeting Time.  
You may also pay your 2015 dues at that time in person or by mail.**

**You can mail the completed ballot to:**

**Ron Finger, KØGOP**

**BAARC Secretary**

**14092 Memorywood Drive**

**Baxter, MN 56425-1009**



# Brainerd Area Amateur Radio Club

## MEMBERSHIP APPLICATION FORM

Dues Year January 1, 2015, to December 31, 2015



(One Application for Each Person)

Name: (First, MI, Last-print) \_\_\_\_\_ Call Sign: \_\_\_\_\_

Address: \_\_\_\_\_ License Class: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_

Phone: (\_\_\_\_\_) \_\_\_\_\_ Additional Phone (\_\_\_\_\_) \_\_\_\_\_

Date of Application : \_\_\_\_\_ Circle One: New / Renewal

E-mail Address \_\_\_\_\_ Member ARRL ? Circle One: Y / N

I would like to receive the BAARCer via the Internet / US Mail (Circle One). (Internet saves Club money)

Circle One: \$20 Full Member / \$ 10 Additional Family Member / Student Member \$10

Note: For first-time members, pay \$5 per quarter for the time remaining in the year you join. For information on a life membership, contact Doug, Club treasurer: [djbdesk@gmail.com](mailto:djbdesk@gmail.com)

Membership Dues \$ \_\_\_\_\_

Voluntary Contribution (Tax Deductible) \$ \_\_\_\_\_

**Total Enclosed** \$ \_\_\_\_\_

Make Checks Payable to:  
**BAARC**. The Club is a non-profit 501c3 organization.  
Contributions are tax deductible.

Send to:  
**Doug Bergsnev, KDØERE**  
**BAARC Treasurer**  
**15912 Olsen Road**  
**Brainerd, MN 56401**

I hereby make this application and agree to abide by the Club By-Laws.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Disclosure: Information provided here will not be sold/given to any other organization without the permission of the members.

**Check our club's Website for other Information and Newsletters.**  
**Regular Updates on the Sunday Night Nets on 147.225 @ 8 P.M.**  
**[www.brainerdham.org](http://www.brainerdham.org)**

### **ARMER is the acronym for Allied Radio Matrix for Emergency Response.**

It is a very sophisticated digital communications system in the State whereby law enforcement, fire, and emergency governmental units share a statewide 800 MHz trunked system. Scott Heide, the Crow Wing County Supervisor of 911 Emergency Communications Services, explained and demonstrated the system to the BAARC. Why? It is because the ham community is and has been an integral part of CWC's emergency communications. John Luce, WØWY, is the Club's and ham radio's link that interfaces with this governmental system. The Club provides many public services unique to our expertise and using our own gear. However, there are also many joint efforts whereby the County emergency communicators need us hams in strategic locations with them. At those times we will be using the ARMER radio systems' equipment—be it HT's or mobile units or base stations—with County permission and control, of course. These units are all "connectable" and encryptable for various tasks. Also we learned that the many radio systems across the County and State provide nearly seamless communication—too complex to describe by this editor. Also you will not be able to monitor these transmissions on old-style scanners. Instead, plan to spend more money on new upgrades for your future personal scanning. As shown below, Al WØRC, Steve NØCRM, and John WØWY assisted Heide with the training session and presentation. Afterwards some members of the BAARC also visited the Crow Wing County 911 Communications Ctr. —Interesting. Roger WØWUG reported that the dispatchers were eager to explain the functions and even gave examples of the sometimes frivolous 911 situations they called upon to deal with. The dispatchers sit in front of 8 video monitors in the 4 dispatching consoles. Of course, their work is very serious for the citizens of the County. Surely the hilarious (non-911) calls relieve some tensions. Above all, the dispatchers did an excellent job explaining their not-so-easy roles in a world full of the unpredictable.



**Photo Credit:** 2 on p.1 and top 3 on this page by WØKO; bottom of p. 6 by WØWUG taken with cell phone camera. Thanks to Scott Heide, for an interesting program. **Text Credit:** Fritz WØKO, Editor. Also thanks for the additional notes from Roger WØWUG.

## **Did You Know? JC Bose patents radio wave detector, September 30, 1901**

By Jessica MacNeil -September 30, 2014

James Clerk Maxwell's [equations](#) predicted the existence of electromagnetic waves of diverse wavelengths in the 1860s, and in 1888 Oliver Lodge and Heinrich Hertz verified it, along wires and in free space. After reading about their experiments, JC Bose, a professor of physics at Presidency College in Calcutta, India, reduced the waves to about 5mm to study them.

He developed the use of galena (lead sulfide) crystals contacted by a metal point for detecting millimeter electromagnetic waves, and filed patent 755840, for a "[Detector for electrical disturbances](#)" in 1901. It was the first device to use a semiconductor junction to detect radio waves.

Bose created a portable device to study the optical properties of short waves, which incorporated the earliest waveguide and horn antenna. It would be more than 30 years before more research and analysis was done with the now widely-used horn antennas. His use of dielectric lenses, polarizers, prisms, and semiconductors at frequencies as high as 60 GHz, were also well ahead of his time. In a 1895 demonstration, he used electromagnetic waves to ignite gunpowder and ring a bell from a distance, reported to be nearly a mile. In 1897 Bose presented his microwave experiments at the Royal Institution in London (see the photo).



He founded the Bose Institute in 1917 in Calcutta where some of his original instruments and devices are displayed. Bose spent much of his later career studying the effects of electromagnetic radiation on plants. Much of Bose's component technology would eventually be used to develop microwave radio transmission. For his pioneering work in quasi-optic millimeter wave research, IEEE has called him the father of radio science. According to a 1997 *Microwave Symposium Digest* publication, "He developed an elegant millimeter wave spark transmitter, self recovering coherer detector, wire grid polarizer, cylindrical diffraction grating, dielectric lens and prism, rectangular waveguide, horn antenna and microwave absorber, for the studies of reflection, refraction, absorption and polarization of millimeter waves and its application to wireless remote control for firing a gun."

**Editor's Note:** Some of the material above is from the ARRL, Wikipedia, etc. Since anyone can enter material on Wikipedia, such information is often suspect, but there are some interesting bits worth reading. So, did Marconi invent radio? Was it Tesla? Was it Stubblefield? Perhaps it was really J.C. Bose, who apparently did not want to apply for patents—believing instead to share all information gleaned from his research. Were the other pioneers as honest? Check it out for yourself.—WØKO

**SUNDAY NIGHT NET OPERATORS**

|          |      |        |
|----------|------|--------|
| 11-02-14 | Rick | NØBJN  |
| 11-09-14 | Dave | KCØTGT |
| 11-16-14 | Doug | KDØERE |
| 11-23-14 | Tim  | KDØYLO |
| 11-30-14 | Tim  | KDØYLO |
| 12-07-14 | Rick | NØBJN  |
| 12-14-14 | Dave | KCØTGT |
| 12-21-14 | Tim  | KDØYLO |
| 12-28-14 | Tim  | KDØYLO |

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

**Can you be the NCS on a regular Sunday every month? Some above have volunteered already. Thanks to all of them!!!!**

**Congratulations to John Luce, WØWY.** John was recently awarded his Director Core Curriculum Certificate from the National Telecommunications Cooperative Association. John is the Board President of Consolidated Telephone Company (CTC), of which he has been a member since 2008.

**2015 DUES can be sent in now.** Make the job of our Treasurer easier. Every year the process stretches out—let's change that now. **See page 5.** Doug KDØERE will be most grateful for your early cooperation.

**November 11th—VETERANS' DAY.** Yearly we honor the service of our BAARC veterans, present and past. Your dedication to our country's call is forever immortalized in our collective memory. It is no wonder the United States is recognized by others as the greatest nation on earth and favored by our Creator. Truly, you military men and women deserve our admiration and especially our thanks for serving all of us, the grateful beneficiaries. May God continue to bless you and the USA!

United We Stand



**First Class Mail**  
Address Correction Requested

Brainerd Area Amateur Radio Club  
c/o M. Fritz Bertelt WØKO  
16167 Ahrens Hill Road  
Brainerd, MN 56401