



# The BAARCeR



**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-5 APRS  
 Crosslake 147.030 MHz+

<http://brainerdham.org>

**OFFICERS**

**President + WWW**

**Editor:**

Steve Mott      NØCRM

**Vice President:**

John Luce      WØWY

**Secretary:**

Ron Finger      KØGOP

**Treasurer:**

Doug Bergsnev   KDØERE

**Director-at-Large:**

Lyle Amundson   KØLFV

**Trustee + BAARCeR**

**Editor:**

Fritz Bertelt      WØKO

**BAARC's Active DXer, Bob Feuer, WØZPE Shares Experience**



At the January Meeting Bob explained how he has made record DX QSOs—more details and summary on p. 4. (Photo credit: Lyle KØLFV)

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— **Events Calendar** —

- Sat., Feb. 4, Club Breakfast @ 9 @ Northwind Grille in Brainerd.**
  - Sat., Feb. 11, Brainerd Jaycees Annual Ice Fishing Extravaganza—(new date)**
  - Sat., Feb. 11 Mid-MN Annual Dogsled Race** (Announcement coming)
  - Sat., Feb. 18, Club Breakfast @ 9 @ Northwind Grille in Brainerd.**
  - Sat., Feb. 18, St. Cloud Area Hamfest—Cabin Fever Reliever @ Armory in St. Cloud**
  - Sat., March 31, Mid-Winter Madness in Buffalo**
- Volunteers are needed for both Feb 11 Events: Contact NØCRM or WØWY on Nets

**Please send in your 2012 Dues—still only \$20—see p.7**

**Listen for Updates on our Sunday Night Nets**

**Hint: Want to use a Ø? Hold ALT and type 0216.**

## Thursday January 26, 2012 – 4:00 PM - BAARC Board Meeting Minutes

### Brainerd Fire Station

**President:** Steve Mott, NØCRM

**Vice President:** John Luce, WØWY

**Treasurer:** Doug Bergsnev, KDØERE

**Secretary:** Ron Finger, KØGOP

**Past President:** Al Doree, WØRC

**Director At Large:** Lyle Amundson KØLFV

**E-Communications Director:** John Luce, WØWY

The President opened the meeting at 4:10 PM with 7 board members and 1 member in attendance. The Secretary reported and distributed the current membership list of 59 members, and discussed the current dues status. A follow-up letter was sent to BSA Pine Tree Council Member Nate Phillipps containing details presented by the Secretary and Dave KCØTGT at their meeting on January 10<sup>th</sup>. The December 2011 minutes were approved as published in the [BAARCer](#).

The Treasurer's Report was given, discussed, approved, and seconded by John WØWY and Al WØRC.

**Upcoming Events:** John WØWY reported on plans for the rescheduled **2012 Jaycee Ice Fishing Extravaganza** event on February 11<sup>th</sup>. The Jaycees will be handling more of their own communications with 24 FRS radios supplied by Granite Electronics in St. Cloud. Accordingly, fewer operators will be needed to handle the remaining key locations of parking, lake entrance and first aid. Al WØRC reported the **Mid-MN 150 Dog Sled Race** will be postponed or cancelled by February 4<sup>th</sup>. The sled course will be from Remer to Outing and back to Remer.

**Old/New Business:** The use of premium (non-oxygenated) gasoline for the Club generators was discussed. The premium grade fuel should prevent problems caused by the breakdown of regular fuel when stored for longer periods. Al WØRC briefly discussed the Club's involvement in the Forestview Middle School's "Balloon Project."

The Board Meeting was adjourned at 4:57 PM.

## Thursday January 26, 2012 - 7:00 PM - BAARC Membership Meeting Minutes

### Brainerd Fire Station

The President opened the meeting with many members and guests present. The December 2011 minutes were approved as printed in the January [BAARCer](#). The Club membership was increased by 4 during the meeting break. The Treasurer reported some ongoing expenses for the Ham Radio classes and April Hamfest. The report was presented, approved, and seconded.

**Digital & Emergency Communications:** John WØWY gave an update on the ARMER status.

**Upcoming Events:** The upcoming details for the **2012 Jaycee Ice Fishing Extravaganza**, and **Mid-MN 150 Dog Sled Race** were discussed. (see Board Meeting Minutes).

**Old/New Business:** Al WØRC discussed the Club's involvement in the Forestview Middle School's "Balloon Project." A special Ham Review Class will be held for Program students to give them a basic understanding of Ham Radio as it applies to their project.

The Membership Meeting was adjourned at 7:34 PM.

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

## DX and the Paper Chase

The holidays are history, but I would like to say Merry Christmas and a Happy New Year to everyone. May the New Year bring you health, happiness and good DX'ing. DX is alive and well as we go further up the Cycle 24 ladder. Every cycle has its good and its bad days, but I work HF every day and with openings into Europe every morning on 17-meters. I've been meeting old friends and making new ones all over Europe. I've mentioned several times that my 40-meter antenna is a ground-mounted vertical and it works beautifully. Many mornings that I find myself unable to sleep, I'm on 40-meters working DX wherever it may produce a signal for me. These past two months with good propagation I've been working into Europe, ZL and VK land and the Caribbean--and what fun it is. Most will tell you that a vertical antenna resonates equally poorly in every direction. I would invite you to my shack at 4:00 AM some morning to listen to the great signals (when propagation permits) on 40-meters. Among the new ones I worked this past month was the Principality of Andorra on 20-meters--a DXCC country and a very interesting one too. I was searching for an open frequency when I heard the operator calling CQ, what a break for me as I was there and was the first one in line to answer him. There is a lot of luck in the world of DX and there's a lot of hard work in getting those rare ones. When you're in their online logs, there is an adrenalin rush. Then when you see your call, it tells you that you "got them." It's a wrap for this month but before I go, remember to sit down at your station and call CQ because someone somewhere out there is listening for your call. So long from Huntersville for now. 73 and good DX from Bob/WØZPE

## Minnesota Section Report from our Director

The ARRL Board of Directors met on 13 and 14 January 2012. Many topics were discussed, and most were about the routine operations of the League. A full summary will appear on ARRL.org soon. There were a few, however, that will affect the League as we move toward the 100<sup>th</sup> anniversary of the League's founding in 2014.

- We will see funding appeals as we approach that year. The goal is to increase ARRL's endowment to an extent that our ability to respond to threats to our spectrum will not be hampered by limited financial resources.
- The League is preparing actions to defend our frequencies in the face of the government's National Broadband Plan. We will see lots more about this with time.
- The Board approved process changes to permit the election of Division Directors and Vice Directors through electronic ballots. This will help eliminate problems that sometimes occur with mailed ballots and returns.
- Much progress has been made toward electronic publishing by the League. Expect to see some announcements that you will like later this year.

The 2012 Dakota Division calendar is already filling with the usual complement of hamfests. November year-to-year comparisons show a modest 1.4 percent membership growth across the Division.

If you have suggestions, questions, comments, etc., you can always reach me or Vice Director Kent Olson at the addresses shown on page 15 of every issue of QST. Best wishes for 2012— It looks like we can look forward to a lot of fun this year.

Greg Widin, KØGW  
Dakota Division Director

## **Bob's Program: "How to Work Good DX"**

The January program was presented by a long-time BAARC member, Bob Feuer, WØZPE. Bob has a passion for DX and he talked to the Club about what represents "Good DX."

Bob summoned the audience asking who was a Technician; a number of hands went up and he encouraged them to get on 10 meters—since Technicians can operate HF on a small portion of the HF band. Bob was first licensed as a Technician in 1996-97 timeframe and took the code exam and became a Tech+. Nearly immediately he got on the air contacting a J79 ( Dominica) from his mobile rig. Bob loves the 17-meter band. As you may well know, it is "the gentleman's band" and is good for rag chewing. In addition, it was on 17 meters that he made his first home-base station contact. He enjoys the 12-meter band as well.

Bob talked about the 4 things you need to do when DXing, and they are as follows: Listen, listen, listen, and then listen. Listen to how they conduct themselves, listen to their timing, listen to how they start a QSO, and listen to how they end a QSO. You need to learn how to answer the DX operators if you want a contact, and by listening you get a good perspective.

When calling a CQ, Bob likes to keep it concise; here is his recommendation for calling CQ. ALWAYS the first thing you must do when keying up the microphone is to ask, "Is this frequency in use?" After hearing nothing you can begin calling by doing the following: " CQ CQ CQ... This is WØZYZ (your call sign), calling CQ, WXYZ calling CQ and standing by." When you get an answer back, say: "Thank you for coming back to my call, my QTH is xxxxx and your signal report is 5-9, back to you form WØXYZ." When signing off with the operators, be sure to say thank you and best wishes—73.

Bob also referenced operating split frequency. This is when the DX operators split their send and receive frequencies. This is done so that they can filter through the pileups of call signs. One of his recommendations is to start 2-3 kHz down from the upper range; an example would be an operator calling on 18.130 with 5-10 up on the receive side. So your transmit range would be 18.135 to 18.140 and 2 kHz down from the upper would be 18.138. Another trick that he may sometimes use if unsuccessful is to try going down to 18.131 or 18.132 in hopes that the operator will sweep by on his way up to the split. Another good point he noted was that just because you can hear a given station does not suggest that you can contact him. A effective rule of thumb is to answer calls with good signal strength, such as S5 or S6.

As evidence of Bob's true passion for DX, he once spent 5 days trying to contact B57H, a DXpedition on Scarborough Reef in the Indian Ocean. In the last operating hours of the expedition, he was successful in making this contact, although he later found out they logged him with the wrong call sign. Still, he was able to get that corrected and now has a QLS card from there. And speaking of QSL, the QSL card is the ultimate courtesy to the Amateur Radio operator.

*(Our thanks to Steve NØCRM for providing these notes from our Club's program. We hear guys are fired up now to work some good DX after hearing Bob's presentation)*

## Station of the Month: KØLFV—A Winter View of Antennas and Neat Gear



From time to time the equipment of my station changes. As part of my hobby I enjoy using different kinds of HF and VHF equipment, also enjoy trying out different types of antenna systems.

My HF station consists of an ICOM IC-746 HF/VHF Transceiver and a Kenwood TS-570S HF Transceiver. For VHF/UHF I use a Kenwood D-700, which is APRS and Packet capable. My HF equipment is coupled to an Ameritron ATR20 Antenna Tuner and an Ameritron AL-811 Linear Amplifier. I also use a QJE Power/SWR meter to monitor power output and SWR. Power to my HF equipment is provided by an Astron RS-50 power supply. In addition I use a Kenwood PS-50 power supply for my VHF & UHF equipment. Current antenna systems include a G5RV dipole, a Cushcraft A3 Tri-Band Beam, two VHF/UHF verticals, with one mounted on the top of my tower and the other one side mounted on the lower part of the tower. Also I have a Cushcraft R-6000 20-10M vertical.

With all of the different antennas and equipment that I have used over the past few years, it's always amazing to me how well a simple wire dipole like the G5RV works, and in using the lower cost, lower-end HF radios you can still make many good North American and DX contacts. Developing good operating skills and persistence will always result in many good QSO's, regardless of what kind of equipment and/or antenna you are using.

**CQ CQ CQ DE KØLFV**



Many members will agree that Lyle Amundson's station pictured is a neat one, surely XYL-approved. Thanks Lyle, for the pictures and write-up. Can we feature your station here?

## Was lead-free solder worth the effort? By John Titus

The ban on lead in electronic solder caused the most controversy because as far as I can tell, no research showed environmentally significant amounts of lead leaching from discarded electronic equipment into groundwater in Europe, Canada, or the US. Granted, disposal and salvage techniques in third-world countries, where such studies are unlikely to occur, probably causes local pollution of water, soil, and atmosphere. Much of the push to eliminate lead from solder, though, stemmed from the public perception of hazardous wastes as portrayed in the news stories I mentioned above. In Europe, the "Greens" played upon environmental fears, pushed legislators to eliminate lead, and dismissed the need for a scientific understanding of heavy-metal pollution (if any). As best as I can remember, consumers didn't clamor for lead-free solder and little or no evidence surfaced to show lead contamination in potable water. The ban on lead in electronic solder caused the most controversy because as far as I can tell, no research showed environmentally significant amounts of lead leaching from discarded electronic equipment into groundwater in Europe, Canada, or the US. Granted, disposal and salvage techniques in third-world countries, where such studies are unlikely to occur, probably causes local pollution of water, soil, and atmosphere. Much of the push to eliminate lead from solder, though, stemmed from the public perception of hazardous wastes as portrayed in the news stories I mentioned above. In Europe, the "Greens" played upon environmental fears, pushed legislators to eliminate lead, and dismissed the need for a scientific understanding of heavy-metal pollution (if any). As best as I can remember, consumers didn't clamor for lead-free solder and little or no evidence surfaced to show lead contamination in potable water

On his Signal Consulting Web site, signal-integrity expert Howard Johnson notes:

"Replacing tin-lead with pure tin is turning out to have been a huge mistake. There are two significant differences between lead-free assembly and lead-based assembly.

"1. Lead-free assembly is not better for the environment, it is worse. The additional tin mining required to produce high-purity tin alloys, plus the mining of other precious metals required to alloy with tin in substitution for lead is a poor trade for the use of existing lead, much of which comes from recycled products. This information comes from a study conducted by the U.S. Environmental Protection Agency (EPA). The study undercuts the primary basis for RoHS."

"2. Lead-free assembly is less reliable than lead-based assembly. The E.U. environmental commission admits this point. That's why they grant exceptions for military and high-reliability applications that still use SnPb solder." **Our thanks to Roger WØWUG for forwarding the article, edited to fit this BAARCer by Fritz WØKO.**

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## Info on D-Star, A Timely Topic: Gleaned from Internet Sources—Thanks to AI WØRC

**D-STAR (Digital Smart Technologies for Amateur Radio)** is a digital voice and data protocol specification developed as the result of research by the [Japan Amateur Radio League](#) to investigate digital technologies for [amateur radio](#). While there are other digital on-air technologies being used by amateurs that have come from other services, D-Star is one of the first on-air and [packet](#)-based standards to be widely deployed and sold by a major radio manufacturer that is designed specifically for amateur service use. Other non-digital voice modes such as [amplitude modulation](#), [frequency modulation](#), and [single sideband](#) have been widely used since the first half of the 20th century. By comparison, digital D-STAR signals offer clearer signals and use less [bandwidth](#) than their non-digital counterparts.<sup>[1]</sup> As long as the [signal strength](#) is above a minimum threshold, and no [multi-path](#) is occurring, the quality of the data received is better than an analog signal at the same strength. D-Star compatible radios are available on [VHF](#), [UHF](#), and microwave amateur radio bands. In addition to the over-the-air protocol, D-Star also provides specifications for network connectivity, enabling D-Star radios to be connected to the Internet or other networks and provisions for routing data streams of voice or packet data via amateur radio callsigns. The first manufacturer to offer D-Star compatible radios is [Icom](#). As of July 06, 2011, no other amateur radio equipment manufacturer has chosen to include D-Star technology in their radios. The technology requires the use of a proprietary [AMBE Codec](#) that is owned by Digital Voice Systems, Inc.

### **Proprietary codec**

D-STAR uses a patented, closed-source proprietary voice codec (AMBE). Hams do not have access to the detailed specification of this codec or the rights to implement it on their own without buying a licensed product. Hams have a long tradition of building, improving upon and experimenting with their own radio designs. The modern digital age equivalent of this would be designing and/or implementing codecs in software. Critics say the proprietary nature of AMBE and its availability only in hardware form (as ICs) discourages innovation. Even critics praise the openness of the rest of the D-STAR standard which can be implemented freely. An open-source replacement for the AMBE codec would resolve this issue.



# Brainerd Area Amateur Radio Club

## MEMBERSHIP APPLICATION FORM

Dues Year January 1, 2012, to December 31, 2012  
(One Application for Each Person)



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

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

City \_\_\_\_\_ State \_\_\_\_\_ ZIP \_\_\_\_\_

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 / \$10 Student Member

**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, our treasurer: <baartreasurer@charter.net>

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

Make checks payable to BAARC. The Club is a 501C3 non-profit organization. Contributions are tax deductible. **Mail to Treasurer.**

**Brainerd Area Amateur Radio Club**  
**Treasurer - Doug Bergsnev**  
**KDØERE**  
**15912 Olsen Lane**  
**Brainerd, MN 56401**

Voluntary Contribution \$ \_\_\_\_\_

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

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

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

**Disclosure:** This information will not be sold or given to another organization without express permission of the BAARC members.

Please mail one form, along with dues (check/money order), for each person who wants to be a member.

**Check our Club's Website for other Information and Newsletters.**

Regular Updates on the Sunday Night Nets on 147.225

**www.brainerdham.org**

**SUNDAY NIGHT NET OPERATORS**

<b>02/05/12</b>	<b>Jeff</b>	<b>KDØHBI</b>
<b>02/12/12</b>	<b>Becky</b>	<b>KDØHBH</b>
<b>02/19/12</b>	<b>John</b>	<b>WØWY</b>
<b>02/26/12</b>	<b>John</b>	<b>KCØWCG</b>
<b>03/04/12</b>	<b>Joe</b>	<b>KBØVYJ</b>
<b>03/11/12</b>	<b>Doug</b>	<b>KDØERE</b>
<b>03/18/12</b>	<b>Steve</b>	<b>WØTNT</b>
<b>03/25/12</b>	<b>Marcia</b>	<b>WØZMC</b>

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

Running the Simplex Net is Optional.

Thanks to all NC Stations for this weekly service. Please let Fritz know if

**Welcome to Our 2 Newest Club Members:** Dave KDØNRI joined us in January while at a Club breakfast. He and YL Barbara currently live in St. Cloud but are looking forward to full-time residency at their cabin in Crosslake. Also joining us in January was Rick KBØWWJ of Little Falls. Most of us have heard Rick's booming signal on two meters. Clearly, he is a regular on the Sunday night nets. Thanks to both for joining us.

**Update on the Echolink @ Little Falls:** Rick KBØWWJ has taken his link off the 146.540 and moved it to the Avon 443.650 + with a tone of 85.4. The node is 616197. This repeater has an antenna height of 160 ft. on a hill that is about 400 ft. high, giving it some very good coverage. Using this echo link will allow everyone up in the Brainerd area to talk on the Avon 443.650 connecting them to the St. Cloud area. Everyone is welcome to use this link. So, please join in on any of our many QSO's that we have on it. We have quite a group on there from TX, CO, NY, PA, IN, and several Hawaiians from the Big Island of Hawaii. Please use the link and join in with us anytime. 73's for now, Dave KDØNRI

**WØRC & Forestview School made Brd. Paper 1-12-12 & KAWB-TV 1-20-12:** The High Altitude Launch Club this spring will release a helium balloon with payload of a digital camera and a high-altitude tracking device. Al Doree, WØRC, volunteered to serve as the talented group's GPS and radio expert. It is hoped that the balloon will rise to some 60K feet. Cory Olson and Jim Reed are the lead science teachers. involved.

United We Stand



**FIRST CLASS MAIL**  
Address Correction Requested

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