



The BAARCer



March 2016

For Anyone Interested in Amateur Radio

Page 1 of 8

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>

2016 OFFICERS

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 Steve Mott **NØCRM**

Vice President:
 Lyle Amundson **KØLFV**

Secretary:
 Ron Finger **KØGOP**

Treasurer:
 Doug Bergsnev **KDØERE**

Director-at-Large:
 Al Doree **WØRC**

Trustee + BAARCer Editor:
 Fritz Bertelt **WØKO**

**Index
of the BAARCer**

Minutes—KØGOP	2
WØZPE DX column Tech Report	3
ARRL NEWS	4
Dog-Sled Race— Report and Pix	5
Fishing Extravaganza	6
Technical Report & Balloon Launch-Feb.	7
Last Word—Updates Sunday Night Net	8

Roger Williams, WØWUG, veteran electronics instructor taught the BAARC members how VHF cavities (duplexers) are tuned.



With a very sophisticated signal analyzer in front of him hooked up to the four canisters, Roger was able to demonstrate in short order how we 2-meter hams are able to use a repeater's single antenna for both transmitting and receiving at the same time. The idea is for the duplexer to be tuned to a 600 Hz separation between the transmit and receive frequencies. We are talking gain and loss here. We want maximum gain and minimum loss so that there is clean, undistorted operation of the repeater system. At that point weak stations will be able to access the repeater and be heard in the repeater's sizable footprint. Those attending could see Roger moving the tubular shafts up and down in the canisters while they watched the graph on the screen (not shown here). Soon it showed a "tuned" cavity ready for installation.

Roger's equipment performs sweep tuning of cavity filters, requires a "tracking generator-spectrum analyzer" feature which his machine has. This makes it unique, in addition to being a RF communications Service Monitor which can check receiver and transmitter performance, trunking radio formats, radio paging formats, and a host of many "service bench" troubleshooting instruments. Very sophisticated gear for sure!!!!

By the way, Roger has been licensed since 1954 and retired from the MNSCU system, having taught most of the years at Wilmar (Ridgewater Community College). He has many former students in the electronic business and industry who maintain contact with him—often still seeking his advice. We in the BAARC are indeed fortunate to have him among the other very talented members of the technical team in the Club. TNX , Roger!!

— Events Calendar —

Sat., March 5, Club Breakfast @ 9 @ Northwind Grille—Brd. Webpage Design Mtg at 10:30 at the Library after the brkft.

Sat., March 12, Buffalo Hamfest

Sat., March 19 Club Breakfast @ 9 @ Northwind Grille —Brd.

Note: Technology Group Mtg after this BRKFST—to be held at Consolidated Telephone Cooperative.—Brd.—More Details Later.

Thurs., March 31-- Regular Monthly Board & BAARC membership Mtgs. @ 4 and 7 P.M. @ Brd. Fire Hall.

MAY 26 Annual Dinner Meeting at the Nisswa American Legion— details later. Program: Tentative acceptance by Ralph KØIR as Presenter—

June 30 Regular Mtg—Presentation by the Father-Sons Team Kendall to T32 E. Kiribati.

Thursday-February 25, 2016 - 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

Community & Special Events Coordinator: TJ Graves, KØTEG

Past Presidents: Charles Lane, W5CCL; Al Doree, WØRC

Director At Large: Al Doree, WØRC

Repeater Trustee: Fritz Bertelt, WØKO

Director of Emergency Communications: John Luce, WØWY

Attendees: Steve NØCRM, Lyle KØLFV, Doug KDØERE, Ron KØGOP, Al WØRC, TJ KØTEG, Dave KØISZ, Roger WØWUG and Mitch ADØHJ.

Secretary's Report: Membership roster shows 70 paid members for 2016. Members are encouraged to renew for 2016 at the same low \$20 rate. The Club website was updated for March including the February BAARCer and a link and updated info on the 2016 Brainerd Hamfest. Other activities included updating Gmail contact list and member photos. 5 new Club Member ID Badges were made. **Motion to accept:** Lyle KØLFV, **Second** Al WØRC, **Passed.**

Treasurer's Report: Treasurer's report submitted showing all month's account transactions and balances to date. A big turnout of students started the Ham License classes on Tuesday 23 February. Future classes will be held at the Brainerd Fire Station training room. **Motion to accept:** Al WØRC, **Second** Steve NØCRM, **Passed.**

Membership Meeting Program: President Steve NØCRM reviewed recent and future Club programs and events. Future Club programs include: **SKYWARN Updates for the 2016 SVR-WX season** by John WØWY – Mar 31, and **G5RV Antenna Design** by Pat WØOPW – Apr 28.

Upcoming Events: Dates were announced for the **SKYWARN Coordination Meeting:** March 19, 2016 in Duluth, **Brainerd Hamfest:** April 16, 2016, **Brainerd Jaycees Run for the Lakes Marathon:** April 30, 2016, and the **BAARC Spring Banquet:** May 26, 2016. The Board is looking for possible speakers for the May 26 Spring Banquet.

Digital & Emergency Communications: Al WØRC reported that the Crosslake 147.030 and Crow Wing Power 146.700 digital Fusion repeaters can now be linked. These will be tested following the Sunday evening 147.225 net.

New Business: Following approval at the 28 January Board Meeting, TJ Graves KØTEG accepted the position of **Community and Special Events Coordinator** for 2016.

Lyle announced a Saturday, March 5 meeting for the new **Club Website Committee** to be held at 10:30 AM at the Brainerd Public Library Conference Room, following the **Club Breakfast Meeting at the Northwind Grille**. Steve NØCRM has added the Club Calendar to the Club Google page and will work with Ron KØGOP to link this to the Club website.

The board meeting was adjourned at 4:55 PM.

Thursday-February 25, 2016 - 7:00 PM - BAARC Membership Meeting Minutes Brainerd Fire Station

The Vice President opened the Club membership business meeting at 8:00 PM with 23 members and guests present. Besides the aforementioned Board items, demonstrations were given by Mitch ADØHJ using a **Raspberry Pi microcomputer, monitor, and VHF HT as an APRS monitor/station**. Lyle KØLFV showed off the **new Club Yaesu FT-991 HF transceiver** and hosted several tables of available Club radio gear for sale.

The program for the evening was an interesting demonstration on the **"Theory and Tuning of Repeater Cavities"** by member and former Commercial Radio Program educator, **Roger Williams WØWUG**.

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

DX and the Paper Chase

The paper chase begins for the two ATNO's in my log. The latter part of January offered a rare opportunity to work the Palmyra Atoll (K5P) DXpedition. The last time Palmyra was activated was over 10 years ago, so you can imagine the huge worldwide pileups to add this rare entity to their log. I was able to work Palmyra on 20-meters CW as the band conditions improved. Starting the last several days of January and moving into February was the DXpedition to So. Sandwich and So. Georgia Islands opening to poor band conditions and deliberate QRM. I missed So. Sandwich, but not for the lack of trying... it just didn't work out for me. Off to So. Georgia Island with good band conditions on 12-meters where I connected with them on phone. They're in the log and they're part of the paper chase. All 3 DXpeditions used Club Log and the OQRS system for QSL cards. What a pleasure and what a convenience. Once again I doff my hat to those dedicated operators who make it possible for the DX community to work those rare ones. I look back at the past 30 days and smile. I was able to work two out of three ATNO's. What a great hobby. Don't forget to sit down at your station and call CQ because someone somewhere in this world is listening for your call - don't disappoint him or her. So long from Huntersville.
 73 es gud DX de Bob/WØZPE

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Repeater Info sent in by Ron KØGOP and compiled by Steve NØCRM

Thanks also to all the other technical people involved.

Frequency	Name	Location	Other	Current Status
147.225		Crosby		Active, System Fusion, New antenna
TX Tone: 110.9				
RX Tone:				
145.130		Brd High-rise	Echolink Node	Active, System Fusion New antenna Raspberry Pie computer/Interface has been added to the system.
147.030		Crosslake		Active, New antenna
144.390		Brd High-rise	BRD APRS Node	Active
443.925		Gull Lake		Active
444.925		Crosby		Active
53.110		Brd High-rise		Active
146.700		Crow Wing Power		On-line: System Fusion
TX Tone:				
RX Tone: 141.3				
145.670		Brd High-rise	Packet Node (Simplex)	Back on air 09/21

Amateur Radio Accompanying “Great Northern Way” Arctic Russia Expedition

03/01/2016

Amateur Radio will be onboard for the “[Great Northern Way](#)” Arctic expedition in Russia. Listen for R3CA/8/9/0 along the route. The historical-geographical expedition was due to get under way in mid-February from Novy Urengoy (Yamal). The project commemorates the 400 anniversary of the Northern Sea Route and will be part of a research program, “Mysteries of the Russian Arctic.” Two all-terrain vehicles will carry participants along a 10,000 kilometer (approximately 6200 miles) route on frozen Siberian rivers, the open spaces of the Arctic tundra, and the land-fast and drifting ice of Russia’s Arctic seas. The expedition plans to make stops of about 1 day each on some Arctic islands, which would be of interest to Islands on the Air (IOTA) enthusiasts. Heading the expedition is the president of the Russian Geographical Society’s Arktika Center and polar explorer Vladimir Chukov, R3CA. Call sign designators will indicate the location — R3CA/8 (Yamal), R3CA/9 (Taimyr), and R3CA/0 (Yakutia, Chukotka). Operation is anticipated on SSB in the vicinity of 14.120 and 14.260 MHz.

The radio operator is Valery Nesterov, RA9J. In Tiksi, Yuri Zaruba, UA9OBA, the president of the Russian Robinson Club, plans to join the expedition, which is carrying an Icom IC-7000 transceiver. An Icom AH2B mobile antenna will be used while under way, but when the expedition is parked, inverted Vs will be deployed.

Some of the islands in Asiatic Russia that the expedition may activate include AS-005 (Dikson Island), AS-152 (Bol’shoy Begichev Island), AS-082, AS-163 (Makar Island), AS-029 (Bol’shoy Lyakhovsky Island), AS-164 (Nemkov Island), AS-070 (GUSMP Island), AS-038 (Ayon Island), AS-065 (Kolyuchin Island) and others depending on the ice situation.

The expedition plans to visit sites associated with research and development of the Russian Arctic, historical monuments, and places of interest related to natural history and cultural heritage. The expedition members will conduct environmental monitoring along the Arctic coast. A series of documentaries about the history and current state of the Russian Arctic and its people is planned. The expedition’s progress will be tracked on its website. The expedition also will visit local attractions, meet with village residents and the youth and school children, and take part in events related to the social and cultural life of the Arctic regions of Russia. — *Thanks to [The Daily DX](#), Great Northern Way expedition website* . From the ARRL website.

SLED-DOG EVENT

The Brainerd Area Amateur Radio Club provided communications for the Mid-MN 150 Sled Dog Race on Saturday, February 13, 2016. The dogs ran from Outing, MN to Remer, MN. There were twelve 6-dog teams and four 8-dog teams. All dog teams started from Outing and ran to Remer. The six dog teams ran a 30 mile route and the eight dog teams ran a 40 mile route. We did not have any major incidents during this event.

We want to thank the radio operators for a great job communicating times and bib numbers during the race. Dan KDØWOG and John WØWY were at the start line recording musher start times; Bob K6RCO was at the sunset Hill Road; Steve NØCRM and Dave KØNRI were at the Ben Draper Road watching for sled dogs and logging trucks; Steve WØTNT was at Windy Lake South and Ron KØGOP was at Windy Lake North; John WØWY was at the 'T' in the trail; T.J. KØTEG was at the start of the SOO line trail; Dan KDØWOG and Dave KØNRI also covered the Finish Line for us; Terry KIØFW and Shirley KØDCW were Net Control operators; Al WØRC organized the event, kept the generator running, and was our rover. Also, Thank You to Dave KØNRI for bringing our Communications trailer to Outing on Friday and returning it on Saturday. GREAT JOB EVERYONE! ——— **SUBMITTED BY AL AND SHIRLEY, WØRC & KØDCW**



Photos by the Dorees: Top right: Barb (YL of Dave KØNRI) helping Shirley KØDCW with NC duties. Bottom left: John WØWY in the colorful but warm cap with Dan KDØWOG in the less colorful but equally warm cap. Both popped into the trailer to warm up a bit between duties. Bottom right: l-r-Terry KIØFW, TJ KØTEG, and Dave KØNRI. BTW-Dave hauled our trailer.

ICE FISHING EXTRAVAGANZA

The Brainerd Area Amateur Radio Club worked radio communications for the Brainerd Jaycees Ice Fishing Extravaganza on Saturday, February 6, 2016. We had 12 operators working the Extravaganza. Tim KDØYLO was our off-ice shuttle driver and did a great job; Alan AAØAS and Shirley KØDCW were co-net control operators; Al WØRC operated our on-ice ATV/sled delivering our operators to their assigned posts; Terry KIØFW reported from the medical tent, Dave KØNRI and Leon KEØAFY covered the North Section of the fishing contest and Dave KDØVJL and Tim KDØYLO covered the South Section of the fishing contest. We introduced our new ham from California, Bob K6RCO, to a Minnesota ice fishing contest; Michael KEØAFZ and our newest ham, Nick KEØHLD, worked as floaters and reported from the weigh-in board. Also, our T.J. KØTEG worked traffic control for the Jaycees as well as radio operator for the BAARC.

Everyone did a great job! We did not have any major incidents, the weather was calm and not too cold. THANK YOU to everyone that worked this event for the BAARC. We also want to thank Crow Wing County Sheriff's Department for the use of their communications trailer.

Photo and Text Submitted by Al & Shirley, WØRC & KØDCW



The Club Crew at the Event: (l-r) Nick Reed, KEØHLD; Michael KEØAFZ; Leon KEØAFY; Shirley KØDCW; Dave KØNRI; Dave KDØVJL; Tim KDØYLO; Alan AAØAS; and Al WØRC. Not pictured are Terry KIØFW, Bob K6RCO, and TJ KØTEG.

Latest Technical Committee Report

The WØUJ 145.130 MHz Yaesu Fusion repeater has recently been updated with a new repeater controller consisting of a Raspberry Pi 2 single board computer and a DMK UR1x USB Radio Interface. The Raspberry Pi 2 uses a software distribution compiled by Doug Crompton, WA3DSP, to control the repeater functionality, provide connectivity through several different VOIP methods, and automate tasks such as linking and unlinking to other repeaters.

The previous repeater setup allowed connectivity through either VHF FM radio or EchoLink, which have been retained, but additional connection methods such as telephone access, AllStar Link, and Voice Over IP (IAX/SIP) have now also been implemented. There is even an audio feed of the repeater that can be heard at Broadcastify.com. It is now easier than before to connect to the WØUJ 145.130 MHz repeater with your VHF radio, telephone/cellphone, personal computer, and smart phone. We have also been able to link to other EchoLink/Allstar enabled repeaters to check into other nets and allow those nets to have a greater coverage area.

We can accomplish tasks on the Raspberry Pi 2 computer that would be difficult to implement on a typical repeater controller. Weather forecasts, club announcements, ARRL code practice, and repeaters statistics are some of the features that are currently being investigated for future implementation. AllStar and EchoLink connectivity have already had big payoffs with being able to interface with our ham "neighbors" in surrounding communities. This is all possible with a setup that is a fraction of the cost of other repeater controllers.—**Mitch Ahrenstorff - ADØHJ; Michael Ruen - KEØAFZ**

February HAB Launch from Forestview Middle School- Baxter

It was a success after reaching an altitude of some 93,054 feet. Having a heavier balloon and payload this time, it landed mid-morning just south of Brainerd within easy retrieval distance. Many were tracking it via the Internet and our repeater. Ron KØGOP kept everyone informed via 2 meters. Al and Shirley WØRC/KØDCW again had a direct hand in the school's technical operation for HABs. Also on the air were KØNRI and WØKO.

SUNDAY NIGHT NCS OPS

03-06-16	Rick	NØBJN
03-13-16	Doug	KDØERE
03-20-16	Dave	KCØTGT
03-27-16	Tim	KDØYLO
04-03-16	Rick	NØBJN
04-10-16	Doug	KDØERE
04-17-16	TJ	KØTEG
04-24-16	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

Would you like to take a turn at NCS?

SK—Gene Bradfield, KØTIW, former member of the BAARC when he and Katie lived in MN, passed away at 81 years of age. He was a retired college professor, and along with his wife (also a ham). Blind since childhood, he accomplished much—even had a band in his teen years growing up in the Pine River-Backus area. We will miss him. A card has been sent. Memorial service later.

Thanks to Lyle KØLFV for again super selling of Club gear. He sold one of our transceivers at a recent Hamfest. In addition, he was assisted by Mitch ADØAJ at the selling station—also passing out Club hamfest literature.

Thanks to TJ KØTEG for accepting the Club's Community and Special Events Coordinator position.

United We Stand



First Class Mail
Address Correction Requested

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c/o M. Fritz Bertelt WØKO
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Brainerd, MN 56401