



# The BAARCer



October 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**

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Pres. Steve Mott, NØCRM, shared great Business Experiences travelling to Japan for Landis+Gyr, a wholly owned subsidiary of Toshiba. Steve, TNX for an informative, international program!



He said traveling across many time zones was difficult at first—along with the cultural differences. Apparently Tokyo is a very expensive city to live in. The Fukushima nuclear disaster forced Japan to learn power shedding. So, Landis+Gyr is helping out.

**— Events Calendar —**

**Sat., Oct. 4 @ 9—Club Brkfst. @ Northwind Grille in Brainerd**

**Sat., Oct. 18 @ 9—Club Brkfst. @ Northwind Grille in Brainerd.**

**Thurs., Oct. 30 @ 4 and 7 P.M. Monthly BAARC Board and Membership Mtg.**

**@Brainerd Fire Hall—Training Session by County on ARMER radios.**

**Check the Club's Website and Activity Calendar**

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

**Encourage New Membership: Dues are still only \$20/year—a bargain for all you get. E-mail Doug for info: [djbdesk@gmail.com](mailto:djbdesk@gmail.com)**

**Brainerd Annual Hamfest —April 18, 2015**

Talk it up between now and then on the nets and in QSOs.

## Thursday—September 25, 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, Doug KDØERE, Al WØRC, Shirley KØDCW, Ron KØGOP, Lyle KØLFV, Roger WØWUG, and Dave KBØSCT.

**Secretary's Report:** There was no Board or Membership Meeting for August. July Meeting Minutes were published in the August 2014 BAARCer; no corrections were noted. The website was updated for the 2014 Fox Hunt and Picnic. Membership roster shows 60 current/paid members.

**Motion to accept:** Lyle KØLFV, **Second** John WØWY, **Passed.**

**Treasurer's Report:** Treasurer's report submitted showing all month's account transactions and balances to date. John WØWY presented a check and thank-you letter from the Baxter Kiwanis for our help at the recent Triathlon held at Whipple Beach. Doug recently received correspondence confirming approval of our tax-exempt status with the IRS and MN Dept. of Revenue.

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

**Membership Meeting Program:** Steve NØCRM gave an overview of recent and future Club programs and events. October 30 meeting is planned to include a County presentation on ARMER radio operation using our 2 recently reprogrammed mobile units. Future Club meeting dates over the holidays are planned for 20 November, 18 December, and 29 January.

**Upcoming Events:** Our traditional final event of the year, **Goblin Watch**, will not be held this year. Over the past several years, with Halloween activities becoming more centralized in churches and community centers, little or no reportable activity has been observed by patrolling Hams. The next Club event will be the **Jaycee's Ice Fishing Event** on January 24, 2015.

**Digital & Emergency Communications:** Al WØRC reported that the Mille Lacs Band Hospital now has a reliable 2M path to St. Cloud for the monthly **Central MN Hospital Net**. Efforts still are being made to accomplish the same for the Sandstone Band Health Center. As our existing repeater equipment is upgraded, it may be a good use for the surplus gear. Al has done some successful tests of our **new 2M Digital Repeater** at his home, and is ready for further testing.

Following some reports of diminished coverage, Roger WØWUG ran several sensitivity and performance tests on our main 147.225 repeater. Results showed no unusual readings, and good sensitivity; the issue seems to be limited to certain null areas of propagation following the last repositioning of the antenna on the **Gull Lake tower site**.

John WØWY reported on the **Brainerd High Rise** repeater site. We will need to meet for a small group session to clean out old unused equipment and identify, photograph, and document current equipment as a guide to future operation. John feels there may be a possibility to locate a future remotely operated Club HF station there as well.

The board meeting was adjourned at 5:22 PM.

## Thursday—September 25, 2014 - 7:00 PM - BAARC Membership Meeting Minutes Brainerd Fire Station

**Information supplemental to Board Meeting Minutes:** Fritz WØKO reported a past Club member, Mike Morris, WAØLVG, is a recent silent key. On behalf of the Club, Fritz sent a sympathy card to the family.

A program on **Japan** by Steve NØCRM, followed the business meeting. Steve has made some half-dozen trips there over the past year for his employer Landis+Gyr, a wholly owned subsidiary of Toshiba.

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



## A Century of Amateur Radio and the ARRL

When the 1979 World Administrative Radio Conference (WARC-79) concluded, Amateur Radio had gained new bands at 10, 18, and 24 MHz. Those bands would become available to US hams later, after the FCC had done its work to put them in place. The term "WARC bands" for 30, 17, and 12 meters persists to this day.

Also in 1979, the FCC issued a *Notice of Inquiry* on the subject of radio frequency interference (RFI). The great expansion of consumer electronic gear that was susceptible to RFI had led an increase in complaints of interference from hams, largely



The 1979 World Administrative Radio Conference (WARC-79) in Geneva remains one of the most significant conferences in International Telecommunication Union (ITU) history. The ground-breaking decisions at WARC-79 remain important to this day. [Photo courtesy of the ITU]

through no fault of the hams or their equipment.

In the March 1980 issue of *QST*, VE2AEJ's article, "Observance of Long-Delayed Echoes on 28 MHz" concluded that long-delayed echoes are a result of transmitted signals getting into a natural duct, probably between the E and F layers of the ionosphere, and circling the globe many times before re-emerging. After the explanation of LDEs was set forth, scientists asked for hams to help with reports of their LDE experiences, to better understand the details of the propagation.

As *QST* articles in the 1980s reflected, the main topics of interest to the amateur community were new antenna ideas -- from simple and inexpensive to large, complex, and *very* expensive -- the use of new solid state technology in the ham shack, VHF/UHF/microwave equipment and activities, 2 meter FM and repeaters, DXing, contesting, and moonbounce communication.

When microprocessors and microcomputers emerged in the early 1980s, hams began putting them to work. Later, stand alone computers began to be integrated into the stations of hams who were pushing the state of the art. Another area where digital technology helped amateurs was the construction of frequency synthesizers.

In the late 1970s, the Soviet Union's "woodpecker" over-the-horizon (ionospheric) radar had started its strong and annoying *peck-peck-peck* that slowly swept through the HF amateur bands as well as the allocations of other radio services.

In 1980 the ARRL Board of Directors established a Long-Range Planning Committee, to look far into the future and plan for Amateur Radio to remain strong enough to weather the efforts of other radio services to chip away at our frequency allocations. The LRPC was also tasked to find ways to strengthen the cooperation between Amateur Radio and governmental agencies at all levels.

The Amateur Radio space effort suffered a huge disappointment in May 1980, when the first attempt to launch a Phase 3 (OSCAR 9) satellite was unsuccessful. The *Ariane* launch vehicle failed right after liftoff, and Phase 3 landed in the Atlantic Ocean. The AMSAT-OSCAR community regrouped and went to work building another Phase 3 unit. The ARRL Foundation launched a fund-raising drive for building the new Phase 3 satellite that was highly successful. -- **Al Brogdon, W1AB**

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**New \$21.40 Vanity Call Sign Fee Now in Effect** The new Amateur Service vanity call sign regulatory fee of \$21.40 became effective on September 11, 2014. The FCC released a *Report and Order and Further Notice of Proposed Rulemaking* ([R&O](#)) on August 29, in which it recalculated the fee to \$21.40 for the 10-year license term. The \$5.30 increase represents the largest vanity fee hike in many years. (***Editor's Note: It is still a bargain considering the much higher fees some of us paid in the early 90's for preferred call signs***)

## A Century of Amateur Radio and the ARRL

In January 1976, *QST* expanded to an 8-1/2 × 11 format! The new size would reduce the printing cost by \$100,000 a year. The old, smaller format had remained in place for years, because it was the size of the press the local printer had in those early days.

Following the fall of South Vietnam, thousands of refugees from that country poured into the US. The State Department provided housing in unused military bases, but there was a need for communication to help reunite families. US State Department employee Jim Bullington, K4LSD, saw that ham radio would be ideal for the task and proposed the idea to the ARRL Board of Directors (which happened to be in session at the time). The Board supported the idea, and hams entered a new area of public service that provided humanitarian aid -- again showing the public what our operators could do. See "Operation Vietnamese Refugee" by George Hart, W1NJM, in the February 1976 *QST* for a full description of the effort.

By the mid-1970s, Citizens Band radio had become hugely popular, which led to a major crime wave of mobile CB radio thefts. Criminals typically are not noted for their superior intellect, so occasionally 2 meter ham gear was purloined and even used, with the thief believing he was on CB. In some cases, hams were able to identify the pirate for the police to investigate.

The League began encouraging clubs to recruit CB operators into Amateur Radio. Many CB operators rose to the challenge, as they came up against the limitations of CB operation. As a result, the number of new licensees rose sharply.

*QST* published a series of articles called "Learning to Work with Integrated Circuits," to help hams keep up with that new technology.

The state of the art in power transistors continued to improve, and *QST* articles appeared, detailing the construction of solid-state kilowatt amplifiers for the ham.

During the latter half of the 1970s, articles and editorials in *QST* reported on the League's work in preparation for defending our amateur allocations at World Administrative Radio Conference 1979 (WARC-79). Hidden transmitter hunts, also known as radio foxhunting, had been very popular in Europe for some time, and the sport started catching on in the US, mostly involving the use of 2 meter FM. -- *Al Brogdon, W1AB*



Art Smith, W6INI, discusses refugee message handling with interpreter Sharon Truong at the Camp Pendleton Amateur Radio station. [WB6AKR photo from Feb 1976 *QST*]

### Useful Frequencies to Program in for the Greater BAARC Area

1. 147.225(+) no tone Brd. N.
2. 146.700(-) T-141.3 Crosby
3. 145.130(-) no tone Brd. S. Echolink Node 233515
4. 147.030(+) no tone Crosslake
5. 147.330(+) no tone Sebeka/Wadena
6. 147.090(+) T 123.0 Pequot Lakes/Jenkins
7. 147.360(+) T-203.5 Aitkin
8. 147.015(+) T-100 St. Cloud/Collegeville
9. 146.520 Simplex
10. 146.580 Simplex
11. 147.135(+) T-123.0 Little Falls
12. 443.125(+) T-123.0 Little Falls
13. 443.075(+) Little Falls NØNRD-R Echolink Node 453256
14. 444.000(+) D-Star Digital Little Falls
15. 443.650(+) T-88.4 Avon KBØWWJ-L Echolink Node 6161916.
16. 145.550 T-100 Breezy Point KØNRI Allstar Net

**Let Fritz WØKO know if there should be any corrections. Obviously, we cannot list all repeaters.**

## **Brainerd Area Amateur Radio Club Installs New Yaesu Digital Repeater**—text and photos from Lyle KØLFV

On Wednesday October 1<sup>st</sup> the first Yaesu DR-1X Digital FM Repeater was installed at our Southeast Brainerd Repeater site. Repeater frequency of this site is 145.13 Mhz minus offset no tone. The installation of the DR-1X will allow continued use of our conventional FM equipment and communications while integrating the use of many new digital communication functions.

The DR-1X is a full-featured C4FM/FM dual band repeater base station, and unlike many other repeaters, the DR-1X handles conventional FM and C4FM digital transmission. The Yaesu System Fusion technology features the Automatic Mode Select function that instantly recognizes whether the signal is C4FM digital or conventional FM and automatically switches to match the received mode. This repeater system has many additional features and will be discussed in more detail at our upcoming October Membership Meeting.

Our Club has also purchased a Yaesu FT1DR Dual Band FM Digital Handheld and will be used to test out some of the new digital features of this repeater. We are planning in the near future to upgrade another repeater site with a DR-1X and will be looking into linking these repeater sites using the updated Yaesu Wires-X Technology, which will be available early next year.

Many thanks to Al WØRC, Lyle KØLFV, and other Club Members who have helped bring this project to the installation and operational phase of our Repeater System Upgrade Initiative. Our Repeater Committee feels that going with the Yaesu System Fusion Technology is the best solution for the Future.

Please help us test out our newly installed DR-1X Repeater System and let us know how this system is performing. We all have much to learn as we enter into the new world of FM Digital Ham Radio Communications.



**Editor's Note:** The tower pix is the one that you will hear this repeater from. The new Yaesu unit Lyle describes is the one pictured above. Our Club thanks these two gentlemen for doing this work.

## A Century of Amateur Radio and the ARRL

Continuing through the 1970s, *QST* articles written by Lew McCoy, W1ICP, helped Novice licensees and other new hams by describing various transmitters, amplifiers, antennas, and station accessories, as well as coaching newcomers on general radio knowledge and techniques.

The first two-way Amateur Radio laser contact (at 475 THz) took place in 1971 between WA8WEJ and W4UDS, operating inside a building of the US Air Force Academy.

Over the years, many other radio services tried to take 220 MHz away from the Amateur Service. In 1971, the Electronic Industries Association petitioned the FCC to reallocate approximately one-half of the band to the Citizens Radio Service. The effort failed.

John Troster, W6ISQ, continued his fine humorous articles and spoofs in *QST* during the 1970s, amusing us greatly. His "fictional" tales often reminded us of real experiences we had along the same lines.

A May 1972 *QST* article introduced readers to a new device that was beginning to have a few practical applications -- the light-emitting diode (LED).

As the Apollo space missions began, W4HHK and K2RIW developed receiving systems to listen in on the 2287.5 MHz signals from the program's spacecraft, as reported in June 1972 *QST*.

During the 1970s, interest continued in electronic keyers, and many articles on the topic appeared in *QST*. New developments included automatic character and word spacing and solid-state memories for repeating often-used messages such as CQs and contest exchanges.

In late 1973, after discussions that spanned many years, the ARRL Board of Directors voted to establish the ARRL Foundation.

The log-periodic dipole array and its great utility in amateur use were described by K4EWG in the November 1973 *QST*.



Slow-Scan TV on HF was gaining in popularity in the 1970s. [*The Radio Amateur's Handbook* 1974]

Amateur DXpeditions increased in popularity during the 1970s. These ranged from casual "holiday" operation by businessmen or tourists to stand-out expeditions, such as the KP6KR Kingman Reef operation in 1974. That adventure included a two-day search to find the island, 5535 contacts in just under 30 hours of operation, and a white-knuckle departure during gale-force winds.



### KINGMAN REEF . . . .

This remote reef is located 820 miles south of Hawaii. During the 30's it was an emergency landing station for the Pan American Clippers flying between the U.S. and New Zealand. KP6KR was the first amateur operation from this atoll - 900 feet long and 6 feet high. The expedition was organized and operated by the Northern California DX Club and sponsored by the Northern California DX Foundation, Inc. During the 29 hour, 43 minute operating period, 5535 QSO's were made. Operation was on the 7, 14, 21 and 28 megahertz bands.

EQUIPMENT: TX/RX: 2FT1018's schematics VFO's, 1-F121000 amplifier. Antennas were 17y Gain 1AA9D and 1BAVT.

OPERATORS: Bob Ferris, K6AHY, "Bunny" Egan, W6SAT, Pete Grabow, W6BOL, Jim Raftery, W6JUCE.

The back side of the KP6KR QSL card from the 1874 DXpedition to the Pacific atoll. [Tom Roscoe, K8CX, hamgallery.com collection]

*QST* articles in the 1970s often reported on the progress of both amateur TV (ATV) on the UHF bands and slow-scan TV (SSTV) on the HF bands, as well as showing station equipment and setups.

Radio contesting started to become more automated during the 1970s. In the February 1975 *QST*, WA4HQW presented "The Contester," a semi-automatic contest station controller that sent CW, checked dupe sheets, recorded the time, filled in the log, and kept a running contact count. One of WA4HQW's observations has been overtaken by events: "There are things that no machine can do, such as copy two or three CW signals at once, which will leave the human operator king for a long time to come."

By 1974, *QST* was publishing reports of the League's preparations -- already in progress -- for the 1979 World Administrative Radio Conference (WARC) to address the allocation of the limited radio spectrum among radio amateurs and other users. WARC-1979 had a very positive outcome for the Amateur Service. -- **Al Brogdon, W1AB**

**SUNDAY NIGHT NET OPERATORS**

10-05-14	Rick	NØBJN
10-12-14	Dave	KCØTGT
10-19-14	Tim	KDØYLO
10-26-14	Tim	KDØYLO
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

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!!!!**

**Silent Key—WAØLVG:** We regret the sudden passing of Michael D. Morris, age 64, of Brainerd. He died on Friday, Sept. 5. There was no funeral. Mike was a long-time member of the BAARC and held the General Class license. Fritz has sent a card of condolences to the family on behalf of our members. Mike will surely be missed.

**Rep. Nolan has replied to WØKO:** He will support the HR 4969 when it comes up on the House floor. This bill would help hams who live under strict covenants which now do not permit visible antennas. Now, under old rules, these hams would not be able to operate in times of disaster and certainly not enjoy their hobby. Send your own message. See p. 8 of September BAARCer for contact info.

**No Goblin Watch:** Because so many churches are now doing their own group events—many known as “trunk and treats” —and with negative reportable incidents declining, local law enforcement authorities feel our Club services are not needed. Our thanks to all who have helped in the past. Yes, we have successfully done our Halloween service!!!!

United We Stand



**FIRST CLASS MAIL**  
Address Correction Requested

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