



January 2024

# THE BIG ISLAND HAMGRAM

The newsletter of the Big Island Amateur Radio Club



*Setting up the buffet table.*



*Sharing stories of Christmases past, with WH6EPS, KH6ATU.*

***The BIARC  
Christmas party  
— 2023 edition —  
as told in pix by  
WH6FSA, WH6LQ &  
WH6JOE***



*Catching up with friends:  
NH7PE and WH6JOE.*

## ... a good time was had by all



*The potluck buffet was bountiful  
and the array of dishes amazing.*

***More Christmas party pix  
on Page 2***



From previous page



**KH6RDO and wife,  
Michele.**



**WH6ELY, KH7DQ and K0BAD.**



**WH6ELY, WH6ELV and  
WH6GNJ.**



**KH6EKD, WH6GUZ and  
WH6EMN.**



**WH6DEL**



**KH6ATU, who  
brought  
salmon,  
watches  
WH7BR and  
WH6EMN de-  
liver, respec-  
tively, their  
turkey and  
ham.**



**Inside the  
kitchen:  
KH6ATU,  
WH6LC, AH6J  
and WH6GNJ.**



**AH6J and dining companions, XYL Esther,  
WH6GNJ and WH6GNK.**





# The Original Big Island of Hawaii International Swap Meet / Ham Fest

Calling all hams!

The Big Island of Hawaii International Swap Meet/Ham Fest will be Saturday, January 20, at the Waimea Community Center, next to the ball field off Kawaihae Road in Waimea (Kamuela).

"This is an island-wide event, so be sure to tell all your radio friends," said spokesman Steve Milner, WH6N, of the hosting Kohala Hamakua Radio Club (KHRC).

Steve added: "Please note: This is a non-commercial event that promotes the trading of equipment and information between hams and the general public and to promote the open exchange of exploring Ham radio as a hobby," said Steve. There will be surprise giveaways throughout the day.

There will be a \$10 donation per table per seller.

There will be a \$5 donation per attendee at time of registration.

One raffle ticket is included with registration. Additional tickets can be purchased for the raffle at \$1 apiece.

## **Schedule:**

8 a.m. -- Breakfast at nearby Hawaiian Style Cafe

9 a.m. -- Vendor setup

9:30 a.m. -- Doors open to public. Be sure to get your raffle tickets for the "Big Ticket Item."

12 p.m. -- Guest speaker, TBA

2 p.m. -- Event ends

Steve said talk-in will be on 147.32 Waimea (100 Hz tone).

Also: Frank, KH6BFD, invites those commuting to the hamfest to call in on the 443.650 + pl100 repeater. "I recently did some work on the duplexer and increased the sensitivity on the receive side. It will help with the testing," said Frank.

For more information contact Steve Milner at [steve.wh6n@gmail.com](mailto:steve.wh6n@gmail.com).

## Mini quiz

### What is Wilderness Protocol?

The Wilderness Protocol calls for hams in the wilderness to announce their presence on, and to monitor, the national calling frequencies for five minutes beginning at the top of the hour, every three hours from 7 AM to 7 PM while in the back country. A ham in a remote location may be able to relay emergency information through another wilderness ham who has better access to a repeater. National calling frequencies: 52.525, 146.52, 223.50, 446.00, 1294.50 MHz.

-- From the ARRL Amateur Radio Emergency Service (ARES) Field Resources Manual (Appendix 6)



## BIG ISLAND MONTHLY SIREN NET – January 2, 2024

Hau'oli Makahiki Hou!

We had 19 check-ins and 24 Siren Status Reports. Both Ainaloa and Kehena Beach were not working, while Laupahoehoe Lookout sounded for 30 seconds.

There are a couple of NCS spots open in 2024 if anyone is interested in giving it a try on Thursdays in February and August 1st. Feel free to contact Darrell KH6RDO at [dasuka001@gmail.com](mailto:dasuka001@gmail.com) or me at [bevgable@gmail.com](mailto:bevgable@gmail.com) to sign up.

Mahalo, everyone, for your Siren Status Reports. Sookyung WH6GBS (NCS) for running a smooth net, and Dave AH6OD for manually connecting additional nodes to the Hawaii AllStar Network.

**73 es aloha,  
Bev, KH7LM**

# Calling all hams: BIARC Winter Field Day is Jan. 27

Winter Field Day: A fun and educational event for ham radio enthusiasts.

Are you interested in ham radio and emergency communications?

Do you enjoy meeting new friends and having a good time?

If you answered yes to either of these questions, then you should join the Big Island Amateur Radio Club (BIARC) for their Winter Field Day outing. The event will start at 9 a.m. (approximate set-up time will start at 7 a.m.) on Saturday, January 27, and it will be a potluck lunch. The venue will be Kuhio Kalaniana'ole Park in Hilo.

"Winter Field Day is a communications exercise that is held on the last full weekend in January every year," said chair Joseph Rosenbaum, WH6JOE. "The purpose of Winter Field Day is to encourage ham radio operators to practice portable emergency communications in winter conditions, when the potential for freezing temperatures, snow, ice, and other hazards may present unique operational challenges.

"Although that is less likely in Hawaii, it still provides an opportunity to work with emergency power and under less than ideal conditions," he explains.

Winter Field Day is open to participants worldwide, and you can operate from the comfort of your home or in a remote location. You can participate by yourself or with your friends, family, or club members.



*In late June, BIARC staged its annual ARRL Field Day at Kuhio Kalaniana'ole Park in Hilo, the same location as the upcoming January 27 Winter Field Day.*

You can use any frequency, mode, or power level that can faithfully transmit the required exchange intact (FT4 and FT8 are not allowed.) You can also earn bonus points for using non-commercial power sources, operating from remote locations, making satellite contacts, and more.

BIARC is planning to participate in Winter Field Day as a club activity, and they invite all ham radio enthusiasts to join them. The club asks participants to bring tables, chairs, pop-up canopies, coolers, and any other items that may be useful for setting up and operating a station in the field.

"We will only be using the club's Yaesu FT-991A radio and everybody that wishes to will have the chance to get on the air. The outing will be a fun and educational opportunity to

learn from experienced operators, test your skills, and make contacts with other stations in North America, and possibly worldwide," said Joe, of the BIARC Operating Activities Committee.

If you are interested in joining BIARC for their Winter Field Day outing, please contact him at [wh6joe@gmail.com](mailto:wh6joe@gmail.com) and provide your name, call sign (if applicable,) and whether you are bringing any tables, etc. and/or any food/drink items. Also, please let him know if you have a preferred time to operate the radio.

"You can also visit the club's website (<https://www.biarc.net/>) for more information about the club and its activities. You can find the official rules and guidelines for Winter Field Day (<https://winterfieldday.org/>). We hope to see you there and have a great time!"



*Richard and Barbara Darling, at a BIARC meeting in Keaau several years ago.*

## Memorial service held on Ulithi Atoll for Darlings

On December 10, part of the cremated remains of Barbara, NH7FY, and Richard Darling, AH7G, were laid to rest on Federai Island (Ulithi Atoll, Yap State, FSM) together with their departed friend, Al Haped, V63YAH.

The service in the Federated States of Micronesia was attended by some 30 people.

William Radolfeth, V63YWR, and the daughter of Al Haped read a writeup from John Bush, V63JB/KH6DLK.

Announcement of the memorial event was made back home on the Big Island by Bob Schneider, AH6J, at the BIARC Christmas Party in Hilo.



# Unleashing power of hydrogen

## *One small donation intended to uniquely energize Keaau High School science class*

In a gesture of support for scientific exploration, BIARC member Gary Schwiter, WH6EPS, has donated an interesting piece of technology to Keaau High School science teacher John Bonewicz, KH6JB.

The donation consists of a slightly used Brunton Hydrogen Reactor, accompanied by a Hydrolyser charging station. The project goal is to spark innovation. The technology promises to revolutionize the way we harness and understand portable energy sources in the future, explained Schwiter.

Over the last decade energy storage has been the limiting factor in developing environmentally friendly energy storage solutions. Currently battery storage devices have been holding the market share, however hydrogen fuel cells are still on the vision board.

Let's delve into the fascinating world of this cutting-edge device and explore its potential impact on our students' scientific endeavors.

The Brunton Hydrogen Reactor is a proof of concept device with a small footprint. At the heart of this donation is a pair of Brunton Hydrogen Reactors, four portable Hydrogen fuel cells and a Hydrolyser charging station used to seamlessly generate and store power, making it an ideal companion for outdoor activities, scientific experiments, and emergency situations.

### **How it works:**

Using the Brunton Hydrogen Reactor is as simple as screwing in a Brunton 'Hydrogen Core fuel cell' into the Reactor Unit. The Reactor Unit features a USB port on its side, powered by the connected fuel cell. Users can toggle between two output levels (1 or 2 amps) by pressing a button on the Reactor

Unit. The 1-amp setting is perfect for charging pocket devices like smartphones, rechargeable lights, and Baofeng Ham Radios. Meanwhile, the 2-amp setting provides enough power to charge larger devices such as iPads.

According to Brunton, each Hydrogen Core fuel cell can charge a smartphone approximately six times, offering an impressive alternative to traditional lithium-ion chargers. What sets the Brunton Hydrogen Reactor apart is the ability to swap out individual cartridges.

Unlike conventional chargers that rely on continuous power sources, each cartridge contains enough energy for approximately six phone charges. Additionally, these cartridges are rechargeable, providing a sustainable and eco-friendly solution. To recharge the Hydrogen Reactor's fuel cells, users can utilize the Hydrolyser charging station, which uses water as a key component. This environmentally friendly method allows for on-site recharging, eliminating the need for external power sources.

One key advantage of the Brunton Hydrogen Reactor is its longevity and environmental sustainability. Brunton's fuel cells are designed for 1000 cycles and can be recycled. This not only reduces electronic waste but also ensures a reliable and long-lasting power source for a variety of applications.

The Brunton Hydrogen Reactor and its accompanying Hydrolyser charging station represent a leap forward in portable energy technology. This project empowers our high school science class with a tool that not only enhances our scientific experiments but also introduces students to the



*WH6FSA photo*

*John Bonewicz, KH6JB, at left, a science teacher at Keaau High School, accepts special donation from Gary Schwiter, WH6EPS, at the BIARC Christmas party in December.*



The Brunton Hydrogen Reactor is a **portable fuel cell power generator**, combining hydrogen and oxygen to produce electricity on-the-move and under any condition. All you do is screw in a Brunton 'Hydrogen Core fuel cell' into the Brunton 'Reactor Unit' which powers a USB port on the side of the 'Reactor Unit'.

possibilities of sustainable and efficient energy sources. As we embark on this exciting journey with the Hydrogen Reactor, we express our heartfelt gratitude to the community, members and local schools who has fueled our commitment to scientific exploration.

## ~ SOTA 10-meter challenge ~

**Summits on the Air (SOTA) is offering a 10-meter Challenge in 2024.**

The challenge will run from 0000 UTC on January 1, 2024, to 2359 UTC on December 31, 2024. Solar Cycle 25 is beginning to create regular favorable DX conditions on the higher bands, and early predictions indicate the cycle peak may occur during the summer of 2024. SOTA held a 12-meter Challenge in 2013, and since then, more than 90 associations have been added to the SOTA program, including many in South America, the Caribbean, and Asia. There is excellent potential for DX SOTA activity, and activators are encouraged to consider 28 MHz for their summit operations in 2024. Scoring will be done automatically by the database software. Activations and chases should be entered as normal. The software will note 10-meter QSOs and score them according to the rules. Usual SOTA rules will apply. Multi-band activations can also be entered as normal, and all results will be updated. Qualifying 10-meter QSOs will be scored separately from other SOTA activity. There will be a special 10-meter Challenge results page, and electronic certificates will be issued for all participants with their name, call sign, association, and score. For more information, including the rules for the challenge, visit the [Summits on the Air](#) website.



[HawaiiARES]

## Winlink practice

A Winlink practice started May 29. Please check your Winlink account for instructions.

If you are not a member of this net and are interested in joining the Winlink practice, please send me a Winlink message (NH7IT).

To learn more about Winlink, check out

[https://  
waketalkers.com/  
resources/digital/  
winlink.php](https://waketalkers.com/resources/digital/winlink.php)

-- Van NH7IT ASEC-Pac

## BIARC monthly meeting info

*The club now gets together on the second Sunday of the month at Kamana Senior Center at 127 Kamana St. in Hilo.*

*The Executive Board meets at noon, with the*

*membership gathering following at 2 p.m.*

*Zoom access is provided. The link will be shared on the BIARC Listserve forum prior to the meeting.*

## Volcano VERT Radio Check Net open to all on second Saturday of month

Coordinator and net controller Doug Wilson, KH7DQ, invites all licensed amateur radio operators to participate in the Volcano VERT Radio Check Net on the second Saturday of each month.

The net starts promptly at **9 a.m. on the Volcano Repeater; 147.260 MHz; (pl 103.5 on the input only, i.e., transmit only).**

“At the end of the regular two-round format on the Volcano Repeater, we will QSY to our alternate repeater **442.150 MHz (Kulani Mauka; pl**

**100.0)** for roll call and signal reports. We will then close this portion of the Net and QSY to the Volcano VERT **146.490 MHz** simplex frequency,” said Doug.

“On our Volcano VERT simplex frequency (**146.490 MHz**) we will do a roll call and exchange signal reports with each station until all stations on this frequency have been contacted. This will conclude the net.

“The purpose of this net is to 1)

check our equipment, 2) test your ability to reach the Volcano Repeater, 3) check signals from various locations in the Volcano area and the East side of Hawaii Island, 4) have a short open discussion in a "normal" two-round net format, and 5) practice switching to our alternate emergency frequencies.

“Everyone should make sure that their radios are programmed with the above frequencies, offsets and pl tones.”



# When all else fails, use a radio

When all else fails, use a radio.

That was the message from members of Wyoming's Buffalo Amateur Radio Klub when they spoke to the Johnson County Commission last fall about their plan to start a neighborhood radio watch across Buffalo.

The network could function as a second line of communications if cell phone or internet service went down, strengthening the county's emergency response preparedness and ability to respond to crises big and small.

"We add redundancy," explained Robert Garrison, the secretary of BARK, the Johnson County Amateur Radio Services Emergency Coordinator and an advocate for the neighborhood radio watch. "We can make announcements about a power outage or something that is going on. ... Things like that can be broadcast to anyone with an FRS or GMRS radio tuned to the repeater frequency."

The County Commission agreed to purchase the basic equipment for the county to get the radio watch started. Members of the club will also provide free training to community members interested in learning how to get on the network.

Especially in the wake of the wildfires on Maui, where emergency alerts faltered after the fires destroyed cell towers, emergency management coordinator Marilyn Connolly said that having another level of communication would be "really valuable."

Garrison said that because of recent changes to Federal Communications Commission radio regulations, it was now possible to locate a radio repeater in the community. Instead of more basic radio-to-radio communications, having a repeater would allow a larger number of people to communicate across a wider swath of the city.

BARK is conducting free public training so residents can learn how to use basic radio systems and communicate during regular communications blackouts.

The Neighborhood Radio Watch will use basic General Mobile Radio Service or Family Radio Service radios, basic systems that can be bought at a big-box store for

## Wyoming hams work with county leaders to set up neighborhood radio watch

only \$30 or \$40. GMRS radios that can transmit on a repeater cost more (\$75 and up).

To operate a General Mobile Radio Service radio, a family needs an FCC License costing \$35 for a 10-year period, Garrison said.

"That would allow residents in Buffalo and tourists coming through to communicate," Garrison said. "It's a source people use to get help, whether it's a gas station or hospital, circumstances may vary a lot."

The radio tower and repeater were installed, and there will be no further maintenance, repair or utility expenses for county taxpayers.

BARK spokesman Gar Jorgenson reports that the system is working better than anticipated.

While the idea for such a watch had been floating around for a few years, Garrison said that COVID-19 derailed any plans. However, that changed last summer after BARK assisted with a statewide training exercise. Named Vigilant Guard, the exercise tested the capability of the county to respond to an emergency in cases of communications blackout. BARK helped coordinate emergency response with Sheridan and Cheyenne, proving the usefulness of amateur radio operators.

"We found out in our full-scale exercise in June how important amateur radio is to our community," Connolly said. "With this, I think it would be the next step in really solidifying a redundant radio system. We should be able to communicate with any kind of event."

Garrison said he also envisioned other nonemergency uses for the system, such as for parents to track down kids playing across town.

"It's just one more communication tool," he said.

The New Amateur Extra-Class Question Pool has been released and is effective July 1, 2024. The [National Conference of Volunteer Examiner Coordinators \(NCVEC\)](#) Question Pool Committee (QPC) has released the 2024 - 2028 Extra-Class FCC Element 4 Question Pool and Syllabus to the public. The new [Extra-Class Question Pool](#) is effective from July 1, 2024, through June 30, 2028. The 2024 - 2028 pool is available as a Microsoft Word document and as a PDF. The 10 graphics required for the new Extra-Class Question Pool are available within the documents or separately in PDF and JPG file formats. Extra-class examination candidates preparing for their exams using the 12th edition of [The ARRL Extra Class License Manual](#) or the 5th edition of [ARRL's Extra Q & A](#) are encouraged to test on or before June 30, 2024. New editions of ARRL licensing publications will be available in May for exams taken on or after July 1, 2024. Read more on [ARRL News](#).

The 10-year amateur radio special event and countdown to the 100th anniversary of the discovery of Pluto will continue on February 11 - 19, 2024 (UTC), and celebrate Clyde Tombaugh's discovery from the Lowell Observatory in Flagstaff, Arizona.

Members of the [Northern Arizona DX Association](#) will operate from Lowell Observatory and their home stations using the special event call sign W7P. The annual QSL cards, the event certificate, and more information about the event can be found at [W7P 2030 \(nadxa.com\)](#).



### Announcements

The [US Islands \(USI\) Awards Program](#) is an amateur radio award program centered around chasing and activating river, lake, and ocean shore islands within the US and its territories and protectorates. USI is offering a special 30th Anniversary Award for hunters and activators from January 1 to December 31, 2024. As a club or as individuals, hunters can work toward confirming 30 different US islands during 2024. The award will be issued in five island increments. Activators can work toward activating or qualifying 30 different US islands, any combination of expeditions, or fixed locations. Activators and island expeditions can also work toward operating from 30 different US islands in any combination of activations or qualifications. A minimum of 15 QSOs must be made for a new island qualification and an island activation to be considered for the award. The award can be issued to a club call sign, multiple members under one call sign, or an individual. There are also bonuses for qualifying new islands. More information and a detailed list of rules are available on the [USI website](#).

### ARDC and ARRL Announce \$2.1 Million for the Next Generation of Amateur Radio

[Amateur Radio Digital Communications \(ARDC\)](#) and [The ARRL Foundation](#) announced a three-year commitment with over \$2.1 million in combined funding to support scholarships for radio amateurs, radio technology for classroom teachers, and amateur radio club grants. This commitment reinforces a strong shared vision between ARRL The National Association for Amateur Radio and ARDC to invest in the future of amateur radio through programs supporting the next generation of radio amateurs.



"ARRL and ARDC share a common vision for the future of Amateur Radio," says The ARRL Foundation President David Norris, K5UZ. "The Foundation exists to support the next generation of radio amateurs, and we are so proud to collaborate with ARDC to make these programs possible."



The ARDC Scholarship at The ARRL Foundation has supported nearly 100 amateur radio operators in pursuit of their educational goals since its inception in 2020. The renewed commitment will result in over 200 total scholarships, awarded over the next three years, for radio amateurs pursuing higher education, with scholarships ranging from \$5,000 to \$25,000. This competitive scholarship program is run through The ARRL Foundation Scholarship Program, and recipients who demonstrate academic excellence and financial need can use this funding for tuition, room & board, books, and other fees essential to advance their education. More information on eligibility and application deadlines may be found online at The ARRL Foundation website at [www.arrl.org/scholarship-program](#).

# ~ Dues are due ~

## Big Island Amateur Radio Club Membership Form:

Name: \_\_\_\_\_ Call: \_\_\_\_\_ License class: \_\_\_\_\_

Address: \_\_\_\_\_ Town: \_\_\_\_\_ ZIP: \_\_\_\_\_

Email: \_\_\_\_\_ (Email will be used for BIARC correspondence.  
It will not be released to the public.)

House Phone: \_\_\_\_\_ Cell Phone: \_\_\_\_\_

- ☐ Check the box on the left if you are currently an ARRL Member.
- ☐ Check the box on the left if you wish the BIARC newsletter to be sent via email.
- ☐ The BIARC membership contact list is available **to BIARC members** upon request.  
Check the box on the left if you want your email address included on this list.

### Class of Membership: (Check one)

(Full members must have a valid FCC amateur radio license in Hawaii County.)

- ☐ Adult Full: (\$25)
- ☐ Youth Full: (\$6.25 - Free if joining in March–December)
- ☐ Adult Associate (\$12.50)
- ☐ Youth Associate: (Free)

Annual dues are payable in December of each year for the following calendar year. Dues for first-time Full Members who join the club **on or after** March 1st are \$2.50 per month, \$1.25 per month for associates, through and including the following December. Associate members are those who do not have an amateur radio license or a license address outside of Hawaii County. Full members are eligible to vote in the election of BIARC directors.

Please add 10% to the dues amount if you pay electronically via the PayPal link at <http://biarc.net>.

### Family Membership Discount:

Dues are for individual memberships except that two or more related Adult Full Members living at the same address may choose to make a single dues payment of **\$37.50** per year. Each family member must fill out an individual membership form. Please submit family membership forms together.

- ☐ My family is eligible for a Family Membership Discount.

**Amateur radio interests:** ☐ HF ☐ VHF/UHF ☐ Microwave ☐ Digital modes ☐ CW  
☐ EMCOMM ☐ Contests ☐ Homebrew projects and antennas ☐ Net operations ☐ VEC

**Other interests and skills:** ☐ Writing skills ☐ accounting skills ☐ Website development skills  
☐ I am interested in club leadership (Board and committees) ☐ Teaching

### Please consider donating to our repeater upgrade and maintenance fund.

I would like to donate \$\_\_\_\_\_ to the repeater fund.

I would like to donate \$\_\_\_\_\_ to the humanitarian fund.

Total amount included with this application:

\$\_\_\_\_\_.

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

Please send in this form with your payment to: **BIARC, P.O. Box 1938, Hilo Hawaii 96721**  
(You may also submit payment via the PayPal donation link at <http://biarc.net> and email a scanned copy of this form to [BIARCTreasurer@gmail.com](mailto:BIARCTreasurer@gmail.com))