



August 2023

THE BIG ISLAND HAMGRAM

The newsletter of the Big Island Amateur Radio Club

All hands on deck!

New recruits sought for BIARC Exec Board

By William Polhemus, NH6ET

Dear Big Island Amateur Radio Club members:

As the station trustee for the Big Island Amateur Radio Club, I am writing to inform you about an upcoming important event in our club's calendar.

The executive board election for four of the six elected seats will take place during the semi-annual membership meeting in November. This election offers an opportunity for members to shape the future of our club and contribute to its continued success.

The executive board plays a crucial

Continued on next page



BIARC newsletter cache now a part of worldwide archives

With approval of the BIARC Executive Board, the club's newsletters — past and present — are being included in Internet Archive's Digital Library of Amateur Radio & Communications.

The newsletters are archived at: <https://archive.org/details/bigisland-arc>.

"You can use the search "text contents" field to do a full-text search on all issues, or click "Date Published" to see them sorted by publication



date," said Kay Savetz, K6KJN, program manager for the DLARC Special Collections.

See story on Page 5

Auction update:

The club's recent auction of donated equipment was a big success. Items were displayed at a series of our monthly meetings, with bids accepted at each gathering.

By the time bidding closed, proceeds totalled \$1,000.

The BIARC Executive Board will use the windfall to purchase a new all-band, all-mode club radio and accessories.

And due to the popularity of the auction display, the board invites members to bring their own ham stuff to sell. At each meeting, there will be at least one table available for people to sell radio-related equipment.

GPS
July 9, 2023
By
WH6FQI

**Free open source
programs can be
tailored to benefit
many, many users**

The July club presentation featured a report on what was learned

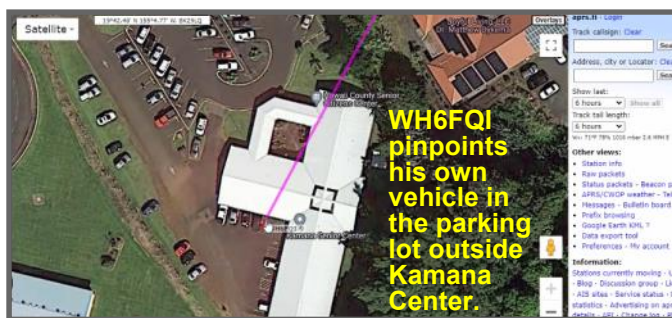
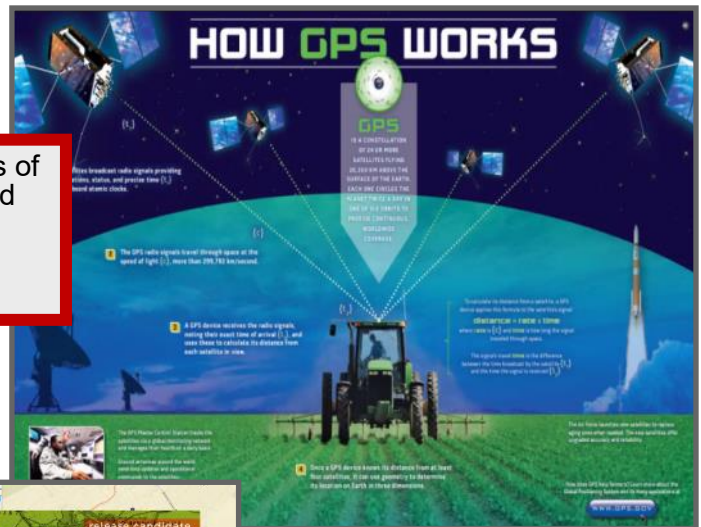
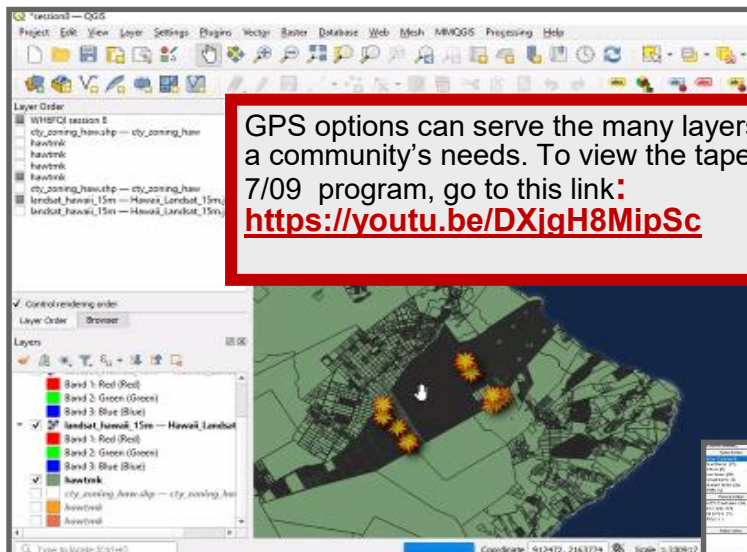


**BIARC members meet
at Kamana Senior
Center in Hilo.**

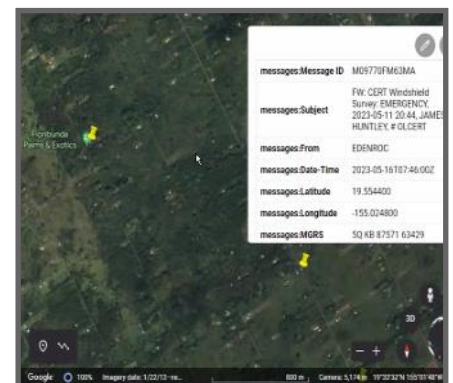
during a recent Winlink/GIS mapping course and how it can be used by CERT and others.



GPS presentation: From Page 1



QGIS is a user friendly Open Source Geographic Information System (GIS) licensed under the GNU General Public License. QGIS is an official project of the Open Source Geospatial Foundation. It runs on Linux, Unix, Mac OSX, Windows and Android.



Your BIARC Executive Board needs **YOU!**

From previous page

role in guiding the direction of our club and making important decisions on behalf of the membership. It should be noted that the process of electing members to the board does not assign them to any particular role on the board. The positions on the board, including president, vice president, secretary, and treasurer, are selected by the incoming board in January, following the election.

Since I am the only non-elected member of the board, and in following the tradition of the club, I have volunteered to head the nomination committee and will also serve as the election proctor. My appointment as a non-elected member aims to maintain impartiality and ensure the integrity of the process.

Here's what you need to know about the election and nomination process:

Eligibility: Any full member of the Big Island Amateur Radio Club is eligible to serve on the executive board. We encourage all interested members to consider taking on a leadership role and actively participate in shaping the future of our club.

Nomination procedure: Members can nominate themselves or another eligible member for a position on the executive board. However, before nominating someone, it is advisable to check with the member to ensure their willingness to run and serve on the

board.

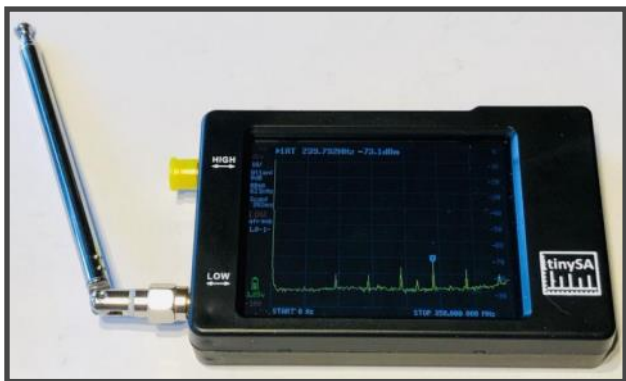
Submitting Nominations: To submit a nomination, please reach out to me directly. If you don't have my contact information, please use my ARRL email reflector (my callsign@arrl.net;) or send me a message on Winlink. If you don't do any form of email, you can reach out to any other BIARC board member who can share my telephone number with you. I just don't want to publish it on the internet. I will accept nominations up until the November meeting.

Election date: The executive board election will occur during the membership meeting in November. Please mark your calendars and plan to attend the meeting to cast your vote and participate in this important process. Currently we are meeting on the second Sunday of each month. I don't see that changing before November. As such, I anticipate that this meeting will be on November 12.

Remember, November might seem far away, but it will arrive sooner than we expect, considering that we only meet once per month. Your active involvement and participation in the nomination and election process will contribute to the vibrant and inclusive nature of our club.

If you have any questions or require further information, please feel free to reach out to me. I am here to assist you. Thank you for your continued support and dedication to the Big Island Amateur Radio Club.

Kind regards,
William Polhemus – NH6ET



**Club to meet
Sunday, Aug. 13**

Special talk on tinySA spectrum analyzers, signal generators

If you're wanting to explore the TinySA and what it can do for you and your life in amateur radio, mark your calendars for the August BIARC meeting at 2 p.m. Sunday, August 13 at the Kamana Senior Center in Hilo and on Zoom.

"The tinySA is a spectrum analyzer," explains presenter Jim Huntley, WH6FQI.

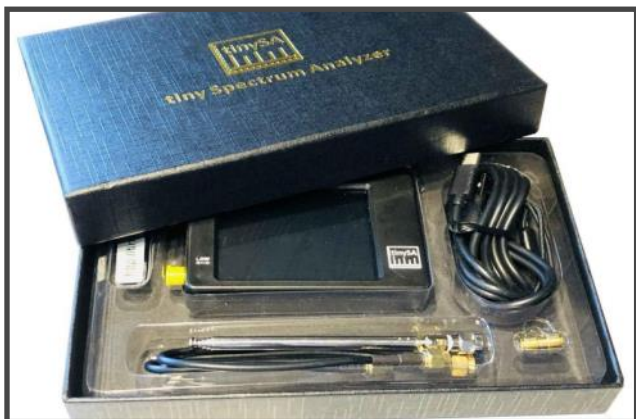
The small spectrum analyzers and signal generators offer some nice capabilities.

"The band scope on many newer radios are simplified spectrum analyzers," says Jim, the BIARC vice president.

"They display signal strength on the vertical axis of the display and frequency on the horizontal axis.

"We will be demonstrating some of the main features and how they are typically used in ham radio," said Jim. William Polhemus, NH6ET, will be bringing his professional spectrum analyzer to compare accuracies and features.

<https://us02web.zoom.us/j/5181360132?pwd=bTVFTG5HZXowYVJ6OHpFcEV1dHJRUT09>



A message from ARRL President Roderick

Dear ARRL members,

On July 22, the ARRL Board of Directors completed their second annual meeting.

I'm writing to let you know that they made the tough, but necessary, decision to increase the regular membership dues rate to \$59 a year starting January 1, 2024 (see **2024 Dues Rates**).

Additionally, we have chosen to separate the printed, mailed magazine from regular membership. Members will be able to choose whether they want to add-on a print subscription to any of our magazines including *QST*, *On the Air*, *QEX*, and *NCJ*.

All members will continue to have online, digital access to each of these four magazines and the digital archive as part of their regular membership benefits.

This is only the second time in 22 years that ARRL has raised our dues. It is a necessary part of ensuring ARRL is supported so we can continue to promote and fight hard for our Amateur Radio Service, while providing benefits and services for our members that increase your knowledge and enjoyment of ham radio.

To help us make this decision, we invited every ARRL member to participate in a survey in May. Over 20,000 members responded.

We know from the survey results that most of you will find the new rate reasonable, or even ask why we didn't set it higher. We also know that some may find the rate is too high. As I've shared with many of you during my visits at hamfests and conventions, each of us has a responsibility to be active participants, and to support ARRL if we want to increase our ranks and ensure a lasting legacy for amateur radio's future.

You told us that you value ARRL's advocacy efforts, including spectrum defense, standing up to regulators and policymakers, and our work in other areas that defend, promote, and grow amateur radio — including STEM outreach to schools, teachers, and youth. **There is no other organization that is working harder to advance a vision that allows any citizen to explore, develop, and practice radio communications and radio technology.**

Your feedback showed us the many benefits, services, and programs you use - from Logbook of The World, to the work done by the ARRL Lab to test equipment for



product reviews. While our magazines topped the list of benefits, many of you also shared that your reading preferences have changed. Some of you prefer print, and increasingly members prefer digital. As a result, for those who prefer print, you will be able to subscribe to *QST* and/or *On the Air* magazine. Again, all members will continue to have access to the digital editions of all four ARRL magazines.

Have you ever heard a Life Member say, "I got a good deal when I signed up for Life Membership 25 (or 30, or 40...) years ago." They're right! They got a good deal, but continuing to serve Life members is not sustainable without making some changes. So, we're going to freeze new applications for the program, not adding any new Life Memberships until we can price the offering to be revenue neutral over its term. And, again, as more members prefer digital, we'll be asking current Life Members to opt-in if they want to continue to receive *QST* by mail.

The cost of doing business goes up every year. During the last couple of years, the costs associated with printing and postage have increased significantly. We've cut and delayed hiring for some positions on our professional staff - one of the smallest teams we've had staffing our headquarters in Newington, Connecticut, in years. We are also continuing to examine other cost-saving measures, but we cannot go further without reducing or eliminating benefits and programs which our members have told us are important to them.

I can assure you that the ARRL Board exercises due diligence and oversight in making sure your association is a good steward of your membership dollars. The reality is that ARRL does a lot - in fact much more than dues cover.

ARRL shares your passion for amateur radio. We are committed to strengthening and growing our community, and protecting our rights to use and experiment on our amateur radio spectrum. We have a 109-year track record that includes YOU as part of that ongoing legacy of support for amateur radio and ARRL.

73, Rick Roderick, K5UR

... and a good
time was had by all

Area hams provide comms for Volcano races

Ham radio operators once again stepped up to the plate and performed a valuable community service -- radio communications for the 2023 Volcano's 'Ohi'a Lehua half-marathon and 5k runs held on Saturday, July 29. Comms coordinator Doug Wilson, KH7DQ, noted that BIARC, as usual, made a good showing in support of the athletes and their host community.

Ten stations were set up throughout the course including net control at the start/finish line. Participating radio operators joining KH7DQ included Paul Ducasse (WH7BR), who helped Doug in running the Net Control Station; David Miller (KH6CZ) at Aid Station #1; Joe Rosenbaum (WH6JOE) at Aid Station #2; Ellen O'Dunn (WH6FRV) with Course Marshall #2; Jim Tatar (WH6EMN) with Course Marshall #3; Bob Becker (WH6ESC) with Course Marshall #4; Linda Quarberg (WH6LQ) at the 5k Turnaround; Tom Fischer (KH6TD) at the Haunani Road Turnaround; Paul Lakin (WH6DYX) with Police Officer #1, and Nancy Lakin (WH6DYY) at the Old Volcano Road and Highway 11 Roadblock. The Lakins, former members of BIARC, are visiting after moving to their new home in Texas. During their years as Volcano residents, the Lakins kept extremely busy in service to the community. Paul headed up the Volcano Village Volunteer Fire Station 19A, and Nancy led the Volcano CERT team.

"On race day, the weather was perfect at 71 degrees and sunny," reported Doug. There were 366 runners participating in the race this year; no one was in-



The annual 'Ohi'a Lehua event drew 366 runners.



Paul Ducasse, WH7BR, assisted Doug Wilson, KH7DQ, at the Net Control Station.



jured and all runners finished the race on time.

"Our ham radio volunteers did an excellent job, as expected, keeping track of runners as they made their way around the course," he said. "The radio operators provided real-time runner status reports from the field to Net Control and race headquarters throughout the race.

"I want to say a big 'mahalo' to everyone for volunteering their time and expertise," said Doug. "All ham radio operators are encouraged to participate in these types of events. It helps our community, and it helps us, as hams, to hone our radio communications skills."

~ 2023 BIARC Roster ~

Executive Board officers and committee chairs

President

Alan Okinaka, KH6ATU

Vice President

James Huntley, WH6FQI

Secretary

Joseph Rosenbaum,
WH6JOE

Treasurer

Tony Kitchen, WH6DVI

At-Large directors

Roy Kunishige, KH6KU, and
David Miller, KH6CZ

KH6EJ station custodian

William Polhemus, NH6ET

Public Service/

Communications Committee

Chair David Miller, KH6CZ

Operating Activities

Committee

Chair John Bush, KH6DLK

Education and

Outreach Committee

Chair Leslie Hittner, K0BAD

Programs Committee

Chair James Huntley,
WH6FQI

Digital Systems Committee

Chair James Huntley,
WH6FQI

Voice Repeaters Committee

Chair William Polhemus,
NH6ET

Meeting Refreshments Committee

Chair Robert Schneider, AH6J

BIARC Hamgram

Editor Leigh Critchlow,
WH6LC

**Club website: [https://
biarc.net](https://biarc.net)**

DLARC Radio Library surpasses 75,000 items of ham radio, shortwave history

Internet Archive's [Digital Library of Amateur Radio & Communications](#) continues to expand its collection of online resources about ham radio, shortwave, amateur television, and related communications. The library has grown to more than 75,000 items, with new resources including newsletters, podcasts, and conference presentations.

DLARC has recently added [hundreds of presentations](#) recorded by RATPAC, the Radio Amateur Training Planning and Activities Committee, and [dozens of talks](#) given at the MicroHams Digital Conference.

DLARC is adding newsletters from amateur radio groups around the world: the latest additions include 1,400 news bulletins from [Irish Radio Transmitters Society](#) going back to 1998, and more than 600 [newsletters from the Worldwide TV-FM DX Association](#), a hobby club devoted to long-distance television and FM communications.

The library has also added newsletters from regional groups across the United States, including the [Anchorage \(Alaska\) Amateur Radio Club](#), [Indianapolis \(Indiana\) Radio Club](#), the [Pikes Peak \(Colorado Springs, Colorado\) Radio Amateur Association](#), and a dozen other organizations. Many of these newsletters have never been posted to the Internet before. All are full-text searchable, and can be read online or downloaded.

Internationally known radio host Glenn Hauser has allowed decades of his radio content to be archived in the DLARC library, including 1,200 episodes of [World of Radio](#), which explores communications from around the world, especially shortwave radio; [Informe DX and Mundo Radial](#), Spanish language translations of World of Radio; [Continent of Media](#), a program about media around the American continent; and [Hauserlogs](#), shortwave listening diaries.

[International Radio Report](#), a program about radio in Montreal Canada and around the world, has also been archived in the library with episodes going back to 2000. Many of these episodes, spanning May 2000 through March 2005, have not been available online for more than a decade, restoring access to important contemporary reporting.

DLARC continues to expand its collection of ham radio e-mail and Usenet [conversations from the early days of the Internet](#), with the addition of nearly 3,500 [QRP-L Digest](#) mailings spanning 1993 through 2004. QRP-L was an early Internet e-mail list for discussion of the design, construction, and use of low-power radio equipment.

The collection of ham radio-related podcasts has reached 5,500 episodes with the additions of [100 Watts and a Wire](#), [The World According to Elmer](#), and 30 episodes of [The Rain Report](#) that were thought to be lost.

The Digital Library of Amateur Radio & Communications is funded by a grant from Amateur Radio Digital Communications ([ARDC](#)) to create a free digital library for the radio community, researchers, educators, and students. DLARC invites radio clubs and individuals to submit material in any format. To contribute or ask questions about the project, contact:

Kay Savetz, K6KJN

Program Manager, Special Collections

kay@archive.org

Mastodon: dlarc@mastodon.radio



**Kay Savetz curates
the Digital Library
of Amateur Radio &
Communications.**

Enhancing Amateur Radio performance with RF filtering

By Joseph Rosenbaum
and William Polhemus

Amateur radio enthusiasts know the thrill of making long-distance contacts and exploring the airwaves. However, the radio frequency (RF) environment can be a challenging place filled with interference and noise that can degrade signal quality. To combat these issues and improve overall performance, it is essential to understand and implement effective RF filtering techniques. In this article, we will delve into the world of RF filtering and explore how it can enhance your amateur radio experience.

Understanding RF Filtering: RF filtering is the process of selectively allowing desired radio signals to pass through while attenuating or eliminating unwanted signals or noise. It plays a crucial role in improving the signal-to-noise ratio (SNR) and reducing interference, ensuring better reception, and even cleaning up the quality of our own transmissions.

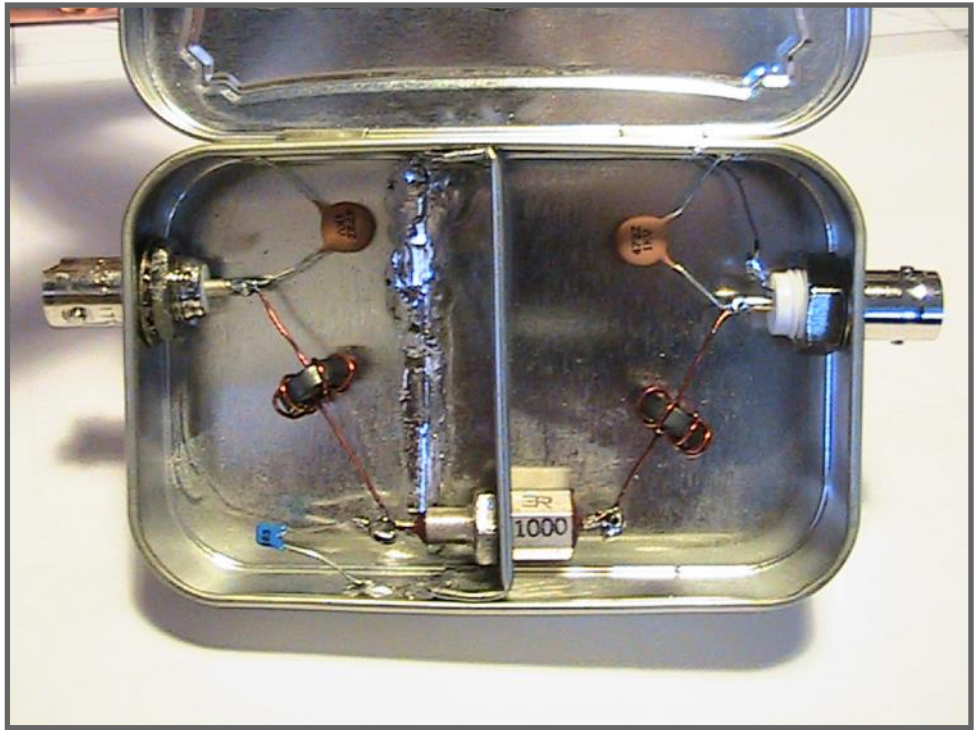


Types of RF Filters:

Low-Pass and High-Pass Filters:

A low-pass filter allows signals below a certain frequency to pass through, while a high-pass filter permits signals above a particular frequency. When used on their own, these filters are useful for eliminating unwanted noise or signals to one side of the operating frequency. Either above the desired frequency, with a low-pass filter, or below it with a high-pass filter.

Bandpass filters: These filters allow signals within a specific frequency range to pass through while attenuating signals outside that range. Bandpass filters are commonly used to suppress out-of-band interference and enhance the performance of receivers and transmitters. A bandpass filter is made up of a low-pass filter and a high-pass filter, which do not overlap in the frequencies they block. The range of frequencies between them, which are not blocked, is called the "passband." When we measure that passband,



A Low Pass RF Filter in an Altoids Box — www.qsl.net

we call that value the "bandwidth."

Notch Filters: Also known as band-stop band-reject filters, or notch filters, attenuate a range of frequencies, while allowing frequencies above and below that range to pass. They are useful for reducing or even eliminating specific types of interference. Such as: powerline hum, or strong local signals like a nearby broadcast transmitter, or another amateur station operating close to you; like at Field Day.

Interference Filters: Interference filters are designed to target specific sources of conducted interference, such as noise coming into our electronics over the AC power lines or even their DC supply. They are essential for reducing emitted

noise caused by external factors and maintaining a clean signal. They are not in fact a distinctive type of filter in their own right. They are typically brute force high-pass filters, made specifically for power supply applications. Similarly, there are filters marketed as "Television Interference" or "TVI" filters. These employ various

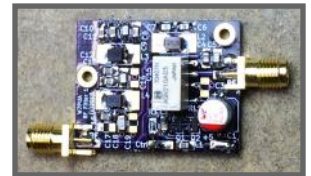


combinations of in-line low-pass and high-pass filters to keep outside signals from affecting the low-quality receivers used in some television sets. Often, both a brute force high-pass filter and an in-line filter are needed, since they handle interference entering the device in different ways.

Filtering Techniques for Amateur Radio:

Receiver Filtering: Adding RF filters to your receiver can significantly improve its performance. Consider using bandpass filters to narrow the received frequency

range, blocking out unwanted signals. These signals can at times be so strong that they cause the receiver circuitry to become saturated. A condition we sometimes call "desense" or "overload," meaning that the receiver no longer has enough dynamic range left to be sensitive enough to detect our desired signals, at any level lower than the strong adjacent signals. At their worst, these signals can be at a level so great that they can damage the sensitive electronics of our receiver, which we refer to as the "front end."



From previous page

A low-pass filter can be very helpful in knocking down interference from a nearby AM broadcast tower, while also virtually eliminating power line noise. Additionally, a high-quality low-pass filter can effectively attenuate many sources of noise above high frequency, including a nearby FM broadcast station. If only filtering on receive operation you can use much cheaper filters than those needed for filtering while transmitting. These receive only filters do not need to shoulder the high power of transmit, so they can be built with significantly smaller and cheaper components. However, never transmit through a receive only filter. You will likely damage or destroy the filter, and could cause damage to your rig.

Transmitter Filtering: Incorporating filters into your transmitter can be equally important. A low-pass filter on the output can help eliminate harmonics and spurious emissions, ensuring compliance with regulatory standards and reducing interference to other operators, and other radio services. Most high-quality transceivers and amplifiers have this filtering built in. However, not all do. They, and many of the “budget” models of transceivers and amplifiers have been observed to be close to or even beyond the allowable limits.

It is important though to make sure that your filtering is capable of handling the power of your radio and/or amplifier. If you transmit through a filter meant for receive use only, or put full power through a QRP filter, as said above, you will likely damage or destroy the filter, and could cause damage to your rig. If your rig does not have a dedicated receive antenna port, or does not have ports for receive filters, you will have to get creative with RF switching to remove the filter from the signal chain during transmissions.

Antenna Filtering: Filters can be integrated at the antenna feedpoint to mitigate strong out-of-band signals. This technique helps protect sensitive receiver stages from overload and enhances the dynamic range of your radio system. Placing the filter at the antenna feedpoint allows the use of a pre-amplifier to boost received signals, to overcome cable and filtering losses in the rest of the signal chain. However, it is impractical to employ any sort of switching to remove the filter during transmit, so we must ensure the filtering is capable of handling the power of the transmissions.

Interference Mitigation: In environments with heavy out of band RF interference, notch filters in particular can prove invaluable. By attenuating specific frequencies associated with the out of band interference source, these filters can help restore clarity to your communications, while not interfering with your in-band activities. A notch filter can also be very useful in band. However, it has to have an exceptionally narrow bandwidth, to keep it from affecting



the portion of the band to be used. The bandwidth is related to what is called the Q factor, or quality factor of the filter. Different filter types have different Q factors. This makes some useful for very broad but imprecise filtering, such as the lumped element LC filters in a band-splitting diplexer; but inadequate for very narrow and precise filtering of nearby frequencies, such as in a 10m duplexer.

Choosing and Implementing RF Filters: When selecting RF filters, consider factors such as frequency range, insertion loss (how much it attenuates the signals we want to pass,) rejection level (how much it attenuates the signals we want to eliminate,) Q factor, and power handling capability. High-quality filters from reputable manufacturers are worth the investment, as they offer superior performance and durability.

However, there is much opportunity for the amateur operator to homebrew their own filters. Many quality designs already exist, and there are now fantastic software tools available for designing your own. An example of this is the Elsie filter design software, by Tonne Software; which has free and paid versions available.

Nuts and Volts Magazine did a review on Elsie in 2018, which can be found at www.nutsvolts.com/magazine/article/filter-design-software. That article also has a deeper dive on some aspects of filtering that are beyond the scope of this article. Check it out!

It's important to note that while RF filtering can en-

hance radio performance, it is not a cure-all solution. Optimal results are achieved through a combination of proper filtering, effective antenna design, and skilled operational techniques. We don't often use the various filtering and other signal processing features built into our radios to their fullest capabilities; if at all.

RF filtering is an essential tool for amateur radio operators seeking to improve signal quality and reduce interference. By implementing appropriate filters at our receivers, transmitters, and even antennas radio enthusiasts can enhance their overall experience and make the most of their amateur radio endeavors.

Remember to carefully choose filters that meet your specific needs and consult with experienced operators and radio clubs for guidance. Enjoy the thrill of clear and interference-free communications with the help of RF filtering!



BIARC EXECUTIVE BOARD MEETING

BEGIN MEETING:

The meeting was called to order at 12:24 pm on Sunday, July 9, by Board President Alan Okinaka. Venue was the Kamana Senior Center in Hilo.

Quorum:

Board members: Alan Okinaka, William Polhemus, Tony Kitchen, James Huntley, Roy Kunishige and Joseph Rosenbaum

Secretary's Report and Minutes:

William moved and Tony seconded to approve the June 2023 executive board minutes. Motion passed.

Treasurer's Report:

William moved and Joe seconded to approve the treasurer's report, subject to audit. Motion passed.

Committee reports:

Public Service Communications Report:

See attached addendum (*included on Page 10 of this issue of the Hamgram*)

Operating activities:

No report

Programs and Digital Systems:

July's program was on GPS mapping and the August program will be on the Tiny SA(spectrum analyzer.)

Digital Systems- No report

Repeater Committee: Joe moved and Roy seconded to authorize an expenditure of \$350 for UR1X interfaces and accessories and an additional \$350 for Raspberry pi's or other single board computers for the repeater linking project. Motion passed.

Education and Outreach:

William has created a club Facebook page located at (<https://www.facebook.com/profile.php?id=100092569165888>) and a YouTube channel located at (<https://www.youtube.com/@BigIslandAmateurRadioClub>) and Thomas(WH6GWL) volunteered to help set up a club Instagram account.

There has been good exposure for our newsletter, the Hamgram. Several other radio-related websites have linked to the club website and we had 258 people downloading the Hamgram at last count. The metrics on our website have been enabled and usage statistics will be brought to the board next month.

William moved and Tony seconded to approve the request from the Digital Library of Amateur Radio & Communications to archive our newsletter and other items on archive.org and to also request that we send them paper copies of relevant materials to scan and archive. Motion passed.

Old Business:

The donated items in our auction were sold and the proceeds were \$1000 which the board has decided to use towards the purchase of a new all band, all mode club radio and accessories.

There will be at least one table available for people to sell radio related equipment, etc. at every meeting. There being no further business, Alan closed the meeting at 1:46 pm. The next meeting will be on August 13th at the Kamana Senior Center in Hilo. The board meeting will start at noon and the club meeting will be at 2pm.

Respectfully submitted,

Joseph Rosenbaum, Secretary



BIG ISLAND MONTHLY SIREN NET - August 1, 2023

The [Big Island Monthly Siren Net](#) serves as a vital practice drill to ensure the island's readiness for emergencies, including natural disasters such as hurricanes, tsunamis, and volcanic eruptions. Twenty-three [siren status reports](#) were received from various locations across the island using the [Hawaii AllStar Network](#), or via email, text, relay and Winlink.

Five sirens were reported as not working: 1. Ainaloa, 2. Kolekole Park, 3. Laupahoehoe Lookout, 4. Leleiwi Beach Park, 5. Puako Beach Rd.

Mahalo to those who participated and for supporting HCCDA efforts.

73 es aloha,

Bev

KH7LM

(For details about the Siren Net, go to nh6tu.org › forms › BigIslandMonthlySirenNet)

CW alive and well in ham radio, nearly quarter century after commercial users QSY'd over to high tech

ARRL offers variety of resources for those wanting to learn Morse Code

Morse Code is still thriving in amateur radio, 24 years after its last commercial use.

On July 12, 1999, the original dot/dash system, invented by Samuel F. B. Morse in 1837, gave way to the rapid development of analog and digital communications.

The final message sent in Morse code for commercial use was the same one that Morse hammered out on his telegraph key 155 years earlier in 1844, which was, "What hath God wrought?"

But this time the message was followed by SK, meaning silent key, or deceased.

The International Maritime Organization replaced Morse code with the Global Maritime Distress and Safety System -- an automated ship-to-shore and ship-to-ship system that use satellites and/or terrestrial radio systems with digital selective calling technology.

Morse Code is also still used in aviation. Pilots listen to a Morse code identifier to verify that their navigation receivers are tuned to the correct radio aid,



Photo courtesy of offgrid-survival.com

such as a VHF Omni-Directional Range (VOR) or Instrument Landing System (ILS) approach guidance system.

Railroads stopped using Morse code in the mid-1970s.

While Morse code is no longer used commercially, it is still an integral part of amateur radio.

Amateur radio operators are no longer required to learn Morse code to obtain their license, but many learn the code on their own or by using study guides and taking classes.

Every day, amateurs around the world use Morse code to communicate with each other, test their radio equipment, or pass along friendly information.

Morse code is essential in helping people communicate during disasters and emergencies because of its signal ability to penetrate adverse weather issues and propagation disturbance.

ARRL offers a variety of resources for those interested in learning Morse code.

Visit <http://www.arrl.org/learning-morse-code> for more information.

PHONETIC ALPHABET

INTERNATIONAL MORSE CODE

A	ALPHA	• -
B	BRAVO	- • • •
C	CHARLIE	- • - •
D	DELTA	- • •
E	ECHO	•
F	FOXTROT	• • - •
G	GOLF	- - •
H	HOTEL	• • • •
I	INDIA	• •
J	JULIET	• - - -
K	KILO	- • -
L	LIMA	• - • •
M	MIKE	- -
N	NOVEMBER	- •
O	OSCAR	- - -
P	PAPA	• - - •
Q	QUEBEC	- - - •
R	ROMEO	• - •
S	SIERRA	• • •
T	TANGO	-
U	UNIFORM	• • -
V	VICTOR	• • • -
W	WHISKEY	• - -
X	X-RAY	- • • -
Y	YANKEE	- • - -
Z	ZULU	- - • •

BIARC Public Service Communications Committee Report July 9, 2023

I. Planned Exercises/Drills/Events:

Hilo History Museum - Pending (September Tentative)
Boy Scouts of America - Under Development
Keaau High School - Pending

II. Scheduled and Executed Outreach/Participation

Volcano's Ohi'a Lehua Runs July 29, 2023 - Annual
Contact Point: KH7DQ
Siren Net - ARES sponsored - Monthly
Contact points: KH6RDO & KH7LM.
VOAD Repeater Test Net - Monthly participation
Contact Point: AH6QO
CERT Training - Keaau - Sept 30 and Oct 1, 2023
Register Here: <https://forms.gle/j9Fd96c4Di37an4B8>

III. Report:

The PSCC did not meet this month. New members are needed.

Initial contact has been made with Boy Scouts of America and the Keaau High School regarding BIARC Outreach and support. Envisioned outreach is similar to that provided to the Hilo Union School earlier this year.

Continued participation in scheduled nets and emergency communication exercises are planned on a scheduled basis.

We remain open to partner with and participate in local Emergency Preparation and Emergency Communication exercises as they occur. Invitations and Information are always welcome.

HVOAD, Hawaii Voluntary Organizations Active in Disaster: The BIARC PSCC is looking for FCC-licensed volunteers to work with HVOAD, and its member organizations. If you would like to become involved, please reach out to David Miller, KH6CZ (davroymill@gmail.com) for more information.

IV. Hawaii ARES:

WH6DVI will update.

David Miller, BIARC PSCC Chair

ARRL and NASA team up to help teachers

A radio experiment held on July 26 to decode a slow-scan TV (SSTV) message sent via the ham radio station on the International Space Station (ISS) was successful.

The image was received by a group of educators at ARRL Headquarters in Newington, Connecticut through the voice repeater on the ISS.

Teachers from around the United States were on hand for the **ARRL Teachers Institute on Wireless Technology**, a program that empowers educators to incorporate amateur radio into their science, technology, engineering, and mathematics (STEM) curriculum. As part of the professional development program, the group received and decoded the image sent by volunteers with Amateur Radio on the International Space Station (ARISS). The transmitted image said, "ARRL Teachers Institute: ensuring a space for radio in the next generation."

The teachers thought it was cool. "Amateur radio is so important to the future of engineering and STEM in our country," said Kristen Kucko, KQ4ECP, one of the institute participants. The group gathered outside ARRL Headquarters with antennas they had made earlier in the day.

As the pass happened, the educators tracked the ISS by hand. A warble of SSTV transmission filled the air, and the group was excited. After the pass, they used laptops to decode the audio stream into an image, while they sat on picnic tables and enjoyed pizza and wings.



Teachers decode the SSTV image over a picnic of pizza and wings while a photojournalist from WFSB-TV shot video of them. [Sierra Harrop, W5DX, photo]



The image transmitted from NASA Goddard Space Flight Center to the ARRL Teachers Institute on Wireless Technology participants via the ISS repeater.

For ARRL Education and Learning Manager Steve Goodgame, K5ATA, the experiment was a way to allow teachers to engage with the power of radio. "When teachers can pull an image off the ISS via amateur radio, it gives a sense of accomplishment that gets them excited. We want to get them fired up about radio, so they can carry that energy back to their classrooms and do the same thing with their students," said Goodgame.

Each of the teachers on hand



The teachers made tape measure Yagi antennas for the experiment. [Sierra Harrop, W5DX, photo]

for the second phase of the institute, -- "TI-2: Remote Sensing and Data Analysis," -- have already been through the introductory course and they are all licensed radio amateurs.

The institute costs teachers nothing to attend, thanks to funding from **the ARRL Education & Technology Program**.

Several local television stations from the Hartford-New Haven market covered the event. See coverage from **WTNH News 8 (ABC)** and **WFSB Eyewitness News 3 (CBS)**.

Amateur radio operators needed for a real-world science experiment during upcoming solar eclipse events

Members of the **Ham Radio Science Citizen Investigation** (HamSCI) will be making radio contacts during the 2023

and 2024 North American eclipses and probing the Earth's ionosphere.

The Solar Eclipse QSO Parties (SEQPs) are set to be fun and friendly with a competitive element, and all amateur radio operators and shortwave listeners are invited to participate.

The upcoming eclipses (October 14, 2023, and April 8,

2024) provide unique opportunities to study interactions between the sun and the ionosphere.

As participants and HamSCI members transmit, receive, and record signals across the radio spectrum during both eclipse events, valuable data will be created to test computer models of the ionosphere.

Learn more at **<https://hamsci.org/projects>**. ARRL is a partner with HamSCI for the SEQP.