

July 2022

THE BIG ISLAND HAMGRAM

The newsletter of the Big Island Amateur Radio Club



Sign up for next ARES exercise, Makani 'Ino

The Hawaii Amateur Radio Emergency Service training exercise, Makani 'Ino, will be staged Saturday, July 16, from 9 a.m. to noon.

Hams interested in participating are asked to pre-register at <https://HawaiiARES.net>.

Check out related news videos on the KITV and KHON websites. And see story on Page 4 of this newsletter.

Field Day 2022



Photos by Gary Miller, KH6GM

PRESIDENT'S CORNER

K0BAD



Welcome to our new club Station Custodian, NH6ET

At the end of last year, Paul (WH7BR) informed the Executive Board that he wished to be relieved of his BIARC Station Custodian responsibilities.

William Polhemus (NH6ET) expressed an interest in the position and the Executive Board accepted his offer. Those responsibilities have been transferred and as of June 30, William is the club Station Custodian.



Steve Herman, W7VOA, and Tony Kitchen, WH6DVI.

QSO	DATE UTC	MHZ	RST	MODE
KH6EJ	2022-06-26 01:27:22	14.311.50	59	SSB

Thanks for the QSO during 2022 Field Day!

VE6FXL PO21

Continued on Page 4

Continued on next page

Contact!

A special report from KH6HAK

Just to prove that you do not have to leave home to have an outstanding Field Day...

I will thank Gary, WH6EPS, for reminding me the day before that we could try for a contact on the ISS Cross-Band repeater. So at the appointed time I set up the satellite rig plugged into my solar-charged battery, and tried. I seemed to be unable to key up the repeater. But on the downlink I did hear NH7YS on Kauai come thru. But I could not trigger the repeater for some reason. Well after the pass I diagnosed my operator error... I didn't enable the 67Hz PL tone on my transmitter. OK, we have another ISS pass in about 90 minutes.

The next pass will be a difficult one, only rising ten degrees in the west. I'm hoping it appears over the mountain. My beams are aimed in that gen-

eral direction. My QFH receive antenna with pre-amp works fine... better than the 10 element UHF yagi... as I learned from the last pass downlink.

So at the appointed time, I began to give out my callsign every 30 seconds. Fifty watts into a five element yagi on two meters. I kept waiting to hear myself come back on the downlink frequency on 437.800 MHz. Then... down in the mud... fading in and out... I hear another callsign! I hear "N", and the voice sounds remarkably like Jeff, NH6A. I asked for the callsign again... fading out... I made out a number '1'. Now I got chills. What was a number 1 doing on the ISS repeater... unless...

"Can I get your callsign again, please, the conditions are difficult. KH6HAK."

"KH6HAK THIS IS NOVEMBER ALPHA ONE SIERRA SIERRA. HOW COPY?"

(OMG OMG)
"NA1SS THIS IS KH6HAK. FINE COPY THERE. I AM ONE-



ECHO PACIFIC FOR FIELD DAY, OVER"

"KH6HAK FROM NA1SS..... (FADE)... ..SOLAR POWER"... (FADE)

We went back and forth with callsigns several times, under very difficult fading conditions. I was never sure of his field day designator return, but it is surely 'solar power' as I heard. When I could no longer hear him, I realized I was trembling as I entered the contact into my QRZ.com logbook.

I am now a two-time 'space cadet'. This was the second time I have contacted a live astronaut aboard the ISS. First time was Field Day 2001 on Oa-

hu, when I spoke with Susan Helms of expedition #2 on the new ISS. I have a QSL card from that. Now I guess I will send for another one. You can see details of my 2001 ISS contact on my web page at: KH6HAK.TRIPOD.COM

That URL is also listed on my QRZ page... although it is not a 'hot link'.

Out-Of-This-World Ham Radio at it's best! Engage!

Analysis Addendum: My downlink fades were a mystery. This is 437.800 MHz coming through the atmosphere slantwise for several hundred miles, with high speed doppler shift of the frequency also. But once the FM 'locks on' it should remain stable.

Some small satellites tumble with a linear antenna that can give you cross-polarization fades. But the ISS is stable on orbit and does not tumble. And my QFH receive antenna is immune to cross-polarization fades as it maintains circular polarization across the whole hemisphere of sky above and around it. So what caused the rapid fades?

A quick look at the solar charts shows me we had an incoming CME about the time of my space QSO. It bobbed the earth's magnetic field, and the Kp index rose to storm levels in the hours following. So my best guess is that I was getting propagation fades as the magnetic waves were rippling through the atmosphere.

Field Day anecdotes

A lot of energy, talent and planning went into the successful production of the annual BIARC Field Day June 25 at the Reeds Bay Park in Hilo.

Vice President Gary Schwiter chaired the fun event, with lots of support from club members.

Among the anecdotes and highlights:

"Roy (KH6KU) had the HF voice/CW set up mostly on 15 and 20 Meters and Jim (WH6FQI) had the 7300 set up on FT8 digital. The reception was great, however it was a faint

voice among a thousand. Every contact made took work on both sides." – Gary WH6EPS

Jim WH6FQI added: "The bands didn't cooperate with our plans, so we adapted and threw up an antenna that we could use for the conditions. It was in the true spirit of field day."

Club engineering guru William Polhemus, NH6ET, left Field Day early to drive up the mountain and work at the Kulani tower site. Among the jobs on his to-do list: BIARC's C4FM repeater, which is now back in working order.

Steve Herman, W7VOA, of Alexandria, Virginia, dropped by Field Day and stayed awhile, enjoying a

shift operating Roy KH6KU's HF rig.

The afternoon potluck was a huge hit, and included a big pot of scrumptious pork-and-peas carefully cooked and served by Paul WH7BR, and aromatic fresh-off-the-grill hotdogs prepared nearby by Gary WH6EPS.

Gary WH6EPS reported on the afternoon Fox Hunt: "The winner was W6SPO, Stefan from Kona. Bob AH6J was a close second only about 10 feet away and Paul WH7BR was also near the target with only 10 minutes remaining in the hunt."

He designed the bright

yellow Field Day "Fox."

"The Fox was a homemade project for a one-time use. It consisted of a micro 1W 2m transmitter, a USB cell phone battery backup, and a raspberry pi 3 running Open-Repeater software stuffed into a drill bit case," said Gary. "The fox was taunting with a CW and Voice ID 'daring hams to come find me'." "The hunt lasted about an hour and 30 minutes, in the weeds, literally."

One of the goals of Hilo Field Day was to contact the International Space Station.

"The 20:51 HST ISS pass went well we could hear one strong call in

the background from Lihue NH7YS. Unfortunately, a full contact could not be made. With hardware issues, the first radio was down, leaving it to Tony WH6DVI and a Baofeng.

We think the call sign was heard but could not complete the full exchange," Gary reported.

"No luck for the club on the second ISS pass, either," he added.

"However, not too far away, Hank KH6HAK, a fellow club member, had great success with the contact of an astronaut. He was so excited he rushed down to the group to share the news in person."

THE FOX HUNT



© Gary Miller

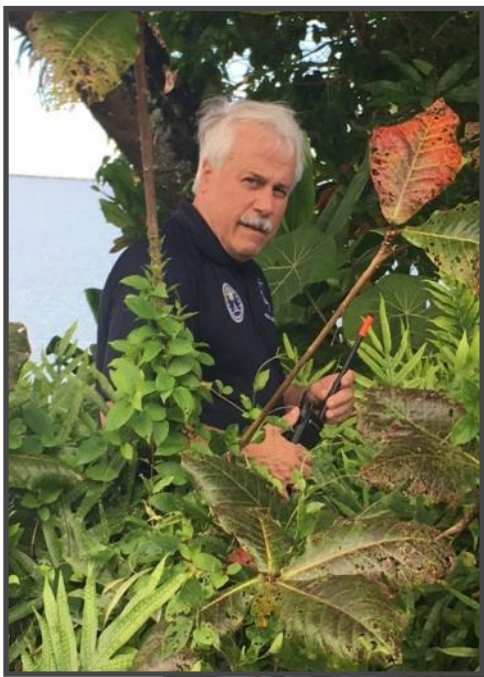
Above: The Fox



© Gary Miller

At right: Its wily creator tweaks the critter before hiding it in the woods.

**BIARC Fox
Hunt action
shots by
Gary
Schwiter,
WH6EPS**



BIARC Treasurer Tony WH6DVI presents a copy of the ARRL's Wire Antenna Classics book to the fox hunt winner, Stefan W6SPO from Kona.

All hams invited to join in Makani 'Ino

From: Clem Jung KH7HO via groups.io

We will be having an ARES sponsored statewide hurricane drill, called Makani 'Ino, that will be held on Saturday, July 16, from 9 a.m. to 12 noon. Please reserve the date and time.

It will be a very strong category 4 hurricane with sustain winds of 155 MPH affecting all counties in the state. Please check hawaii.ares.net web site to register and to find additional information.

This drill will help us prepared for the hurricane season. As part of the hurricane drill, the time slot from 9 a.m. to 9:30 a.m., we want those who have Winlink capability to fill out the Winlink Hurricane Form. It can be found in Winlink Express when you click on messages, then click

on Select Template, Standard Templates, click down to Weather and it is the first weather form.

After filling the required information (make up the information that is consistent to an approaching weather from a category 4 hurricane with a lot of damaging winds, heavy rains and flooding, and huge storm surge).

Then send it to KH6SW using any of the RMS gateways. We will map all the responses and show both the Honolulu office of the National Weather Service as well as the National Hurricane Center in Florida the capabilities of Winlink and Winlink mapping.

Other portions of the hurricane drill will also involve voice as well as other Winlink messages.



Sign up today <https://forms.gle/DPc86fYLzDJo2xR6>

What: Ham RADIO - statewide communication exercise. Voice communications as well as [Winlink](#) Radio email will be utilized to pass messages from the individuals to a hub who will pass it on to a county emergency operations center. Participant Exercise Plans will be emailed to registered participants.

When: Saturday, July 16, 2022 from 9 a.m. to 12 noon

Who: All licensed amateur radio operators are invited - unaffiliated or with ARES, RACES, SKYWARN, CERT, HEALTHCOMM, or any [club](#). We will encourage voice traffic as not all have [Winlink](#) capabilities.

Where: State of Hawaii.

Why: To prepare and practice using amateur radio to send messages during a catastrophic hurricane when normal communications have failed.

How: Use of voice and/or digital mode, [Winlink](#), to pass [Winlink](#) Hurricane Reports, Check Ins, Check Outs, Field Situation Report, Damage Reports, [Request](#) for Assistance, Shelter Reports

PRESIDENT'S CORNER

From Page 1

As of July 1, 2022, we have a vacancy on the Executive Board. William has effectively resigned from his position on the board and is now an Ex Officio (Station Custodian) member of the Executive Board – filling the position formerly held by Paul.

William's regular term was to have ended in January 2023. The Executive board must appoint someone to fill the position vacated by William until January 2023 and will do so at its July Executive Board meeting. Then, in November, that individual – or any other club member for that matter – can run for the November election to that position for a full 3-year term beginning in January 2023. This is a great time for new members to get on the board. Not only do they have a chance to help run the club – but they can have a "break-in" opportunity by stepping forward at this time to fill William's old position.

In addition to William, two other Executive Board positions will expire this year. My term – and that of Jim Sugg – will expire at the end of this year. I do not plan on running for an additional term. I believe we should give opportunities to all full members to sit on the Executive Board.

So, we will have three positions to fill in November. Wouldn't it be great to see multiple candidates for each of these positions?

The Micronesian connection

As we've learned, you don't have to spend much time hanging with the BIARC gang before you discover there's a unique, long-distance community service project headquartered at the Darling QTH in Puna.

For years, care packages have been sent to Micronesia, and communications handled between that distant island nation and Hawaii and North America. Key cogs: Barbara Darling, NH7FY, her late husband, Richard Darling, AH7G, and John Bush, KH6DLK, of Hilo, who lives parttime with family on Ulithi in Yap State.

"Back in 2011, Richard was called by Tom Raffiipy, KH7LJ, and asked if he would get on the radio and talk to two new hams that had gotten their licenses down in Micronesia. Our friend and hanai son, John Bush, had been down there installing computers in an elementary school and had worked with these men to get their licenses.

"Tom, also a resident of Puna, is a ham radio operator, but only a Technician so he couldn't talk to them. So Richard started talking to William and Albert every day that we were home. Albert has since passed away, and some of Richard's ashes are there waiting for John to arrive so that they can be buried with Albert. Richard used to spend hours talking to Albert. (*Albert Haped V63YAH, SK, Federai Island*)

"In 2016, Richard's dementia got so bad that he couldn't even remember how to turn the radio on, so that is when I started to do the daily contacts. I'm still doing them and have done many phone and tablet patches, especially during the last couple years. I can get Clifton (son) from Australia, a son, Jonah, on Pohnpei Island, Dexter and Ace (sons) from Guam and two relatives on Yap Island at the same time on my tablet and they can take turns talking to William and his wife, Addressa.

"I do phone patches to Missouri, Texas, Georgia, California, Maui



Photo by Bob Schneider, AH6J
Tom Raffiipy and Barbara Darling at the July IHOP ham breakfast in Hilo.

and Oahu too," said Barbara. "I do many patches for the Micronesians on the Kona side of our island. Many of them work over there."

On the first Saturday of each month, in Hilo, there is a ham radio group that gets together for breakfast at IHOP. (All amateur radio operators are welcome.) While there on Saturday, July 2, Marcy Raffiipy, Tom's wife, came over to give Barbara a beautiful lei. Bob Schneider took a picture of Barbara and Tom, together, and it's one she'll treasure.

"It is the first I have seen the Raffiipys in about ten years, even though they don't live too far away from me," she said. "I was really pleased to see them, and to get the photo, for sure."

Next meeting is Saturday, July 9

The Big Island Amateur Radio Club will continue with in-person meetings at the Keauau Community Center at 2 p.m. on Saturday, July 9.

Please bring a small, tasty contribution for the 3 p.m. pot-luck break.

In addition to the face-to-face session, the event will be shown on Zoom. A Zoom invite will be sent out on the BIARC Listserve on Friday, July 8.

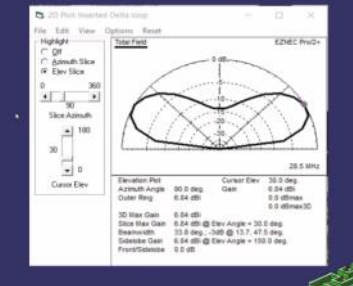
All Amateur Radio operators are invited.

The BIARC Board will meet at noon, also on Zoom.

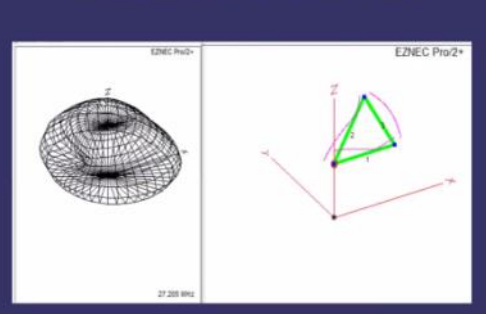
Big Island Amateur Radio Club

10 Meter Delta Loop
June 11, 2022
By
WH6FQI

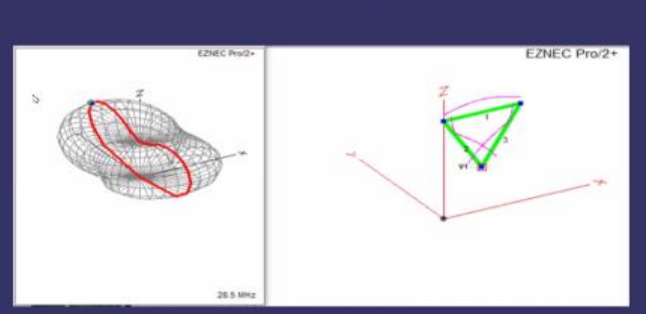
Inverted Delta Loop 2D FF Plot



Delta Loop Corner Fed



Inverted Delta Loop EZ-NEC



June meeting ... in the room and on Zoom

The June 11 monthly BIARC session at the Keauau Community Center offered members another chance for an in-person get-together, while Zoom access also was enabled. Jim WH6FQI gave an informative update on his 10 Meter Delta Loop; Bob AH6J demonstrated vital components

of a "Go Kit"; Jef NH6A offered a brief interactive tutorial on "CW"; Gary WH6EPS talked a bit about the "Fox" for Field Day and the big annual event, itself; and John KH6DLK showed the newest update in his collapsible PVC J-pole portable antenna project.



Epperson home destroyed by fire

Chuck Epperson, AH6SC, has been a supportive member of BIARC for many years. When I was the QSL manager for the entire state, for distributing QSL cards, Chuck who had started working at Tripler Hospital, would get in touch with me every time he came home to see if I had any cards for Oahu. He would hand-carry them over for me so they didn't have to be mailed.

Chuck and his wife, Val, had a home in Hawaiian Paradise Park on 12th Street, until Monday morning, June 27th. Chuck had

installed a new propane heater the weekend before and he thinks that that may have caused a fire at their home. He was in Hilo at the time the fire broke out. His wife managed to get out with her oxygen machine. She has minor burns on her shoulder. They have lost everything except their truck, which Chuck was using at the time.

They are currently staying with Linda Spencer in Hilo. Her husband was a ham radio operator and good friend of Chuck's. They will be looking for a home to move into. As Chuck says, "it's a good thing it happened during the day because if it happened at night they wouldn't be here now." Good luck, Chuck and Val, in finding a new home.

— **Barbara Darling, NH7FY**

Five new hams pass Technician exam right before revised question pool goes into effect

Doug Wilson, KH7DQ, reports that five people passed their Technician License exams just a few days before the June 30 expiration of that question pool and have now joined the ranks of Amateur Radio operators here on the East Side of Hawaii Island.

"Congratulations to Jerry Eschbaugh, Diana & Michael Sahli, and Nicole & David Vallecorsa," said Doug. "Welcome to the hobby and we look forward to hearing you on the radio and sharing friendships with you!"

Doug is the Volunteer Examiners Team liaison for our team of 13 VEs and responsible for coordinating and supervising examinations and processing applications and test results through the ARRL VEC (Volunteer Examiner Coordinator). "For these last two testing sessions, Linda Quarberg (WH6LQ), Tom English (WH6EBS), Paul Ducasse (WH7BR) and myself served as the VEs" said Doug.

TECH TIPS



By Hank Kaul, KH6HAK

Beware “The Blob.”

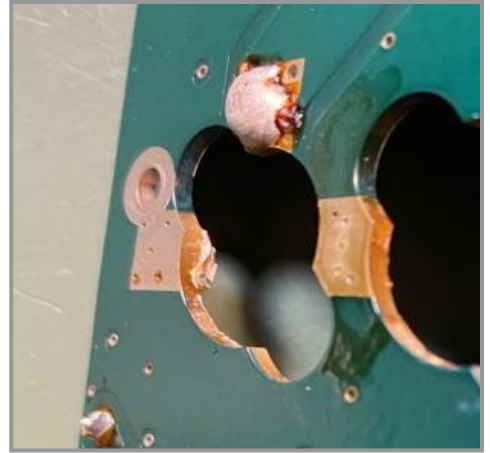
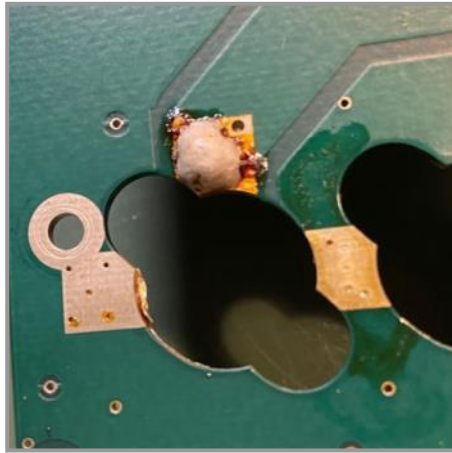
Remember that ALS-1306 amplifier I was so overconfidently ‘fixing’ too many months back? It should have been a simple transistor replacement. But I neglected to factor in that this amp was built by MFJ enterprises. Upon replacing four transistors in the rear PA board, I found the B+ voltage line was shorted to ground.

Thinking I had a bad transistor, I lifted the Drain (power) tab on each transistor and found I STILL had a power short. So now I destroyed four new transistors removing them completely from the PA board. Still I have a short.

The PA board has a handful of tiny surface mount capacitors scattered along the B+ line on the board, and any one of them could have shorted. There were no visible burned parts or solder bridges. So I believed I had a bad PA board and I ordered a new PA board from the factory for \$275. Then after I removed the old board, it no longer showed a short!

Still unwilling to trust it, I went with the new board anyway. This old amp had Rev. 1.2 PA boards dated 2010. The new board was now Rev. 6 dated 2020 and had some obvious differences in the ferrite output circuit. The factory service rep assured me it would work OK with the older board in parallel with no problem. So I overconfidently soldered all the input-output wires onto the board and installed four new MRF-150 transistors at \$50 each. Fired it up, and with all the bias turned way down, it was still drawing too much current!

A quick check with the meter shows I have 900 ohms to ground on the B+ line. So it looks like a bad transistor. Leaving the meter in the (deEnergized) B+ line, I carefully lifted the drain power tabs on each transistor one at a time. Of course it was the fourth and last transistor that I lifted that resolved the fault. One certifiably bad transistor. So I sliced the tabs off and removed that transistor. Then I went



Two of the four transistor B+ tabs have about five thru-plated holes to the underside of the board where another trace takes them to the output ferrite circuit. And there... looking like a cross between the ‘Terminator’ metal man and “The Blob” was this droop of solder hanging down far enough to short out onto the heatsink plate below.

down the line to reconnect the other three.

This is where things got really strange. Just trying to reconnect the first transistor suddenly gave me a dead short on the line. What the...(redacted)! Lifting the transistor tab again, the short persisted, so it was a board problem not the transistor that was shorted. Lots of micro inspection with a magnifier and a sharp knife on the edges of the printed circuit board ensued, and at one point the short went away. Aha! Got it!

A little more fooling around and the short returned. It also appears to be pressure-activated when I press on certain areas of the board.

Now I’m thinking there is a blob of solder or something under the pc board, but I cannot examine there easily with the board mounted.

The transistors mount to the heatsink plate below, and the pc board is lifted about 1/8 inch above that ground plate. Suddenly it occurs to me that I have the old board I removed, so I began examining the underside of that pc board. Sure enough... there was the problem.

Two of the four transistor B+ tabs have about five thru-plated holes to the underside of the board where another trace takes them to the output ferrite circuit.

And there... looking like a cross between the ‘Terminator’ metal man and “The Blob” was this droop of solder hanging down far enough to short out onto the heatsink plate below. When you do a second-time solder job on these transistor terminals, some solder flows

thru the holes and ‘bags’ down on the underside to short out.

I noticed that some of the factory solder joints on the B+ line into the board also had large nuggets that would short out if you pressed lightly on the board above them. I consider this a design deficiency of the amp. Too easily shorts out under repairs. It would have been easy for the factory to insulate these areas.

I ordered some KAPTON tape to cure the problem. KAPTON is “polyimide silicone” and looks like yellow-orange cellophane, but is incredibly tough stuff. It will handle soldering temperatures and higher, and has incredibly high dielectric strength to resist arcing. I have worked with KAPTON sheets in the RCA TV transmitters where it is used as a plate blocking capacitor on the 20kW final PA tube. The KAPTON must block about 10kV high voltage while passing 20kW of pulse-modulated VHF RF without arcing thru.

So now that I am sure I know where the problem is, I am again overconfidently predicting I will get this amp repaired as soon as my KAPTON tape arrives to insulate these problem areas.

I will let this story serve as a warning to anyone else who may need to repair an Ameritron PA board in the future.

BEWARE “THE BLOB”. (Does anyone else remember that 1958 horror-sci-fi movie?)

BIARC Executive Board Meeting

June 11, 2022

A Begin Meeting

● Call to Order –

- The meeting was called to order at 12:13 pm by Board Vice President Gary Schwiter.

● Quorum Call

- Vice Present: Gary Schwiter, James Huntley, Jim Sugg, Tony Kitchen, William Polhemus. and Paul Ducasse.

● Secretary's Report and Minutes (5/14/2022)

- William **moved** and Jim H. **seconded** that the May BIARC Board Minutes be approved as published. Motion **passed**.

● Treasurer's Report

- Still short of goal for dues. We have 61 paid members.
- William **moved** and Jim H. **seconded** that the Operating Statement and the Funds Summary be approved, subject to audit, without changes. Motion **passed**.

B Members Present

- Members present: Glenn AH6EI, Joe WH6FH, and Roy KH6KU. No input given.

C Committee Reports

- No formal reports submitted.

D Old Business

● Equipment Donation

- Waiting on replacement batteries, to replace the bad ones shipped by Grainger, to install in UPS for repeater site.

E New Business

● Membership Meeting Snacks

- Gary **moved** and William **seconded** that the club will supply snacks for today's club meeting using the remaining board donated funds from last meeting. No further club supplied snacks until the Christmas meeting. Pot luck going forward. Motion passed.

From previous page

- Tony **moved** and Jim H. **seconded** that the club reimburse Bob AH6J for the cost(\$13.56) for the broken glass from last meeting. Motion Passed.
- William needs a board member signature on the change of trustee paperwork. He also needs all board members present to sign last months minutes that appointed William as the club trustee. Jim H signed the application.
- Gary **moved** and William **seconded** an official trustee email account be created for the trustee.kh6ej@gmail.com. Motion passed
- Tony **moved** and Jim H. **seconded** that the \$210 Field day budget be allocated and that receipts will be turned in for reimbursement of actual expenditures. Motion passed

There being no further business, Gary **moved** and Jim H. **seconded** that Gary adjourn the meeting at 12:30 pm HST: Motion passed.

Respectfully Submitted,

James R. Huntley, Secretary

DX Engineering has announced that it has added Penta Laboratories RF vacuum tubes to its product line. "In the ham radio community, special RF power vacuum tubes are essential replacements for current model amplifiers. They are also used to revive legacy amplifiers, and some technically savvy operators build vintage-style homebrew equipment and other devices using vacuum tubes," included the DX Engineering announcement. **Penta Laboratories** describes that it "was founded

in 1951, and quickly achieved industry-wide recognition for the development of the beam-power Pentode vacuum tube." The company stocks thousands of tubes for a range of disciplines, including vacuum tubes designed for ham radio and other radio frequency applications. Penta Laboratories' states that their tubes are burned in for a minimum of 48 hours, dissipating full power with filament plate, and support screen voltages that are normally used in amplifier applications.

BIARC 2022 Budget & Operating Statement

	<u>2022 Budget</u>	<u>Actual- 1/1/2022 To 6/09/2022</u>
Income:		
Dues	\$1,200.00	\$1,100.00
Repeater and general donations	\$1,000.00	\$709.00
Humanitarian Fund	\$300.00	\$265.00
PayPal Adjusted Donation		\$15.06
Total Income	<u>\$2,500.00</u>	<u>\$2,089.06</u>
 Expenses:		
Club Liability Insurance	\$350.00	\$323.20
Club Equipment Insurance	\$250.00	\$186.85
Donations (PCC)	\$25.00	\$0.00
Equipment	\$950.00	\$290.00
Field Day	\$210.00	\$0.00
Annual Build Project	\$100.00	\$0.00
P. O. Box Fee	\$250.00	\$258.00
Humanitarian Awards	\$250.00	\$140.00
VOAD Dues	\$25.00	\$0.00
Office Supplies/Bank Fee/Misc.	\$40.00	\$0.00
Website Costs	\$50.00	\$0.00
Total Expenses	<u>\$2,500.00</u>	<u>\$1,198.05</u>
Excess (Deficit)		\$891.01
 Bank of Hawaii Balance as of: 6/09/2022		
		\$2,557.21
Deposit Pending		\$170.00
Namecheap Balance		\$1.00
Paypal Account Balance		\$2,233.46
 Fund Balances: (6/9/2022)		
Repeater fund	\$2,287.69	
Humanitarian Fund	\$125.00	
Emergency Reserves	\$1,000.00	
General Fund	\$1,548.98	
Total Funds	<u>\$4,961.67</u>	

BIARC - Donation Funds Summary
As of: 06/09/2022

Repeater Fund Summary:

<u>Year</u>	<u>BIARC Equipment Budget</u>	<u>Donations (Credit)</u>	<u>Equipment Purchases & Maintenance Costs</u>	<u>\$ Covered By Repeater Fund</u>	<u>Repeater Fund Balance</u>
2017	\$600.00	\$273.00	\$932.75	\$332.75	-\$59.75
2018	\$1,000.00	\$235.00	\$266.98	\$0.00	\$175.25
2019	\$500.00	\$255.00	None	\$0.00	\$430.25
2020	\$500.00	\$501.72	\$436.78	\$0.00	\$931.97
2021	\$600.00	\$1,595.00	\$1,548.28	\$948.28	\$1,578.69
2022	\$950.00	\$709.00	\$0.00		\$2,287.69

Notes: This fund holds amounts donated to be used for repeater maintenance & upgrades.

Humanitarian Fund:

<u>Year</u>	<u>\$ Donated</u>	<u>Amount Spent</u>	<u>Balance</u>
2022	\$265.00	\$140.00	\$125.00

Notes: This fund holds amounts donated.

BIARC Treasurer's Report as of 6/9/2022

- We have received 2022 dues payments to date from 61 members.
- Since the last report the following disbursements have been made:
 - Ck#1828 U.S. Postal Service \$258
(Annual PO Box fee from 7/1/2022 to 6/30/2023.)
- Overall we are \$370 short of reaching our 2022 income target of \$2,500 adopted in the 2022 Budget.

Attachments:

Operating statement as of 6/9/22. (Adobe PDF)
Donation Fund Summary as of 6/9/22. (Adobe PDF)

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Tony Kitchen, WH6DVI
BIARC Treasurer

On the Air

MONTHLY TIPS AND TECHNIQUES TO HELP NEWLY LICENSED AMATEUR RADIO OPERATORS GET ON THE AIR

[New Ham Resources](#) | [On the Air Magazine](#) | [Read Previous Issues](#)

Wondering what to do with your new Amateur Radio license?

This online article from the ARRL provides info and advice from experienced hams.

Key Pieces and Paddle Parts



Though they differ in appearance and required operating technique, straight keys and paddles are the most common tools used to send Morse Code, or CW. Learn more about these tools for sending code in the following article.

THE BIG PICTURE

Key Pieces and Paddle Parts

Of the tools used to send Morse code, straight keys and paddles are the most common. Though they differ in appearance and in required operating technique, they're both essentially on-off switches with similar components.

Straight Key



Contact spacing adjustment:

Turning counter clockwise increases the gap between the contacts, clockwise makes the gap smaller. The space between the two electrical contacts under the key's arm should be about 1/16th of an inch apart when the key is not depressed.

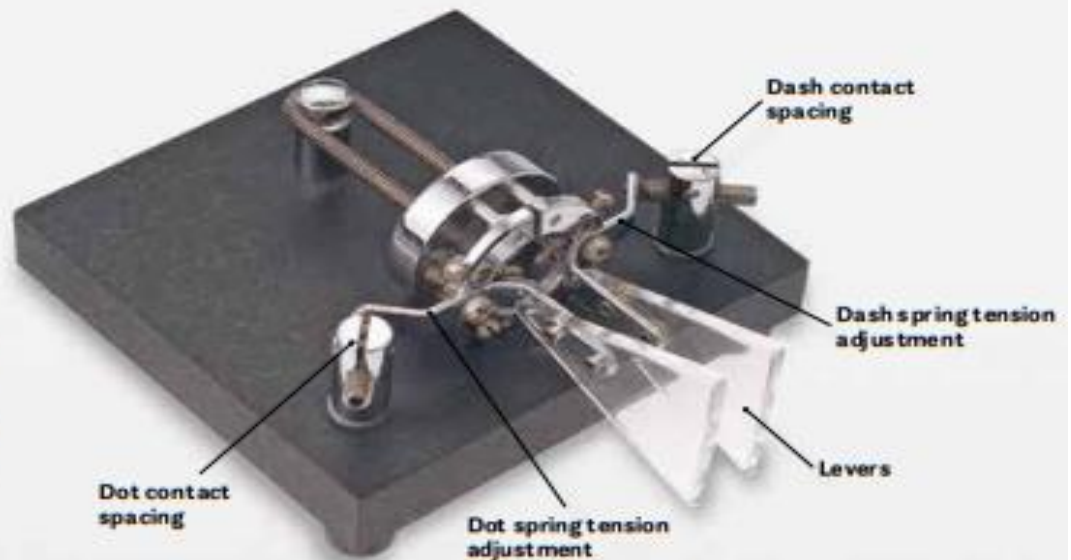
Spring tension adjustment:

Allows the arm of the key to spring up and break the connection when the operator releases pressure.

Bearing tension adjustment:

Reduces play in the key's lever arm without introducing friction to the up-and-down movement of the arm.

Paddles



Contact spacing: Adjust to determine how far you must move the paddle before the contact is closed.

Tension adjustment: Adjust to increase or decrease the amount of force required to push each paddle.

Tools for Sending Code

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One of the first things that comes to mind when we think of CW is the Morse code key. At its heart, a Morse code key is very similar to a light switch. You make or break a connection — in this case, to make a series of long and short pulses that are put together in a meaningful way. Here's a closer look at the tools hams use to make these connections.

The Straight Key

In the case of a Morse code straight key, the length of time you keep the switch connected is the length of the signal that's transmitted over the air. When you press the key, the connection is switched on. If you let go, the switch automatically returns to the off position.

Most people use a three-fingered grip on a straight key, centering their index finger and stabilizing with their thumb and middle finger. This allows you stay properly oriented on the key, and also reminds you to make small, precise presses that enable you to time the length and spacing of dits and dahs (hamspeak for the familiar "dots" and "dashes" of Morse code).

The Paddle

Paddles are an alternative to straight keys. Instead of you manually controlling the length of the dit and the dah, as you do with a straight key, the paddle handles it for you electronically. On a set of paddles, one paddle controls the dits and the other controls the dahs. When you push the switch on, the paddle will send the character at the proper length every time.

If you hold the switch closed long enough, the paddle will repeat the character at a perfectly measured pace. You can adjust that pace to go faster or slower, depending on your skill level and the skill level of the person on the receiving end. Finally, if you squeeze the paddles together, that will alternate which character is sent. If you squeeze the dit paddle first, then squeeze the dah paddle, the key will auto-repeat dit-dah-dit-dah-dit-dah until you let go. If you do the opposite, and squeeze the dah paddle first, the key will auto-repeat dah-dit-dah-dit-dah-dit instead. By mastering the timing of squeezing and letting go, you can send any combination of dits and dahs.

There are a few types of paddles: single-lever (you lose the squeeze function, but gain compactness/fewer moving parts), dual-lever (the most common kind), and bugs (which are kind of half straight key/half paddle — see the photo at right for an example).



Using a three-fingered grip on a straight key helps with stability and precision.

Which One to Use

When trying to choose between key or paddle, keep in mind that one isn't really better than the other, they are just different. I come from an engineering background. I try my best all day, every day to be efficient and precise. A paddle speaks to that nature.

A straight key, however, seems to have a soul. Imagine a language you're familiar with, spoken in a regional accent. Some places drop the final "R," others have a southern drawl. Similarly, you can hear nuances from operator to operator by the way they use a straight key. There's even a name for this quality: the *fist*. Some hams can recognize the fist of the operator on the other end of the contact before they even send their name, location, or call sign.

Some people enjoy the history associated with one form of key or the other, and want to connect with that. The most important thing is to find a key or paddle that works for you and enjoy it.

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This unusual wooden bug was made by Gary Johnson, NA6O.