



September 2022

THE BIG ISLAND HAMGRAM

The newsletter of the Big Island Amateur Radio Club

AREDN-MESH TECHNOLOGY TRAINING EVERYTHING IS SETUP WHAT DOES IT DO.

- By joining this network you can find and use all sorts of applications (known as services). Anything running on a server, like weather stations, web sites showing site conditions, email servers, etc can be provided as a service. There are also services that don't rely on a browser: video streams, chat servers, VOIP PBXes, etc. The network can also be used to connect Winlink stations, Dstar and DMR repeaters, and Allstar devices.
- Lets Get Started



WH6EPS,
WH6FZH,
NH6ET

Photos by
WH6LQ



Gary Schwiter,
WH6EPS, gives
AREDN-MESH
basics.

AREDN-MESH TECHNOLOGY TRAINING WHERE TO START

- Mikrotik hAP AC Lite

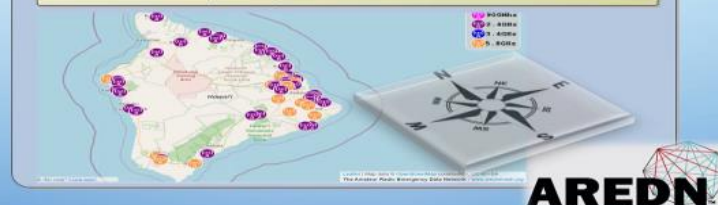


The Mikrotik hAP AC Lite is a five-port router. It provides a seamless method for integrating the ham radio network into your ham shack network.

AREDN

AREDN-MESH TECHNOLOGY TRAINING DO I HAVE A RADIO DiD LINK FROM MY QTH

- First Do I have a nice View. **Location, Location, Location**
- Can I see my **target**. Line of sight, mark it with a compass
- <http://42561.noip.us:8888/meshmap>
- Do a site survey, check site radio bands 2.4 & 5.8 check each beamwidth 5Mhz, 10Mhz, 20Mhz



Tips, demo on modern mesh highlight August get-together

Vice President Gary Schwiter, WH6EPS, conducted the August club session at the Keaau Community Center and online via Zoom. And he introduced the member-

ship to the AREDN mesh system, its many facets, current setups and impressive potential for service to the community via "amateur radio over wire-

Continued on next page

Tech Prep Class starts Sept. 21

The next Amateur Radio Technician License Preparation Class will begin Sept. 21 via Zoom.

"The purpose of this class is to prepare you to pass the test for the entry-level Technician Class Amateur Radio License," said instructor Doug Wilson, KH7DQ. This license "is a good start to a wonderful life-long hobby and will equip you to communicate during a disaster

when other means of communications have failed." Students will be provided, by email, the Technician License question pool and numerous other reference materials throughout the course to assist in preparing for the exam. The course includes the examination and processing of license application. Contact Doug at douscalle@aol.com if you are interested in taking this class.

Coming up this month

Show-and-tell on BALUNS, UNUNS ...

William Polhemus, NH6ET, will present the monthly BIARC program at 2 p.m. Saturday, Sept. 10, at the Keaau Community Center and live on Zoom.

His focus will be: "All Wound Up! An overview of BALUNS, UNUNs, impedance transformers, and chokes."

"I'd like to ask any members to please feel free to show and tell their favorite components, completed projects, or purchased items, in this category of radio science," said William.

"You can show your stuff, online or in person, during and after the discussion."



Talking AREDN-MESH technology at August membership gathering on Zoom and at the Keaau Community Center.

From previous page

less bands."

Gary called his presentation "a beginner's guide, with a little show-and-tell."

First up: Mikrotic hAP AC Lite. This "great little product" is "a great place to start" and the only piece of equipment you need to get off the ground with AREDN.

Gary showed images on-screen to orient the audience to how the "tunnel" links being used in Hawaii are established, and encouraged members to get involved.

"We want to expand the RF links," he explained.

Following a short break for an ice cream social in honor of the late Richard Darling, AH6G, Gary offered a live demo.

"When you log in to your hAP, this is the interface you'll see," he said, pointing to a graphic, "and this one shows mesh status."

There are many choices in how to set up the mesh system, and in Hawaii we're using "RF tunnels," he explained.

Then he demonstrated connecting via tunnels from the BIARC hAP, KH6EJ,

to two at his house under his call sign, WH6EPS, then over to KH6EJ, back to WH6EPS, and then over to WH6DVI, et cetera.

Gary said that to encourage other hams to get involved, he offers free hookups to a bunch of services such as police scanner, Kiwi SDR for band reports and signal checks, aircraft tracking and more.

He then got Treasurer Tony Kitchen, WH6DVI, involved and sending RF cellular data to the tunnel network, back to EPS, back to DVI and then off to Maui.

And Tony demonstrated the PBX phone system – a four-digit calling setup affectionately known as the "bat phone system."

He called Dewey, NH6MI, at No. 6014. The two had a short conversation to exhibit the high audio quality of this audio coupling via AREDN mesh.

Also at the meeting, Bob Schneider, AH6J, shared copies of hurricane preparedness guidelines he had picked up at the Hawaii County Civil Defense Agency.

AREDN-MESH TECHNOLOGY TRAINING GETTING AROUND THE HOA

- These are perfect if you live in an area with a restrictive HOA or CC&R. Your neighbors will never notice the dish isn't pointed up.
- Any dish - including a repurposed DishTV or DirectTV dish. Those typically will provide overall gain of 22-25 dBi.
- These dishes are going to be on the South side of the house in Hawaii think before you buy.

AREDN



Bob Schneider, AH6J, shared copies of hurricane preparedness guidelines he picked up at the Hawaii County Civil Defense Agency. He recommends getting ahold of the Hawaii-focused information and following advice offered by the experts. Go to: <https://hawaii-county-hurricane-resource-site-hawaiicountygis.hub.arcgis.com/documents/hurricane-preparedness-guide/explore>

AREDN

WH6EPS-6-EDENROC mesh status

Location: 19.472623 -155.084317

Refresh Auto Out

Local Hosts	Services	Current Neighbors
WH6EPS-6-EDENROC (wan)	WH6EPS-6-EDENROC-HAP	KH6EJ-6-KEAUA-HAP (wan)
WH6EPS-plavare	WH6EPS-AIRCRAFT TRACKING	KH6EJ-VARAPNGW
WH6EPS-KiwiSDR	WH6EPS-KiwiSDR	WH6DVI-6-AIHAQA (wan)
WH6EPS-RMS		WH6DVI-A548432
WH6EPS-BCDS36HP-H	WH6EPS-6-3309	WH6EPS-6-EDENROC-LAQ
RMS-1	WH6EPS-PackoAPPS-145-099	WH6EPS-6-EDENROC-M2-C (n)
	WH6EPS-PoliceScanner	
	WH6EPS-IL2K-POST-OFFICE	
Remote Nodes	ETX Services	Previous Neighbors
KH6EJ-6-KEAUA-HAP (wan)	0.20	KH6EJ-6-KEAUA-HAP
NH6MI-AS28376		KH6EJ-VARAPNGW (local mesh)
KH6EJ-VQDP		
		OLSR Entries
		Total

**AREDN-MESH TECHNOLOGY TRAINING
WHERE TO START**

• Mikrotik hAP AC Lite

Mikrotik hAP AC Lite RB952UJ-5ac2nD

• 5dBi Dual radios (2.4 & 5 GHz) 200 mW

• 5dBi 27 dBi gain antenna 630 mW

AREDN

**AREDN-MESH TECHNOLOGY TRAINING
DO I HAVE A RADIO DID LINK FROM MY QTH
LOW POWER AND LINE OF SIGHT.**

• So if you determine there is a local node, how do you find out if you can reach it?

• <https://npdesign.ai.com/>

• <http://hcyw.hatsbat.com/>

• Radio Mobile WEB Site (ve2dbe.com)

AREDN

Club in transition: There's a role for each and every BIARC member



THE PRESIDENT'S CORNER

Les Hittner
K0BAD

In May of 2019, BIARC approved a new Constitution and Bylaws. When I joined the club in 2015, it seemed to me that BIARC was struggling. I didn't know if the club had a Board of Directors or not. I DID know that if it did, the board was not particularly active – and probably didn't even meet regularly. Meeting programs were very interesting – but they didn't appear to focus on Amateur Radio. In fact, many of them were travelogues presented by members who had taken interesting vacations. The club meetings themselves often turned into endless complaint sessions that often ended with no solutions.

Something seemed to be missing. The club was doing very little public service. The club had a poor working relationship with HCCDA – neither directly nor through ARES. ARRL Field Day was apparently organized by the same person every year. It didn't really seem to feel like a club project whenever I asked about it (Because of our summer excursions back to Minnesota, I have never been able to participate.) While BIARC had an extensive system of VHF/UHF repeaters, I had a hard time trying to find out exactly who was responsible for their operation and maintenance.

I had just left a club in Minnesota that had been suffering a similar malaise. And they had recently fixed it. I thought, "Why wouldn't it work here?" and began to put forth an idea for club renovation. My idea was to have the club run by an Executive Board

and a set of committees. Then needless and tiring monthly club meetings could be replaced by varied and interesting programs and activities. Membership meetings would be reduced to a minimum of two per year – one in May to give the Executive Board an opportunity to make an extensive report to the membership and get some feedback, and one in November – where Executive Board elections would take place.

As in May, the November meeting also served as a communications conduit between the membership and the Executive Board. Also included in my proposal was the creation of five standing committees (Voice Repeaters, Digital Systems, Program, Operating Activities, and Education and Outreach) and the implementation of staggered 3-year Executive Board terms – so that the entire board would not be replaced at once. This Executive Board concept means that the club literally has no officers. The club is run by the Executive Board, who elects its own officers from among those board members. This year, I am not the BIARC President. Rather, I am the President of the BIARC Executive Board.

The club membership liked the idea – and in 2019 they voted to make the change. Despite the restrictions brought about by COVID-19, I think the club has made significant progress since that day. But there is much more work to be done. It is very easy to adopt a new BIARC Constitution and Bylaws, but that is just the start of the

work. The Executive Board has to do the work. It has to be active. Part of that work is recruiting new members to fill the positions of members whose terms have expired.

The easy way to recruit new members is to convince existing members to stay on for subsequent terms. But that is not always what is best for the club. Take the Board Treasurer, for instance. It's hard work and consistent performance from year to year is important. It is likely that if the Treasurer elects to run for subsequent terms – and the membership votes accordingly – the Executive Board will vote to keep that individual on as Treasurer. On the other hand, the Board President probably should change after one or two terms. If a board member's term expires while filling the President's role it is probably healthier for the club if that person steps off the board and allows others to lead.

My term on the BIARC Executive Board ends this coming January. This is my second term. I will not be running for another term on the board. It is time for other members – newer members – younger members, to step up into leadership roles on the BIARC Executive Board. It is good for BIARC – and it is good for them as individuals. Not being on the Executive Board doesn't exempt me or any other club member from participating in leadership roles in the club. Those five Standing Committees need active members.

Please join a committee today.



ISS Commander Kjell Lindgren works the radio on Field Day, logging his contact with KH6HAK.

SPACE LOG 2022
NOT LONG AGO
IN A GALAXY
WE ALL KNOW ...
CONTACT!



NASA Astronaut Kjell Lindgren, KO5MOS, tweeted this photo of the ham radio station in the Columbus module, just before ARRL Field Day in June. <https://tinyurl.com/2p9cr53f>

Pics capture moment of KH6HAK-ISS cool contact

By Hank Kaul, KH6HAK

I was not going to write anything this month, but I could not let this one go unnoticed. Our dear publisher was disappointed that I did not get a picture of my contact with Kjell Lindgren aboard the ISS. Well, some-

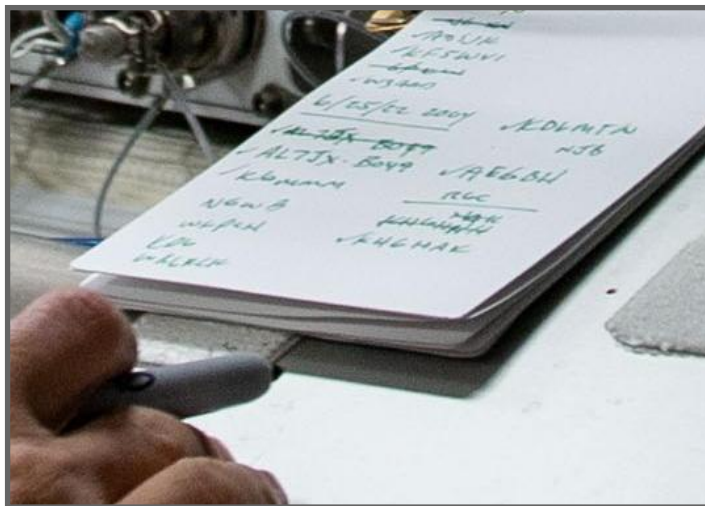
one up in space must have heard her, and snapped this image of Commander Lindgren working the radio on Field Day 2022. I have this image published on my [QRZ.com](https://www.qrz.com) web page.

Now I began to wonder... just what time this image was snapped?

So I went to the NASA website and looked up the image. The EXIF data for this image indicates it was created at the EXACT TIME I contacted NA1SS. So I downloaded the full size image and blew up his notepad... to find my call sign, KH6HAK, at the bottom of his notes.

He is talking to ME in this image! I'm immortalized in the NASA photo records.

How cool is that?



ISS Commander Kjell Lindgren logs his Field Day contact with KH6HAK.

International Space Station Upgrades Amateur Radio Operations

ARISS, Amateur Radio on the International Space Station, announced that simultaneous operations of the ARISS voice repeater and digital APRS (Automatic Packet Reporting System) communications on the Space Station are now a reality.

Current ARISS operations include voice repeater transmissions with the JVC Kenwood TM-D710GA in the Columbus module and APRS operation from an identical radio in the Zvezda module. Packet operations are on 145.825 MHz.

The Columbus module radio uses the call sign NA1SS and the new radio in Zvezda uses RS0ISS. Aside from the call signs, the radios are identical, and packet operations are the same as before. You can use RS0ISS, ARISS, or APRSAT as the packet path. Both radios are expected to be running full time, except during educational contacts, extra vehicular activities (EVAs), and docking maneuvers. Final checkouts and equipment activation occurred on August 11.

Rosalie White, K1STO, one of two US delegates to ARISS, said the ham radio community will be very happy with the new radio operations from the ISS.

"Hams really love doing ARISS packet, cross-band repeater, and Slow-Scan Television (SSTV) operations. Besides the thousands who download ARISS SSTV images downlinked from the ISS, we discovered that in a year's time, hams did 80,000 ARISS packet messages," she said. "We are not sure how many have been enjoying the ARISS cross band repeater, but we know it is a lot. This simultaneous operation capability is going to make many hams happy -- and we know that keeping hams on the air is good for ARRL and good for amateur radio," White added.

Operational status and expected downtimes of the ISS radios can be found at www.ariss.org/current-status-of-iss-stations.

Long before Zoom, KH6EJ famous for remote meetings

Aug. 20 email from President Les Hittner, K0BAD:

"Check the year 1947 in Big Island History in today's Internet version of the Hawaii Tribune-Herald.

"Seems like Amateur Radio operators on the Big Island and throughout the state envisioned the concept of 'remote meetings' long before ZOOM came into being!

"KH6EJ even got some publicity before BIARC adopted it as the club call."

■ Big Island history

1947

Here's the pertinent 1947 article, retrieved in mid-2022 from the newspaper's microfilm archives for a weekly retrospective blast from the past:

"Something new in the line of conducting a meeting will be inaugurated Thursday at 7:30 p.m. when a meeting of the territorial Camera council will be held by radio, over

station KH6-EJ, owned by William Seymour, of Hilo who will make contact with ham stations in Honolulu and on each of the Hawaiian islands where amateur radio station[s] exist. This is an experiment that has never before been conducted, either in the Hawaiian islands or on the mainland, as far as is known. Contact will be

made with radio stations operating in Honolulu by H.E. Warren, Kauai by Jack Wada, Maui by T. Idamoto. The Big Island will be represented by Millard Mundy, senior director for Hawaii and Miki Kuneida, junior director. Urban Allen, president of the Camera Club Council of Hawaii will preside. By holding the meeting over the air it eliminates the necessity of the members making a trip to wherever such meetings are to be held from time to time."



ARRL President Emeritus Harry Dannals, W2HD, at the 2014 ARRL Centennial Convention in Hartford, Conn.

ARRL President Emeritus Harry Dannals, W2HD, SK

Harry Dannals, W2HD, President Emeritus of ARRL The National Association for Amateur Radio®, died on August 30. He lived in Charlottesville, Virginia. In April, Dannals celebrated his 95th birthday and over 80 years of involvement in amateur radio. He served as ARRL President for 10 years, from 1972 - 1982, and his President Emeritus status was conferred in 1984. He was an ARRL Life Member.

Route 66 On the Air Special Event

The annual Route 66 On the Air Special Event will take place September 10 - 18, 2022. The purpose of the event is to commemorate the history of the "Mother Road" connecting the east and west United States.

Now in its 23rd year, the Northern Arizona DX Association (NADXA) started the event, which is now coordinated by the Citrus Belt Amateur Radio Club (CBARC) in San Bernardino, California.

There will be 21 stations with 1x1 call signs on the air from Chicago, Illinois, to Santa Monica, California, all with consecutive calls starting with W6. NADXA will operate three of the 21 stations, including W6G (Flagstaff, Arizona), and W6S (Arizona Rover 1). They'll set up at various spots along Route 66 east

of Flagstaff, and W6T (Arizona Rover 2) will be set up in Bellemont. Later in the week, the event will be moved to Parks, on old Route 66, west of Flagstaff.

The history of the Mother Road began in 1926, when US Highway 66 was established. It was the first major improvement to the link between the west coast and the nation's heartland. Through stories, songs, and TV shows, the highway came to symbolize the freedom of the open road, inspiring many to see America in its entirety. The demise of Route 66 began in the 1950s, as construction began on the new interstate highway system. US Route 66 was officially decommissioned in 1986, but today, small portions of the highway still exist in several states.

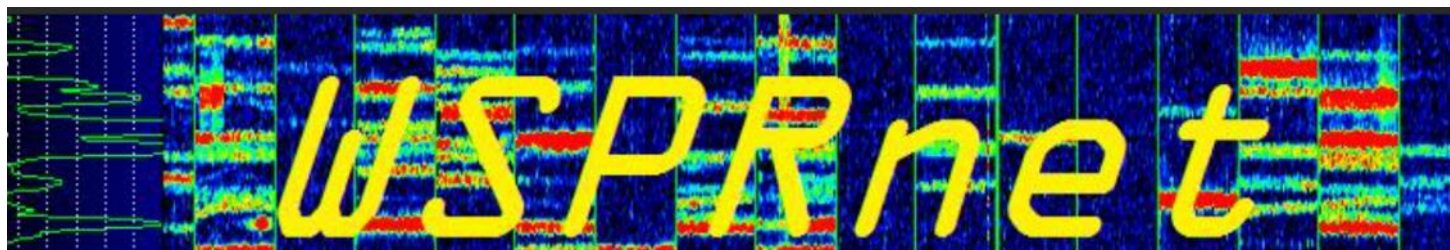


For more information on participating stations, certificates and decals, and the event, visit the [Citrus Belt Amateur Radio Club \(CBARC\)](#) and [Northern Arizona DX Association \(NADXA\)](#) websites.

Visit the ARRL Special Event Stations database at www.arrl.org/special-event-stations for other on-the-air commemorations.

SEPTEMBER VHF CONTEST

Of note for VHF contesters is the 2022 ARRL September VHF Contest, which begins on September 10 at 1800 UTC, and concludes on September 12 at 0259 UTC. The new Analog Only categories that were introduced for Single Operator participants in June will continue with this event, so there are plenty of ways to participate, no matter which modes (CW, SSB, or digital) you choose to operate. Operation is allowed on any amateur frequency from 50 MHz to light. Complete rules are available at www.arrl.org/september-vhf. -- Thanks to [The ARRL Contest Update](#).



WSPR Beacon Project - Status Update

From: Roland, HB9VQQ

Aug. 9, 2022

Subject: International WSPR Beacon Project status update

Dear WSPR Beacon comrades,

It has been a while since the last update. Unfortunately some of the Beacons are struggling with Hardware failures and other issues resulting in an extended downtime of more than one month. I want to emphasize the importance of having consistent Data of the WSPR Beacons. Consistency and uptime are the ultimate goals of the Project.

At the same time it is sometimes very difficult to get a response in a timely manner from some of the Beacon Operators. It would really help if you check your Spam Folder regularly and join our WSPR Group chat on [Telegram](#) for quick information exchange.

I want to thank all the Beacon Operators who manage to keep their Transmitters up and running with a high percentage of uptime! Well done!

This is indeed very valuable for Data Analytics over a long period of time to visualize Propagation patterns and trends.

Hopefully we will soon see a couple of new Beacons on the Air

[TF3D](#) – Benni [TF3T](#) (Beacon arrived)

[BX6AP](#) – Rex (Beacon arrived)

[PY7ZC](#) – Marco (2nd Hardware finally arrived... Thanks to Alejandro [HP1COO](#))

CE7UPK was transferred to Mauricio CE7FMP, thank you both Jose Miguel and Mauricio for the smooth handover.

The installation of the Beacon on [Gogh Island](#) is still planned for September 2022. This is going to be a great Propagation Indicator for the upcoming DXPedition to [Bouvet Island](#). The vessel

sign	Total Uptime	Uptime last 30 days	Uptime last 6 months ↓
HS0AC	47.4 week	100.0%	99.9%
K3WRG	48.1 week	100.0%	99.9%
CP6AA	48.4 week	100.0%	99.9%
KH6EJ	50.4 week	100.0%	99.9%
GM1BAN	1.05 year	100.0%	99.9%
HB9T	1.09 year	100.0%	99.9%
RT9K	1.03 year	100.0%	99.7%
M0JUJ	43.4 week	100.0%	99.6%
DU1EV	47.0 week	100.0%	99.6%
IU2PJI	1.03 year	100.0%	99.4%
WB6YRW	1.06 year	100.0%	99.3%
LU4AA	43.8 week	98.3%	99.2%
PY1IFF	40.5 week	96.7%	98.9%
ZS1WRC	38.4 week	99.2%	98.8%
CE3WSP	45.1 week	100.0%	98.5%
VK4BA	51.0 week	99.2%	98.2%
N6UA	45.9 week	100.0%	97.9%
R0CBZ	31.3 week	100.0%	97.5%
HP1GDP	1.05 year	98.3%	97.1%
ZL2KO	26.6 week	85.8%	96.4%
EX0DX	46.7 week	98.3%	95.6%
W9VW	45.7 week	100.0%	95.2%
KL2R	43.5 week	75.0%	93.9%

(was) scheduled to leave Cape Town on the 19th of August.

[Phase II of the Project](#) is still looking for participants mainly outside of EU and the US.

Last but not least: If for any reason you should encounter a Beacon downtime, planned or unplanned please update the [Google Spreadsheet](#).

73,
Roland, HB9VQQ

[Donations for the Project](#)
[Grafana Beacon Dashboards](#)
[Discussion Group on groups.io](#)
[Intl WSPR Beacon Project on Twitter](#)
[WSPR Beacon Map](#)
[Project Website on Github](#)

Hams invited to kokua at Sept. 17 Ka'u Coffee Trail Runs



There's still time to sign up to help with comms for the races.

Paul Ducasse, WH7BR, informs the club that hams at all license levels are invited to help out with communications for the Ka'u Coffee Trail Runs on Saturday, Sept. 17.

"This is a good opportunity for new radio operators to get some hands-on experience using a radio out in the field," he explained.

"If anyone is interested in helping out during the race as a volunteer radio operator they can either contact Blake Stene (KH7MS) (808) 365-7213, blakestene@gmail.com, or myself, Paul Ducasse (WH7BR) (808) 960-7024, ducasse123@gmail.com."

Info about the race can be found at: kaucoffeetrailruns.com.

Blake said, "I'm looking for volunteers that have DMR/Analog equipment. DMR (digital mobile radio) will be used as the primary mode of communication for this event."

"We currently have a multi-mode (DMR) UHF 444.950 repeater at the Ka'u Coffee Mill so it makes sense to run this event on the digital repeater."

"If you don't have a DMR radio I can provide you with one. Please share this information with anyone interested."

Saturday, Sept. 17, 2022
5:30AM Please meet at the
Kau Coffee Mill for a briefing
before going to your station.

Ka'u Coffee Run:

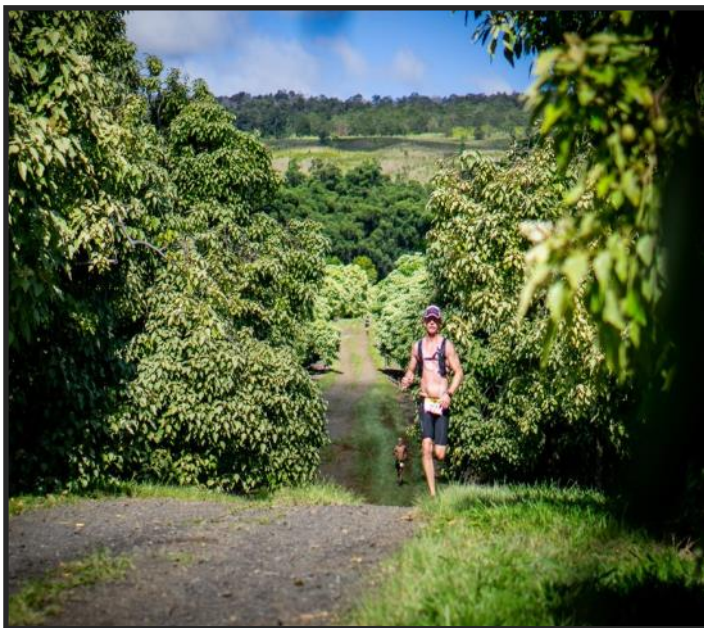
1) All comms will be under NCS (Net Control Station) control. Incidents should be reported to NCS and routed/relayed from NCS to appropriate stations or officials.

2) Use of DMR handhelds and mobile DMR radios augmented by UHF 70cm DMR repeater and VHF simplex 146.520.

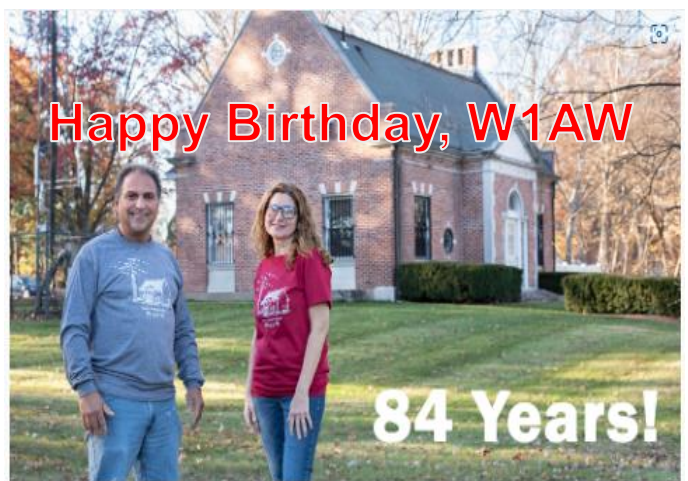
3) Analog simplex 146.520 will be used for point-to-point communications. (station to station)

4) Aid stations are spaced approximately every 1 mile along the course and should be manned by communications team members. We may have limited resources so just do the best you can.

Proceeds from the run will go to support 'O Ka'u Kakou, the Ka'u nonprofit organization. OKK uses the donations to fund local scholarships, land for a proposed senior housing project, purchase of life-saving equipment for Ka'u Hospital, restoration and maintenance of three historical cemeteries, sponsorship of free Veterans Day, and the 4th of July Parade & Fun Day.



Radio operators are invited to volunteer for the Ka'u Coffee Trail Runs on Saturday, Sept. 17.



Happy Birthday W1AW! The Hiram Percy Maxim Memorial Station was dedicated on September 2, 1938, in Newington, Connecticut — today, the site of ARRL Headquarters. Since it was established, W1AW has consistently been on the air. It is known the world over for its bulletin transmissions, on-air Morse code practice sessions, and visitor operating studios.

BIARC Executive Board Meeting

August 13, 2022

A Begin Meeting

● Call to Order –

- The meeting was called to order at 12:09 pm by Board Vice President Gary Schwiter.

● Quorum Call

Present: Gary Schwiter, Jim Sugg, Tony Kitchen, Joseph Rosenbaum, and William Polhemus.

● Secretary's Report and Minutes (7/9/2022)

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

● Treasurer's Report

- Only three payments since the June report, reimbursement to Bob(AH6J), field day expenses, and filing fee for the DCCA annual business report filing.
- Gary asked how much was remaining of the field day budget. Tony reported that of the \$210 only \$79.80 had been used.
- Jim Sug **moved** and Joseph Rosenbaum **seconded** that the report be approved, subject to audit, without changes. Motion **passed**.

B Members Present

- Members present: Glenn AH6EI.

C Committee Reports

● Digital Systems verbal report.

- Gary verified that the Dragon modem was shipped as directed in the prior meeting. James Huntley will submit the receipt for reimbursement.
- William **moved** and Joseph Rosenbaum **seconded** that we authorize the digital Systems committee to spend up to \$300 on equipment for AREDN Mesh for the Pepeekeo site. Motion **passed**.

● Voice Repeaters

- The design is done for the channelized receive multi-coupler at Kulani Cone and is with state engineer for review.

- We have been offered a donation of a number MSR-2000 repeaters from DLNR division of Forestry and Wildlife. William doesn't believe BIARC has a use for them, but other clubs do use them. We are allowed to donate the to other non-profits. North Hawaii Hospital Amateur radio Club and KHRC could use them. There are six of them so some could be used by members.
- Tony **moved** and Jim Huntley **seconded** that we accept the donation of the repeaters and leave it to the Voice Repeater committee to determine their disposition. Motion **passed**.
- Willam has reached out to the ham, WH6BR suggested, that could fabricate the antenna standoff. Discussions are ongoing. Other than the standoff, we just need the Raspberry PI's, which are in short supply at the moment.
- Education and Outreach
 - Due to unhappiness with WordPress, the subscription was allowed to lapse. Our Domain name is with NameCheap, and our website host is with HostGator.

D New Business

- Gary **moved** and Jim Huntley **seconded** that the club should support club participation in Winter field Day. Motion **passed**. It will be referred the Operating Activities Committee.
- Gary Motion **moved** and Jim Huntley **seconded** that we approve an expenditure up to \$150 for Winter Field Day. Motion **passed**.
- Jim Huntley volunteered to join the Operating Activities Committee.

E Old Business

- Discussion of lending library tabled until next meeting.
- Discussion of changing insurance providers to be tabled to a future meeting.

There being no further business, Gary adjourned the meeting at 12:45 pm HST.

Respectfully Submitted,

James R. Huntley, Secretary