

May meeting venue

BIARC will meet at 2 p.m.
Saturday, May 11, at the
Keaau Community Center.

Big Island Amateur Radio Club

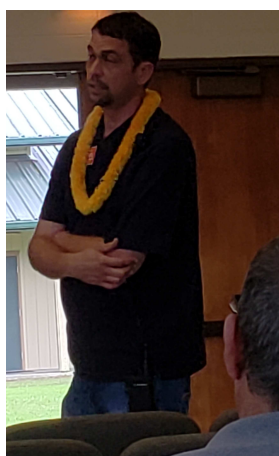
May 2019 Newsletter



April DMR talk: Blake Stene, KH7MS, of Ocean View, presented "DMR 101," an introduction to various modes, ins and outs, successes, updates and the learning experiences resulting from his involvement in this new facet of the ham radio hobby: Digital Mobile Radio.



DMR equipment.



Public safety comms systems talk in May

At the May BIARC meeting, Vice President William Polhemus, NH6ET, will offer an overview of local public safety communications systems, their use by agencies that rely upon them, and the known limitations affecting interoperability.

He will highlight difficulties observed during recent disaster responses, and host a discussion about "how the amateur radio community could help our agencies overcome these difficulties."

***Photos by Bob Schneider, AH6J,
& Linda Quarberg, WH6LQ***



Vice President William Polhemus, at left, interacts with guest speaker Blake Stene, at right, at the April 13 membership meeting.

BIARC meeting minutes April 13, 2019

The meeting was called to order by Vice President William Polhemus, NH6ET, at 1400 in the main nave of the Puna Covenant Church..

Announcements:

William: ARRL VEC Testing is taking place in Classroom #7.

Introduced Blake Stene, KH7MS, who will present the program on DMR.

Pascal is still looking for someone to coordinate the BIARC 2019 Field Day effort.

William Polhemus will deliver a future club program on Public Safety Communications.

Jim Kennedy, K6MIO, announced that he will be moving to Florida sometime in June. He has two towers that must be taken down and he would like some help. No tower climbing will be needed. He also has some older amateur equipment that he will not be taking with him and that he is willing to sell at a very good price. Jim distributed an information sheet and Leigh, WH6LC, said she would send it out to the Newsletter mailing list.

Treasurer's Report:

Tony Kitchen (WH6DVI) reported that a total of 12 to 13 new members have joined BIARC since January and that 33 old members have not yet renewed their memberships for 2019.

BIARC Board Meeting April 27, 2019

The meeting was called to order at 10:06 am at the Puna Covenant Church

The following BIARC Board members were present:

Pascal Nelson - President

William Polhemus - Vice President

Leslie Hittner - Secretary

Tony Kitchen - Treasurer

James Huntley

Mel Uchida

Others:

Paul Ducasse

Robert Schneider

There being a quorum present, Pascal moved on to

the meeting agenda.

Leslie presented the minutes of the previous board meeting, which were included with this meeting's agenda.

Mel moved and Tony seconded to approve minutes of last Board meeting (03/24/2018). Motion carried.

Tony presented the Treasurer's Report as of April 22, 2019. There was \$3010.06 in the bank. Tony also noted that revenue expectations from dues and donations have not yet met the 2019 budgeted amounts. He also stated that the

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Checks written: \$185 for Club Equipment Insurance.

The current club balance is: \$2880.06.

Tony noted an error in the March minutes that were corrected.

The current balance in the repeater Fund is \$275.25.

New Business:

Leslie Hittner (K0BAD) moved that BIARC conduct a vote at the May meeting in an effort to replace the current Bylaws with the combination Constitution and Bylaws as published via email with the April BIARC Newsletter. Paul Ducasse, WH7BR,

seconded the motion, which passed with 17 votes in favor and 1 vote opposed.

Accompanying discussion: Hittner noted that in accordance with the current Bylaws, the May vote will require a 2/3 "Yes" majority vote of the entire club membership in order to be approved. Current membership appears to be 64 as of this date, but an official up-to-date membership list will be used to distribute and count the votes at the May BIARC meeting. The current Bylaws also allows the board to define an email method for receiving and recording such votes.

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Meeting minutes: continued

Kulani Repeater Status:

In response to some concerns and in order to address some roomers that have been circulating, William, NH6ET, gave a brief status report of the Kulani Repeater status. Spectrum is rumored to be closing down their tower site on Kulani Cone. Apparently, they are no longer using it and the only people actually using the tower are other businesses, including BIARC, that rent space from or been granted access by Spectrum. Hawai'i Public Radio has apparently already moved off the tower. Other users, including BIARC, have not received any official notification of this abandonment from Spectrum.

While the land is owned by Kamehameha Schools, the tower itself is owned by Spectrum.

BIARC's access to the tower site has been terminated by Kamehameha Schools until the club meets Kamehameha Schools' insurance requirements (5 million overall instead of the 2 million overall that the club currently holds). Pacific Wireless Communications has agreed to grant BIARC temporary access under its state permit until the issue can be resolved.

A week prior to the meeting, William ensured that a needed repeater power reset at the Kulani site was accomplished.

At 1422 the meeting broke for pupus and reconvened at 1456 for the program presentation on the subject of DMR (Digital Mobile Radio).

Just prior to the presentation, Barbara Darling, NH7FY, asked for a vote on whether or not to continue the Friday lunches at Ponds. Bob Schneider moved that the club continue to sponsor Friday noon lunches at Ponds. The motion was seconded by Gus Treewater, K2GT, and passed by a voice vote.

Accompanying discussion: Attendance has dropped off and if the club elects to continue these lunches, more people

should be encouraged to attend.

Program: DMR, presented by Blake Stene, KH7MS.

Blake gave a brief description of DMR's RF characteristics – specifically as related to the two-channel TDMA (Time-Division Multiple Access) modulation scheme. He stressed the importance of determining which channel (called "slots") that a repeater operates on when programming a radio. The TDMA signal occupies 12.5 KHz bandwidth with 6.25 KHz allocated to each slot. Each slot can handle either voice or data (The RF modulation is actually 4FSK – four level frequency shift keying.).

The remainder of Blake's presentation focused on the Tier II Talk Group structure of the DMR system that has been imposed on users through the Brandmeister server network. Nearly all of these talk groups must be arbitrated by these servers with two exceptions; (1) simplex operations are possible, and (2) operations over TG9 (Talk Group 9) do not require access to the internet.

There are a number of parameters that must be known in order to properly program a DMR radio, Tier # (There are three) the talk group number (ID), the time slot to be used, and color codes (These serve the same purpose as a CTCSS tone on analog FM systems.) The programming of a DMR radio is complex enough that many manufacturers offer code plugs (a radio configuration file) that can be plugged into the radio for fast programming whenever needed.

Like other modes, DMR reflectors have been established on the internet that allow inter-mode communications and provide for flexible internet access via "hot spots"

References: <https://www.radioID.net> is where a new DMR user obtains a DMR ID, which is necessary to operate DMR. <http://kh7ms.com> is where Blake has much DMR information

The meeting was adjourned at 1543.

Respectfully Submitted,
Leslie D. Hittner, Secretary

Board meeting minutes

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IRS Form 990N has been filed and that the DCCA Report to the State of Hawaii would be filed in July.

William moved and Mel seconded that the Treasurer's Report be approved subject to audit. Motion carried.

Accompanying discussion: Tony expressed concern that he could not find adequate paper records to support equipment purchases and costs. Leslie and William both stated that they had boxes of BIARC paper records and that in any event these needed to be sorted through to determine whether they needed to be maintained and if so, whether a paper or electronic record would suffice.

10:10 Old Business

Two items of Old Business remained from the previous board meeting. Without objection, Pascal asked that the following two items of Old Business remain on the table and that no action be taken on them at this time. There was no objection.

Mission Statement HCCD MOU

10:30 New Business

Board resignation:

Tony moved and William seconded to accept the resignation of Hank Kaul from the BIARC Board. The motion carried.

Accompanying discussion: The Secretary was directed to craft a letter to Hank indicating the board's reluctance to accept his letter and expressing their hope that he will continue to be an active member of BIARC.

Annual Reports and responsibilities:

The board determined that the Annual ARRL Affiliation Report would be completed by the Secretary based upon membership rosters provided by the Treasurer.

The board determined that the IRS 990 EZ (990N) form and the State of

Hawai'i Non-Profit reports be filed by the Treasurer.

The board determined that there are no dues payment requirements to the Hawai'i Repeater Coordinator.

The following reports were received by the board:

Status of Kulani Cone repeater

A verbal report and discussion about the mechanical/electrical condition of the Kulani repeater was given by various members in attendance. The repeater is essentially in good operating condition with the exception of the antenna, which needs to be re-installed. The club has an essentially new commercial quality antenna and a newly fabricated tower mount. It was felt that actual replacement should wait until concerns about the site itself have been addressed.

A verbal report and discussion about repeater site access and possible changes in site access or location was given by various members in attendance. A fire in the HELCO service entrance to Spectrum's equipment building took place in 2017. Since that time, Spectrum and the property owner, Kamehameha Schools, have been in a dispute over costs related to that fire and to extinguishing it. As a result, Spectrum has threatened to abandon the site, since the company no longer uses that facility other than to lease the building and tower access to others including BIARC. It is understood that Hawai'i Public Radio (The largest renter) has moved off the tower and is now transmitting from the Insite tower formerly owned by Hawai'i Telecom. As of now, Spectrum has not notified any of the occupants of the building and tower of its decision.

Accompanying discussion: William said that his company (Pacific Wireless Communications) has granted BIARC access to the Kulani site because of the insurance concerns discussed at the April BIARC meeting. Several board members asked that this informal arrangement be

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Board meeting minutes

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codified in a written agreement as soon as possible. William will ensure that this happens.

A number of board members also asked if it would make sense to seek free access to the Insite tower facility. Insite is a company that buys towers and rents space on them. Nobody knew what their reaction would be to a request from an amateur radio organization.

There was some discussion about BIARC asking Spectrum to take ownership of the tower. Because of insurance and liability concerns, that discussion was very short.

The Secretary expressed his desire to see more formal written reports from committee chairs in the future.

Preparation for Constitution/Bylaws vote to be scheduled at the May BIARC meeting:

James moved and Mel seconded that the following formal announcement of the upcoming vote be published to the BIARC email listserve and be made a part of the BIARC May Newsletter:

"In accordance with the motion that was passed by a vote of 17 "PRO" and 1 "CON" at the April monthly BIARC meeting, the BIARC Board has scheduled a vote on a new Constitution and Bylaws which will be conducted at the Monthly BIARC meeting on Saturday, May 11 at 2:00 pm at the Kea'au Community Center.

William moved and Mel seconded that the Secretary be directed to set up and coordinate an email voting process for the May Constitution and Bylaws vote. Motion carried.

Those paid-up club members who are unable to attend are encouraged to send their vote by email to the following:

lhittner@hbc.com

Email votes must be sent on or before 10:00 HST on Saturday, May 11, 2019.

(NOTE: The proposed Bylaws were sent to the Newsletter email list and BIARC email listserve prior to the April 2019 BIARC monthly meeting. These documents have not been modified and they remain as sent.)

Determination of interim board members:

Without objection Pascal asked that the current board members be assigned to the interim board in the event that the vote for the new Constitution and Bylaws passes. The station custodian also would be recognized as an Ad Hoc member of the interim board. There was no objection.

Pascal asked that without objection and in accordance with the new Constitution and Bylaws, if approved, the interim board would serve until the next scheduled election under the new Constitution and Bylaws (November). It should be noted that the interim board will likely be called to meet regularly at least once per month until then, as it will have the task of getting BIARC off the ground under the new structure.

Interim board tasks may include but are not limited to:

- electing interim board officers or recognizing current club officers as the interim board officers;
- writing comprehensive standing committee descriptions and reporting requirements beyond those contained in the new founding documents - as needed or desired;
- assigning board and club members to standing committees,
- updating membership lists to acknowledge the new membership categories;
- arranging for the proper categorization, records-keeping, and maintenance of BIARC club equipment.

There was no objection.

11:30 Other Business:

Pascal announced that he and Debbie will be moving back to the mainland sometime in June. He is concerned about the Newsletter email address list

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The president's paragraphs

Hello BIARC,

The May 11 BIARC meeting is an important one. At this meeting the membership will vote on the updated Constitution and Bylaws which were presented to the club at the March meeting. We need your participation in this vote.



Late last year, after discussions with other Board members and the club, Les Hittner K0BAD was empowered to form a working committee on the Constitution and Bylaws. This committee did

great work on producing a draft of the proposed updates which were presented to the BIARC membership at the March meeting and published in the April newsletter. The issue was also discussed again at the April meeting.

At a Board meeting on April 27 the Board approved this proposal to be submitted to the BIARC membership for a vote at the May club meeting. There will be ballots at the meeting, as well as the possibility of voting by email before the meeting. Les Hittner will be publishing details on how to participate by email.

The Board was enthusiastic in its approval of the proposed changes. We believe that the changes will strengthen the club by better defining the roles of officers, clarifying the terms of elected officials, and requiring more regular Board meetings and participation. The proposed changes also separate to some degree the essentials of the Constitution (the organizational and legal stuff) and the Bylaws (the operational stuff). By doing so, it makes it much clearer and

and the BIARC website (biarc.net). Tony volunteered to temporarily take over the website and will talk with Pascal outside of the meeting. Several options about the Newsletter list were discussed. Leslie will continue that discussion with Pascal outside of the meeting.

William moved and Tony seconded that the board formally recognizes the contributions that Pascal has made to the club over the years, and offer our sincere thanks to him for his service. Motion carried by unanimous voice vote.

Tony moved and William seconded that the next BIARC Board meeting be scheduled 1 week after the May Constitutional vote: on May 18, 2019 at 10:00 am at the Puna Covenant Church. The motion carried.

Adjournment:

There being no further business, Pascal adjourned the meeting at 11:30 am.

Respectfully Submitted,
Leslie D. Hittner, Secretary

Tech License course schedule

Doug Wilson's free Technician License course schedule is underway. The six-week classes include five training sessions, with licensing exams given on the final week.

Upcoming starting dates are at 6:30 p.m. on May 23 in Waimea (location TBA), and on Oct. 17 at the Keaau Community Center.

The classes are free, with the normal \$15 testing fee to ARRL, whose volunteer VEs (volunteer examiners) conduct the testing for the Federal Communications Commission. As always, current licensees wanting to upgrade also may take tests for advanced licenses at that time. To register for the Tech training classes, or for more info, contact Doug, KH7DQ, at douscelle@aol.com.

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President's paragraphs
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easier for the club to adapt to changing circumstances and interests of its members. For example, the new bylaws make it much easier to set up new working committees, or to sunset committees, without the cumbersome requirement of modifying the constitution. Also, the proposed changes make much clearer the requirements for committee reporting and accountability.

All in all, I and the Board believe that these changes will invigorate and empower the club to adapt to the inevitable changes and challenges of our environment. Many ham radio clubs around the USA, as well as here in Hawaii, have had a hard time surviving the decades since their founding in the 50s, 60s, or 70s. Yet BIARC is still here, and looking towards the future. We believe that these updates to the Constitution and Bylaws will help us move into another half-century with confidence.

Please vote.

For the program of the May meeting I have these words from the presenter, William Polhemus NH6ET, our Vice President (who did a great job chairing the April meeting - thank you William):

"I will be presenting an overview of the various public safety communications systems in use on the island, and will touch on the technologies employed by them; namely the various P25 architectures. I will highlight the limitations of, and jeopardies to, these systems. I will discuss their use by the various agencies that rely upon them, and the known limitations affecting interoperability during a disaster response. I will highlight some difficulties that were observed during the recent disaster responses, and host a discussion about how the Amateur radio community could help our agencies overcome these difficulties."

Aloha,
Pascal AC7N

**NH7FY updates on BIARC
 Friday lunch
 and
 daily Micronesian contact
 project**

Aloha: At the BIARC meeting on Saturday, April 13, the subject of the BIARC Friday lunches was voted on. It was decided to continue the lunches.

We have been meeting at 11:30AM on Fridays at the Ponds Restaurant in Hilo. We sure would like to have more than the 4-5 hams attending each week. Please call Barbara at 936-3377 if you plan to attend so that the reservations can be made.

Also: My daily contact with Micronesia has had a change. The over-the-horizon radar has been complicating our transmissions so we have moved to 14.280 and currently at 7PM local Hawaiian time.

73,

Barbara NH7FY

**10-10 International
 Aloha Chapter**

Local hams active on 10-meters encourage amateur radio licensees at all levels to join in the fun.

[More info on the world of Ten-Ten is available on Facebook and at <https://www.ten-ten.org>]

Hawaii repeaters list, a work in progress, courtesy of Jim Tatar, WH6EMN

	A	B	C	D	E	F	G	H	I	J
1	2019		Island of Hawaii Repeaters				March, 2019			
2										
3			HAWAII ISLAND REPEATERS				FCC State co-ordinator is Rick Ching rickching1@gmail.com			
4							hawaiirepeaters.net is Rick Chings web site of REGISTERED repeaters			
5							Stations in RED have not been registered with Rick Ching in over 5 years. Please register and update (rickching1@gmail.com)			
6							Stations with no X in the hawaiirepeaters column are asked to contact Rick Ching and register your station rickching1@gmail.com			
7							hawaiirepeaters.net (and) Gary W6AMA are checked if they are confirmed by that website			
8							Please help update this list by mailing info to Jim Tatar at james.tatar@yahoo.com			
9							If you know of an inactive station listed here please let us know so we can update the files.			
10	General Geographic location									
11	This list is being updated so any information would be helpful. Jim Tatar									
12										
	Location	Mode	Call Sign	Output Mhz	Input	Tone / CTCSS	Notes	repeater	repeater	Gary W6AMA
13			HAMAKUA	HILO			EAST SIDE			
14	Waiakea	FM	AH6JA	145.3100'			Waiakea	X	X	
15	Pepeekeo	FM	NH7GF	145.1900'	-600 KHz	110.9 Hz	ALLSTAR	X	X	
16	Kaumana	FM	K2FFT	146.6400'	-600 KHz	100.0 Hz	Kaiwika 1,000ft Allstar 42906 HI & mainland	X		
17	Hakalau		NH7GB	146.6200'	-600KHz	110.9 Hz	Allstar	X	X	X
18	Waiakea	FM	KH6EJ	146.6800'	-600 KHz	100.0 Hz	BIARC portable	X	X	
19	Pepeekeo	FM	HJ6EJ	146.8800'	-600 KHz	100.0 Hz	600ft BIARC linked	X	X	X
20	Kaumana City	FM	KH6JUJ	146.9600'	-600 KHz	100.0 Hz	Allstar, OPEN (operational soon)RAGS	X	X	X
21	Hilo	FM	NH7GX	442.2000'	+5 MHz	110.9 Hz	ALLSTAR	X	X	
22	Hilo Kaumana	FM	KOBAD/R	442.7750'	+5MHz	100.0 Hz	Analog & C4FM, APRS & linked	X	X	X
23	Hilo	FM	NH6XO	443.2750'	+5 MHz	107.2 Hz		X	X	
24			NH6XPZ	443.8250'	+5MHz	103.5 Hz	P25 RACES	X	X	
25	Kaumana City	DMR	KH6KL	444.1250'	+5 MHz		DMR, OPEN	X	X	X
26	Hilo	FM	NH6OV	444.2750'	+5 MHz	88.5 Hz		X	X	
27	Pepeekeo	FM	KH6ICU	444.4000'	+5MHz	192.8Hz		X	X	
28	Hilo	FM	WH6FM	444.7250'	+5MHz	123.0 Hz	pBAD WIN SYS Allstar2598	X		X
29	Hilo	FM	WH6FM	444.7750'	+5MHz	127.3 Hz	Analog/DMR XO net	X	X	X
30	Hilo	FM	KH6FV	444.8500'	+5MHz	88.5 Hz	DMR	X	X	
31	Hilo	FM	WH6FM	444.9000'	+5MHz	123 Hz	WIN SYS	X	X	
32	Kaumana City	FM	KH6KL	444.9250'	+5MHz	100.0 Hz	Allstar 41592 OPEN	X	X	X
33			PUNA				EAST SIDE			
34	Keaau	FM	WH7FC	145.4500'	-600KHz	100.0 Hz	PERC	X	X	
35	Kurtistown		KB6EGA	146.6800'	-600KHz		PERC as of 10/12/18	X	X	X

	A	B	C	D	E	F	G	H	I	J
34	<u>Keaau</u>	FM	WH7FC	145.4500'	-600KHz	100.0 Hz	PERC	X	X	
35	<u>Kurtistown</u>		KB6EGA	146.6800'	-600KHz		PERC as of 10/12/18	X	X	X
36	<u>Kulani Cone</u>	FM	KH6EJ	146.7600'	-600KHz	100.0 Hz	linked, <u>Kulani 5,518ft</u>	X	X	X
37	<u>Pahoa</u>	FM	K1ENT	146.8400'	-600KHz	100.0 Hz		X	X	
38	<u>Kurtistown</u>	FM	KB6EGA	146.8600'	-600KHz		as of 10/12/18	X	X	X
39	<u>Pahoa-Kapoho</u>	FM	WH6DYN	147.1200'	+600KHz	100.0 Hz	<u>Puna Net</u>	X	X	X
40	<u>Volcano</u>	Dual	KH7DQ	147.2600'	+600KHz	103.5 Hz	C4FM Auto	X	X	X
41	<u>Kurtistown</u>	FM	AH6KZ	147.2800'	+600KHz	88.5Hz		X	X	
42	<u>NOAA- Kulani Cone</u>	WX	WWG76	162.5500'				X	X	X
43	<u>Puna</u>	FM	WH6ECW	442.1500'	+5MHz	100.0 Hz	(Solar Power)	X	X	X
44	<u>Kea'au HPP</u>	FM	KH6EJ	442.5000'	+5MHz		linked <u>BIARC</u>	X	X	
45	<u>Volcano</u>		WH6DYN	442.8750'	+5MHz	123.0 Hz	Analog/ <u>P24 XO (NAC BAD)</u>	X	X	X
46	<u>Kea'au</u>	FM	WH7FC	443.5000'	+5MHz	100.0 Hz	PERC	X	X	
47	<u>Mountain View</u>		WH6LU	443.7000'	+5MHz	100.0 Hz	PERC	X	X	
48	<u>Pahoa</u>	FM	K1ENT	444.0000'	+5MHz	100 Hz		X	X	
49	<u>Pahoa</u>	DUAL	K1ENT	444.0500'	+5MHz	100.0 Hz	KF7YNZ C4FM	X	X	
50	<u>Mountain View</u>		WH6EPS	444.3000'	+5MHz	100.0 Hz	Node 46623 limited range	X	X	
51	<u>Ainaloa</u>		KH7MS	444.9500'	+5MHz	100.0 Hz	<u>Allstar 47953</u>	X	X	
52		<u>KA'U</u>					<u>SOUTH SIDE</u>			
53	<u>Ka'u</u>	FM	WH6FC	145.2900'	-600KHz	100.0 Hz	<u>SPARC (Volunteer Fire Department)</u>	X	X	
54	<u>Discovery Harbor</u>	Dual	AH6DX	145.4900'	-600 KHz	100.0 KHz	<u>Allstar 45973 FM / C4FM Dual Mode 20W</u>	X	X	X
55	<u>Kau, Police</u>	FM	KH6EJ	146.9200'	-600KHz		<u>BIARC linked</u>	X	X	
56	<u>Naalehu</u>		AH6DX	147.3400'	+600KHz	123.0 Hz	<u>Naalehu HS Allstar 42573, H1DXC</u>	X	X	
57	<u>NOAA-South Point</u>	WX	WWG27	162.5500'				X	X	X
58	<u>Pahala</u>		KH7MS	443.4000'	+5MHz	77.0 Hz	<u>Allstar node 42537 DMR TS 2 TG; local 2 TS</u>	X	X	X
59	<u>Ocean View</u>		KH7MS	443.4000'	+5MHz		<u>DMR</u>	X	X	
60	<u>Discovery Harbor</u>	C4FM	KH6TA	444.2000'	+5MHz		<u>Wires X & IRMS linked 20W (5W EP)</u>	X	X	X
61	<u>Kau</u>	FM	KH6EJ	444.6000'	+5MHz	100.0 Hz	<u>BIARC linked</u>	X	X	
62	<u>Ocean View</u>	FM	KH7MS	444.9500'	+5MHz	100.0 Hz	<u>Analog/P25 ; NAC293</u>	X	X	X
63			<u>KONA</u>	<u>KOHALA</u>			<u>WEST SIDE</u>			
64	<u>Kona</u>	FM	WH6FC	146.6600'	-600 KHz	100.0 Hz	<u>ARES</u>	X	X	
65	<u>Kona</u>	FM	NH6M	146.7000'	-600KHz	110.9 Hz	<u>Allstar 28376</u>			X
66		FM	NH6M	146.7000'	-600KHz			X		
67	<u>Captain Cook</u>		WH6EUR	146.9600'	-600KHz	107.3 Hz	<u>Allstar</u>	X	X	X
68	<u>Kona</u>	FM	WH6DEW	147.1600'	+600KHz	100 Hz	<u>8,000ft BIARC linked Kars</u>	X	X	
69	<u>Waikoloa Village</u>	FM	NH6EE	147.2400'	+600KHz	100.0 Hz	<u>NH6EE per Eric Grabowski KH6CQ 9/18</u>	X		X
70	<u>Kailua Kona</u>		KH6BFD	224.2800'	222.6800'	103.5 Hz		X	X	
71	<u>Kona</u>	FM	NH6M	442.0250'	+5MHz	100.0 hz	<u>Allstar 28378 NH6M</u>	X	X	X
72	<u>Captain Cook</u>	FM	WH6WF	442.3250'	+5MHz	100.0 Hz	<u>Allstar 43168</u>	X	X	X
73	<u>Captain Cook</u>	FM	WH6TAT	442.3250'	+5MHz			X		
74	<u>Kona</u>		NH6AR	442.4000'	+5MHz	88.5 Hz	<u>DSTAR</u>	X	X	

G99



BIARC linked KH7HI KARS

	A	B	C	D	E	F	G	H	I	J
73	Captain Cook	FM	WH6TAT	442.3250'	+5MHz			X		
74	Kona		NH6AR	442.4000'	+5MHz	88.5 Hz	DSTAR	X	X	
75	Kona	FM	KH6FV	442.6250'	+5MHz	88.5 Hz	DMR	X	X	
76	Waikaloa/Humaua	FM	KH6BFD	442.6500'	+5MHz	103.5 Hz		X	X	
77	Captain Cook	FM	KH7MS	443.4000'	+5MHz	77 Hz	Solar power	X	X	X
78	Kona	FM	NH6M	443.4750'	+5MHz	100.0 Hz		X	X	
79	Kaloko Mauka	FM	KH6BFD	443.6500'	+5MHz	100.0 Hz	Allstar 42325	X	X	X
80	Kona		WH6DEW	444.2000'	+5MHz	100.0 Hz	DMR CC1TG 3115	X	X	
81	Keaahou	FM	KH6ICU	444.4000'	+5MHz	192.8 Hz	Allstar	X		X
82	Kaloko		KH6FV	444.5500'	+5MHz	88.5 Hz	DMR	X	X	
83	Waikaloa Village	FM	NH6EE	444.9750'	+5MHz		NH6EE per EJ; KH6CQ Alani Hui	X	X	X
84	Kona		KH6BDF	927.1375'	-25 MHz	dpl411	dpl411	X	X	
85			MAUNA KEA							
86	Mauna Kea	FM	AH6J	146.7200'	-600KHz	100.0 Hz	STATE VOAD emergency only	X	X	X
87	Mauna Kea	FM	WH6FM	147.2000'	+600KHz	100.0 Hz	ALLSTAR	X	X	
88	Mauna Kea		KF6FV	442.6250'	+5MHz	88.5	DMR	X	X	
89			MAUNA LOA							
90	Mauna Loa	FM	WH6FM	146.8200'	-600KHz	100.0 Hz	linked WIN 8200' p-BAD	X	X	X
91	Mauna Loa	FM	KH6HPZ	147.0400'	+600KHz	103.5	RACES State of HI CD 8200'	X	X	X
92		FM	KH6EJ	147.8800'	-600KHz			X		
93	Mauna Loa	DMR	AH6CP	444.7500'	+5MHz	103.5 Hz	DMR ALL	X	X	
94	WAIMEA		HAWI	KOHALA			NORTH SIDE			
95		APRS	KH6L	144.3900'			APRS, digipeater, packet, I gate 10/18			X
96	Kamuela	FM	NH6EE	147.2400'	+600 KHz	100 Hz	Alani Hui	X	X	
97	Waimea Hospital	FM		147.3200'	simplex	100 Hz		X	X	
98	Waimea Hospital	FM	NH7HI	147.3200'	+600KHz	100.0 Hz	KARS	X	X	X
99	Waimea	FM	KH7T	147.3800'	+600KHz	100.0 Hz	BIARC linked KH7HI KARS	X	X	
100	Kahua Ranch		AH6GR	442.2750'	+5MHz	136.5 Hz		X	X	X
101	Kamuela, Lalamilo	FM	NH6EE	444.6250'	+5MHz		per EJ KH6CQ Alani Hui Lalamilo	X	X	X
102	Kohala-Parker Ranch	FM	KH6EJ	444.4500'	+5MHz	88.5 Hz	BIARC linked Parker Ranch	X	X	X
103			Maui Island repeaters				MAUI NORTH SIDE			
104	Haleakala	FM	KH6COM	146.9400'	-	110.9 Hz	Maui CD linked	X	X	X
105	Haleakala	FM	KH6H	147.0200'	+	103.5 Hz	State of Hawaii CD	X	X	
106	Haleakala	FM	AH6GR	442.1000'	+	136.5 Hz	Maui CD, linked MCD	X	X	X
107	Haleakala			443.9250'	+	123.0 Hz	Analog P25 XQ net	X	X	X
108	Haleakala	FM	AH6GR	444.2250'	+	110.9 Hz	Maui County CD linked	X	X	X
109			statewide Multiple access point frequencies							
110		APRS	KH6L	144.3900'			APRS Digipeater, packet, Igate	X	X	X
111										
112	Operators are requested to register with Rick Ching to confirm repeater operation.									
113										

III

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Sheet1

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English (USA)

G99 BIARC linked KH7HI KARS

	A	B	C	D	E	F	G	H	I	J	K
112	Operators are requested to register with Rick Ching to confirm repeater operation.										
113											
114											
115											
116	The following repeaters may or may not be in operation and need to be registered and confirmed with the FCC co-ordinator										
117	UNCONFIRMED REPEATERS										
118	Location	Mode	Call Sign	Output Mhz	Input	Tone	NOTES				
119						CTCSS	All below need review and confirmation				
120			HAMAKUA HILO				EAST SIDE				
121	Hilo	FM	WH6XM	51.8000'	-500KHz						
122		FM	WH6XM	52.5000'	51.50000'						
123	Hilo Shop Cen	FM	KH6QAI	145.3500'	-600KHz		115ft				
124		FM	AH6GG	146.6600'	-600KHz	141.3 Hz					
125		FM	KH6IAA	146.7000'	-600KHz						
126	Waiakea H S	FM	AH6JA	147.1400'	+600KHz						
127		FM	AH6JA	444.1500'	+5MHz						
128		FM		444.3400'	+5MHz		Kaiwiki 1000ft				
129		FM	AH6JA	444.7500'	+5MHz		Hilo, 100ft				
130		FM	KH6FV	445.5500'		114.8 Hz					
131			PUNA				EAST SIDE				
132	Glenwood	FM	AH6GG	52.2000'	+500KHz	141.3 Hz					
133	Volcano	FM	WH7BR	144.4400'		100.0 Hz					
134	HPP	FM	WH6BY	146.4450'		100.0 Hz					
135	Kalapana	FM	KH7ZN	146.5800'		110.9 Hz					
136		FM	WH6BU	146.6400'	+600KHz						
137	Kea'au	FM	KH6EJ	146.6800'	-600KHz		Portable BIARC (Limited range)				
138	Kilauea			146.7000'	-600KHz	100.0 Hz					
139	Pahoa		K1ENT	146.8400'	+600KHz	100.0 Hz		X			
140		FM	AH6GG	147.0000'	+600KHz	141.3 Hz					
141	Pahoa	FM	NH6P	147.1400'	+600KHz						
142		FM	AH6GG	442.0250'	+5MHz	156.7 Hz					
143		FM	NH6P	442.2500'	+5MHz	114.8 Hz					
144				442.3500'		100 Hz	Alistar 42907				
145		FM	NH6HT	442.5750'	+5MHz						
146	Mountain View	FM	KH6QAJ	444.3500'	+5MHz						
147			KA'U				SOUTH SIDE				
148		FM	WH6FC	443.6500'	+5MHz						
149	Discovery Harbor	FM	KH6VFD	145.4100'	-600KHz		FVARC	X			
150	Naalehu		KH6VFD	145.3500'	-600KHz	100.0 Hz		X			
151	Ocean View	FM	WH6FC	146.6600'	-600KHz	100.0 Hz					
152	Ocean View		NH6P	146.8600'	-600KHz	100.0 Hz	(RIP 7475 KHTY 1-7475	X			
153							146.8600' under review at this location				
154			KONA KOHALA				WEST SIDE				
155	Kealahou	FM	KH6ANA	144.5100'	+600KHz						

Sheet1



Aloha, from Pacific SM

Bob Stoffer (AH6GT – Kona Bob) has been contributing to Hawaii HF activity for years. Many know of his logging website, <http://40Meter.net>.

His net logging system has grown in popularity to the point where just about every HF NCS is a confirmed user. It allows creating an online log shared with check-in stations and others who might just want to monitor looking for a friend. He keeps a monthly cumulative log that came to our attention as we plan to roll out the new ARRL ARES Connect program in Hawaii.

Recently ARES has been more focused on VHF/UHF and repeater activity.

The 40Meter.net web site reminds us of the importance of HF for EmComm in Hawaii. HF operations deserve the attention brought to it by the 40Meter.net website.

Even with poor propagation the last few months, the HF nets have remained active. Most Hawaii nets start on 40 meters but quickly QSY to 60, 80 and some days to 160 Meters. Many stations are upgrading transceivers to operate on 60 meters and finding antenna solutions for the lower bands. Recognition of their efforts is important to a growing Hawaii HF EmComm capability.

The web site has accurate propagation information for interisland NVIS communication based on a US Air Force Space Weather station at Lualualei on Oahu that is updated every 15

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The nearly century-old electromechanical Alexanderson Alternator at SAQ transmits on CW at 17.2 kHz on special occasions, such as Christmas Eve.

Got any plans yet for Christmas Eve?

Hundreds report hearing the "old lady," aka SAQ Alexanderson Alternator, on Christmas Eve.

Alexanderson Alternator transmissions from SAQ in Sweden on Christmas Eve drew more than 340 listener reports from 28 countries, including seven reports from the US.

"Many visitors had come to the transmission hall to enjoy coffee, cake, and Swedish ginger snaps as they were watching the activities with starting and running the old radio transmitter SAQ," the report from Sweden said.

"The 'old lady' was in a very good mood, and we had a flawless startup and transmission. The conditions were very good with the dry and cold weather, and the signal was strong."

The nearly century-old electromechanical Alexanderson Alternator at SAQ transmits on CW at 17.2 kHz on special occasions. Amateur Radio station SK6SAQ was also active on Christmas Eve from the SAQ site in Grimeton, Sweden.

minutes. Learning use of this leading-edge technology can assist operation. Interested? Check in to one of the HF nets and you will get help using it.

With Bob's help we can now capture the HF net statistics. In March, 58 nets had 601 check-ins with an estimated 384 person hours activity - testing equipment, learning about propagation, experimenting with antennas and practicing communication skills. All things the VHF/UHF nets do.

Bob's web site is also keeping stats on frequent contributors. So far for April the activity leaders with 10 or more check-ins are: 21 - KK6GM Gary; 16 - AH6GT KonaBob; 14 - NH6M Dewey; 14 - KH6FHI Joe; 11 - AH6SN Peter; 10 - KH6PXM Rob.

Bob has agreed to help us plan a wider adoption of EmComm activities under the new ARES Connect program. His solution is simple and can reduce the work involved in reporting and allow participants to concentrate on communications. The Brandmeister DMR net run by Blake (KH7MS) is one of the UHF based nets experimenting with it.

**ARRL Pacific Section
Section Manager: Joseph
Speroni, AH0A
ah0a@arrl.org**

**At right: A 2013 coronal mass
ejection. [Photo courtesy of
NOAA]**

Solar Cycle 25 predicted to be similar to Cycle 24

Scientists predicting the sun's activity for Solar Cycle 25 say it's likely to be much like that of current Cycle 24, which is declining and predicted to bottom out in 2019 or 2020.

Solar Cycle 25 Prediction Panel experts said Solar Cycle 25 may get off to a slow start, but is anticipated

Florida ARES, State of Florida considering memorandum of understanding

Amateur Radio Emergency Services (ARES®) Section Emergency Coordinators (SEC) from the ARRL Northern, West Central, and Southern Florida sections met recently with state Emergency Management Communication leaders to discuss improved integration of Amateur Radio during emergencies. A draft Memorandum of Understanding (MOU) between ARES and the State of Florida was presented for further consideration.

If agreed upon, the MOU would make ARES and Amateur Radio a valid resource that can be easily requested during an incident.

"For the first time ARES will be integrated into the state communication team," said West Central Florida Section Emergency Coordinator (SEC) Ben Henley, KI4IGX.



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to peak between 2023 and 2026 with a sunspot range of 95 to 130. This is well below the typical average of 140 to 220 sunspots per solar cycle. The panel expressed high confidence that the coming cycle should break the trend of weakening solar activity seen over the past four cycles.

The Solar Cycle Prediction Panel forecasts the number of sunspots expected for solar maximum, along with the timing of the peak and minimum solar activity levels for the cycle. The outlook was presented on April 5 at the 2019 NOAA Space Weather Workshop in Boulder, Colorado.

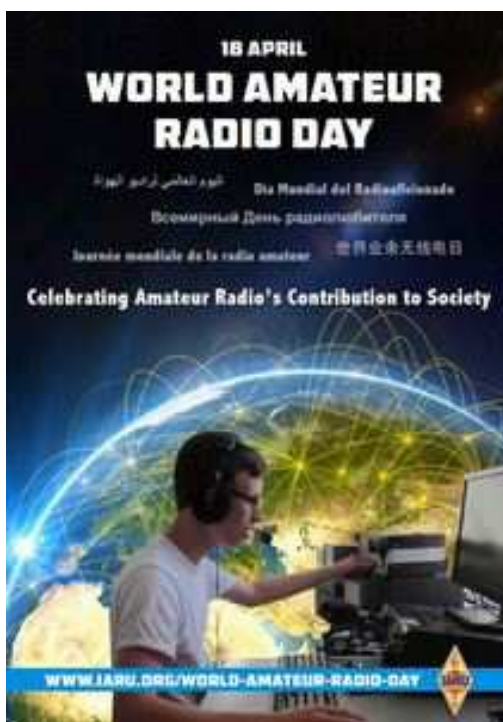
"We expect Solar Cycle 25 will be very similar to cycle 24: Another fairly weak cycle, preceded by a long, deep minimum," said panel co-chair Lisa Upton, a solar physicist with Space Systems Research Corp. "The expectation that Cycle 25 will be comparable in size to Cycle 24 means that the steady decline in solar cycle amplitude, seen from cycles 21 - 24, has come to an end and that there is no indication that we are currently approaching a Maunder-type minimum in solar activity."

World Amateur Radio Day 2019 marks International Amateur Radio Union founding

On April 18, World Amateur Radio Day (WARD) focused on the 94th anniversary of the International Amateur Radio Union (IARU), which was founded in Paris in 1925. Each year, WARD celebrates Amateur Radio's contribution to society.

"I am pleased to extend my greetings for World Amateur Radio Day," said IARU President Tim Ellam, VE6SH. "Each April 18 is the day for all of Amateur Radio to celebrate and tell the world about the science we can help to teach, the community service we can provide, and the fun we have."

Amateur Radio experimenters were the first to discover that the shortwave spectrum was not the wasteland experts of the time considered it to be, but a resource that could support worldwide propagation. In the rush to use these shorter wavelengths,



Amateur Radio was "in grave danger of being pushed aside," the IARU's history notes. Amateur Radio pioneers met in Paris in 1925 and created the IARU to support Amateur Radio around the globe.

Two years later, at the International Radiotelegraph Conference, Amateur Radio gained allocations still recognized today -- 160, 80, 40, 20, and 10 meters. More bands have followed, and the IARU has been working to defend and expand Amateur Radio frequency allocations ever since.

From the 25 countries that formed the IARU in 1925, the IARU has grown to include 160 member-societies in three regions. IARU Region 1 includes Europe, Africa, the Middle East, and northern Asia. Region 2 covers the Americas, and Region 3 is comprised of Australia, New Zealand, the Pacific island nations, and most of Asia.