



President's message

Tsunami Awareness Day

On Saturday, April 19, the Tsunami Awareness Day event was held — at a level of participation not yet seen to date.

Under the coordination of the Pacific Tsunami Museum and the Hawaii County Civil Defense Agency, this year's event introduced the general public to the array of emergency response partners and the functions they would play in a tsunami incident.

Staged in the area immediately around the King Kamehameha statue in downtown Hilo, this event focused on building the public's awareness — not so much of the hazard and the risks, but rather to highlight the organizations, assets, roles and responsibilities of emergency responders and the supporting organizations who will step in to help the community in the event of a tsunami.

The first point to address when it comes to a tsunami — or for most any other hazard — is who is in charge of emergency response?

An emergency response is primarily the responsibility of the local jurisdiction; there are certain exceptions to that rule, but for a tsunami and other natural disasters, the local jurisdiction will be in charge.

The local jurisdiction will designate a "Lead Agency." This lead agency will be accountable for assuring that a proper emergency response plan is executed.

For a tsunami, the lead agency for coordinating response efforts to include singularity of message will be the County's Civil Defense Agency.

Coordinating assets is especially critical in Hawaii, as local resources are highly limited and wise use of these resources plays an important role throughout response and into recovery.

The other side of that response coin is singularity of message.

The message and information provided to the public has to be concise and clear.

The public's response and involvement to these messages may require action on their part; such as to evacuate from low-lying areas, or it may just require the public to stay away from and out of the ocean until the "all clear" has been given.



HANSON



Partnering with Civil Defense will be Fire, Police, Public Works and State Highways as emergency response agencies and departments.

There are other state and federal partners, as well, that may play a part in a response. These partners are known as "Professional Emergency Responders." Professional responders have a legal obligation to provide response services in time of need.

There is a second category of organizations that participate in the overall response. This other group of participants are known as "Support Organizations." Such support organizations are asked to provide services by a professional response agency, such as Civil Defense. Support organizations take their marching orders from the agency that activates them. Support organizations play a critical support role in a response.

American Red Cross (ARC), Community Emergency Response Teams (CERT), Neighborhood Watch (NHW), and even amateur radio services such as ARES, RACES and the soon-to-come Hawaii County Auxiliary Communications Service (HC-ACS) are emergency response support organizations that work for, and in support of, responding agencies.

In recent years, amateur radio assets have grown in particular interest to local jurisdictions. Kauai, Maui, and Hawaii County have

stepped up and continue to move forward with integrating and involving amateur radio into their emergency response exercises and in developing their list of assets under their respective Emergency Operations Plans (EOP).

Yes, it has taken a lot of effort by amateur radio operators and organizations such as ARRL, ARES, RACES, CERT and the various Civil Defense offices throughout the state to move amateur radio forward as a partner to the point that amateur radio is being looked at for auxiliary communications services, use in major exercises, throughout the State of Hawaii for emergency communications (Em-Comms), in future revisions of the Continuity of Operations Plan (COOP), All Hazards Mitigation Plan, and the Emergency Operations Plan (EOP), and in continuing to build "Community Resiliency" — which is the ultimate goal.

The Tsunami Awareness Day event featured four exhibitions that featured amateur radio in their message or as the focal point. Amateur radio is definitely making a good name for itself with local government as amateur radio operators better align their skills, talents and time in emergency response.

Aloha,
Bill Hanson/N0CAN
President



ON DUTY

On previous page: Paul Agamata, WH6FM; Milt Nodacker, AH6I, and Paul Ducasse, WH7BR, assist with communications demos at Tsunami Awareness Day.

At left: Paul Ducasse, WH7BR, shows his mobile communications capability at the big event in Hilo.

Below: Kim, WH6KIM, and Sean, KH6SF, Fendt represent ARES at the April 19 Tsunami Awareness Day.

*Photos by
Bill Hanson, N0CAN*



Big Island Amateur Radio Club

P.O. Box 1938, Hilo, HI 96721

www.biarc.net

Officers for Calendar Year 2014

President: Bill Hanson, N0CAN, 989-4700

Vice President: Milt Nodacker,
AH6I, 965-6471

Secretary: Leigh Critchlow, WH6DZX, 930-7330

Treasurer: George Bezilla, WH6EFN, 961-6323

Directors — 2014-2015

Toni Robert, N0INK, 937-2183

Directors — 2013-2014

Mary Brewer, WH6DYW, 985-9595

John Buck, KH7T, 885-9718

John Bush, KH6DLK/V63JB, 935-5500

(Club License Trustee:

Paul Ducasse, WH7BR, 985-9222)

Standing Committees (as of December)

Service/Awards: vacant

Education & Testing: Milt Nodacker, AH6I

Emergency: Paul Ducasse, WH7BR

Equipment: Milt Nodacker, AH6I

Health & Welfare: Barbara Darling, NH7FY

Membership: vacant

Hospitality: Jean Nodacker, WH7WT

Newsletter: Leigh Critchlow, WH6DZX

Repeater: Bob Schneider, AH6J

Webmaster: Curt Knight, AH6RE

Special Committees

Hamfest Chair: Bob Schneider, AH6J

co-Chair: Doug Wilson, KH7DQ

QSL Bureau Chair: Barbara Darling, NH7FY

Meetings and Get-Togethers

Membership meetings: Second Saturday of each month at 2 p.m. at the Keaau Community Center

Friday Lunches: A group meets for lunch every Friday at 11:30 a.m. at Kow's Chinese Restaurant in Hilo at 87 W. Kawailani St., just above Kinoole Street behind the Shell station.

East Hawaii Net

The East Hawai'i Net meets on Monday, Wednesday and Friday mornings at 8AM HST on the 146.76 MHz repeater.

ARES Emergency Net

Meets Saturday evening at 1900 HST on the 146.76 repeater. Backup is 146.76 simplex.

All are welcome to check in.

(For info on HF nets, see NH7PE's column, Page 7)



Repeaters

* Linked to other repeaters covering the Big Island and Maui.

** Linked to the WIN system, which includes 71 repeaters in the US, Australia, Canada and Japan.

*** Linked to the XO network, Hawai'i statewide. Contact WH6FM for info.

Frequency:	Trustee:	Location:	Tone:
*145.29-	WH6FC	HOVE - Ka'u	100 Hz
146.66-	(TBS)	Ocean View	100 Hz
146.68-	KH6EJ	Kea'au (limited range)	none
*146.76-	KH6EJ	Kulani	none
*146.82-	KH6EJ	Mauna Loa ARES	none
146.88-	KH6EJ	Pepeekeo, linked for emergency only	none
*146.92-	KH6EJ	Ka'u Police Dept	none
*146.94-	KH6RS	Haleakala Maui Civil Defense	110.9 Hz
147.02+	KH6HPZ	Haleakala Maui RACES	103.5
147.04+	KH6HPZ	Mauna Loa RACES	none
*147.16+	WH6DEW	Hualalai Kona	100.0 Hz
*147.32+	NH7HI	North Hawai'i Comm. Hospital Hilo	100 Hz
*147.38+	KH7T	Waimea East (experimental)	none
*442.35+	KH6RS	Kaanapali Maui	136.5 Hz
*442.50+	KH6EJ	Kea'au	none
443.40+	KH7MS	Kona	100.0 Hz
443.40+	KH7MS	Ocean View	77.0 Hz
443.65+	(TBS)	Ocean View hub and standalone repeater	none
*444.225+	KH6RS	Haleakala Maui Civil Defense	110.9 Hz
*444.45+	KH6EJ	Parker Ranch GS Camp	88.5 Hz
***444.90+	WH6FM	Hilo - linked to WIN system	100 Hz
***444.775+	WH6FM	Hilo - linked to XO network	123 Hz

Proposed revisions to the BIARC Bylaws

Greetings, BIARC members:

At a board meeting on Saturday, April 19, the following draft of proposed bylaws revisions was approved, following many hours of hard work by the BIARC Bylaws Review Committee. President Bill Hanson asks members to review the document, and be prepared to vote on it at our next general membership meeting at 2 p.m. Saturday, May 10, at the Keaau Community Center.

And, in addition to the vote on the bylaws, there will be a vote relating to special membership categories: Family, Student and special mid-year dues for new members.

Aloha and 73, on behalf of the BIARC Board,
Leigh Critchlow,
secretary

(WORKING DRAFT) REVISED BYLAWS OF BIG ISLAND AMATEUR RADIO CLUB (A Hawaii Non-Profit Corporation)

The following Bylaws of Big Island Amateur Radio Club (BIARC), a non-profit corporation, have been revised on _____, 2014 to read as follows:

ARTICLE I

MEMBERSHIP VOTE AND DUES

SECTION 1. A member is considered to be in good standing when the current year's dues are fully paid. The membership year and fiscal year shall be January 1 through December 31 each year. There shall be the following membership classifications:

- (a) Full membership will be available to any person holding a valid amateur radio license.
- (b) Associate membership will be available to any unlicensed person interested in Amateur Radio.

SECTION 2. Full members have the right to vote and to hold office. Each member shall have one (1) vote. Associate members enjoy all privileges except the right to make or second motions, to vote or to hold office.

SECTION 3. A member may be expelled for cause upon two-thirds (2/3) majority vote of those members in attendance at any regular meeting of the membership, provided written notice of such meeting specified that such action is to be considered, and provided that an opportunity for a fair and impartial hearing before a special committee of the membership has been afforded.

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Members dig into the lovely Easter dessert buffet prepared by Hospitality Chair Jean Nodacker, WH7WT. From front to back: Doug Pase, Rick Bowen, David Ratzlaff and Arlen DeLima.

*Photos by
Bill Hanson, N0CAN*

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SECTION 4. The annual dues for the following membership year shall be set by the membership at the Annual General Meeting in November, or at a special meeting held for this purpose, which may include special rates for designated member groups.

SECTION 5. In order for a member to propose business, make or second motions, or vote on any BIARC business that may be before the membership, dues must be current prior to the beginning of the meeting at which the business will be conducted.

ARTICLE II GOVERNANCE

BOARD OF DIRECTORS

SECTION 1. The Board of Directors shall consist of at least seven members, to include the four Officers and at least three Directors. The previous year's President may choose not to serve as a director following his or her term as President. The Officers and Directors shall be elected for two-year terms, and shall be limited to two consecutive terms. The terms of approximately one-half of the directors shall expire annually.

OFFICERS

SECTION 2. The officers of this corporation shall be a President, a Vice President, a Secretary, and a Treasurer. The officers shall be elected by the membership in attendance at the General Membership Meeting in November for terms of one (1) year and shall serve until their successors are installed. No officer shall hold the same office for more than two (2) consecutive terms. All records shall pass to the incoming officers.

SECTION 3. The President shall:

- (a) Call and preside at all meetings of the Board of Directors and shall preside at all meeting of the membership.
- (b) Appoint the chairs of all standing and special committees. Members of committees shall be appointed by the committee chair. Committee chairs and members serve at the pleasure of the President and may be removed by the President with the concurrence of the Board of Directors.
- (c) Serve as member ex-officio of all committees except the Nominating Committee.
- (d) Present an annual report consisting of financial and committee status at the General Membership Meeting in November and to be published in the BIARC newsletter thereafter.

(e) Have the authority to act in the treasurer's place or appoint a temporary treasurer, in the case of absence of the treasurer.

(f) Sign all official documents adopted by BIARC.

(g) Perform such other duties as are incidental to this office that may be required by law or as may be specified in these By-Laws.

SECTION 4. The Vice President shall:

(a) In the absence or disability of the President, perform all duties of the President.

(b) Perform such other duties as are incidental to this office that may be required by Law, as may be specified in these By-Laws, or as may be directed by the President.

SECTION 5. The Secretary shall:

(a) Give notice of all meetings of the General Membership and the Board of Directors.

(b) Maintain the minutes of the Board and General Membership Meetings.

(c) Conduct the correspondence of BIARC in accordance with the direction of the President and/or the Board of Directors.

(d) Be responsible for maintaining membership records.

SECTION 6. The Treasurer shall:

(a) Be charged with the safekeeping of all moneys received and funds of BIARC, and for the records of its financial affairs, make disbursements in accordance with the approved budget and instructions of the Board of Directors. Checks will require the signatures of two (2) officers of the corporation. Any expenditure not included in the annual budget must be approved by the general membership.

(b) Prepare an annual budget, which shall be presented to the general membership for approval.

(c) Compile and present monthly financial reports to the Board of Directors and general membership.

(d) Prepare an annual financial report, which shall be presented to the Audit Committee, Board of Directors and general membership at the February meeting.

(e) At the end of the term of office shall provide for an annual review of all corporate financial accounts.

(f) Perform other such duties as are incidental to this office that may be required by law or as may be specified in these By-Laws.

DIRECTORS

SECTION 7.

(a) Directors shall be elected by the membership in attendance at the General

Membership Meeting in November for a two-year term. The term of the Director will be described with the years of service (for example, Director 2014-2015). A director may not serve more than two (2) consecutive two (2) year terms. The terms of approximately one-half of the directors shall expire annually.

(b) Directors shall serve until the later of the expiration of their term, election of their successor or removal from office.

SECTION 8. Powers of the Board of Directors. The Board of Directors shall have full power and authority over the affairs of the corporation as specified below:

(a) To make and change policies, rules and regulations not in conflict with the law or the Articles of Incorporation or with these By-Laws for the management of the corporation's business or affairs.

(b) To delegate any of the powers of the Board of Directors in the course of current business of the corporation to any standing or special committees or agent of the corporation, with such powers (including the power to sub-delegate) and upon such terms as it sees fit.

SECTION 9. It shall be the duty of the Board of Directors:

(a) To attend all regular and special meetings of the Board of Directors. Repeated or habitual failure to attend any regular meetings of the Board of Directors or of the General Membership in any given year without prior notice to and approval by the Board of Directors shall be grounds for removal for cause.

(b) To develop and prepare a balanced budget for the fiscal year and present it for review and approval by the general membership.

(c) To keep a correct record of the proceedings of all their meetings.

(d) To assure that the records and reports required by law are made.

(e) To return all property and records of the corporation promptly upon the expiration of term or removal from office.

SECTION 10. Removal of Officers or Directors:

(a) Officers and Directors can be removed from office for by a vote of two-thirds of the members present at a meeting of the membership. Prior notice must be given to the membership that the removal of an Officer or Director will be business of the meeting.

SECTION 11. (a) Should vacancies occur

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in the Board of Directors, except for the office of President, through death, resignation, removal or other cause, the President shall announce at the next general membership meeting, after a vacancy opens, that nominations will be accepted. The general membership shall elect a person to fill the vacancy for the unexpired term. (b) If a vacancy should occur in the office of President, the Vice President automatically becomes President for the unexpired term.

ARTICLE III

ANNUAL ELECTIONS

SECTION 1. Nominating Committee

(a) There shall be a Nominating Committee established annually as a Special Committee. The president shall appoint a chair at the September meeting. It shall be the duty of the Nominating Committee to prepare a slate of officers and directors for the succeeding year. The nominees for each office shall be members in good standing. The slate may include more than one nominee per anticipated vacancy and shall be presented at the October meeting of the membership. (b) Nominations may be made from the floor at the October and November meetings provided consent of the nominees has been obtained.

SECTION 2. The newly elected Board of Directors shall assume their responsibilities at the beginning of the fiscal/calendar year following the oath of office. The oath of office shall state that the office holder will promise to uphold the By-Laws and policies of BIARC.

ARTICLE IV

COMMITTEES

SECTION 1. The Board of Directors shall establish such committees as it determines will further and assist the conduct of the business of BIARC.

SECTION 2.

(a) Standing committees are those appointed to be responsible for continuing and ongoing interests and operations of BIARC for an unspecified duration. The following standing committees shall be established by the Board of Directors:

1. Audit Committee. This committee shall consist of at least three (3) members who are not directors or officers and be responsible for reviewing the financial statements.

2. Asset and Inventory Committee. This committee shall be responsible for maintain a current list of assets. This list shall be made available to members upon request.

(b) Special committees may be appointed when deemed necessary for a short-term or exceptional function. When special committees are established, the conditions of their termination shall be stated in their establishment.

(c) Appointment of chairs and members to committees and their removal shall be as provided in Article II, SECTION 3 of these By-Laws.

(d) Chairs of committees shall report to the Board of Directors and to the membership as directed by the President.

ARTICLE V

MEETINGS

SECTION 1. The Annual General Membership Meeting of the corporation shall be held in November.

SECTION 2. Regular meetings of the general membership shall be scheduled monthly unless cancelled by the Board of Directors.

SECTION 3 Special meetings of the membership may be called by the President. A Special meeting must be called by the President at the written request of ten (10) currently paid up full members of BIARC. Notice of all regular and special meetings shall be given through the newsletter, or by email broadcast to members.

SECTION 4. Regular meetings of the Board of Directors shall be held at least quarterly at the time and place determined by the Directors.

SECTION 5. Special meetings of the Board of Directors shall be held from time to time at the discretion of the Board.

SECTION 6. A majority of the Board of Directors shall constitute a quorum for the transaction of business at all meetings of the Board. The first order of business at any meeting of the Board of Directors shall be to determine if a quorum is present. Absent a quorum no business shall be transacted.

SECTION 7. A quorum for any regular General Membership meeting shall be twenty-five (25) percent of the total voting members. At special meetings of the membership at least twenty-five (25) percent of the total voting members shall constitute a quorum. The first order of business at any meeting of the general membership shall be to determine if a quorum is present. Absent a

quorum no business shall be transacted. **SECTION 8.** In the absence of both the President and the Vice President from any meeting of the Board of Directors, a Chair for that meeting shall be appointed by the President, if the absences are anticipated in advance. If the absences are not anticipated, the President pro tem for that meeting shall be elected by the Directors present.

SECTION 9. In the absence of both the President and the Vice President from any meeting of the membership, a Chair for that meeting shall be appointed by the President, if the absences are anticipated in advance. If the absences are not anticipated, the Chair will be selected by and from Officers and Directors present at the meeting. If no Officers or Directors are present no business meeting will be conducted.

SECTION 10. Robert's Rules of Order (current Newly Revised) shall be the parliamentary authority for all matters of procedure not specifically covered by these By-Laws.

ARTICLE VII

AMENDMENTS

SECTION 1. Amendment of these By-Laws shall be considered at a General Membership meeting called for that purpose, and shall require the affirmative vote of at least two-thirds (2/3) of the voting membership. Copies of the proposed amendments shall be made available for review and notice shall be given that amendment of By-Laws will be taken up at said meeting. At the option of the Board of Directors, the votes may be cast in person at said meeting and/or by email in a manner prescribed by the Board of Directors. **SECTION 2.** These By-Laws shall be subject to Chapter 414D, Hawaii Revised Statutes, as amended, and in case of any conflict, State law shall prevail. **SECTION 3.** All amendments shall be effective upon approval by the membership or as provided in the amendment.

Revised BIARC Bylaws
adopted: _____, 2014

President

Secretary



Photos by Linda Quarberg, WH6LQ

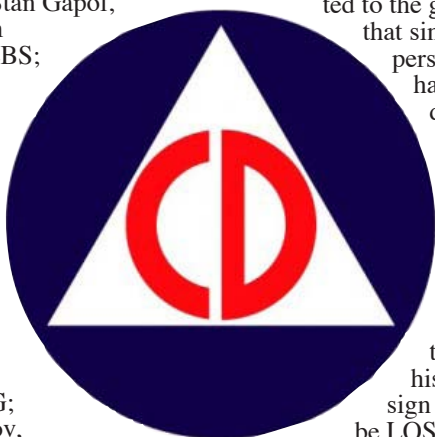
Hawaii County Civil Defense Agency Administrator Darryl Oliveira tells BIARC members he's depending upon amateur radio operators in times of crisis.



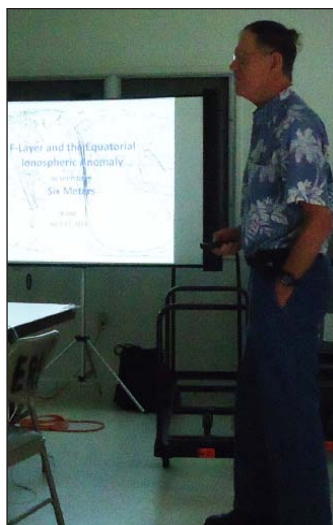
Minutes

Big Island Amateur Radio Club general membership meeting April 12, 2014 Keaau Community Center

The meeting was convened at 2 p.m. by President Bill Hanson, N0CAN, with 29 members and guests in attendance. Also present: Vice President Milt Nodacker, AH6I; Treasurer George Bezilla, WH6EFN; Secretary Leigh Critchlow, WH6DZX; Director Mary Brewer, WH6DYW; Jim Kennedy, K6MIO; Doug Pase, AH6UD; Paul Ducasse, WH7BR; Arlen DeLima, WH6EJZ; Barbara Darling, NH7FY; Richard Darling, AH7G; Dave Broyles, KH7SO; Stan Gapol, WH6ASV; Tom English, WH6EBS; Ceri Sanders, WH6ECS; Rick Bowen, WH6ECR; Doug Wilson, KH7DQ; Linda Quarberg, WH6LQ; Mike Hughes, Mark Morabito, Nick Rivera; Satoshi Yabuki, AH6TG; Joseph Meszarov, Harriet Owens; David Ratzlaff, WH6EHG; Nancy Knight, WH6EHD; Ray Dustin, N5NNK; Paul Agamata, WH6FM; Jean Nodacker, WH7WY, and Robert Oliver, NH6AH.



Bill welcomed our special guest, his boss, Hawaii County Civil Defense Administrator Darryl Oliveira, who admitted to the group that since he, personally, hasn't yet delved into the inner workings of the amateur radio avocation, his call sign would be LOST. His appreciation of, and respect for, ham radio as a technology and as a community, however, is unbounded. "The amateur radio community is a huge resource," said Oliveira.



Jim Kennedy, assisted by Doug Pase, above, when the lights went out, talks about eTEP.

"At Civil Defense, we really need the whole community's help," he said, because in a time of emergency, "commu-

nications is our Achilles heel." During a disaster, or when an emergency looms, Civil Defense wants to be able to use amateur radio "and every other tool we have" to push "accurate" information out to the community. He said what is worse than no information, is the sharing of faulty info and the confusion that ensues. He talked a little bit about the infrastructure — repeaters and the like — in the works on the Big Island to ensure that Hawaii County has a resilient emergency communications system which will allow the dissemination of a "clear, concise and consistent" message. Referring to the 2006 earthquake, he noted that communications systems themselves are vulnerable to an emergency and to oversaturation of use. He wants the leaders of all of the Big Isle radio clubs to collaborate with him on a plan for deploying communications resources when an emergency arises. He invites anyone with comments or questions to call him about anything at Civil Defense at 935-0031. During the discussion period following his talk, Oliveira encouraged all residents to do what we can to prepare ourselves with provisions, etc., so we can help each other weather the time period after a disaster before regular systems are up and running again and

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things get back to normal. Quoting a colleague at Civil Defense who has been through many a storm, Oliveira said the mantra at the agency, when it comes to using up your food supplies when the power goes out, is to eat your way through your food in this order: "refrigerator, freezer and then cupboard." He said the new islandwide communications infrastructure will maximize the contributions of the amateur radio community. "I'm really leaning on all of you to help," he told the gathering of hams. Education Chair Milt gave an update on VE Testing. Three sessions are scheduled: April 17 at Orchidland LDS, 2 p.m. Saturday, May 24, at the Kilauea LDS church; and at 1 p.m. Saturday, June 28, at Wailoa Center during Field Day. He will be starting a General License class at 6:30 p.m. Thursday, June 12, at Hawaii Community College in Hilo. This has been arranged by Oliveira.

Milt said for the May meeting program, he wants to focus on getting the club prepared for Field Day, which will feature activities both at Wailoa Center and in the Hilo Walmart parking lot. Bill said the Field Day Planning Committee will hold its next meeting at 5:30 p.m. Wednesday, April 30, at the Keaau Community Center. Everyone is welcome. Bill gave a preview of the Saturday, April 19, Tsunami Awareness Day event to be held by the Kamehameha statue in Hilo (see this month's President's Report on Pages 1-2 for photos and a recap of this successful event.) Milt then introduced our program speaker for the day, Jim Kennedy, K6MIO, who shared with us an information-packed presentation he has prepared for the Central States VHF Society. For a look at the complete PowerPoint program on "F-layer and the Equatorial Ionospheric Anomaly as seen from Six Meters." See complete narrative and photos later in this newsletter. Jim takes the scientific basis for the vagaries of propagation

and turns all sorts of facts into an organized look at what is true, and why it's true; what isn't true, and why not; and why what we think is true often is not ... and vice versa.

Take "Afternoon TEP," for instance. Despite its name, it sometimes occurs in the morning, and sometimes sizzles in the late evening. The power went out during Jim's talk, knocking out his carefully prepared slide show, so with Doug Pase holding his laptop up in the air, he switched over to the small screen to discuss MUF, Maximum Usable Frequencies, etc., until the power came back on, precisely when he was delving into "Transequatorial Propagation: TEP." Jim's explanatory slides and vivid verbal descriptions kept the audience engaged through some heavy-duty content. We learned how in the evening, as day turns into night, for about a half hour to 45 minutes, there's a huge upsurge as the sun goes away and "a screaming death" as the pump fails. You have about "45 minutes to go get a cup of coffee"

before the evening "eTEP Bubble Fountain" cycle starts. The Bylaws Revision Committee continues to meet and the board will consider its recommendations, vote on the final draft, and circulate it via email to the membership prior to a vote on the proposed revisions at the May general membership meeting. (See final draft earlier in this newsletter.)

George gave the treasurer's report: Not a lot has happened since last month. Current balance stands at \$4,195.75. The minutes of the March meeting were approved, as circulated in the April newsletter. QSL Bureau Chief Barbara Darling gave the March report: 1,905 cards received from Japan, Poland, Ireland, Bulgaria, Ukraine, Russia, for a year-to-date total of 3,670. Meeting was adjourned at 4 p.m. Next meeting will be at 2 p.m. Saturday, May 10, at the Keaau Community Center.

Respectfully submitted,

— — — Leigh Critchlow,
WH6DZX
Secretary

May 2014						
Sun	Mon	Tues	Wed	Thurs	Fri	Sat
				1	2	3
4	5	6 Board Mtg 1700 hrs	7	8	9	10 General Meeting 1400 hrs
11 Mother's Day	12	13	14	15	16	17 Work Day Mauna Loa Repeater Site Tech Class
18	19	20	21	22	23	24 Tech Class VE Testing 0830 to 1630
25	26 Memorial Day	27	28	29	30	31

10-meter mission in 2014

10-10 Spring Digital, CW QSO Parties on tap



Photo by Curt Knight/AH6RE

Destination 10-10: All Technician Class Licensees have 10-meter privileges. So: All aboard!

We hope you all enjoyed the Ten-Ten Spring Digital QSO Party, April 26-27, and are gearing up for the May 3-4 Spring CW QSO Party. For further details, check www.ten-ten.org.

All Technician Class Licensees have 10-meter privileges, so feel free to try your hand on HF!

And on the fourth Tuesday of each month is the VHF digital net at 8 p.m. HST. Lots to do. Lots of fun.

*Thanks and aloha.
—Irene, NH7PE*

Nets!

The Aloha Chapter of Ten-Ten International Net, Inc. meets on 28.490 MHz, with an alternate frequency of 28.487MHz, every Monday evening at 6:30 p.m. HST.

If you don't hear me, don't just listen, call "CQ!" Help keep 10 meters in amateur radio hands.

At 7 p.m. HST on Tuesday, a High Frequency ARES net meets on 7.088 (or 3.993.5 or 1.870 MHz, depending on propagation)

On the second Tuesday of each month is the UHF digital net at 8 p.m.



CQ CQ CQ CQ CQ...CQ CQ CQ CQ CQ...CQ CQ CQ CQ CQ...CQ CQ CQ CQ CQ...CQ CQ CQ CQ CQ...

Heads up!

The 10-10 International Net Spring CW QSO Party is May 3-4.

Enjoy 48 hours of CW fun.

For this party you are to use only the CW portion of 10 meters, and the information exchange is still call sign, name, QTH and 10-10 number, if you have one. See the website www.ten-ten.org for more information.

For all you "Scouts," get prepared for the 10-10 Open Season (PSK) QSO Party, which will be held this year on June 7-8.

And remember that Ten-Ten International has two daily nets called from various places on the main-

land. Both nets are at 1800z (8 a.m. HST) on 28.380MHz and 28.800MHz.

Just listen. If you can hear them, join in. There are approximately 80 chapter nets that meet each week, all around the world.

Give your dial a whirl!

Ten meters has been open many evenings. NH7PE has had QSOs with South Africa, New Zealand and Australia.

Don't just listen, call CQ!

To see what DX paths are open, listen for the beacons from 28.175-28.300MHz, especially 28.200MHz.

*Aloha and 73,
Irene, NH7PE*

Upcoming VE Tests

Testing by the Volunteer Examiner team for all classes of licenses will be held May 24 at 2 p.m. at the LDS Church on Kilauea Avenue in Hilo (next to Seven Eleven).

Testing will also be conducted at Field Day, June 28, at Wailoa Center at 1 p.m. These will be the last Technician tests using the current question pool. Beginning the first of July, all Technician tests must use the new question pool. For further information, contact Milt, AH6I, at 965-6471 or nodacker@gmail.com.

Upcoming classes

A special two-day Technician class will be given on Saturdays May 17 and 24 from 8:30 a.m. to 4:30 p.m. The class will be at the LDS Church on Kilauea Avenue in Hilo (next to Seven Eleven). The testing session for this class will be the afternoon of the 24th at 2 p.m.

A General class will be offered beginning June 12 on Thursday evenings at 6:30. This class will be at Hilo Community College, room as yet undetermined. This will be the normal six-session format.

For further information, contact Milt, AH6I, at 965-6471 or nodacker@gmail.com.

May BIARC program

"HAM" Radio to be revealed -- May Program

As I announced in the April meeting, I have been trying to put together a program for May in support of Field Day that would introduce members to contesting and hopefully stimulate some interest among BIARC members in contest operation.

I have found no one familiar with contesting to make a presentation. As a result, I will be doing a program called "Wide World of Ham Radio" which will include contesting among the many facets of our fascinating hobby.

I'll include some early history of government regulation: "stick them on 200 meters and below; they'll never get out of their back yards with that."

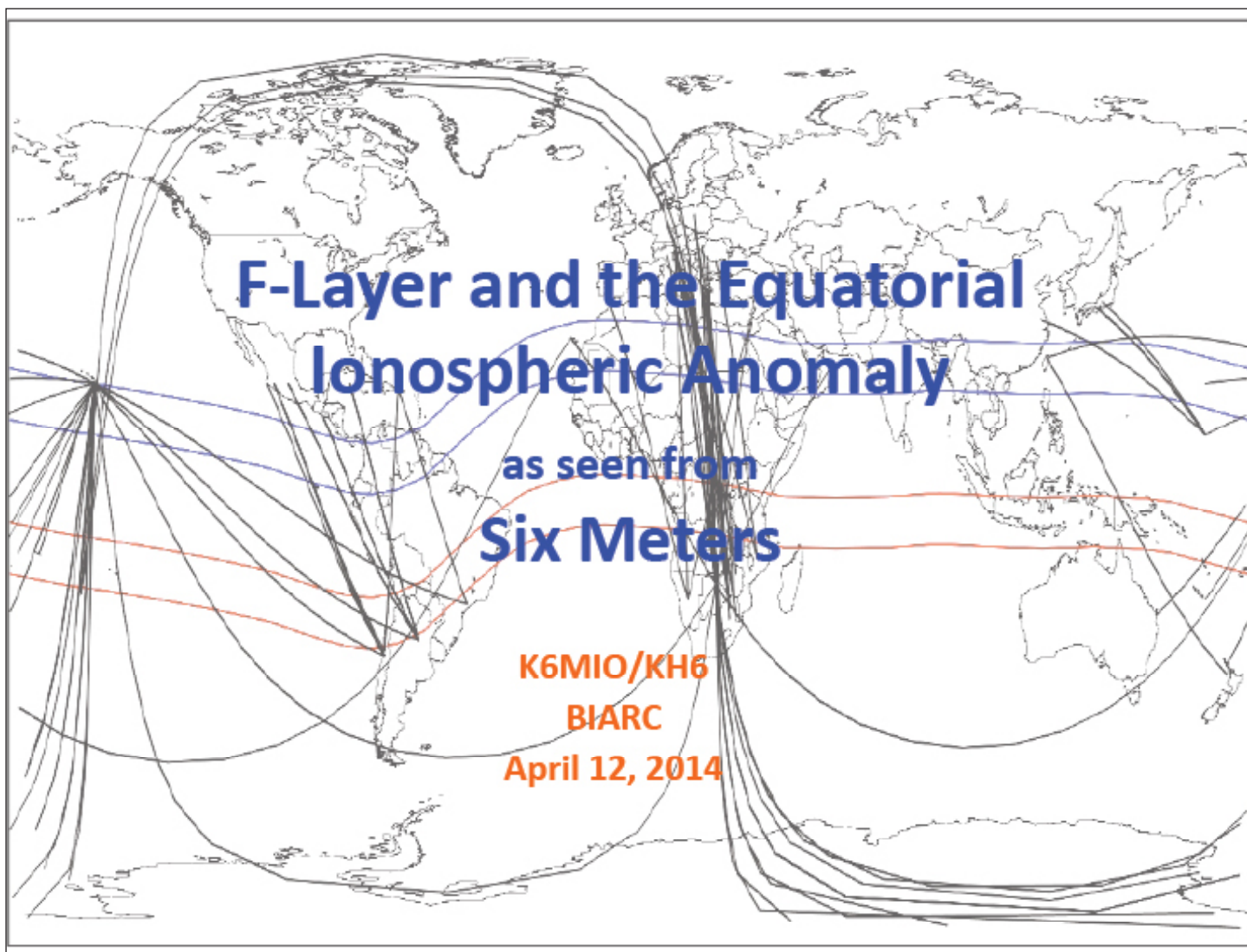
I'll also provide the answer to that perennial question, "Where does the expression HAM radio come from?"

If you have any specifics you'd like included, drop me a note at nodacker@gmail.com.

Milt Nodacker, AH6I

BIARC Newsletter

Story/ad submittal deadline
for June edition: May 20
email to lcritchlow@mac.com



Presented by Jim Kennedy, K6MIO

F-Layer and the Equatorial Ionospheric Anomaly

~A Summary~

Living in Hawai'i has many niceties, and some of these are special to ham radio.

Our location about 20° north of the Geomagnetic Equator provides some unique propagation opportunities as a result of something called the Equatorial Ionospheric Anomaly (EIA).

Especially during the Spring and Fall, the EIA leads to unusu-

ally high F2-layer Maximum Usable Frequencies (MUF). While this is especially attractive to the six-meter and ten-meter communities, if the coming solar minimum and following maximum turn out as poorly as many solar experts predict (slide 3), these propagation modes may also pay off for the HF communities as well, especially in the 12- to 20-meter range.

When the Sun comes up every-day, its extreme ultraviolet radiation produces free electrons in the E layer. These electrons then interact with ionospheric winds, caused by the Sun's heating, and the Earth's magnetic field, to gener-

ate a powerful E-layer electron current in a very narrow band or "ribbon" flowing right above and along the Geomagnetic Equator (slide 4). This is something called the Equatorial ElectroJet (EEJ).

All these things acting together form a kind of electron "pump", which sucks in E layer electrons and pushes them up through the F1 layer, gathering more electrons, and on into the F2 layer in a huge daytime (only) "fountain" (slides 5 and 6).

Like a water fountain, the rising electrons eventually run out

Next page

Sun and Six (Meters)

- Sun ionizes the ionosphere (F-layer = EUV)
 - Summer “should” be best for F2, ***but its not***
 - Most ions created, but even more are destroyed
 - Most O_2^+ (sucks up lots of electrons)
 - Local **Winter** F2 is best, ***if it’s winter at both ends***
 - Least O_2^+ (leaves more electrons behind)
 - **Spring/Fall** F2 is best, ***if path crosses the equator***
 - (Summer has Es, but that’s another subject)
- Six meters: Good band to study propagation
 - At HF lots of different prop at same time
 - On six, it’s easier to sort out why and what

Slide 2

From previous page

of steam and they loop over to the north and the south and drop back down into two F2-layer “pools” about 17° north and south of the Geomagnetic Equator.

Although the pools are lower than the highest points in the fountain, they are still quite high in the F2 layer. The very small number of gas atoms and molecules at those heights, which might otherwise reabsorb the electrons, provides for long electron lifetimes (many hours). The pools themselves can have very high Maximum Usable Frequencies compared to those in the midlatitude F2 regions.

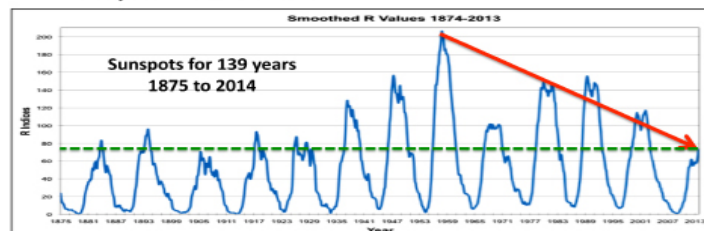
Following the Sun, the fountain and the two electron pools move around the Earth each day (slide 7). They track around in two “lanes” that run parallel to the Geomagnetic Equator, one to the north and the other to the south.

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“But... I Only Work HF”

Sooo... Why Worry About Six Meters?

- Need to worry about the Sun...
 - Maybe **VERY** Worried...



- Many solar experts think Cycle 25 will be worse!
- 10, 12, 15, 17, even 20, may sound like 6 today

Slide 3

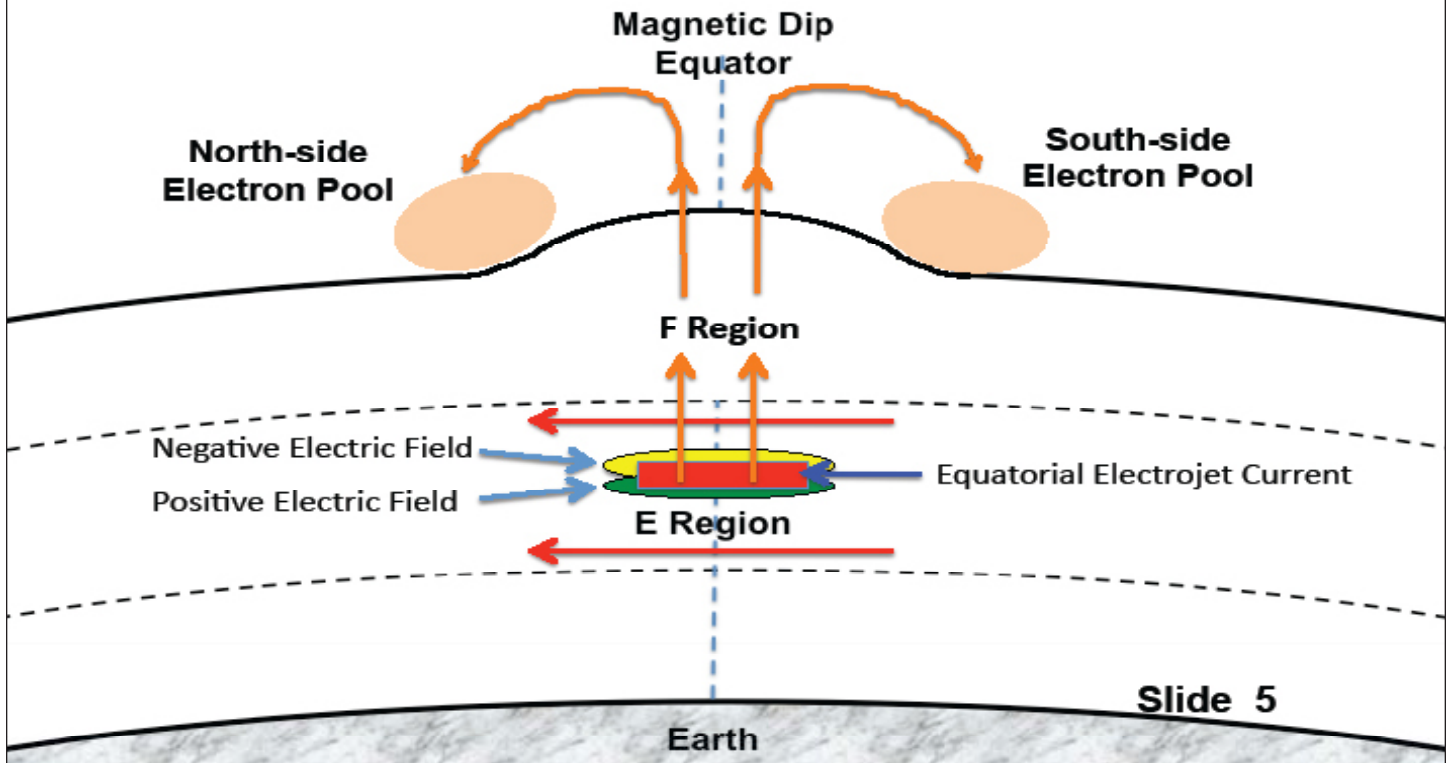
Causes of Tropical F-layer Skip

(So... What’s Six Like Today?)

- **Geomagnetic** (dip) equator does good things
 - Even in a poor solar-cycle maximum
- Daytime Sun creates:
 - Ionization in the E, F1, and F2 layers, *and*
 - Neutral E-to-W winds in the E layer drag electrons
 - Creates intense *current* ribbon along the dip equator
 - “Fountain” of E & F1 layer electrons *up* to the F2 layer
 - They *add* to the Sun’s F-layer electrons
 - Fountain outflow makes two “pools” of electrons
 - 17° north and south of the dip equator, following Sun

Slide 4

Daytime Fountain Effect



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The lanes are about 10° wide, running roughly from 10°N to 20°N and 10°S to 20°S .

In the Spring and Fall, the Sun shines more or less equally on both the northern and southern electron pools, making skip across the Geomagnetic Equator possible, without coming back to the ground in between (slide 8)!

This general effect is called Trans-Equatorial Propagation (TEP).

The high concentration of free electrons in these pools, plus the fact that the signal path hits the pool at a very shallow angle, leads to very high skip frequencies (in rare cases at least to 222 MHz).

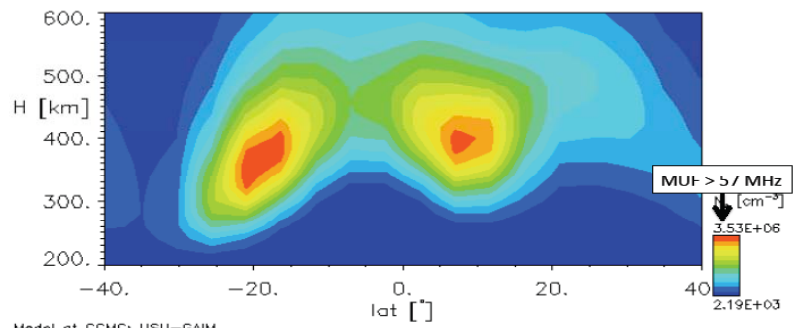
During the morning hours the two pools charge up with electrons, and by midday they generate F2-layer propagation referred to as

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USU-GAIM Model Electron Density

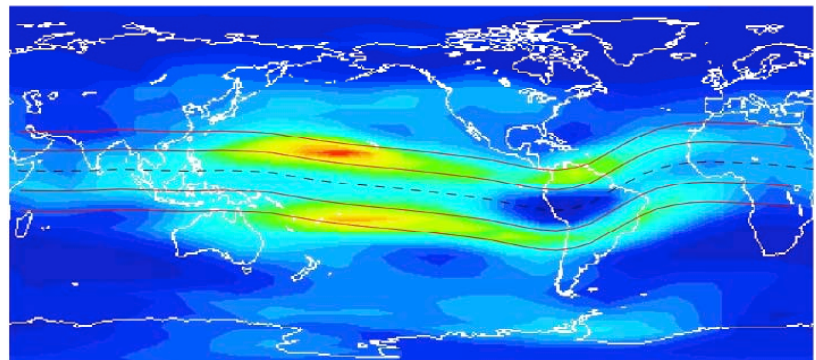
Peak MUF > 57 MHz

04/02/2013 Time = 03:15:00 UT lon= 245.°



Sun Pushes Ionization Pools Down

North and South Ionization Lanes



USU-GAIM ionization model courtesy of GAIM Team Utah State University

Slide 7

From previous page

“afternoon TEP” or aTEP (slide 8 and 9). This leads to propagation usually more or less along north-south paths between stations that are within about 30° latitude of the Geomagnetic Equator (slide 10).

Just as the Sun sets in the late afternoon, there is a sudden impulsive upsurge in the fountain electron column – a “last gasp” – called the PreReversal Enhancement (PRE).

Then the fountain stops flowing.

This sudden last impulse, pushing on the electrons already “in the pipeline”, sets off a vertically stacked set of waves in the, now stationary, electron column.

This is something like having a stack of pancakes on a platter and then hitting the underside of the platter upward with a sledge hammer, throwing the pancakes up into the air (slide 11).

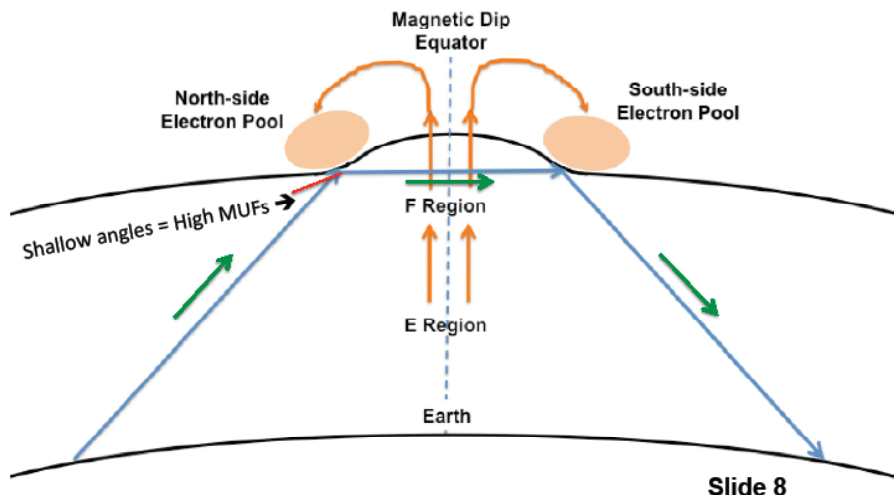
These waves of alternating high-density “pancakes”, with largely empty spaces in between, creates tunnels or waveguides through the old electron column, which can also bend radio waves around over the Geomagnetic Equator and back down to Earth on the other side. These wave structures can last for many hours into the evening (local midnight or later).

As a result, about the time the “afternoon TEP” goes away, the “evening TEP”, or eTEP, starts and continues on into the first half of the night.

In addition to the north-south paths, mostly east-west paths are also possible. At times there is a large east-west longitude difference between the free-electron peaks in the north-side and south-side TEP lanes (slide 12).

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Daytime Fountain and aTEP



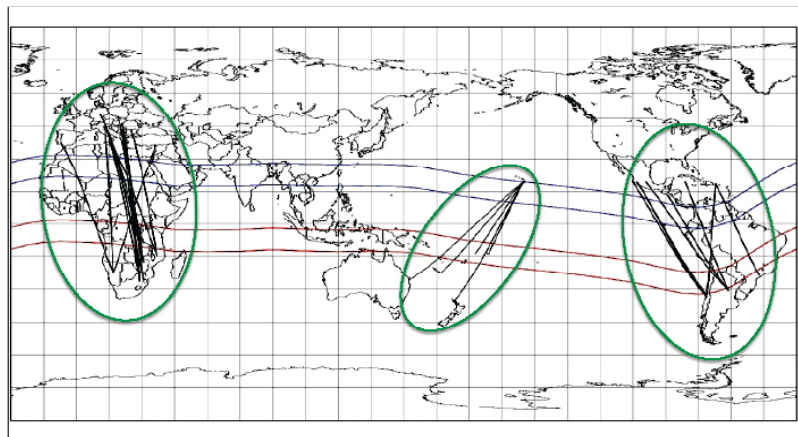
TransEquatorial Propagation (TEP)

- Ionization lane MUFs can be over 65 MHz
- They provide paths across the dip equator
- Two forms of TEP
 - Afternoon TEP: aTEP
 - Evening TEP: eTEP
- Both forms can produce even higher MUFs
 - aTEP: Shallow angle skips and the M-factor
 - eTEP: Slots in between bubble layers - waveguides

Slide 9

North-South TEP

Both aTEP and eTEP



From previous page

The cause is not completely clear, but it appears quite frequently between Hawai'i and the southern half of South America.

This is sometimes referred to as Oblique TEP. (I am inclined to think that this is a form of afternoon TEP on both ends, even though it is often in the evening in South America.)

A related form of propagation, often called TEP, but technically is not (it doesn't cross the Geomagnetic Equator), occurs commonly when a single individual lane (either the north lane or the south lane) produces single and multihop east-west F2 propagation along that single lane.

This is fairly common and produces paths to Wake, Guam, Taiwan, China, the Philippines, Japan, Korea, and other destinations (several examples in slide 13). It also probably plays a role in paths from Hawai'i to the very northern parts of South America.

An especially interesting propagation variation is something being called TransPolar Longpath (TPL).

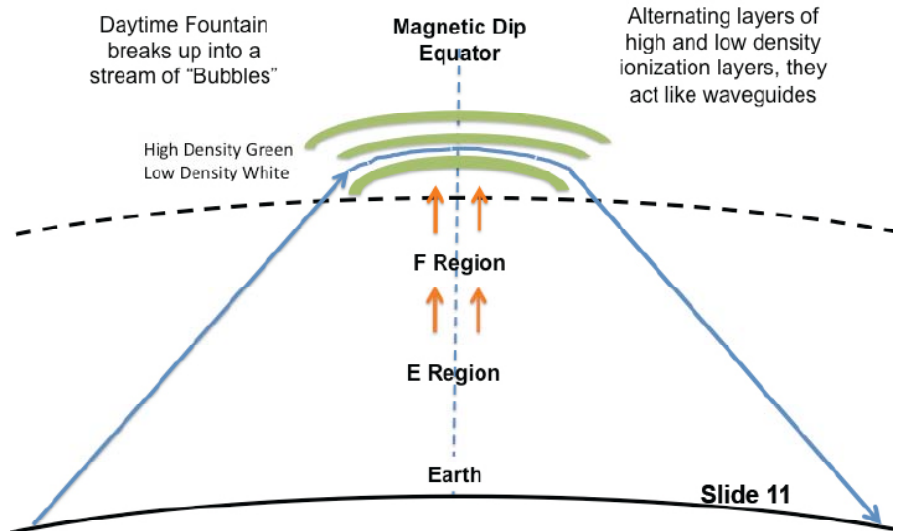
These are paths that start off as TEP over the equator, on one side of the Earth (like Hawai'i), and then keep on skipping around up high in the ionosphere, apparently not coming to Earth at all, until they hit the TEP lanes on the other side of the Earth, which then bend them back down to Earth on the other side (slide 14).

Long paths from Hawai'i over the South Polar regions to the Med and southern Europe are good examples, but not the only ones.

There have been a number of TPL contacts over the North Pole from Pacific Islands into southern

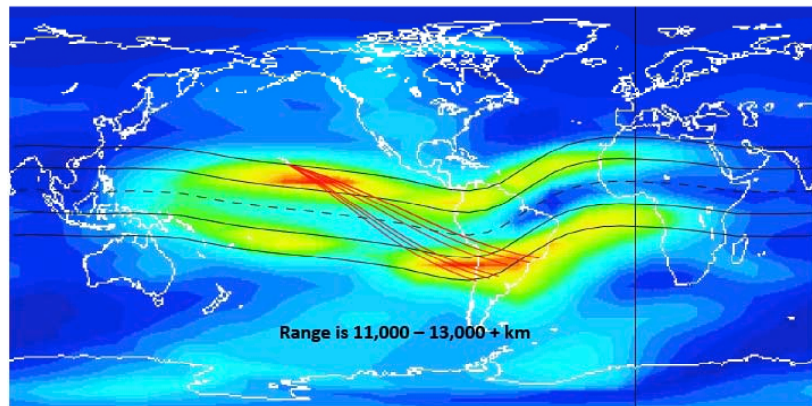
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Evening eTEP Bubble Fountain



Oblique TEP

(I Think It's a Form of aTEP)

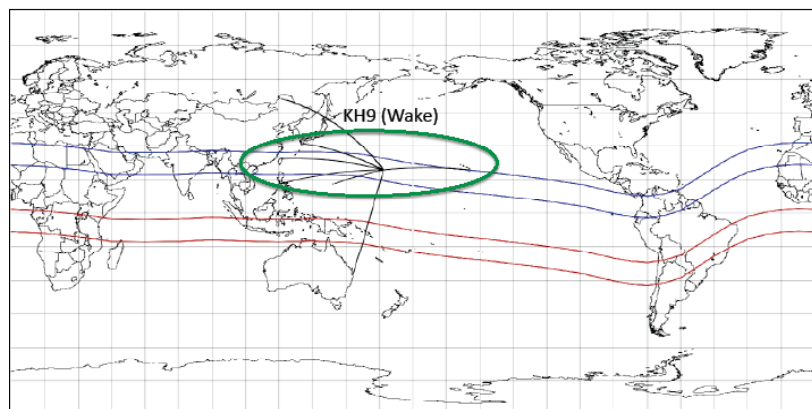


USU-GAIM ionization model courtesy of GAIM Team Utah State University

Slide 12

Equatorial F2

Propagation Along, and Across, the Equator



Slide 13

From previous page

Africa, and the Indian subcontinent.

So far, all the discussion has been about stations within about 30° of the Geomagnetic Equator, but the paths can be stretched – if they have the help from some other type of propagation, such as Sporadic E. If there is an Es path that is situated so that it connects to a point from which TEP can occur, then one can extend the range of potentially possible end points (slide 15).

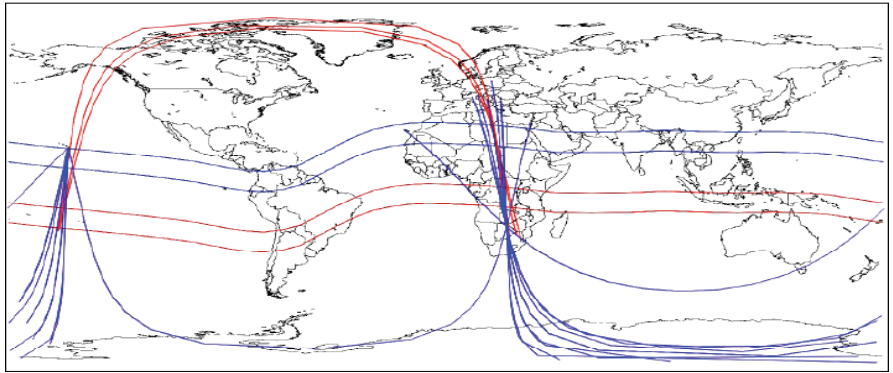
Paths between the North American west coast, the US southern tier, and portions of Mexico working into the South Pacific are fairly common in the late Spring, when the TEP and northern Es seasons overlap briefly.

So, if Cycle 25 turns out badly for the upper HF bands, all these possibilities (slide 16) still should be there to keep DX-ing from Hawai'i interesting.

— Aloha,
Jim Kennedy/K6MIO

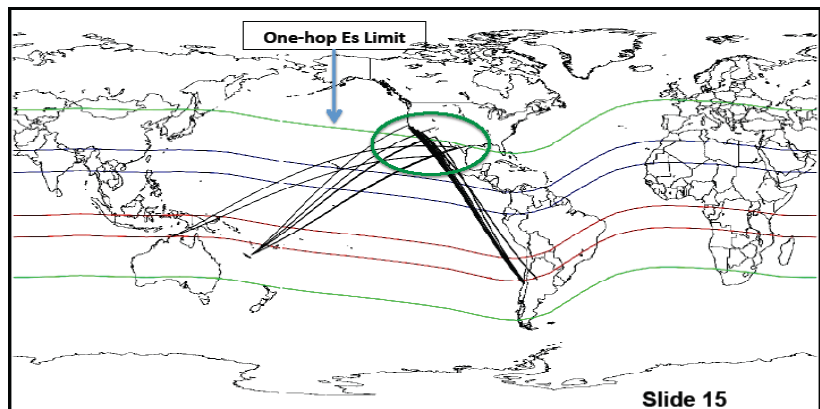
TransPolar Longpath KH6 and E51

2200-0130 East End to 0900-1100 West End



Slide 14

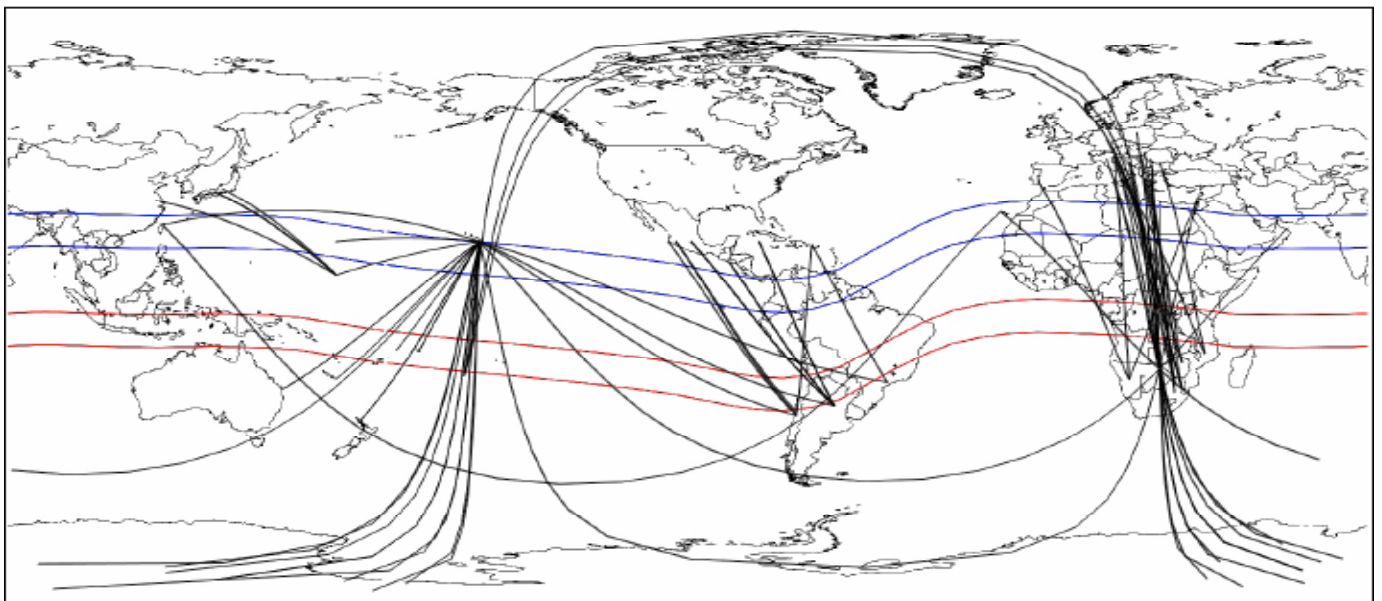
Sporadic E Links to TEP



Slide 15

So, If Cycle 25 is a Bust...

15-m May Still Be Up and Running, Six-Meter Style



Slide 16