

SQUAKBOX

Issaquah Amateur Radio Club

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Issaquah, Washington

June 2019

ARRL Invites Applications for Volunteer Monitor Positions

ARRL is now accepting applications from individuals interested in becoming part of the new Volunteer Monitor program, a joint undertaking of the FCC and ARRL. The program seeks volunteers who -- working under the direction of ARRL -- will monitor and survey the Amateur Radio bands both to detect improper activity and to recognize exemplary on-the-air behavior.

Prospective Volunteer Monitors must be ARRL members. They will undergo a training and certification program administered by ARRL, and will be vetted by

ARRL through at least one oral interview and a preliminary evaluation by ARRL staff. Such requirements will continue for Volunteer Monitors once they are selected.

Volunteer Monitors will serve 3-year terms at the pleasure of ARRL, and ARRL will reserve the right to terminate the participation of any Volunteer Monitor for any reason.

Volunteer Monitors must be able to utilize state-of-the-art receiving equipment and to access no-cost remote receive sites, if requested. Applicants must possess strong

writing and communication skills and an understanding of the importance of thorough documentation. They must have basic word processing and data entry skills and be able to send such information, including recordings, to ARRL electronically.

Applicants must have no history of warning letters or other enforcement-related action from the FCC, must hold a Technician or higher class license, and must have been licensed for at least 3 years.

Applicants should send applications to volunteer-

(Continued on page 3)

| Also . . . | |
|--------------------|---|
| Last Meeting | 2 |
| “Mystery” Signal | 2 |
| 6 Meter Event | 4 |
| SAQ | 4 |
| WRC-19 Prep | 5 |
| NO Vanity Call Fee | 5 |
| FT4 Test Canceled | 6 |
| 24 GHz | 6 |
| RYRYRY | 7 |
| FD Locator | 7 |
| Cricket World Cup | 8 |
| Coming Events | 8 |

June Program

Field Day Preparations

Be sure to come to the meeting and help us finalize our plans for Field Day this year.

Future programs are as follows:
July - Field Day Wrap-up and Picnic
Aug - HFp Antenna & Fox Delta

Contact Joe KF7BMD 425-985-1562 to volunteer.

Magnetic Loop Antenna Designs Multiply

Magnetic loops have become popular as effective and compact antennas for traveling and stealth applications. An HF magnetic loop design by John Chappell, W3HX, was an honorable mention in the 2018 QST Antenna Design

(Continued on page 3)

At the last meeting . . .

May 1, 2019

Opening:

The meeting was called to order by President Lara Flores (WA7LNF) at the Issaquah Senior Center. We conducted introductions, 19 people were on the roster for this meeting.

Old Business:

- The minutes of the last meeting, published in SquakBox, were approved unanimously.
- Treasurer reported a balance of \$6,360.33, up about \$685.00 from the April balance from due deposits and proceeds from the Puyallup Swap Meet.
- Planning for Field Day (which will be at the Flintoft property on Lake Sammamish, just North of the State Park Boat Launch) was announced as the major topic for discussion at our next meeting on June 5.

New Business:

- The Technician Class scheduled for next Saturday currently has 35 "signed-up" participants
- It was announced that DMR (Digital Mobile Radio) Sessions will be conducted at Valley Camp the weekend of May 18th and 19th. Information at <http://www.pnwdigital.net/dmrgathering-2019/index.html>
- The Pacific Northwest VHF Society <http://pnwvhfs.org/> will have its 25th annual conference in Issaquah at the Holiday Inn October 11th and 12th.
- It was announced that a Ham flea market will be in Stanwood on the

(Continued on page 4)

E-Mail Elmer

Got a HAM radio question and can't find an Elmer to talk to? Just send your question by E-Mail to our E-Mail Elmer at:

Elmer@w7bi.com - Ed. - S

2019 IARC Officers

President

Lara Flores (WA7LNF) - (Issaquah)

Vice President

Joe Decuir (KF7BMD) - (425) 985-1562 (Issaquah)

Secretary

Mihai Manolache (W4MHI) - (425) 647-7030 (Issaquah)

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Don Stewart (KI7TTX) - (206) 450-1222 (Issaquah)

W7BI Trustee

Rod Johnson (WE7X) - (425) 392-8497 (Issaquah)

Hams Help Trace "Mystery" Signal Disrupting Keyless Entry Devices

A recent article in The New York Times reported that many garage door openers and keyless vehicle entry fobs in an Ohio town near Cleveland mysteriously stopped working. While the article invoked The X-Files and hinted initially that a NASA research center might be involved, the cause was not so much mystifying as arcane.

"Garage door repair people, local ham radio enthusiasts, and other volunteer investigators descended on the neighborhood with various meters," the May 4 article by Heather Murphy recounted. "Everyone agreed that something powerful was interfering with the radio frequency that many fobs rely on, but no one could identify the source."

More than a dozen residents reported intermittent issues getting their key fobs and garage door openers to operate, and most lived within a few blocks of each other. At one point, the local power utility started shutting off power to areas where the strongest RF signal was detected, but the signal persisted. Dan Dalessandro, WB8ZQH, a TV repairer, was among several hams who investi-

(Continued on page 3)

Magnetic Loop Antenna Cont.

Competition. Chappell's mag loop offers coverage on 80 - 20 meters, and he runs FT8 at 50 W. See his article on page 39 of the June 2019 issue of QST.



The magnetic loop for 40 and 20 meters designed by Richard Robbins, WA8RR. [Photo courtesy of DELARA News]

Richard Robbins, WA8RR, wanted to build one of his own for 40 and 20 meters, and he described his efforts in a recent edition of his club's newsletter, DELARA News. An online calculator helped him come up with the basics, and he decided on a 10-foot circumference loop constructed from half-inch copper pipe that would handle 100 W. His prototype, constructed from a piece of pipe "hand bent into an approximate circle," a Dayton Hamvention flea market capacitor, and a coax drive loop, would tune the two bands -- although, as expected, tuning was very sensitive and affected by body capacitance.

He worked up a reduction drive and remote motorized tuning, and was able to make several FT8 contacts, using his antenna analyzer to



tune the loop. "The tuning would shift as I was transmitting," Robbins recounted. "This is a result of a very high circulating current and heating of the separate components." Encouraged, he went for a higher-end design constructed around a 5 - 500 pf vacuum variable capacitor, the project's most expensive component (these go for \$150 or more on eBay). "It is big and heavy," Robbins said. He had a metal fabricator bend a new piece of thin-wall copper tubing into a more aesthetically pleasing circle.

"To drive the capacitor, I obtained a stepper motor and driver, an Arduino controller board, and a four-channel remote," Robbins explained. "I used some sample programs to develop the code that would move the capacitor at different speeds depending on how long the remote was pressed. I added markings on the capacitor, so I could quickly move to different bands." -- Thanks to DELARA News – ARRL Letter, 5/23/2019 - S

VM Cont.

monitor@arrl.org for processing.

In February, Riley Hollingsworth, K4ZDH, was named to oversee the development and implementation phases of the Volunteer Monitor program, which will replace the Official Observer (OO) program. Hollingsworth once handled Amateur Radio enforcement for the FCC. - ARRL Letter, 5/16/2019 - S

"Mystery" Cont.

gated. He initially picked up "little blips" on a signal detector, but finally, on one block and at a particular house, the signal was quite loud.

"The source of the problem was a homebrew, battery-operated device designed by a local resident to alert him if someone was upstairs when he was working in his basement," the Times reported. "It did so by turning off a light." The inventor, not identified for privacy concerns, had no malicious intent nor any no inkling that his device was wreaking havoc on the neighborhood until a North Olmstead City Council member and a volunteer knocked on his door. The device operated on 315 MHz, the frequency many keyless-entry devices use under FCC Part 15 rules. The device's battery was removed, the signal stopped, and all who were involved breathed sighs of relief. – ARRL Letter, 5/9/2019 - S

June Event in Europe to Assess Activity, Ability to Share Spectrum on 6 Meters

The International Amateur Radio Union (IARU) has thrown its support behind an upcoming operating event on 6 meters aimed at assessing activity on 6 meters and the ability of Amateur Radio to share spectrum with government users on the band. The worldwide Amateur Radio community is invited to participate in the Czech-sponsored Pohotovostní (readiness) Test -- or "P-Test" -- which will take place on June 13. Agenda Item 1.1 for World Radio-communication Conference 2019 (WRC-19) will consider an Amateur Service allocation in the 50 - 54 MHz band in Region 1 (Europe, Africa, Asiatic Russia), taking into account studies looking into sharing between the Amateur Service and the mobile, fixed, radiolocation, and broadcasting services, "in order to ensure protection of these services."

The Czech Republic's telecommunications regulator CTO is investigating if theoretical study results match real life. The June test follows an initial trial that took place in late February in the Czech Republic. One objective was to verify that military and Amateur Radio stations could coexist on the band. The second test will take place when enhanced propagation is more likely. During the event, other 50 MHz band users will operate their own communication systems, and the IARU has cautioned radio amateurs not to interfere with their activities.

"The purpose of this event is to show regulators that amateurs and military stations can coexist without causing harmful interference to each other," said an IARU Region 1 news article by Hans Blondeel Timmerman, PB2T.

The June 13 event will take place in two activity periods: The first will run from 0730 until 0900 UTC, and the second will take place from 1100 to 1230 UTC. Participating stations will call "CQ P (Contest)" and exchange signal reports, a sequential serial number, a six-character grid locator, and a geographical location.

Maximum power output will be 25 W PEP, the maximum power under Czech Amateur Radio Service regulations. Stations outside of the Czech Republic are requested to use the same output power to enable comparisons with the February test. The use of spotting networks is permitted. Submit logs no later than 1230 UTC on June 15.

"We would like to involve amateur stations experimenting with wideband modes in this test," the IARU news article said. This could include reduced-bandwidth digital television or other wideband emissions. Such stations would participate in the second activity period. – ARRL Letter, 5/23/2019 - S

High-Altitude Celebration at SAQ

On May 1, the Day of Industrial Culture in Europe sponsored "WORK it OUT," during which workers all over the continent displayed their skills in choreographed dance. The occasion involved thousands of dancers in a "massive Pan-European dance event" at 1500 UTC. Participants included a dozen women and men at SAQ [station call sign] in Swe-



(Continued on page 7)

Minutes Cont.

11th, from 9:00 - 1:00.

Program:

The presentation this week was by member Barry Hanson, who documented a fascinating "Coast-to-Coast Grid Expedition" on the 6 meter band.

The meeting was adjourned at 9:00pm.

- Submitted by Don Stewart (KI7TTX), for Mihai Manolache (W4MHI), Secretary - S

IARU Represents Amateur Radio at WRC-19 Preparatory Meeting

The International Amateur Radio Union (IARU) represented the interests of the Amateur and Amateur-Satellite Services in Geneva at last month's second Conference Preparatory Meeting (CPM) in advance of World Radiocommunication Conference 2019 (WRC-19) this fall. The February 18 - 28 gathering was aimed at reviewing and revising a 780-page Draft CPM Report containing initial WRC-19 negotiating positions for Amateur Radio-related agenda items, as well as nearly 200 documents proposing changes.

Although no blockbuster Amateur Radio-related matters are on the WRC agenda this time, several important items are under consideration. Here's what's at stake this year.

Agenda Item 1.1, the primary Amateur Radio-related item, raises the possibility of improvements to 6 meters in ITU Region 1, where the international Radio Regulations include only allocations in a few African countries. Methods of addressing the agenda item outlined in the CPM Report range from a 4 MHz primary allocation shared with existing services to no change to somewhere between the two extremes. No impact on 6-meter allocations in Regions 2 and 3 is anticipated.

Agenda Item 1.13 is an effort to identify spectrum above 24.25 GHz that may be designated for International Mobile Telecommunications (IMT). Since 1979, the band 47 - 47.2 GHz has been allo-



Radio amateurs representing the Amateur Service in Geneva were (standing L - R) Flávio Archangelo, PY2ZX; Bryan Rawlings, VE3QN; Dave Court, EI3IO; IARU Vice President Ole Garpestad, LA2RR; Dale Hughes, VK1DSH; Hans Blondeel Timmerman, PB2T; ARRL's Jon Siverling, WB3ERA, and (kneeling L - R) Dave Sumner, K1ZZ, and Ken Yamamoto, JA1CJP. Court and Sumner represented the IARU, while the other attendees served on their respective national delegations. Hughes chaired the Sub-Working Group that dealt with Agenda Item 1.1. [Photo courtesy of Dave Sumner, K1ZZ]

cated on a primary basis to the Amateur and Amateur-Satellite Services. No sharing studies of the 47 GHz band -- normally a prerequisite to consideration of a new allocation -- were conducted during the study period, but that did not prevent a belated effort by IMT interests to justify a mobile

allocation and IMT designation. Even if the 47 GHz band escapes attention at WRC-19, it may very well turn up as an agenda item at WRC-23.

Agenda Item 1.16 covering radio local area network (RLAN) spectrum could impact the 5,650 - 5,850 MHz amateur band (5,650 - 5,925 in Region 2, the Americas). One proposed method overlaps the amateur allocation above 5,725 MHz, and if WRC-19 adopts this approach, then there may be issues for the Amateur Service.

Agenda Item 9.1.6 covers Wireless Power Transmission for Electric Vehicles (WPT-EV), a topic that has been gaining visibility recently. The IARU says it's unlikely that changes will be made to the ITU Radio Regulations at WRC-19, but that doesn't remove the threat to the Amateur Service. – ARRL Letter, 3/21/2019 - S

FCC is NOT Reinstating a Vanity Call Sign Fee

An erroneous report this week suggested that the FCC planned to again impose an Amateur Radio vanity call sign application (regulatory) fee of \$70 for the 10-year term. This incorrect conclusion resulted from an incomplete

(Continued on page 6)

May 14 FT4 Mock Contest Session was Canceled, New WSJT-X Beta Version Pending

A second hour-long FT4 "practice contest" set for May 14 UTC has been cancelled, following the success of an initial mock contest held on May 9 UTC (the evening of Wednesday, May 8, in continental US time zones). The event followed ARRL RTTY Roundup rules, with everyone working everyone. WSJT-X program suite developer Joe Taylor, K1JT, was among those jumping into the fray. He called the exercise "very useful" and has drawn some preliminary conclusions as to how the FT4 protocol functions in a contest setting.



"FT4 works well, but -- as implemented WSJT-X 2.1.0-rc5 -- it has some rough spots and performance issues," Taylor said in a post to the Yahoo WSJT Meteor Scatter and Weak Signal Group. "Many of these have been fixed already during this beta-testing period, and more improvements are still to come."

Taylor said a second mock contest session using the current -rc5

"release candidate" (beta version) would not be helpful, and it's not convenient for the developers to build and distribute -rc6 in time for a session early next week, a few days before the Dayton Hamvention. "Instead, we are aiming now to release WSJT-X 2.1.0-rc6 about 2 weeks later -- probably in the last week of May or the first week of June," Taylor said. "Another mock contest practice session will be scheduled soon after that release." The current -rc5 beta version will expire automatically on June 7.

Post observations and comments to the Yahoo WSJT Group reflector or to the WSJT Development Group Mailing List. – ARRL Letter, 5/9/2019 - S

Vanity Call Sign Cont.

reading of the May 7 FCC Notice of Proposed Rulemaking (NPRM) in the matter of the assessment and collection of regulatory fees for fiscal year 2019.

Although the Schedule of Regulatory Fees does show a \$7 annual fee for Amateur Radio vanity call signs, a boldface heading in that section of the NPRM states, "REGULATORY FEES. This section is no longer in effect as it has been amended by RAY BAUM'S Act of 2018..." Section 9(e)(2) of RAY BAUM'S Act gives the

FCC Adopts Order on Use of Bands above 24 GHz for Next-Gen Wireless

The FCC on April 12 adopted a Report and Order (GN Docket 14-177) aimed at making available millimeter wave (mmW) spectrum at or above 24 GHz for fifth-generation (5G) wireless, Internet of Things, and other advanced spectrum-based services, including satellite broadband services. The FCC first adopted rules to allow Fixed-Satellite Service (FSS) Earth stations to be individually licensed to transmit in the 50.4 - 51.4 GHz band using criteria identical to those applicable in the 24.75 - 25.25 GHz band.

"This action will allow FSS operators to provide faster, more advanced services to their customers," the FCC said in announcing the action.

The Commission also established a coordination process to accommodate the military's potential need for additional sites in the upper 37 GHz band (37.6 - 38.6 GHz band) in limited circumstances, while protecting the interests of non-federal licensees in this band.

"The[se] steps are an integral step toward the auction of the Upper 37 GHz, 39 GHz, and 47 GHz spectrum bands slated to begin later this year," the FCC said. – ARRL Letter, 5/9/2019 - S

SAQ Cont.

den -- the VLF Alexanderson alternator transmitter and UNESCO World Heritage Site -- all apparently unafraid of heights.

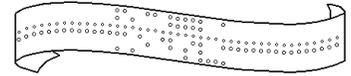
Video, likely shot by a drone and posted on YouTube, shows appropriately equipped workers arrayed across the T-bar support of one of SAQ's tall antenna support towers, dancing to "WORK it OUT," a techno-style theme based largely on Beethoven's "Ode to Joy." They joined other worker groups -- displaying various levels of dancing prowess -- who took part in the May Day event at 41 industrial monuments in 12 European countries.

SAQ maintains a 1920s-vintage electromechanical radio transmitter once used for transatlantic telecommunication in that pre-high-power transmitting tube era. The nearly century-old Alexanderson Alternator at SAQ transmits on CW at 17.2 kHz on special occasions from Grimeton, Sweden. – ARRL Letter, 5/9/2019 – S

Vanity Call Sign
Cont.

Commission discretion to exempt a party from paying regulatory fees when the FCC determines that the cost of collection exceeds the amount collected. A new section 9(e)(1) incorporated the Amateur Radio vanity fee exemption from FCC rules into the statute.

The NPRM makes clear in several other places that regulatory fees no longer apply to Amateur

RYRYRYRY...

DE KA7TTY

Hey IARC,

Is it Summer yet? Must be close. The rain is getting warmer.

Wow. Do we ever have a great place for Field Day this year. A great location with some tall trees to stretch out long-wire antennas. A good gathering area close to the lake (with a gentle breeze so it won't be too warm) for food and conversation. Just be sure to come to the meeting and help make the final preparation and to be sure we plan for the radio operations you want this year.

Also be sure to mark your calendar for the July mini-meeting, picnic, and recap of our Field Day operation. The picnic is on July 10 so we don't interfere with everyone's 4th of July plans. Last year we did some quick VHF stations. What about some quick HF stations this year. It's not Summits On The Air, but it might give folks some ideas for portable setups. OK. See you at the meeting, John KA7TTY

ARRL Field Day Site Locator is Live, Promotional Material and FD Gear Now Available

Amateur Radio's most popular operating event, ARRL Field Day is June 22 - 23. See the May issue of QST, page 85, for the official Field Day announcement. The complete 2019 ARRL Field Day packet is online.

The Field Day site locator is now up and running, and by mid-week, 475 sites already were in the database. To find a Field Day site near you, enter your town and state in the "Location or Call Sign" box at the upper left. Listings also are available by state or Canadian province. To add a site, visit the Add Field Day Station page. Information on promoting Field Day is available. Also, visit the Field Day social media page for information on promoting your

Field Day operation via Facebook, Twitter, Instagram, LinkedIn, and YouTube.

The ARRL Public Relations Committee will host a series of live video/audio conference calls every Thursday starting on May 9 to help ARRL PIOs with their Field Day publicity efforts. Field Day public service announcements (PSAs) are set to be posted to the ARRL Field Day web page this week.

The complete 2019 ARRL Field Day packet is online. ARRL encourages participants to register their Field Day operations using the FD Site Locator. – ARRL Letter, 5/9/2019 – S

SQUAKBOX

This newsletter is published monthly for the members of the Issaquah ARC W7BI. Items for publication must be received by the 15th day of the month preceding publication. Send items to:

SQUAKBOX Editor
John MacDuff, KA7TTY
620 S.E. Bush St.
Issaquah, WA 98027-3909

Material may also be sent via E-Mail at editor@w7bi.com.

The IARC is affiliated with the American Radio Relay League (ARRL). Visit our WEB page at: <http://www.w7bi.com>

Membership is open to anyone regardless of age, sex, race, national origin, religion, or amateur radio license status. Dues are \$15 per year for a family membership, free for those under 19 years of age.

A two-month courtesy mailing of this newsletter will be made to meeting visitors and others upon request.

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- Coming Events -

- **June 5** - Monthly Issaquah ARC meeting at the Issaquah Senior Citizens Center, 75 NE Creek Way, Issaquah. Doors open at 6:45 PM, the meeting begins promptly at 7:00 PM and the program begins at 8:00 PM. Refreshments are provided.
- **May 31-June 2** - SEA-PAC Hamfest and ARRL Northwestern Division Convention. Seaside Convention Center, Seaside, Oregon info@seapac.org www.seapac.org/
- **June 7-9** - 51st Annual Apple City ARC Hamfest. Apple City ARC, Dryden, WA. <https://www.applecityarc.com/>
- **June 8** - Port Ludlow ARC Old Fashion Tail Gate'r. 8am - 12pm. Grace Christian Center, 200 Olympic Pl, Port Ludlow, WA. <https://www.n7pl.org/>
- **June 15** - Second Annual Tailgate Swap. Spokane Valley, WA.
- **June 22-23** - **ARRL Field Day**

Radio Amateurs in India Recently Provided Post-disaster Communication

According to a May 12 article in The Hindu newspaper, after Cyclone Fani struck eastern India on May 3, two teams of Amateur Radio operators from Andhra Pradesh and West Bengal came to the rescue. The town of Puri in the state of Odisha remained cut off for 2 days, and VHF communication systems used by police had very limited range. The Odisha state control room was not able to establish regular communication with district headquarters, "resulting in utter confusion in relief and rescue operations," the newspaper said. Emergency man-

RSGB Announced a Cricket World Cup Amateur Radio Marathon 5/30 - 7/14

The Cricket World Cup will take place in England and Wales. UK and international call signs will be active on nine HF bands on SSB, CW, and digital modes. Award certificates will be offered based on the number of contacts made with the special UK and international stations. Sponsors are inviting other countries to take part and to activate special call signs with the suffix "19CWC" or similar. A

agers now are looking into how and why post-disaster communication failed for the first time since 1999. In the wake of Cyclone Fani, ham radio provided the primary mode of communication for the first several hours. – ARRL Letter, 5/23/2019 - S

total of 31 special call signs will be on the air in the UK, with GB19CWC representing the 2019 Cricket World Cup Headquarters in England. Listen for other "GB19" prefix call signs. Teams will field special event stations as well. Email for more information on the marathon. -- Thanks to Nick Totterdell, G4FAL – ARRL Letter, 5/23/2019 - S

Vanity Call Sign Cont.

Radio licenses. The FCC eliminated the regulatory fee for Amateur Radio vanity call signs in 2015. – ARRL Letter, 5/16/2019 - S