

# SQUAKBOX

**Issaquah Amateur Radio Club**

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Issaquah, Washington

November 2010

## The 2010 Global Amateur Radio Emergency Communications Conference

The 2010 Global Amateur Radio Emergency Communications (GAREC) Conference was held October 10-12 in Curaçao (PJ2). At the time most conference attendees arrived in Curaçao, it was a part of the Netherlands Antilles along with Bonaire, St Maarten, Saba, and St Eustatius. By the time the attendees headed home, independence had been declared and Curaçao was its own nation within the Kingdom of the Netherlands.

GAREC is an annual conference attended by radio amateurs from

around the world who are involved in emergency communications. This year, representatives from the Netherlands, Switzerland, Finland, the United Kingdom, Cuba, India, Japan, South Africa, the United States and Curaçao took part. The ARRL was represented by ARRL Emergency Preparedness and Response Man-

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## PBS Show Features History Mystery with an Amateur Radio Twist

In the PBS show History Detectives, a group of researchers helps people to seek answers to various historical questions they have, usually centering around a family heirloom, an old house or other historic object or structure. So when Chuck Roedel, WA2MXR, of Beverly Hills, Florida, had what he thought may be an artifact from the turning point in the US space race against Soviet Russia, he called on the detectives to help him sort it all out. The show featured Roedel and his history mystery back in June, and his segment was just made available to the public on the History Detectives Web site.

Back in October 1978, Roedel -- an ARRL member -- met Dwight "Doc" Saxmann, W3HNT (now a Silent Key), of Baltimore, Maryland, on the air. In one of their QSOs, Saxmann told Roedel that in the early 1960s, he had worked on Echo 2, an early NASA communications satellite made out of

*(Continued on page 3)*

## November Program

### Annual Auction

See Auction Rules on page xx.

Future programs are as follows:  
Dec- Holiday Party  
Jan - Open

There are openings for future programs. Contact Gerard WT0F, 425-395-4554 to volunteer.

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## At the last meeting . . .

IARC Meeting Oct. 6, 2010

Meeting called to order by President Bruce KG7OI @ 7:28pm.

Bruce noted that there were no guests and everyone present knew each other. There were 15 members present.

Sandra KE7LXP reported on the Sound Shake exercise which was just concluding. The exercise began at 7:00am with pre-event meeting, and activities got started at 8:00am and ran until 8:00pm. The scenario was Day 2 and 3 following a major earthquake. It was mostly a Shelter Drill with some participants acting as clients checking into the shelter. Radio communications was setup at the Senior Center (as a shelter), EOC (at Public Works), and IPD. The Shelter was operated on a large Public Works generator. The exercise was long enough that they were able to conduct a shift change at the EOC. Mike KF7BIG had a quick lesson from Kelly on the operation of the ACU 1000 Audio Interface and located himself at the Water Tower up on the hill north of the freeway and performed cross banding between everything he could contact. Overall, contact was made with King County, Bellevue, Kent, Renton and Snoqualmie.

Rod WE7X was home sick and there was no Treasurers Report.

Announcements:

Doug W7RDP reported on the TAPR Conference. He says everyone interested in what is cutting edge in digital radio should have been there. He saw a new Winlink 2000 being developed which no longer required the expensive Modem. It works with software and sound cards. A new digital Voice radio demo used a new free codek that is under development. The problem is cramming it all in 500Hz bandwidth.

Bruce reminded everyone of the coming Total Eclipse in August 2017 Center line will run through central Oregon.

## 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:

[IarcElmer@dhuibh.net](mailto:IarcElmer@dhuibh.net) - Ed. - S

### 2010 IARC Officers

#### President

Bruce Helbert (KG7OI) - (425) 391-6828 (Sammamish)

#### Vice President

Gerard Hickey (WT0F) - (425) 395-4554 (Issaquah)

#### Secretary-Treasurer

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

#### W7BI Trustee

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

## Global Cont.

ager Mike Corey, W5MPC.

Topics covered included the earthquakes in Haiti and Chile, Amateur Radio emergency communication organizations, how emergency messages are handled, and how an emergency communications exercise is designed and organized. Updates on emergency communications activities in each of the three IARU regions were also given. Greg Mossup, G0DUB, had the attendees do a table top exercise for a large scale international disaster.

At the end of the conference a statement paper was written and approved by the representatives in attendance. This will be available soon on the GAREC Web site.

The week of the conference was an exciting time to be in Curaçao. At midnight on 10-10-10, Curaçao became an independent nation. Those who could make it attended a celebration at the VERONA club house. Shortly after midnight Brett Ruiz, PJ2BR, made the first contact from the independent Curaçao with Yuri, R7MA.

Throughout the week of the conference, attendees also had a chance to get on the air using the call sign PJ2A. This call has been assigned to VERONA, Curaçao's IARU Member-Society. When not operating from PJ2A, several attendees operated under their home callsign/PJ2. Those who could go on the air as PJ2 were greeted with massive pileups all week long.

GAREC has been held each year since 2005. The meeting location

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## PBS Cont.

an experimental material. Echo 2 - a 135 foot diameter metalized PET film balloon -- was a balloon satellite that functioned as a reflector, not a transmitter, so that after it was placed in a low Earth orbit (LEO), a signal would be relayed to it, reflected or bounced off of its surface and then returned to Earth.

Launched on January 25, 1964 on a Thor Agena rocket, Echo 2 was used for passive communications experiments, as well as to investigate the dynamics of large spacecraft and for global geometric geodesy. Echo 2, orbiting in a near-polar orbit, was conspicuously visible to the unaided eye over all of the Earth. Brighter than all stars and sometimes even outshining Jupiter, it was probably seen by more people than any other man-made object in space. Echo 2 reentered the Earth's atmosphere and burned up on June 7, 1969. NASA abandoned passive communications systems in favor of active satellites following Echo 2.

But as Roedel explained to Sociologist Dr Tukufu Zuberi, one of the researchers on History Detectives, he told Saxmann that he really didn't understand just what the balloon was made out of, "so he said if I sent him an envelope, he would send me back a piece of the satellite. And he did. I'd like to know if this is a piece of an NASA satellite. And if you could, I'd like to know a little bit more about Doc." Along with the material, Saxmann included a note and a diagram of the satellite.

So Zuberi got down to business, trying to find out all he could on NASA's Echo program -- and Saxmann. Zuberi found that when the Echo satellites were launched into space, it inflated and then operated like a giant mirror, bouncing radio waves back to Earth. "So the Echo was a major publicity event for the United States, something which is putting the US in direct competition with the Soviet Union," he explained. "But this is interesting -- the US shared the Echo technology with other countries. And it seems the Soviets actually participated in experiments with Echo 2, launched in 1964. The Soviets called Echo 2 'the friendly Sputnik.'"

Zuberi took the 4 inch square of metallic fabric -- half of it covered in mysterious pink powder -- that Saxmann sent Roedel to NASA's Goddard Space Flight Center (GSFC). There, Ron Muller explained to him that Echo 2 had a Mylar structure, but it had actual aluminum on the inside and the outside; this special fabric was glued together in panels for a 100 foot balloon. "And then it gets all folded up very carefully in a 'Z' shaped kind of a thing," Muller explained. And then the whole works gets stuffed into [a small] canister very carefully. Once it was in orbit, it would inflate to full size."

Next, Zubari sought out Debbie Thomas, also at GSFC; Thomas is the operator of the lab's scanning electron microscope. Thomas, with Roedel's permission, took a small cross-section of the material

to scan it. Based on what she finds, she will be able to tell if was of the same fabric as Echo 2. "Looks like maybe two metallic layers here," she said. "Let's see, I'm going to take a spot on here. Looks like aluminum. And this is Mylar here. So we know that we've got an aluminum sandwich, essentially. Your total thickness of your aluminum is about point three mils, thereabouts."

Armed with this information, Zubari met with Margery Sovinski, a material analyst at GSFC. She explained that "the total thickness for the material is very similar to what the report indicated it should be. So we've confirmed that it's very likely that the sample that you have here could have been used for the Echo 2 projects." And the strange, pink powder? Sovinski explained that a fluorescent tracer was added to the material so that if there was a leak, the powder was bright enough that Mission Control could see it if the Echo balloon exploded in orbit.

So now Zubari was sure that this piece of material was indeed from the Echo 2 project. But how did Saxmann get a hold of it? In searching for Saxmann, he was able to find his son Milt, who explained to Zubari that his father had passed away in 1983. Doc Saxmann worked for Westinghouse, at the time, a subcontractor to NASA. He confirmed to Zubari that the note Roedel received with the material was indeed written by his father: "Oh, yeah, that's his writing. He always

*(Continued on page 5)*

# Amateur Radio Operators Provide Communications Support During Chilean Mine Rescue

As the last of the 33 miners who were trapped 2300 feet deep inside (and 3 miles from the mine entrance) the San José Mine -- located about 27 miles from the Chilean town of Copiapó in the Atacama Desert -- rose to the surface at 0055 UTC on October 14, the world cheered in unison. The miners, who were underground for 69 days -- the longest time ever for miners to be trapped and survive -- all emerged relatively healthy.

According to the Radio Club de Chile (RCCH) -- that country's IARU Member-Society -- amateurs with the Radio Club Copiapó, CE1CPI, provided communication support between the authorities and emergency equipment operators inside the San José Mine complex, as well as with family of the trapped miners in the complex and authorities in Copiapó. "There are no other means of communication at the scene," said Radio Club Copiapó President Jose Maldonado Lazo, CE1RXY. "The group is working in the area of the mine with three phones, while amateurs in Copiapó "are covering all the needs of SENCO [a construction company], SAMU [ambulance and EMT], the Interior Administration and the fire and police departments. We do this gladly and hope that this has a happy ending."

According to Erico José Andrade, CE2EPB, Radio Club Copiapó has a lot of equipment, enabling the club to cover almost all of the Atacama Region: "This helped effectively from the outset after the accident, because the mine complex where the emergency occurred did not have contact with ordinary phones that could coordinate the rescue effort in the shortest time possible."

Some of the 80 members of Radio Club Copiapó installed amateur equipment in the mine complex, and volunteers from the club have, from the moment the mine collapse first occurred on August 5, have taken shifts to provide communication support. "This, together with additional mobile police stations, hospitals and fire battalions, kept everyone abreast of all the needs and urgent requirements," Andrade explained. – ARRL Newsletter, 10/14/2010 – S

## ARISSat-1 Cont.

lator and display software will be available before launch for multiple platforms. There also is a 16 kHz wide Mode U/V (UHF uplink/VHF downlink) transponder between the BPSK and FM signals. –

Gould Smith, WA4SXM, AMSAT ARISSat Project Manager – ARRL Newsletter, 09/28/2010 – S

## Auction

For those who may not be familiar with the club auction, the following information is offered.

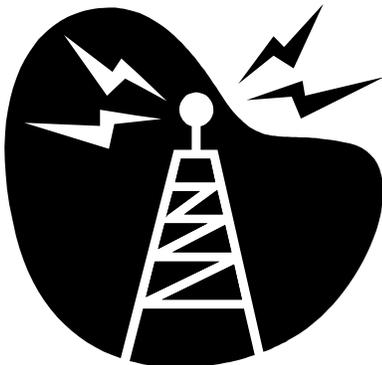
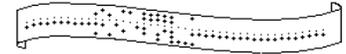
1. Bidders need not be members of the IARC. Bring a friend...or your worst enemy!
2. Club members...and others wishing to clean out their "shack"...will supply all the items for the auction. In general, these items should be at least loosely related to amateur radio. Washing machines, garden tools or beer bottle collections would probably not qualify.
3. All items brought to the auction are considered to be donations to the club and all auction proceeds go to the club treasury. No consignment items are accepted. Donors may, however, set a minimum bid price on an item. If the minimum is not reached, the item will be returned to the donor unless he/she chooses to reduce or remove the minimum.
4. Bidders must settle their accounts with the IARC Secretary-Treasurer before leaving the premises...with or without the items! No credit is extended.
5. Unsold items will, in priority order, be (1) returned to the donor, (2) offered free to anyone wants them, (3) deposited in the nearest unlocked vehicle...preferably without the driver's knowledge... or (4) deposited in the nearest dumpster. - S

**PBS Cont.**

printed.” He also said his father was known as “Antenna Doc.”

Milt explained that NASA contracted Westinghouse to conduct a series of tests on the Echo 2 balloons here at the former naval air station at Lakehurst, New Jersey. “One of the final tests was the burst test,” he said. “And it was like a just real loud dull ‘thunk.’” In doing this test, the scientists had filled the test balloon up with so much gas to see how much it could take -- they knew it would explode. And when it exploded, there were lots of little pieces of balloon everywhere. “You know and it split open and everybody just dived in -- you know like kids with leaves? They just dove into this balloon. [Dad] dove in as well, because it was all over the place.”

Zubari took all this information back to Roedel: “So a conversation over 30 years ago led to you having a piece of history in your closet.” Roedel agreed, saying, “I never understood why he would send me this. I was just on the air. Now I have this story. This is really nice. Nice to know.” - ARRL Netter, Sept 23, 2010 – S

**RYRYRYRY..**

DE KA7TTY

And it is auction time again. This is one of my favorite events. I hope you all have saved up some good stuff for this year’s event. Remember that even though you are offering it to the club, you can set a minimum so it is only donated if it gets a good price.

Another reminder for this season is the pay attention to the Winter Wilderness Protocol. As you may recall, this is asks Ham’s who have mobile VHF and UHF gear in their vehicle who are making a trip through the mountains where cell phone coverage is spotty or non-existent to turn their rigs on and monitor the PRIMARY- 146.520 MHz and any or all of the SECONDARY FREQUENCIES.(52.525, 223.500, 446.00, 1294.500). TIMING- Every 3 hours from 7:00 AM, from the hour until 5 (five) minutes past the hour.(7:00-7:05 AM, 10:00-10:05 AM, ..., 10:00-10:05 PM). ALTERNATE TIMING- 6:55 AM to 7:05 AM, etc. 5 minutes before until 5 minutes after (watches may be incorrect). The purpose is to answer any calls for assistance, take down the information, and once you are in range of a repeater, to call and get someone monitoring to call 911. The alternative would be to place a cell phone call to 911 as soon as you are in range of cell towers again. This could be a vital service if needed.

OK. See you all at the meeting. 73, John KA7TTY

## ARISSat-1 in Satellite Final Preparation

Having successfully completed vibration testing this week, the ARISSat-1/RadioSkaf V satellite will soon be on its way to Russia for final preparation and launch to the International Space Station (ISS). ARISSat-1 is scheduled to be sent to the ISS aboard Russian Progress vehicle 41P in January 2011 and deployed during EVA (spacewalk) R-28 in February 2011.

ARISSat-1/RadioSkaf V will have simultaneous 2 meter FM, CW, BPSK and transponder transmissions. These multiple transmissions are created by a new software-defined transponder (SDX)

board. The FM transmissions will cycle between a voice ID, select telemetry values and 24 international greeting messages in 15 languages, as well as live SSTV images. The CW transmissions will be call sign ID, select telemetry and call signs of people actively involved with the ARISS program. The BPSK transmissions will feature a new 1kBPSK protocol developed by Phil Karn, KA9Q, to be readable in low signal level conditions. The BPSK data will alternate between telemetry and Kursk experiment data. Free groundstation soundcard demodu-

(Continued on page 4)

## 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:

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Material may also be sent via E-Mail at w7bi@qsl.net.

The IARC is a nonprofit organization registered in the State of Washington and is affiliated with the American Radio Relay League (ARRL). Visit our WEB page at: <http://www.qsl.net/w7bi/>

Membership is open to anyone regardless of age, sex, race, national origin, religion, or amateur radio license status. Dues are \$20 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 -

- **November 3, 2010** - Monthly Issaquah ARC meeting at the Issaquah Valley Senior Citizens Center, 75 NE Creek Way, Issaquah. Doors open at 7:00 PM, the meeting begins promptly at 7:30 PM and the program begins at 8:00 PM. Refreshments are provided.
  - **November 29, 2010** - Issaquah Ham Radio Support Group meeting, Police Station, Issaquah, talk-in 146.56 MHz at 7:00 PM, Meeting at 7:30 PM.
  - **December 1, 2010** - Monthly Issaquah ARC meeting. See Nov. 3th for time and location.
- February 19, 2011** - Salem Hamfair & Computer/Electronics Swapmeet. Rickreall, OR at the Polk County Fairgrounds. <http://www.w7sra.com> .
- **March 12, 2011** - Mike & Key Swap Meet. Puyallup fairgrounds exhibition hall, Puyallup, WA. For information, contact [dmdink@yahoo.com](mailto:dmdink@yahoo.com) or [n7wa@arrl.net](mailto:n7wa@arrl.net) . <http://www.mikeandkey.org/flea.htm> .

## Global Cont.

changes each year and is rotated through each IARU region. The 2011 GAREC conference is

scheduled to be in Sun City, South Africa in August and will coincide with the 2011 IARU Region 1

Conference. – Mike Corey, W5MPC, ARRL WEB, Oct. 22, 2010 - S

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NEXT MEETING: Wednesday, November 3, 2010 - 7:30 PM

Talk-in frequency: 146.56 MHz

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FIRST CLASS POSTAGE  
 --- TIME SENSITIVE MATERIAL

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