

December 2013

(www.k7id.org)

P.O. Box 1765 Hayden, ID 83835-1765

REGULAR CLUB MEETINGS:

Monday, Dec. 9, 6:30 p.m.
CdA Shrine Center
1250 W. Lancaster Rd
Hayden, Idaho
Topic: Christmas Potluck
Presenter: KARS
Refreshments: Everyone

Monday, Dec. 9, 5:00 p.m.
ARRL VE Test Session
Search & Rescue Bldg.,
10865 N. Ramsey Rd.
Hayden, Idaho

Monday, Jan. 13, 7:00 p.m.
Search & Rescue Bldg.,
Hayden, Idaho
Topic: Radio Direction Finding
**Presenters: Randy Carlson,
KB6YAV, and Larry Telles,
K6SPP**
**Refreshments: Tom Rich-
mond, KI7W**

Monday, Jan. 13, 5:30 p.m.
ARRL VE Test Session
Search & Rescue Bldg.,
Hayden, Idaho

Upcoming Events

**Idaho QSO Party
March 8-9, 2014**

**Mike And Key Hamfest
March 8, 2014
Puyallup, Washington**

PRESIDENT'S COLUMN

The year 2013 is quickly coming to an end. By the time you read this newsletter, Thanksgiving will be a memory and Christmas will be looming. Along with this will come the end of my two-year term as KARS President.

I would like to thank the board members for being so supportive and doing such a great job. Usually, the board is presented with only a few problems to face and solve. Their major task is to keep watch on the club funds, make sure they are spent wisely and keep the club in-line with FCC rulings and Federal and State law. That has not been the case for the board that will be retiring the end of December. They have been faced with several large challenges and have put in a lot of time and effort to try and formulate the best possible solutions for the club. I think they all deserve a little time for rest and relaxation. Maybe even an opportunity to spend some time in their ham shacks and on the air.

There are many other KARS members that I owe a big Thank You. They have done a lot of work to keep our club moving forward and running efficiently. With my memory I'm sure I will forget some of them if I try to list them by name here, so I will attempt to thank each one personally before the New Year arrives.

The new board was elected at the last meeting by acclamation. Please be as supportive of them as you have been of the current board. I'm sure they will have lots of new ideas to share with you. The two boards will be meeting together the first part of December so we can have a seamless transition.

Elsewhere in this newsletter is a one page description of a system to access an antenna remotely. The hams featured in the article are members of EDCARC (El Dorado County Amateur Radio Club) in Placerville, Ca. Pat and I were both members of this club before we moved to Northern Idaho. If you have any questions regarding the equipment and how it works, please contact me. I will be able to put you in contact with Mel, N6MCM, the ham that actually built, tested and is using the system.

Many of you are probably aware that the new UHF repeater system was installed on Canfield Mountain on Saturday, Nov. 9th The UHF repeater is operating on a frequency of 443.975 MHz, with a tone of 136.5 and an offset of +5 MHz. The work crew managed to pick a nice day to do all the outside antenna work. Once again we owe our thanks to Jerry, who donated his time to do the tower work for

the site. Others working that day were Allan, KE7DFT; Dale, KE7VMN; Bob, KF7VIH; Dave, KF7YWR; and Bob, K7CGA. Hope you have had a chance to access the new repeater. Your feedback on the new system would be appreciated.

Please remember our Christmas Party to be held on Dec. 9, 2013 at 6:30 PM. As usual, this event is a potluck. The club will supply paper products, plastic ware, cups and coffee or water. It is up to you to bring your favorite potluck dish to share with the group. Please bring enough food for you and your guests and some to share with others. There will be several door prizes to be given to a few lucky attendees. See you December 9.

Merry Christmas to you all. Those traveling away from the area for the holidays have safe travels. We look forward to seeing you in the New Year.

73

Bonnie

SPOKANE RADIO STATION HIT BY COPPER THIEVES

Moody Broadcasting station KMBI-AM on 1330 kHz in Spokane, Washington, has been knocked off the air by copper thieves. The theft was noticed Sunday morning, November 3rd when station employees found that one of the tower monitors was out and called police. Further investigation by an employee revealed numerous cables had been stripped from the tower. News reports quote the Spokane County Sheriff's Office as saying that it would cost the station thousands of dollars to rewire and get back on the air. KMBI has an FM operation on 107.9 MHz that was not affected. (AR Newsline)

AUTUMN 2013 5 MHZ NEWSLETTER NOW AVAILABLE

The Autumn 2013 edition of The 5 MHz Newsletter is now available for download at tinyurl.com/ouaalv6. In addition to the latest 5 MHz news, there are also features on emergency communications messaging with an international dimension, the current Radio Society of Great Britain 5 MHz discussion and much more.

Also included is news of a television interview with IARU President Emeritus Larry Price, W4RA. In it Price explains the workings of World Radiocommunication Conferences and the International Telecommunications Union.

Again you can download this issue free of charge at tinyurl.com/ouaalv6. And lest we forget, this edition number

eight marks the second anniversary of the 5 MHz Newsletter. (AR Newsline)

SUCCESSFUL CANADIAN HIGH ALTITUDE BALLOON LAUNCH

Radio Amateurs of Canada has congratulated the students, volunteers and educator Robert Streimer VE4SHS at Shaftsbury High School in Winnipeg Manitoba. This for the recent and very successful launch of the SHARP 3.1 helium filled balloon reached an impressive maximum altitude of 117,214 feet. SHARP 3.1 carried a payload consisting of four cameras, a number of electronic sensors, a Geiger counter, a 3 axis accelerometer magnetometer and numerous other sensors. According to Radio Amateurs of Canada, now begins the task of analyzing of the data that was collected during the flight. (VE2MBS/VE2QQ)

HAM RADIO IN SPACE: ART AND HAM RADIO IN DEEP SPACE

Students at the Tama Art University in Tokyo, Japan are planning to send a sculpture called Artsat2 Despatch along with an amateur radio payload into deep space. This to take place sometime in mid 2014.

The sculpture, which is 50 by 50 by 45 cm was created at the university using a 3D Printer. The ham radio portion of the payload will consist of a CW beacon in the 435 MHz band using an omni-directional antenna.

The sculpture and ham radio gear are planned to launch as a secondary payload along with the primary asteroid explorer Hayabusa 2. Hayabusa 2 will be making a round-trip to the C-type asteroid 1999 JU3 arriving in mid 2018.

For hams here on Earth this mission should provide the ultimate in DX reception challenge, especially when at its maximum distance of two million miles from Earth.

More about this interesting combined art and science exploration exercise is on the web at tinyurl.com/ARTSAT-DESPATCH, (Artsat-Despatch release)



Boundary Amateur Radio Club, (BARC)

President Kirk DeHaan, N6SXR announced that BARC, an ARRL affiliated club offering amateur radio licensing instruction and VE testing services to its surrounding community (and members) has acquired and is in process

of installing its first full time high power remote Packet Digipeater on Black Mountain as a key part of its ARES activities. **W7BFI-1** is the PBBS, Packet Bulletin Board and mail system connect address. Access to the Digipeater is via its alias address **BARC-1**. DeHaan indicated that the club is deploying local H&W traffic, bulletins and information handling capabilities using low powered portables, smart phone & iPad style Apps also using sound card technology eliminating the need for costly TNC interfaces, base stations and power requirements. The system was originally proposed for KARS but the project was later abandoned. The BARC Digipeater is *open* to all amateurs who can “hit” the system from Washington, Montana, British Columbia, Alberta and Northern Idaho. Black Mountain is an easy hop from the Coeur D’Alene area making it available for testing or use going forward. Check www.w7bfi.com/index.html for status and additional information - *N7JU (BARC)*

First High School Satellite Among November Ham Satellite Bonanza

The first high school satellite, TJ3Sat, which launched this week aboard a Minotaur I rocket from Wallops Island, Virginia, was among several satellites carrying Amateur Radio payloads — two with ham radio transponders — scheduled to be put into orbit during November. In addition to the Minotaur I launch, other satellites are set to go into space early November 21 (UTC) aboard a Dnepr rocket from Russia, while still others were scheduled to be deployed from the International Space Station. The Minotaur I carried 29 satellites in all.

The TJ3Sat CubeSat is a joint project between the Thomas Jefferson High School for Science and Technology in Alexandria, Virginia, and industry partners to design and build a CubeSat to inspire interest in aerospace technology as part of NASA’s Educational Launch of NanoSatellites (ELaNa) program. The school says the satellite’s main mission is “to provide educational resources to other K-12 education institutions to foster interest in aerospace through the successful design and flight of a CubeSat.”

Perhaps more to the point for high schoolers, the satellite’s *Text Speak* module will convert text messages into analog voice signals. “Students and other users from around the world can submit text strings to be uploaded to the TJ3Sat website. Approved text strings will be transmitted to the satellite and the resulting voice interpretation will be relayed back to Earth over an Amateur Radio frequency,” the TJ3Sat website explains. The small satellite also will transmit telemetry. Details are on the TJ3Sat website. The school says the November 20 (UTC) launch culminated 7 years of work by more than four dozen students. According to a *Washington Post*

article, the satellite will broadcast its first message to TJ alumni worldwide: “Go Colonials!”

Also on the Minotaur I ride was KySat-2, a 1U CubeSat that’s also part of NASA’s ELaNa program (KySat-1 was lost during a launch vehicle failure). It is a project of Morehead State University (communications, power systems), Kentucky Space LLC (mission management) and the University of Kentucky (onboard computer, imaging payload).

With the call sign KK4AJJ, the satellite will transmit with a 1 W downlink at 437.405 MHz using AX.25 protocol to portable ground stations developed by Morehead State for outreach to grades K-12. In addition to basic housekeeping data, telemetry will be tied in with lesson plans under development. KySat-2 also will include an imaging payload. All student operators and engineering team members were required to Amateur Radio licenses as part of the project.

The JEM Small Satellite Orbital Deployer aboard the ISS was scheduled to launch three 1U and one 3U CubeSats carrying Amateur Radio payloads in the November 19-20 time frame. These include Pico Dragon, developed by the ViCt Nam National Satellite Center (VNSC), University of Tokyo and IHI aerospace; ArduSat-1, and ArduSat-2, deployed November 19, and TechEdSat-3p, developed by interns at the NASA Ames Research Center, set for deployment November 20. All carry beacons and downlinks (no transponders) in the 437 MHz range. TechEdSat-3, which is testing an Iridium satphone modem, will automatically de-orbit after 10 days.

Earlier this week Expedition 38 Flight Engineer Mike Hopkins, KF5LJG, installed the satellite deployer on the ISS’s multi-purpose experiment platform while working in the Kibo module of the International Space Station. — *Thanks to AMSAT News Service, AMSAT-UK, and NASA*

ARRL Helps Manufacturer to Resolve Arc Fault Circuit Interrupter RFI Problems

The ARRL Lab has worked with a manufacturer of arc fault circuit interrupter (AFCI) breakers to resolve complaints that Amateur Radio RF was causing certain breaker models to trip unnecessarily. Like the more common ground fault circuit interrupter (GFCI), the AFCI is a safety device. Primarily designed to detect problems that could result in a fire, AFCIs detect potentially hazardous arc faults that result from often unseen damage or poor connections in wiring and in extension cords and cord sets.

“Several months ago we started receiving reports from amateurs that when they transmitted, their AFCI breakers were tripping,” said Mike Gruber, W1MG, the ARRL Lab’s EMC specialist. He notes that the issue has been a topic of online ham radio discussions as well as on homeowner

sites; it seems that stray RF is not the only thing that can cause a “nuisance trip” of an AFCI. Gruber pointed out that the National Electrical Code (NEC) already requires AFCIs in some household circuits, but not all US jurisdictions have adopted the requirement.

Gruber said that as AFCIs became more common in new construction in the US, reports started coming in that AFCIs in the vicinity - not just in the radio amateur’s home - would trip in the presence of RF from an Amateur Radio transmitter. While each manufacturer’s design is proprietary, most AFCIs detect arcs by monitoring the shape of the alternating current waveform, changes in current levels, voltage irregularities, and the presence of high frequency emissions or “noise.” The ARRL Lab dug into the problem.

“Last summer we built a test fixture in which we could test any type of circuit breaker,” Gruber said. It involved using WIAW as an RF source. Gruber says he bought one of “every AFCI that I could get my hands on,” but when the Lab began testing them during WIAW transmissions, none of the devices tripped.

A ham in New Mexico who had reported AFCI problems sent some of his breakers to the ARRL Lab, “and those tripped when we tested them,” Gruber said. The problematic breakers were certain models made by Eaton Corporation. “We already had an Eaton breaker, an older model, but it did not trip,” he noted, adding that the breaker had a yellow button. The newer model, which had a white button, did trip in the presence of RF, however, even at power levels down to about 50 W on 17 meters.

Gruber contacted Eaton, and two of the manufacturer’s engineers visited ARRL Headquarter in August. “Eaton was extremely cooperative and eager to resolve this,” Gruber recounted. “They spent the day with us, going over our test methods and took some of the problematic breakers back with them, eventually developing a modified version.

“We have just finished testing the new version of the breaker, and it did not trip during WIAW transmissions and in other tests,” Gruber reported. He said the new breaker is still in the queue for UL approval.

Eaton Engineering Director Andy Foerster said arc fault detection is challenging, in part because so many common household devices - such as vacuum cleaners and power tools that use motors with brushes - create arcing. In information provided to ARRL Eaton engineer Lanson Relyea said that because AFCIs rely on HF emission detection to verify arcing, “any signal that conducts or radiates a signal within the detection band of the AFCI can cause interference and cause the device to trip without the presence of a true arcing condition.”

Foerster explained that all arc fault devices must meet the requirements of UL standard 1699. “This standard requires a very extensive set of tests to confirm that the

device will detect an arc, that it will not nuisance trip in the presence of a set of common loading conditions, and that it will resist a variety of environmental noise sources,” Foerster told ARRL. “Among this last set of noise sources is radiated electromagnetic field immunity and immunity to conducted disturbances.”

Foerster said AFCIs use “some pretty sophisticated digital signal processing technology” to distinguish various types of arcs. “They continue to get better, but they are not perfect,” he added. “And the governing philosophy is that they should err on the side of tripping.” According to Foerster and National Fire Protection Association (NFPA) statistics, the use of AFCIs appears to have contributed to an overall decrease in house fires from electrical causes. When the National Electrical Code (NEC) begins to specify AFCI receptacles next year, Foerster assured, these will include “the immunity to ham radio RFI that we have developed with the testing assistance of the ARRL.”

Eaton and ARRL agreed that when the manufacturer comes out with any new models of breakers, it will ask the League to test them at WIAW. “It’s a win-win situation,” Gruber said. Eaton also has agreed to work with anyone having a problem with RF tripping its AFCIs. Eaton says that AFCI manufacturers “are aware of this compatibility issue and are actively working to correct this in future products.”

Eaton’s Relyea said that hams experiencing unwanted tripping problems with their or their neighbors’ AFCIs should contact the manufacturer as the first step in rectifying the compatibility issue. In the case of Eaton breakers, contact Bob Handick (412-893-3746) or Joe Fello (412-893-3745).

EXTRATERRESTRIAL COMMUNICATIONS: LASER SPEED DEMO IN SPACE

NASA has used laser technology to transfer data over the 239,000 miles to and from the moon. This at a speed of 622 megabits per second.

Badri Younes is NASA's deputy associate administrator for space communications and navigation. In a press release he said that his agency is encouraged by the results of the demonstration of the Lunar Laser Communication Demonstration to this point. As such NASA is confident that it is on the right path to introduce this new capability into operational service soon.

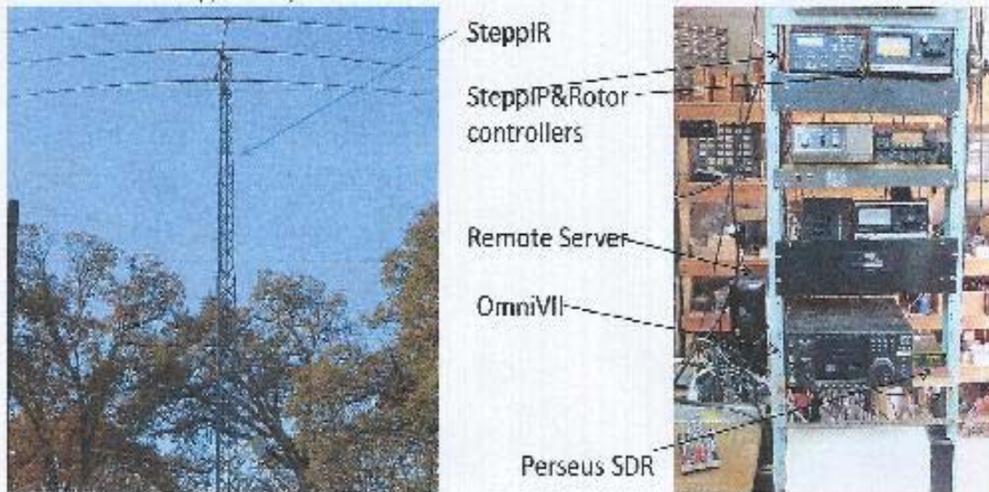
The space agency's Lunar Laser Communication Demonstration is the first two-way space communication system to use a laser instead of radio. Younes calls it the first step on NASA's roadmap toward building the next generation of space communication capability.

The Lunar Laser Communication Demonstration is hosted on NASA's Lunar Atmosphere and Dust Environment Explorer or LADEE satellite. (NASA)

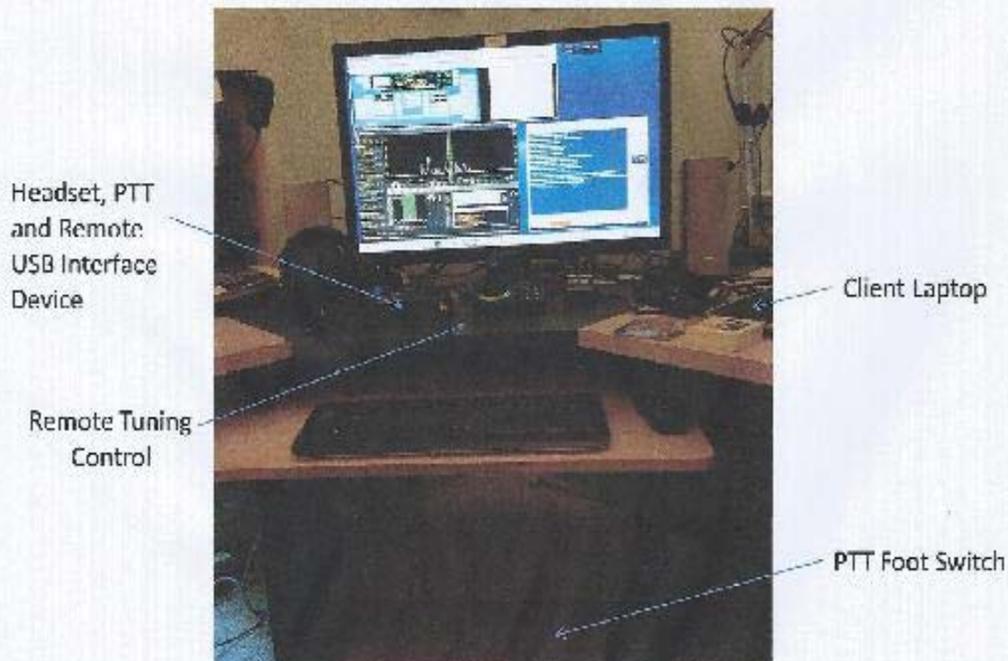
MEL'S REMOTE STATION

Mel, N6MCM, lives on a small lot in El Dorado Hills, with restrictive CCR's. Ken, K6KRD, lives on several acres in Rescue, with no restrictions. It's a match made in Heaven! Mel uses Ken's SteppIR antenna and remotes everything back to his house. He's been working with Ken on this project for some time now and, finally, it all works!

N6MCM Remote Station



N6MCM Client Station



NEW TINY PACEMAKER DEVELOPED THAT REQUIRES NO WIRING

Developed in the United States by the company Nanostim, the tiny device is less than 10% of the size of a conventional pacemaker, uses a built-in battery and is designed to be implanted intravenously directly in the heart.

Conventional pacemakers require a patient be subject to a surgical procedure so that a pocket can be created in the body to house the pacemaker and associated wiring. Such wires are regarded as the component of pacemakers most likely to fail.

By contrast the Nanostim pacemaker is inserted via a catheter inserted through a vein leading to the heart. It has a built-in battery that is expected to last between nine and thirteen years. Eliminating the need for wires lowers the risk of infection or malfunction and means that patients are not restricted in the amount of activity they do, the firm behind the device claims.

Currently more than four million people around the world have some sort of cardiac rhythm device with an additional 700,000 people getting one each year. The new pacemaker design has yet to receive full United States Food and Drug Administration approval.

More on this story is on the web at tinyurl.com/wireless-pacemaker. (BBC)

INTEL GALILEO BOARD SOON AVAILABLE

Intel's Galileo open-source computer can now be ordered and is scheduled to ship at the end of November. Online retailer Mouser Electronics is the first to take orders for the board.

The Galileo computer is an unenclosed circuit board that's a little larger than a credit card, and uses Intel's extremely low-power Quark processor.

Though higher priced, the Intel board is being called a competitor to the popular Raspberry Pi open-source PC. Both are targeted at the community of makers and hackers who design computing devices ranging from robots and health monitors to home media centers and PC's. Galileo is also expected to become a welcome addition in ham radio development circles as well. (Southgate)

FEMA AND NPR TEAM FOR ALERTING DEAF TO EMERGENCIES

The Department of Homeland Security has announced a pilot project in cooperation with NPR Labs, to demonstrate the delivery of the first-ever, real-time emergency alert messages to people who are deaf or hard-of-hearing in five Gulf states.

Twenty-five NPR affiliates in Alabama, Florida, Louisiana, Mississippi and Texas have agreed to participate in the venture to transmit emergency alert messages, such as weather alerts, to 475 individuals who

are deaf or hard-of-hearing in the stations' listening areas. This to determine how effectively the messages are being sent and received.

The public radio stations participating in the project will receive emergency alert messages from FEMA's Integrated Public Alert and Warning System. The stations will then broadcast the emergency alerts to specially designed FM Radio Data System receivers that alert the participants with a flashing indicator.

The receivers can also show the content of the alert through the receiver's digital display. Participants can connect a strobe light or bed-shaker alerting device to the receiver to help ensure alerts are noticed both day and night. (RI)

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COFFEE & DONUTS EVERY THURSDAY MORNING

8:00 A.M.
To
10:00 A.M.



The Golden Spike
Community Center
Rathdrum

TALK-IN: 146.98
100 PL

Bring a writing instrument. The Golden Spike has the napkins for our breakfast table engineering!

Deadline for submitting articles, stories, reports, etc., is the 25th of each month for the following month's newsletter.

Kootenai Amateur Radio Society



PO Box 1765, Hayden, Idaho 83835-1765

Please complete the entire form and return with your payment

Single Year membership

New member \$15.00 Renewing \$15.00 Family \$23.00 Info Update Only

Two Year Membership

New member \$28.00 Renewing \$28.00 Family \$42.00

Call Sign _____ Class _____ Expires _____

First Name & Initial _____ Last Name _____

If renewing, only fill in information below that has changed since last application, otherwise complete.

Address _____

City _____ State _____ Zip Code _____

Phone Number _____ E-Mail Address _____

ARRL Member _____ May we publish Limited information _____ (Y/N)

For Family Membership, Please complete an additional application and staple together.

Signature _____

K7ID.org Request Form

First and Last Name _____ Call Sign _____

Would you like your (call sign)@k7id.org email be forwarded to an existing email account or would you like to Access it through a web or post office protocol (POP) system?

Please Forward to my existing Email Webmail access POP Access
(Please complete the bottom & Sign) I wish to opt-out of K7ID.org

Please select a user name _____@K7ID.org

Please select a Password _____

For forward request only

Email address _____

Signature _____

Internal Use Only

Cash	<input type="checkbox"/>	Check	_____	Money Order	<input type="checkbox"/>
Roster	<input type="checkbox"/>	Membership Card	<input type="checkbox"/>		

