

RCA AMATEUR RADIO CLUB

NOVEMBER, 2013

MONTHLY NEWSLETTER

INDIANAPOLIS, IN

THE NEXT MEETING OF THE RCA AMATEUR RADIO CLUB WILL BE
TUESDAY, NOV. 12th, 6:30 PM AT [G.T. SOUTH'S](#),
5711 E. 71st STREET, INDIANAPOLIS, IN

RCA ARC NEWS

SUMMARY OF THE OCTOBER MEETING – Thanks to all who attended the October meeting! Jim, K9RU reported on the recent VHF contest. Reminder, the CW World Wide is coming up. The '88 repeater has been back on the air for a year now, we have all the voter sites operational and Echo Link up and running. John, KF9UF has been updating all the documentation and putting it up on the Cloud so all the control operators have access to it. The repeater is homebrew and it has been through many updates, so sorting it out takes some time. Several of us have an informal sked on weekday mornings between 8:30 and 9:00 AM. Everyone is welcome. Leroy, WA4OTD, discussed the possibility of installing the Club's 756Pro on his church's property. The church could use it to communicate with other churches and form a ham club. RCA ARC members could have access for to use the station. Security issues, access and antennas would need to be worked out. The fly-by of the Juno spacecraft was discussed and how it worked. Don't forget the Ft. Wayne Hamfest in November, several members are planning to drive up, so there are possibilities for car pools. We still have the November meeting before the hamfest to make plans. Dave, N9KZJ and K9RU gave their impressions of the Ten Tech Hamfest near Knoxville, Tennessee.

NEXT TEST AMATEUR RADIO LICENSE TEST SESSION --

Time: Saturday, November 9, 2013, 12:00 PM (Walk-ins allowed)
Location: Salvation Army EDS Training Facility
4020 Georgetown Road
Indianapolis, IN 46254-2407
Contact: Jim Rinehart, K9RU. k9ru@arrl.net 317 495-1933

THE CONTEST SEASON HAS BEGUN AND HERE IS A LIST OF THE UPCOMING MAJOR CONTESTS:

Worked All Europe RTTY - Nov 9 at 0000 UTC to Nov 10 at 2359 UTC
ARRL Sweepstakes Phone - Nov 16 at 2100 UTC to Nov 18 at 0300 UTC
CQ World Wide CW - Nov 23 at 0000 UTC to Nov 24 at 2359 UTC
ARRL 160 Meter - Dec 6 at 2200 UTC to Dec 8 at 1600 UTC
ARRL 10 Meter - Dec 14 at 0000 UTC to Dec 15 at 2359 UTC

AMERICAN LEGION TAKES TO AIRWAVES IN SALUTE TO VETERANS – Indianapolis Legionnaires will honor their fellow veterans in a special on-the-air tribute on Veterans Day, November 11th. That when members of The American Legion Amateur Radio Club will operate using the special event call sign W9L on 20 meters, 2-meter simplex, a Central Indiana repeater and connect world wide via IRLP beginning at 9:00 a.m. through 5 p.m. Eastern Time.

Frequencies in use will include to 14.275 MHz upper sideband on 20 meters, 146.46 MHz on 2 meter simplex, the 145.17 MHz repeater in Hamilton County and IRLP Node 4816. Those who make contact with W9L will be eligible to receive an attractive full color commemorative certificate. More about this event including QSL routing is on the web at website www.legion.org/hamradio (K9JM)

HAMFESTS, OPERATING EVENTS

Nov 9-10 Worked All Europe RTTY
Nov 13 ARRL Frequency Measuring Test, 10 pm EST
http://www.nxtbook.com/nxtbooks/arrl/gst_201311/index.php#/92
Nov 16-18 ARRL Sweepstakes Phone
Nov 16 Ft. Wayne Hamfest & Computer Expo, <http://www.fortwaynehamfest.com/>
Nov 23-24 CQ World Wide CW
Nov 30 Evansville Hamfest, <http://w9ear.org/hamfest.htm>
Dec 6-8 ARRL 160 Meter
Dec 14-15 ARRL 10 Meter

All dates, unless otherwise stated, are UTC.

<http://www.arrl.org/contest-update-issues> Contests updates
<http://www.hornucopia.com/contestcal/> WA7BNM Contest Calendar
<http://www.arrl.org/special-event-stations> ARRL Special Event Stations page
http://www.arrl.org/exam_sessions/search ARRL training page for test sessions
<http://indyhams.org/events/> Indiana events and public service opportunities.

CQ WW PHONE CONTEST CONDITIONS WERE PHENOMENAL

Words like “wall-to-wall stations” and “phenomenal conditions” punctuated post-contest reports from last weekend’s CQ World Wide DX Contest (SSB). Participants have OI’ Sol to thank, as sunspot numbers leaped into the vicinity of 150.

The very active solar conditions did little to help those who favor or concentrate on the lower bands, but 10 meter operators experienced sustained openings during the weekend, punctuated by occasional radio blackouts. On 10 meters activity ran from 28.300 to 29.300 MHz during the daylight hours.

If you were not on for the contest you missed one of the best openings during a contest in years.

Conditions were very “hot” with 10 meters open for the ARRL SS CW contest the following weekend. – K9RU

SENATE CONFIRMS WHEELER TO FCC CHAIR AND MICHAEL O'RIELLY AS A COMMISSIONER

The US Senate confirmed the White House nomination of venture capitalist and industry insider Thomas Wheeler, a Democrat, to be FCC chairman. He succeeds former FCC

Chairman Julius Genachowski, who stepped down in June. The Senate also confirmed Michael O'Rielly as a commissioner to one of the two Republican seats on the Commission. O'Rielly, a New Yorker who is on the staff of Texas Republican Senator John Cornyn, will fill the remainder of the term expiring June 30, 2014, that had been held by Robert M. McDowell, who resigned in May. Acting FCC Chairwoman Mignon L. Clyburn, who now will return to her seat as a commissioner, congratulated Wheeler and O'Rielly on their confirmations.

"Tom brings a tremendous depth of experience, talent, and knowledge that will serve him well as the leader of this critically important agency," Clyburn said in a statement. "I have no doubt that he will be an outstanding FCC Chairman. With his extensive public policy expertise and understanding of the communications landscape, Michael will certainly be an invaluable asset to the Commission."

Wheeler also served as a wireless and cable industry lobbyist. He was president of the National Cable Television association from 1979 until 1984. --ARRL Letter

ARRL SUPPORTS FCC WRC-15 ADVISORY COMMITTEE RECOMMENDATIONS AFFECTING AMATEUR RADIO

The ARRL has expressed its support for three recommendations affecting Amateur Radio frequency allocations which the FCC's World Radiocommunication Conference 2015 FCC Advisory Committee (WAC) has already approved. ARRL Chief Technology Officer Brennan Price, N4QX, filed comments on behalf of the League October 17 in IB Docket 04-286. The League has concluded that the WRC-15 Agenda Item 1.1 recommendation for 420-450 MHz "maintains a status quo that accommodates many users and works well." The Amateur Service is secondary on the 70 centimeter band in the United States. At least one administration has proposed to introduce international mobile telecommunications (IMT) — cellular telephone and wireless broadband — to the bottom 10 MHz of the band, but the League said it agrees with the WAC and the NTIA that things are just fine as they stand.

"The *status quo* is successful and represents a success story for spectrum management," the League said. "Introduction of IMT in the 420-430 segment of this band, as proposed by one administration, will most assuredly upset this status quo." The ARRL pointed out that although ham radio is secondary on the band, "radio amateurs have a vested interest in maintaining their ability to use the band," and Amateur Radio has been "a responsive and responsible sharing partner" to the band's primary users.

For its part the WAC said, "The results indicate that for most cases, sharing between IMT-2000 base/mobile stations and the various types of radars when placed in adjacent spectrum is not feasible in the absence of mitigation." Based on information at hand, the committee said, "it is logical to conclude that co-frequency sharing between IMT and the radiolocation service in the 420-450 MHz bands is not feasible."

The League also said the WAC recommendation for WRC-15 Agenda Item 1.10 regarding 22 to 26 GHz "protects the only worldwide, primary Amateur and Amateur-Satellite Service allocation between 146 MHz and 47.2 GHz."

"Sharing with incumbent services, including the Amateur and Amateur-Satellite services at 24.-24.25 GHz will require technical and operation constraints that will result in spectrum being impractical for use by the MSS [Mobile Satellite Service]," the ARRL said. The Amateur and Amateur-Satellite services are primary at 24.-24.25 GHz. "Radio amateurs have been responsible stewards of a band that is difficult to use, and the WAC proposal of no change to

the entire 22-26 GHz range is particularly applicable to the 24-24.25 GHz segment.”

WRC-15 Agenda Item 1.18 considers a primary allocation to the radiolocation service for automotive applications in the 77.5-78.0 GHz frequency band in accordance with a resolution adopted at WRC-12. The League suggested that the FCC support the WAC [recommendations](#) “as a base for eventual reconciliation with an NTIA position,” or that the FCC not support any position on the agenda item, “as conducted studies to not support a position more expansive than that contained in the recommendation.” The Amateur and Amateur-Satellite services are now primary in the 77.5-78 GHz band, with Radio Astronomy Service users secondary. – ARRL Letter

RAC, CANADIAN AMATEURS FAVOR NEW MW AMATEUR BAND

Radio Amateurs of Canada has commented in support of a proposal that would create a new secondary Amateur Radio medium-wave allocation at 472 to 479 kHz. The new 630 meter band was proposed in a *Consultation* released in June by Industry Canada, the nation’s radio communication regulator. It proposed numerous revisions to Canada’s table of allocations warranted in the wake of World Radio communication Conference 2012 (WRC-12). Last year the ARRLasked the FCC in 2012 to carve out the same MW band for US hams.

“RAC is pleased to see the department has included this allocation to the amateur service on a secondary basis in Canada, consistent with outcome of Agenda Item 1.23 at the World Radio Conference 2012,” said RAC President Geoff Bawden, VE4BAW, on behalf of RAC. “It is acknowledged that amateur service use of this new...band will be limited to 5 W effective radiated power relative to an isotropic radiator,” Bawden continued. In line with WRC-12, Industry Canada proposed that stations in the Amateur Service “shall not cause harmful interference to, or claim protection from, stations of the Aeronautical Radio navigation Service.”

Bawden said the addition of the MW band to the Amateur Service “will give Amateur Radio operators in Canada an opportunity to participate with other amateur operators in conducting short and long-range propagation studies using very narrowband digital techniques. Such communications will provide another path for emergency and disaster relief communications, when necessary.”

Several Canadian radio amateurs and other organizations also filed comments favoring the new MW allocation.

Bawden also offered the RAC’s support to create a 60 meter band for Canada’s radio amateurs. The allocation 5250 to 5450 kHz is not yet available to hams north of the border, and while Industry Canada did not specifically propose creating an amateur allocation there, the RAC remains optimistic.

“Based on the posted comments, we expect a favorable decision to this consultation very soon and expect an appropriate footnote will be added to this portion of spectrum [in the *Canadian Table of Frequency Allocations*] indicating the six spot frequency allocations authorized to the Canadian Amateur Service and any restrictions on use that may apply,” Bawden told IC.

Low-frequency experimenter Joe Craig, VO1NA, writing on behalf of the Marconi Radio Club of Newfoundland ([MRCN](#)), added that group’s voice to those supporting the creation of the

472-479 kHz band in Canada. "From 2009-2012, we and other Canadian amateurs conducted experiments between 504 and 509 kHz in support of a domestic allocation to the Amateur Service in this portion of the radio spectrum," Craig noted. "We have used Morse and digital transmissions on 504.1, 507.77 and 508.5 MHz and were authorized to use up to 20 W ERP. There were no reports of interference from these operations."

Utilities in Canada and the US have opposed the addition of a secondary Amateur Radio allocation at 472-479 kHz as well as at 135.7 to 137.8 kHz. In its **comments**, the Utilities Telecom Council of Canada (UTCC) urged IC not to establish an Amateur Radio allocation at 472-479 kHz, saying that interference to power line communication (PLC) systems operating in that part of the spectrum is highly likely and would be difficult to mitigate, since the PLC systems would have to avoid interfering with amateur operations.

"If there was an amateur allocation at 472-479 kHz, amateurs could freely operate in close proximity to transmission lines without the utility knowing that they were there," the UTCC said in its comments. "Utilities would probably only become aware of these operations when it was too late, because they would experience unexplained outages or mis-operation of PLC systems. Interference to PLC systems has the potential to cause widespread electrical outages."

Craig asserts that the utilities are using drama, conjecture and "outright inaccuracies" to support their position, even citing what he called "the unfortunate FCC decision to deny 137 kHz" to US hams. "We can hope that reason will prevail, and that the new band will soon become available to Canadian amateurs," he told ARRL. --ARRL Letter

ELECTRONIC TREASURES OF THE DAVID SARNOFF COLLECTION



The history of the Radio Corporation of America is in many ways the history of 20th-century American innovation. From the company's founding in 1919 to its sale in 1986, the RCA name was synonymous with products that shaped how Americans lived and worked. Long before the rise of Silicon Valley, RCA Laboratories, in Princeton, N.J., was at the center of the nation's consumer electronics industry, harnessing the creative impulses of thousands of scientists, engineers, and technicians to systematize the invention of new technologies.

In October, a [new exhibition highlighting RCA's rich history](#) opened at the [College of New Jersey](#), in Ewing. It draws from the more than 6000 artifacts that the college inherited after the David Sarnoff Library – RCA's main technical archive and museum – closed in 2009. (The [IEEE Foundation funded a new study center](#) connected to the exhibition.) The installation covers the development of radio, television, and broadcasting, as well as RCA's work in liquid-crystal displays, electron microscopy, solid-state physics, and computers. <http://spectrum.ieee.org/slideshow/consumer-electronics/gadgets/electronic-treasures-of-the-david-sarnoff-collection> – IEEE Spectrum

NASA USES LASERS TO COMMUNICATE WITH THE MOON, BREAKS RECORDS

The space agency is breaking records and setting new standards in space travel and communication all the time. Over the weekend, NASA made history by using lasers to communicate and transport data to the moon. The Lunar Laser Communication Demonstration (LLCD) launched a pulsed laser beam that transmitted data over 239,000 miles between the moon and Earth at an amazing rate of 662 megabits per second. The LLCD is the first ever system for two-way communication using lasers instead of radio waves. Since the first time NASA began space exploration, it has always used radio frequency communication, but times are changing and now, more data capacity is needed. The lunar laser, developed by Massachusetts Institute of Technology (MIT) researchers, hopped a ride aboard the [Lunar Atmosphere and Dust Environment Explorer](#) (LADEE) spacecraft which finally reached the moon's orbit on October 6. During the demonstration, light speed signals travelled from the spacecraft to a ground station in White Sands, NM, while the lasers were simultaneously being sent to the spacecraft from the ground station.

Why lasers? Lasers allow for better communication capabilities like better image resolution. It even allows NASA to transmit 3D videos from deep space.

LINKED REPEATERS INSTRUMENTAL IN HIKER RESCUE

A hiker in distress in Nevada is thankful that he had his hand-held transceiver along when he found himself stranded in the hills near Henderson. Western Intertie Network ([WIN](#)) System member Jim Frederick, KF6QBW, in Arizona reports he was monitoring the system November 3 around midday when he heard, "Mayday, Mayday. Hiker in distress!" from his WIN System repeater.

"I grabbed a charged battery for my VX-5, and the call came over the radio again," Frederick says. He responded, and the hiker on the other end, Nathan Rischling, KDØHFM, of Nellis Air Force Base in Nevada, told him he'd misread the elevation on his topographical map, had ended up on a very steep and rough area, had stuck his hand on a cactus, and could find no safe way out of his situation. He had a GPS, however, and was able to provide Frederick with his precise coordinates. Rischling said he had a day's worth of food and water but needed help getting off the mountain, as he would not get back to his starting point before sundown and didn't think his GPS battery would last out the trip.

"KDØHFM stated that he did not take a conventional trail and was using a topographical map and GPS for guidance," Frederick explained.

Frederick said he knew from experience that a call to the Las Vegas search and rescue would expedite the process, so he put out a call on the WIN System for any Las Vegas station that could make the call. James Freeman, KG7EWP, promptly came back, and Frederick handed off the emergency traffic. Freeman called 911 and spoke with search and rescue, and stood by until the situation was resolved. Within 15 minutes a rescue helicopter was on the way.

Frederick kept his ear to the radio until the event was resolved, in case someone needed more information from him, and a few hours later, he overheard Rischling thank KG7EWP for helping "and everyone else on the WIN System for standing by."

The WIN System is a series of 90 linked, or inter-tied repeaters — most on UHF (70 centimeters) — that cover a substantial portion of California, 16 other states, and four countries

around the world. It is owned and operated by Shorty Stouffer, K6JSI. KF6QBW is an affiliated repeater station with the WIN System.

"Without Shorty, K6JSI (my Elmer), and the WIN System and its members, I would not have known what to do, let alone been able to help, as I was just a link in this chain of events," Frederick said. — *Thanks to Chuck Baer, W4ROA; Jim Frederick, KF6QBW; Shorty Stouffer, K6JSI, and Sean Kutzko, KX9X*

PERFECT METHOD OF ANONYMOUS, ONE WAY COMMUNICATION

Uno, Dos, Tres... If you have done any amount of listening to shortwave radio outside of the ham bands, you have undoubtedly run across "numbers stations." The broadcasts from these stations consist streams of numbers or letters, often in a computer-generated female voice speaking in Spanish. Every now and then, a numbers station pops up on 30m, sending five-character groups in Morse code.

According to the Conet Project (<http://www.irdial.com/conet.htm>), "Shortwave Numbers Stations are a perfect method of anonymous, one way communication. Spies located anywhere in the world can be communicated to by their masters via small, locally available, and unmodified Shortwave receivers. The encryption system used by Numbers Stations, known as a 'one time pad' is unbreakable. Combine this with the fact that it is almost impossible to track down the message recipients once they are inserted into the enemy country, it becomes clear just how powerful the Numbers Station system is."

The Conet Project sells a CD with a number of recordings for \$55, but you can find a bunch of mp3 files at <http://www.archive.org/details/ird059> for free.

Recently there was a thread on the Glowbugs Google Group about numbers stations. One fellow mentioned "The Numbers Station," a movie released earlier this year starring John Cusack. IMDB (<http://www.imdb.com>) says that The Numbers Station is about "a disgraced black ops agent dispatched to a remote CIA broadcast station to protect a code operator. Soon, they find themselves in a life-or-death struggle to stop a deadly plot before it's too late." It's currently available for streaming on Netflix, and I watched it recently. It's kind of violent (lots of people get shot), but it's a decent thriller.

Another group, ENIGMA 2000, (<http://www.apul64.dsl.pipex.com/enigma2000/>) is described as "a UK based online group, whose aims are to bring together listeners and enthusiasts who monitor and gather information on 'Number Stations' and other related radio transmissions. Through our Yahoo Group monitors can share their logs, discuss frequencies, thoughts and opinions on this most emotive subject." Jim says, "These folks are SERIOUS enthusiasts. I have heard that they surpass many intelligence services with their thoroughness. You can get in up to your eyeballs if you don't watch it."

These stations have been around since World War II. I remember as a kid in the 1960s and 1970s, reading articles about numbers stations in Popular Electronics and Electronics Illustrated. They're as much of a mystery today as they were back then. --KB6NU

SHORTS

NEW E-PUB TO TAKE UP WHERE MONITORING TIMES LEFT OFF -- When *Monitoring Times* publishes its final issue in December, a new electronic publication, [The Spectrum Monitor](#), will follow in its footsteps. *Monitoring Times* announced earlier this year that it was ceasing publication after a 33 year run and the retirement of its publisher, Bob Grove, W8JHD.

Monitoring Times Managing Editor Ken Reitz, KS4ZR, will helm *The Spectrum Monitor*, which will debut in January and, as he explained in announcing the new publication, “will carry virtually all of the current *Monitoring Times* columnists and feature writers.” Reitz said *The Spectrum Monitor* will be available only in Adobe PDF format, which may be read on any desktop, laptop, iPad™, Kindle Fire™ or any other device capable of opening a PDF file.

The Spectrum Monitor promises to cover the radio listening and monitoring waterfront, from Amateur Radio and Amateur Radio satellites to scanning; aeronautical, utility, and government monitoring; Amateur Radio astronomy; long-wave monitoring; short wave broadcasting; antennas, and radio restoration. --ARRL Letter

NOISE REDUCTION INVENTOR RAY DOLBY, SK - The technologist who literally invented electronic noise reduction has passed away. This with word that Dolby Laboratories founder Dr. Ray Dolby died September 12th at his home in San Francisco at age 80. Early in his career, Ray Dolby was employed by Ampex Corporation where he was chief designer of the electronic aspects of the first practical videotape recording system. In 1965 he founded Dolby Laboratories, whose major accomplishments include the development of electronic noise reduction and surround sound technologies. According to a company spokesperson, in recent years, Ray Dolby had been suffering from Alzheimer's disease. Then last July he was diagnosed with an acute form of leukemia. Ray Dolby is survived by his wife, Dagmar, his sons, Tom and David and their spouses. A celebration of his life will be held at a later date. The family asks that, in lieu of flowers, donations be made to the Alzheimer's Association, 1060 La Avenida Street, Mountain View, California, 94043, or the Brain Health Center, % CPMC Foundation, 45 Castro St., San Francisco, California, 94117. - Dolby Labs, RW, ProSound, twice.com

FRIEDRICHSHAFEN LECTURES AVAILABLE TO DOWNLOAD – Six of this years lectures presented at Germany's Ham Radio gathering are now available as PowerPoint slides with synchronized audio. Available programs include Tom Perera, W1TP's talk on the Enigma and other historic cipher machines; John Alexander, G7GCT's small cipher machines presentation and Chris Duckling, G3SVL's, 100 Years of the RSGB and its International Partners. If you are interested in finding out more, go to <http://www.dokufunk.org/talk> on the World-Wide-Web. --ARRL Letter

NIKOLA TESLA MONUMENT UNVEILED IN NEW YORK - The president of Serbia has traveled to the United States where he recently unveiled the Nikola Tesla Monument at Tesla's former laboratory in Long Island. In a press statement prior to the actual ceremony, Serbian President Tomislav Nikolic said that it was the strength of Tesla's vision is what influences how the public speaks about Nikola Tesla with respect some 70 years after he died. Nikola Tesla who passed away on January 7, 1943 was a Serbian-born and later inventor, electrical engineer, mechanical engineer, physicist, and futurist. He is perhaps best known for his contributions to the design of the modern alternating current electricity supply system. For decades The Tesla Science Center has been trying to set up a commemorative

museum at the site of Nikola Tesla's old laboratory, Now those behind the project and who managed to raise over a million dollars in an internet crowd funding campaign can celebrate the fact that their goal is finally starting to become a reality.

SPECIAL EVENT STATION KP4AO [ARECIBO OBSERVATORY](#) IN PUERTO RICO WILL BE ON THE AIR SUNDAY, NOVEMBER 10, 1230-2000 UTC. - "We will be on the air commemorating our 50th anniversary of Radio Astronomy Science," explains Angel M. Vazquez, WP3R, the head of telescope operations and RFI/spectrum manager at the facility. "We will operate 20 meter phone only at around 14.250 MHz."

The observatory is inviting radio amateurs to operate the station. Vazquez says the KP4AO ops will be transmitting right from the control room of the William E. Gordon telescope, the world's largest and most sensitive radio telescope, commissioned in November 1963. Additional history and pictures here: <http://www.wired.com/wiredscience/2013/11/arecibo-50th-anniversary>

A commemorative certificate will be available for those who make contacts with KP4AO (include a SASE) as well for those who operate the station. QSL to Arecibo Observatory Radio Club, HC03, PO Box 53995, Arecibo, PR 00612.

The special event is sponsored by the Caribbean Amateur Radio Group and the Arecibo Observatory Radio Club. The National Astronomy and Ionosphere Center (Arecibo Observatory) is a facility of the National Science Foundation.

LOOKING FOR SOME HINTS ON BUILDING VHF/UHF ANTENNAS? – DK7ZB has a nice web site: http://www.mydarc.de/dk7zb/Duoband/5+8_2m-70cm.htm

THE *RCA ARC MONTHLY NEWSLETTER* IS COMPILED AND EDITED BY JIM RINEHART, AND JIM KEETH. ALL MATERIAL CONTAINED HEREIN IS OBTAINED FROM THE SOURCES CREDITED AND EDITED FOR THIS NEWSLETTER. EMAIL TO <mailto:WebMaster@w9rca.org>. Check our web site at <http://www.w9rca.org/>