



Legacy Amateur Radio Club

# RCA AMATEUR RADIO CLUB



AFFILIATED CLUB

INDIANAPOLIS, INDIANA

APRIL, 2016

MONTHLY NEWSLETTER

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

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## RCA ARC NEWS

**SUMMARY OF THE MARCH MEETING** – The order form for Indy Hamfest tables has been received. Six tables will be purchased for this year's event. Previously we had planned to purchase an air conditioner for the repeater shack and share the expense with the other "tenant" in the building. Jon, KC9GUM, has offered to donate a window air conditioner to the Club. Thanks, Jon! The 6m beacon installation at the repeater site has not been finished. We'll try and finish that up soon. At the Dayton Hamvention this year (May 20-22), we'll plan to do Friday night dinner as usual at the Barnsider Restaurant. Same as last year. Field Day (June 25-26) was discussed as was the "remote station" being assembled by K9LZJ. Dave, N9KZJ, reported on activities at WW2IND. Thanks to all who attended.

### NEXT TEST AMATEUR RADIO LICENSE TEST SESSION

**Time:** Saturday, April 9th. Exams start at noon. Walk ins allowed.

**Location:** Salvation Army EDS Training Facility  
4020 Georgetown Rd.  
Indianapolis IN 46254-2407

**Contact:** James K. Rinehart, (317) 218-7304, e-mail: [k9ru@arrrl.net](mailto:k9ru@arrrl.net)

**INDY MINI-MARATHON, MAY 7 - AMATEUR RADIO VOLUNTEERS** – Volunteers are still needed to help out with the amateur radio communications for the Mini-Marathon. This is a lot of fun and there are the 500 Festival "perks", such as the free t-shirt, volunteer day passes at IMS, etc.

For more information contact:

Michael R. Palmer, N9FEB, [N9FEB@comcast.net](mailto:N9FEB@comcast.net)

(317) 849-3602 home, (317) 753-8691 cell, [www.IndyHams.org](http://www.IndyHams.org)

**DAYTON HAMVENTION BUS** --The Indianapolis Club has chartered a bus to the Dayton Hamvention again this year. The day trip to Dayton will be on Saturday, May 21. The bus will have two pick up points: 6:30 AM at Southern Plaza, and pick up around 7:00 AM at Peddler's Mall on the east side. It will leave from Dayton around 4:00 pm.

As in the past, there will be a short stop at McDonald's in Richmond on the way to Dayton for breakfast, and a dinner stop at MCL in Richmond on the way back. The cost for the round trip is \$30 per person (same as last year), and does not include admission to the Hamvention or either of the meals mentioned above.

The bus will drop off at the front door of Hara Arena, and be parked in close proximity of the facility so items can be stored on the bus for your convenience.

Tickets for the bus trip will be available at the IRC meetings, or by contacting club treasurer Rhonda Curtis, WS9H, Phone: (317) 363-7457 Email: [ws9h@arri.net](mailto:ws9h@arri.net)

You don't need to be a IRC member and it a great way to go to the Dayton Hamfest.

Tickets for admission to the Hamvention are available on their website: <http://hamvention.org/purchase-tickets/>

**BICENTENNIAL INDIANA QSO PARTY IS SATURDAY, MAY 7th, 11AM TO 11PM EDT** – This is a 12 hour operating event with the objective of activating all 92 Indiana counties and getting as many Indiana hams on the air as possible during the QSO Party on the 160, 80, 40, 20, 15, and 10 meter amateur bands, CW and Phone.

The goal for hams operating from Indiana is to work all 92 counties and as many hams in Indiana and worldwide as possible on the 160, 80, 40, 20, 15, and 10 meter amateur bands.

As part of the Indiana Bicentennial Celebration the HDXCC will offer a special certificate for working the following 15 counties: Clark, Dearborn, Franklin, Gibson, Harrison, Jackson, Knox, Orange, Perry, Posey, Switzerland, Warrick, Washington and Wayne, representing the 15 counties that made up Indiana on December 11, 1816 when Indiana was admitted to the union. See rules for detail on receiving the certificate.

A certificate will be awarded for any station activating one or more of the 15 Bicentennial Counties and submitting an entry. This applies to fixed, portable, rover and mobile stations making 25 QSO minimum is an aggregate from one or more of the 15 qualifying counties.



### Indiana Bicentennial County Award

The Hoosier DX and Contest Club Confirms  
In the Indiana Bicentennial Year of 2016  
Amateur Radio Operator

conducted two-way communications with amateur radio stations located in the 15 current Indiana counties of Clark, Dearborn, Franklin, Gibson, Harrison, Jackson, Jefferson, Knox, Orange, Perry, Posey, Switzerland, Warrick, Washington and Wayne. These counties with altered borders comprised the counties in the State of Indiana on December 11, 1816; the date Indiana was admitted as the 19th state of the United States of America.

HDXCC Awards Manager

INQP allows a number of operating categories including: QRP, low and high power single operator, all-out club efforts, multi-operator high power and multi-multi (multi operator and multi transmitters) operation. Also included are mobile units and rovers moving from county to county and portable setups similar to Field Day. Plaques are awarded for best in Indiana, out of state efforts, and best individual county efforts!

The Indiana exchange is RS(T) plus the county, for all others States it is RS(T) plus state, for Canada RS(T) plus province or territory and all others it is RS(T) plus DX.

The INQP Club Competition offers Indiana Amateur Radio Clubs a great opportunity as a club operating event. This could be a membership operating activity, a club multi-operation or a portable operation from a rare county or straddling a county line.

The club's aggregate score is the total score of the club members submitting contact-logs. At the end of the QSO party club members will submit their contact-logs electronically listing their club affiliation.

The club must be a legitimate Indiana Club. At least three members must participate, either as three individual single operator entries or a multi-operation entry listing three members or a combination of these entries. All contacts made by club members submitting logs, must be made from a station located in Indiana during the INQP.

Digital logs are preferred for INQP entry submissions. Handwritten logs are accepted, but they have to be manually entered, so please use logging software if at all possible. The Cabrillo log format is preferred for log submission.

**Top Club Competition Plaque** will be awarded to the club with highest aggregate score and awards certificates for second and third place. We would like to encourage all Indiana clubs to consider putting together a club effort and get their members on the air for the INQP.

The INQP overlaps with a few other QSO parties and contests: the 7QP, NEQP, and the Italian ARI Contest. So, during the INQP many other stations seek contacts from Indiana to fill their logs. The more Indiana stations on the air that day, the more action for everyone!

Typically 80, 40 and 20 meters are the most common bands used during the INQP, with 40 meters being the best band to work Indiana stations. Check 80/75 meters after dark for activity.

See INQP WEB site for details: <http://www.hdxcc.org/inqp/>

## HAMFESTS, OPERATING EVENTS, VOLUNTEER OPPORTUNITIES

Apr 16	North Central Indiana Hamfest	<a href="http://nci-hamfest.net">http://nci-hamfest.net</a>
May 7	Minimarathon	<a href="http://www.IndyHams.org">www.IndyHams.org</a>
May 7	Indiana QSO Party	
May 20-22	Dayton Hamvention	<a href="http://hamvention.org">http://hamvention.org</a>
June 25-26	ARRL Field Day	
July 8-9	Indianapolis Hamfest	<a href="http://www.indyhamfest.com">http://www.indyhamfest.com</a>

Opportunities for public service: <http://indyhams.org/events>

## ARRL ASKS FCC TO RESTORE BALANCE OF MODES ON 80 AND 75 METERS

In [comments](#) filed on March 23 on its *Petition for Rule Making* ([RM 11759](#)) seeking changes to 80 and 75 meters, the ARRL has told the FCC that its primary objective is to "rebalance" the bands by correcting a 10-year-old FCC error.

"ARRL's proposal is not fairly viewed as a proposal to take anything away from anyone," the League's comments assured. "It is more properly viewed as the effectuation of a fair, equitable, and efficient 'band plan' looking forward for the foreseeable future that balances everyone's needs, and which remedies a plainly unfair plan, imprudently created in the 2006 [Report and Order](#) in WT Docket 04-140."

Prompting the League's assurances were comments filed on the ARRL's *Petition* by a number of Amateur Extra class licensees, who felt that reframing 3600 to 3650 kHz for data modes could prove to be a disincentive to General licensees to upgrade. Others commenters saw it as an unfair spectrum grab. The ARRL noted that prior to 2006, the band was evenly divided between RTTY/data and phone/image subbands, with the RTTY/data subband extending from 3500 to 3750 kHz, and the phone/image subband extending from 3750 to 4000 kHz. The 2006 FCC *Report and Order* "substantially altered" what the League called "this even division of emission types."

In outlining the history of the proceeding, the ARRL pointed out that the FCC's *Notice of Proposed Rule Making* in Docket 01-140 would have shifted the line between the 80 meter RTTY/data subband and the 75 meter phone/image subband from 3750 kHz to 3725 kHz, pursuant to a 2002 ARRL *Petition for Rule Making*, RM-10413. This would change the ratio of spectrum between phone/image and RTTY/data segments on 75/80 meters from 50/50 to 55/45, and it is what the FCC proposed in its *NPRM*.

In its *Report and Order* in Docket 04-140, however, the FCC made "a very substantial and unjustifiable departure" from what it had proposed in its *NPRM*, the ARRL recounted. The Commission expanded the phone/image subband at 75 meters to 3600-4000 kHz, and it reduced the 80 meter RTTY/data subband to 3500-3600 kHz, eliminating RTTY operation above 3600 kHz and changing "the entire dynamic of this band," the League said.

The FCC had said in its proposal that no licensees would lose operating privileges. Nonetheless, the FCC's phone band expansion reduced by 100 kHz the spectrum between 3500 and 4000 kHz that was previously available to General class licensees, while Advanced licensees lost 75 kHz. In an apparent FCC oversight, the *Report and Order* completely eliminated access by automatically controlled digital stations (ACDS) to 3620 to 3635 kHz. A

subsequent FCC *Report and order* and *Order on Reconsideration* only made the situation worse by replacing the deleted ACDS segment with 3585-3600 kHz. That resulted in "a shortfall in available RTTY/data spectrum on 80 meters," the ARRL said, adding that its current *Petition* "simply restores that which was disreputed in 2006 in error." Read [more](#).

## HAMVENTION ANNOUNCES 2016 AWARD WINNERS

Nobel Laureate Joe Taylor, K1JT, of Princeton, New Jersey, has been named as the 2016 Dayton [Hamvention](#)<sup>®</sup> Amateur of the Year. Hamvention announced the recipients of the Amateur of the Year, Technical Achievement, Special Achievement, and Club of the Year awards on March 18.

Taylor was awarded the Nobel Prize in Physics in 1993 for the discovery of the first orbiting pulsar, leading to observations that established the existence of gravitational waves. Licensed in 1954 as KN2ITP, Taylor served as a professor of astronomy at the University of Massachusetts from 1969 to 1981, and later as a professor of physics at Princeton University. Since his retirement, Taylor has been developing and enhancing digital protocols for weak-signal communication by Amateur Radio, including *JT65* and *WSPR*.

John S. Burningham, W2XAB, of Morrow, Georgia, is the recipient of the Hamvention Technical Achievement Award. A radio amateur since 1970, Burningham has been involved with amateur repeaters for more than 40 years. Following positions in the aerospace industry and for Motorola, he has been in higher education for more than 20 years, and now serves as a senior lecturer in the Department of Computer Science and Information Technology at Clayton State University. A Life Member of ARRL and QCWA and a member of AMSAT and TAPR, he currently is active in the digital mobile radio community and is the author of the [Amateur Radio Guide to Digital Mobile Radio](#). He also wrote "Introduction to Digital Mobile Radio," which appeared in the October 2015 issue of *QST*, and is a contributing author in the 2016 *ARRL Handbook*.

The 2016 Hamvention Special Achievement Award will go to Stan Horzepa, WA1LOU, of Wolcott, Connecticut, for advocating cutting-edge technologies now commonly used in Amateur Radio. Horzepa has authored five books and written more than 1200 pieces for ARRL and TAPR, evangelizing the use of home computers, packet radio, APRS, digital signal processing and software defined radio in Amateur Radio. Licensed in 1969, Horzepa has sampled almost every entrée on the ham radio menu and has served in a slew of roles, including ARRL Connecticut Section Manager. Presently, Horzepa is a director and secretary for TAPR and serves as editor of TAPR's newsletter, *PSR*.

Rocky Mountain Ham Radio has been named as Hamvention Club of the Year. The organization, based in the Denver, Colorado suburbs, offers its services to other ham radio clubs and ARES groups to help them be successful. Technical assistance, classroom training on a myriad of subjects, mentoring, equipment/system design, and public service are among the services it provides. The group owns and maintains fixed analog and digital/DMR repeater assets, including one of the premier private DMR networks in the nation, which is linked with an amateur microwave network that spans the Front Range of the Rocky Mountains from Cheyenne, Wyoming, to Cañon City, Colorado. The group also owns and operates a deployable communications command post in a 26-foot trailer. Read [more](#). --ARRL Letter

## MAJOR DXPEDITIONS COOPERATING TO MINIMIZE CONFLICTS

Two major DXpeditions are now attracting hordes of DX chasers and raising activity levels on HF. While both the Heard Island [VK0EK](#) and Juan de Nova [FT4JA](#) DXpeditions coordinated their operating plans in advance to avoid conflicts and confusion, the fact that both DXCC entities are quite rare will keep things hopping on bands where both DXpeditions are active at the same time. Heard Island is number 5, and Juan de Nova is number 4 on ClubLog's [DXCC Most Wanted List](#).

"Because we will be on the air at the same time as the FT4JA DXpedition -- and because we will both be operating from a very similar time zone -- it is very important that we coordinate with the French Team, and we have," says the VK0EK website. The VK0EK and FT4JA websites include the same graphical presentation of their joint [operating plan](#).

The Juan de Nova DXpedition kicked off on March 30 and will operate until April 11. The VK0EK DXpedition began on March 23 and will continue until April 10.

As part of that plan to head off potential conflicts, the VK0EK operators are listening *down* from their transmit frequencies, while the FT4JA operators are listening *up* from their transmit frequencies (both will *always* operate split).

This should minimize "pileup overlap," although if both major DXpeditions end up on the same band and mode, operators not interested in working either station could find it harder to locate a clear frequency. At one point on March 30, VK0EK and FT4JA were transmitting 3 kHz apart on 80 meters.

Heard Island is in the Indian Ocean about 1000 miles north of Antarctica, and Juan de Nova is in the Indian Ocean in the Mozambique Channel between Mozambique and Madagascar, off the southeastern coast of Africa.

"We built the radio camp and antennas under extreme conditions," a March 31 report from the FT4JA team recounted. "No wind at all during those first days. At night, the temperature doesn't really decrease, and we have thousands of mosquitoes showing up, looking for fresh meat. The sea is close but very warm, with sharks coming very close to the seashore."

The VK0EK team has offered suggestions to increase a DXer's chances of getting into the log, but they apply to working any DXpedition. In short, the DXpedition operators will *always* work split, never simplex. Listen to the operator's instructions, and watch for the operator's calling "pattern" before you start calling. Also, get familiar with the band plan posted on the DXpeditions' websites. Read [more](#). --ARRL Letter

## "DISCOVER THE HF EXPERIENCE" AIMS TO DAZZLE TECHNICIANS, NEWCOMERS

Contesting clubs in Canada and New England have joined forces to invite non-hams, new hams, and even old timers to discover HF radio in the 21st century firsthand, by getting on the air and operating remote stations. Beta test "Discover the HF Experience" events will take place in April, with the debut on April 2 in Manitoba. A subsequent special event in Massachusetts will take place on April 10, using the call sign K1K. A major rollout is expected at Dayton [Hamvention](#)® in May, with four operating positions at ARRL EXPO. The "Discover the HF Experience" concept stresses that "shortwave" Amateur Radio is just as compelling now as it was 100 years ago.

"Amateur Radio is complementary to new technology, not in competition with it," said [Gerry Hull](#), W1VE, who came up with the idea and has been working with [Cary Rubinfeld](#), VE4EA, in Manitoba to flesh it out into a program. "Ham radio is so experiential," Hull told ARRL, "so a key part of this process is getting hams to experience HF, if they're unfamiliar with it. As part of these events, we are going to have remote HF stations on the air. We will have Elmers to help participants through a contact, so they can see how HF really works," he added.

"Our amateur population is at an all-time high, but most new hams are getting a Technician ticket, getting on VHF and UHF, and hanging out with like-minded friends," Hull said. The limitations on what Technician licensees can do often leads to boredom, Hull said, "and they drop out of the hobby. They never get the exposure to HF ham radio, and as any veteran radio amateur can tell you, that's a lifelong exploration."

Radiosport Manitoba and the Winnipeg Amateur Radio Club will sponsor the April 2 debut at the Canad Inn, Garden City, in Winnipeg (9:30 AM until 4:30 PM CDT). The April 10 beta test will take place at Keefe Technical High School in Framingham, Massachusetts (12:30 until 4 PM EDT), in place of the normal Yankee Clipper Contest Club (YCCC) open house.

"Today there are not as many HF Elmers," Hull said. "Who better to be the ambassadors of HF than contesters? We're passionate about HF!"

[Contact](#) Discover the HF Experience for more information. Read [more](#). --ARRL Letter

## SBE URGES FCC TO IMPROVE MEDIUM-WAVE NOISE ENVIRONMENT

The Society of Broadcast Engineers ([SBE](#)) has told the FCC that the regulatory agency needs to take another tack in its efforts to tackle AM broadcast band revitalization. If the FCC takes the SBE's advice, the result could be less noise in the MF and HF Amateur Radio bands. In [comments](#) the SBE filed in response to an FCC *Further Notice of Proposed Rulemaking and Notice of Inquiry* (MB 13-249) proposing ways to enhance the viability of the AM broadcast service, the SBE said the Commission must "commit to a regulatory plan which, over time, will reduce the levels of man-made noise in the MF bands, and more broadly in the bands below 30 MHz." In comments it filed earlier in the proceeding, the SBE pointed out that "AM radio in particular is susceptible to interference from electronic devices of all types," and that ambient noise on the AM band is only bound to get worse with further proliferation of noise-generating electronic devices, including certain lighting devices regulated under FCC Part 15 and Part 18 rules.

"[T]he only source of regulatory reform that has a meaningful chance to positively affect the noise floor over time are regulations that create obligations on manufacturers and importers and dealers, prior to the point that the consumer or user of the device or system comes into possession of it, and before it is deployed," the SBE said. The SBE said that while the FCC has strongly supported unlicensed low-power RF devices over the years, it "apparently does not have a clear understanding of the aggregate effects" of these devices on the MF noise environment. In addition, the power grid has expanded, imposing its own family of electrical noises on the radio spectrum.

"Much unintentional interference is local in nature, but the cumulative impact can be extensive," the SBE told the FCC. "The Commission does not now have, and has never had, a complete understanding of ambient RF noise levels and trends over time."

The SBE urged the FCC to better enforce some existing regulations and develop new ones to address ambient noise in the existing AM band. "It is obvious that any interference management plan...has to be based on rules which limit RF noise before it becomes an issue, not *post hoc*, and those rules have to be enforced," the SBE said. Read [more](#). --ARRL Letter

## OVER THE HORIZON RADARS BECOMING ROUTINE VISITORS ON AMATEUR HF BANDS

The International Amateur Radio Union Region 1 (Europe/Africa) Monitoring System ([IARUMS](#)) has reported a spate of over the horizon (OTH) radar signals on various Amateur Radio HF bands -- exclusive and shared. Many of these signals are being heard outside of the Region 1 confines.

A 50 kHz wide Russian OTH radar has been heard in the evening on 80 meters, often in the CW part of the band. An "often long-lasting" Russian OTH signal about 13 kHz wide is being heard on the 7000-7100 kHz segment of 40 meters, while some digital traffic (FSK or PSK), and a "Codar-like radar from the Far East" are being heard in the 7000-7200 kHz segment as well as non-amateur CW transmissions.

The same OTH radar being heard on 40 meters also is appearing on 20 meters, along with digital traffic in FSK or PSK and on CW and broadband OTH radar signals from China. Some monitoring reports are intriguing, such as this one on 14.280 MHz from IARU Region 1 Monitoring System Coordinator Wolf Hadel, DK2OM: "Female voice with encrypted msgs -- figures -- 'SZRU' = Foreign Intelligence Service of Ukraine in Rivne -- every Wednesday at 1005 UTC."

Broadband OTH radars from China, Australia, Cyprus, and Turkey have been monitored in 15 meters. On 10 meters, radars from Iran with FM CW and different sweep rates have been monitored, as well as fishery buoys on CW, and taxi operations on voice from Russia.

Voice traffic from fishing operations has been heard on all or most HF bands, as have a variety of broadcasters, including the third harmonic of Radio Tajik (4765 kHz) on 14.295 MHz, Radio Taiwan and Myanmar Radio, both on 7.200 MHz, and Radio Hargeysa in Somalia on 7.120 MHz.

The February 2016 IARU Region 1 Monitoring System [newsletter](#) offers more details. There is an online [archive](#) of past issues. -- *Thanks to the IARU Region 1 Monitoring System*

## "THE DOCTOR IS IN" -- ARRL PODCAST -- DEBUTS ON APRIL 7

The popular QST "The Doctor is In" column soon will also be available as a podcast! "ARRL The Doctor is In" will debut on Thursday, April 7, and subsequent new episodes will be posted every other Thursday. The podcast will feature QST columnist and technical whiz Joel Hallas, W1ZR, with QST Editor in Chief Steve Ford, WB8IMY, serving as the host. Each 20-minute program will be available from Apple [iTunes](#) and [Stitcher](#) -- the two largest podcast distribution platforms (search for "ARRL The Doctor is In") -- and episodes will be [archived](#) on the ARRL website. [DX Engineering](#) is the sponsor of the "ARRL The Doctor is In" podcast.

"When the ARRL presented us with this unique opportunity, it was an easy decision to make," said DX Engineering CEO Tim Duffy, K3LR. "DX Engineering is one of the most prominent businesses supporting the ham radio community, so it just makes sense to be part of the 'ARRL The Doctor is In' podcast."

The new, twice-monthly podcast will cover a broad range of technical topics of interest to all amateurs -- everything from antennas to zener diodes and beyond. We invite listeners to [send us their own questions](#) for the show. *Your* question could be answered in a future podcast.

"ARRL The Doctor is In" arrives on Thursday, April 7! --ARRL Letter

## ARRL URGES FCC NOT TO IMPOSE OVERBROAD NOTIFICATION REQUIREMENT TO OPERATE ON 2200 AND 630 METERS

In an [ex parte statement](#) filed March 10 with the FCC, the ARRL has asked the Commission not to adopt "an overbroad" requirement for notification of utilities in advance of intended Amateur Radio operation on the pending 2200 and 630 meter bands. The statement in [ET Dockets 12-338 and 15-99](#) supplemented the League's earlier comments in the proceeding. The FCC is expected to provide Amateur Radio with access to both bands and to spell out service rules and operational requirements, sometime within the first quarter of 2016. Regulatory provisions under consideration have included a possible notification requirement by some radio amateurs to utilities that operate PLC systems in that region of the spectrum, prior to their starting operation on either new band. Utilities use unlicensed PLC systems to control parts of the electrical power grid.

"ARRL does not object to such a notification requirement, provided that it is appropriately circumscribed, not overbroad in its applicability, and not overly burdensome for radio amateurs to comply with," the League's statement asserted.

The ARRL noted that comments filed by the Utilities Telecom Council (UTC) called for a system of "quasi-coordination" by radio amateurs before commencing operation on 2200 meters (135.7-137.8 kHz). In its remarks to the FCC, the ARRL pointed out, however, that the UTC has not volunteered any information with respect to how a notification process might work nor offered any PLC database information to the ARRL or to the amateur community so prospective users of the band could determine if their operation might be problematic.

The ARRL expressed concern that “this vague reference” to a notification procedure by UTC might lead the FCC to adopt an overbroad notification requirement for radio amateurs intending to operate in either the 2200 or 630 meter band. The League further pointed out that PLC systems operating between 9 and 490 kHz are not subject to protection from licensed services.

The League reiterated its willingness to accept distance-separation criteria between amateur stations operating on either band and PLC-carrying transmission lines making use of frequencies in either band, and a notification process in the few instances in which an amateur station intends to operate on either band within close proximity to a transmission line with a PLC using the same frequencies. The League said interference potential to PLC systems from Amateur Radio operation on 2200 or 630 meters is very low, with the possible exception of amateur operation within 1 kilometer of an existing transmission line carrying co-channel PLC signals — a very unlikely circumstance.

“It would be an unreasonable regulatory burden to require more than this, and there is no record justification for a requirement that all radio amateurs who wish to operate in these bands to have to participate in a notification process,” the ARRL said in its *ex parte* statement. In any event, the League added, notification should not be required for any PLC system that comes on line after the effective date of the *Report and Order* granting Amateur Radio access to 135.7-137.8 kHz or to 472-479 kHz.

Radio amateurs are sufficiently technically sophisticated to identify a transmission line that might be carrying PLC and to determine whether their station is closer than 1 kilometer to that line, the League asserted, adding that it would be able to assist hams in making such determinations.

Once notification has been made, the ARRL continued, the burden should be on the utility to demonstrate quantitatively within a reasonable time that the proposed operation would cause harmful interference to PLC operations that existed before the effective date of any *Report and Order* in the proceeding.

Any sort of blanket notification requirement prior to transmitting on 2200 or 630 meters “would be clear regulatory overkill,” the ARRL concluded. Neither would it be reasonable to require across-the-board notification even by amateur stations located within 1 kilometer of a transmission line, because the chances that a particular transmission line is carrying PLC, and makes use of either band are “extremely small.”

## TECHNICAL

**Antennas are everywhere** -- On radios, televisions, cell phones, computers, and wireless internet routers. Each is optimized for a specific frequency range, often in the megahertz or gigahertz. Normally, the time-reversal symmetry of electromagnetic radiation dictates that if an antenna can transmit efficiently at a particular frequency, it must be an equally good receiver at the same frequency. That reciprocity becomes a problem—and slows down communications—when antennas inevitably listen to the reflections of their own transmitted signals.

Now [Andrea Alù](#) and his colleagues at the University of Texas at Austin have designed and built an antenna that breaks time-reversal symmetry.

<http://scitation.aip.org/content/aip/magazine/physicstoday/news/10.1063/PT.5.7254>

**The Big List of RTL-SDR Supported Software** -- Looking for software options for an RTL-SDR dongle? Look here: <http://www.rtl-sdr.com/big-list-rtl-sdr-supported-software/>

**Signing up for a RemoteHamRadio free trial** - If you have not tried operating a remote station RemoteHam Radio (RHR) is offering you an opportunity to try it. Below is a video explaining how to sign up. <https://www.youtube.com/watch?v=DzsBdq2xYbk>

## SHORTS

**ARRL / TAPR Digital Communications Conference Issues 2016 Call for Papers:** Technical Papers are being solicited for presentation at the 35th Annual ARRL/TAPR Digital Communications Conference ([DCC](#)), to be held September 16-18 in St Petersburg, Florida. Papers will also be published in the *Conference Proceedings*. Authors do not need to attend the conference to have their papers included in the *Proceedings*. The submission deadline is July 31, 2016. The ARRL/TAPR Digital Communications Conference is an international forum for technically minded radio amateurs to meet and present new ideas and techniques. Submit papers via [e-mail](#) or mail to Maty Weinberg, KB1EIB, ARRL, 225 Main St, Newington, CT 06111. Papers will be published exactly as submitted, and authors will retain all rights. --ARRL Letter

**ARRL Introduces Three New E-Books –** The ARRL has introduced three new e-books to its growing digital library. The newest titles available in the popular Amazon Kindle format include [Work the World with JT65 and JT9](#) by ARRL author Steve Ford, WB8IMY, [ARRL's Small Antennas for Small Spaces](#), second edition, and [Antenna Physics: An Introduction](#), by Robert J. Zavrel, Jr, W7SX.

All of these publications are also available in print format, directly from [ARRL](#) and [ARRL publication dealers](#).

ARRL reminds Amazon shoppers to consider visiting [smile.amazon.com](#) when ordering. Amazon will donate 0.5 percent of the price of your eligible AmazonSmile purchases to ARRL whenever you shop on [AmazonSmile](#).

**Kingman Reef (KH5) Deleted from DXCC List –** The ARRL Awards Committee has voted to delete Kingman Reef (KH5) from the DXCC List, effective March 29, 2016. Kingman Reef will be added to the Deleted Entities List on March 29, 2016. The total number of entities on the List will drop from 340 to 339. The deletion process is described in DXCC Rules Section II DXCC List Criteria, Part 5(a) Deletion Criteria.

*"An entity may be deleted from the List if it no longer satisfies the criteria under which it was added. However, if the entity continues to meet one or more currently existing rules, it will remain on the List."*

Kingman Reef's original addition by virtue of separate administration has changed (separate administration by the US Navy has been removed), and the reef does not meet any current criteria to remain on the List. The US Fish and Wildlife Service (F&WS) administers Kingman Reef and Palmyra Island. The reef is too close to Palmyra Island to count as a separate entity and now will be considered a part of the Palmyra/Jarvis DXCC entity.

Prior to its deletion, Kingman Reef was the seventh most-wanted DXCC entity, according to ClubLog. It was last activated as K5K in 2000. Read [more](#). --ARRL Letter

**UC Berkeley Trains, Tests Hundreds of New Hams –** Ham radio-related courses taught at the University of California Berkeley Campus and a follow-on "Annual VE Mega-Session" may be one reason that California continues to lead the nation in the number of Amateur Radio licensees. A March 16 exam session yielded 50 new Technician licensees, as well as three new General class, and five new Amateur Extra class licensees. For the third year in a row, scores of mostly electrical engineering and computer science students capped their participation in one of two ham radio-related classes taught by UC Berkeley EE/CS Professor Michael "Miki" Lustig, KK6MRI. His lower-division "Hands-On Ham" course is for sophomores, while his upper-division "Digital Signal Processing" course is aimed at juniors and seniors.

"These popular courses are filled quickly on registration day," Lustig said. "Class members also include some majoring in mechanical, biological, and nuclear engineering." --ARRL Letter

**ARRL 2016 August UHF Contest Cancelled –** The ARRL August UHF Contest for 2016 has been cancelled, while the ARRL VHF Contest Revitalization Committee mulls its future. The

Contest Revitalization Committee fielded dozens of comments from members concerning possible changes to this annual UHF operating event, traditionally held on the first weekend of August each year. Many commenters expressed dissatisfaction with the timing of the contest, occurring as it does at the hottest time of the year, and that it was too close on the calendar to other VHF/UHF events. In response to this member input, the Contest Revitalization Committee recommended to the Programs and Services Committee (PSC) that the 2016 August UHF Contest be cancelled, and the PSC agreed. The ARRL VHF Contest Revitalization Committee continues to study the possibility of redesigning the August UHF Contest or replacing it with a similar event at another point in the calendar -- possibly in the spring -- for 2017. The Committee will solicit member comments in the near future, as it weighs several alternatives.  
--ARRL Letter

**Comedian, Actor, TV Writer and Personality Garry Shandling, ex-KD6OY, SK** – Comedian, actor, and TV personality Garry Shandling, ex-KD6OY, died March 24 after suffering an apparent heart attack in Los Angeles. He was 66. Shandling became a ham as a teenager in the 1960s, long before he entered show business.

**ISS Expedition 47/48 Crew Increment Includes Two Radio Amateurs** – After launching on March 18 in a Soyuz TMA-20M vehicle from the Baikonur Cosmodrome in Kazakhstan, the Expedition 47/48 crew increment of Astronaut Jeff Williams, KD5TVQ, and Cosmonauts Oleg Skripochka, RN3FU, and Alexey Ovchinin is settling in on board the International Space Station (ISS).

**Backscatter: The Dynamics of a Brand Name** – An interesting article on the history of some well known electronics companies: <http://insight.ieeeusa.org/insight/content/views/280278> – Thanks W9KVK

**Purdue is printing real circuits with an inkjet printer.** Researchers there have discovered a means to get a gallium-indium liquid metal mixture to flow through a print head by using ultrasonic waves to break it into smaller particles, and a carrier like ethanol to get it to flow. Once the liquid-metal traces are deposited, pressure is used to make the traces conductive by displacing the oxide layer between the particles.

**General Electric is no longer going to produce Compact Fluorescent Lamps.** Though CFLs captured 30% of the US light bulb sales at their height, they've now decreased to less than 15%. Consumers are favoring the qualities and economics of LED lighting. (Dennis, N6KI)

**The First QRM: Marconi vs Maskelyne**

<http://forums.qrz.com/index.php?threads/the-first-qrm-marconi-vs-maskelyne.517109/>

**Some quick links to interesting sites:**

<http://qrznow.com/build-a-25-50-free-standing-tilt-then-crank-up-tower-antenna/>

<http://qrznow.com/ultra-portable-antenna-tower-for-ham-radio-34/>

<http://qrznow.com/r2t2-multiuser-sdr-transceiver-with-web-interface/>

<http://qrznow.com/kenwood-ts-990s-hf6m-flagship-base-station-built/>

<http://qrznow.com/ol7m-installed-monster-g0ksc-28mhz-system/>

**THANKS FOR READING!**

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