

RCA AMATEUR RADIO CLUB

MAY, 2014

MONTHLY NEWSLETTER

INDIANAPOLIS, IN

THE NEXT MEETING OF THE RCA AMATEUR RADIO CLUB WILL BE
TUESDAY, MAY 13th, 6:30 PM AT [G.T. SOUTH'S](#),
5711 E. 71st STREET, INDIANAPOLIS, IN

RCA ARC NEWS

SUMMARY OF THE APRIL MEETING – Thanks to all who attended the 8-April meeting. We took care of ordering eight tables for the Indy Hamfest (July 12). So far, we have no leads on a new north side receiver site. Still looking. K9RU reminded everyone that the Indiana QSO part is on May 3rd. There is no new news on Field Day. Apparently the planning is progressing. John, KF9UH, has been in contact with the other folks who have equipment in “our” repeater building. We may be able to make a deal to each pay half on a window air conditioner for the building. E.J., KK9EJ, inquired about DMR (Digital Mobile Radio) repeaters in the area and would like to find someone who would be interested in putting one on the air. Specific plans for Dayton this year will be finalized at the May meeting. K9RU mentioned the upcoming VHF contest in June.

RCA ARC PLANS FOR THE DAYTON HAMVENTION -- Here are the plans for this year at the Hamvention... We will use 144.430 MHz simplex. Meet as usual in the northwest corner of the arena with the permanent seats at noon on Friday and again Saturday. Grab something to eat for lunch and join us there. We plan to meet for dinner after the hamfest Friday evening about 5:00 to 5:30 PM. **NEW RESTAURANT THIS YEAR...** We're planning to go to **Barnsider Restaurant**, 5202 North Main St. (Rte 48) in Dayton. (937 277-1332). <http://barnsider-restaurant.com/home.htm> If you are leaving the Arena and heading east on Shilo Springs Rd., turn right on Main St. (south) about ½ mile. The restaurant will be on your left. If you exit the parking areas and go south on Wolf Rd. and then east on Turner, turn left at Main St. (north) the restaurant is about two blocks on your right. Since we haven't been there before, we'd like to make a reservation. ***If you're thinking about attending, please RSVP to <mailto:k9ru.indy@gmail.com> by Thursday, May 15.***

2014 IRCC TECHNICAL EXCELLENCE AWARD NOMINATIONS – The Indiana Radio Club Council is looking for nominations for the 2014 Technical Excellence Award. This award provides a way to recognize Indiana Amateur's that are advancing the state of the art or have used or shared their technical expertise to the benefit of the amateur radio community.

Look around your area, there are plenty of technical hams in our ranks. We are looking for the best of these. They could be doing technical mentoring, projects, seminars or have presented technical talks at your club meetings or a forum at a hamfest. They may be working with digital communications, home brew, remote station control, repeaters, antenna tinkerers or just plain old time ham radio "geeks."

Nomination Requirements – Any amateur radio operator in Indiana may submit a nomination. Nominee must hold an amateur radio license and be a resident of Indiana, but are not required to be a member of any club or organization.

We need as much information about your nominee as possible. Please explain in some details what your nominee has done with their technical skills, achievements, mentoring, projects, and how the amateur radio community benefits for those efforts. Include the **nominees name, call, email and/or home address, and home and/or cell phone number.**

We also need the nominating person's: name, call, email and/or home address, and home and/or cell

phone number. We may need to contact you for additional information or confirmation.
All nominations must be received by **June 5, 2014**. The IRCC Technical Excellence Award is to be presented at the **Indianapolis Hamfest** on Saturday, **July 12, 2014** at the **IRCC forum**.

Submit nominations to Jim Rinehart, K9RU, 1455 Shannon Ave., Indianapolis, IN 46201, or email: k9ru.indy@gmail.com

ARRL SM ELECTION – If you are an ARRL member, you should have received a ballot in April. Lou Everett, WA5LOU, our current ARRL Indiana Section Manager, is running for re-election. Lou has done an outstanding job as SM and he enjoys doing it. He lives in Cumberland, IN, and has been very active supporting local clubs, hamfests, and other activities. His opponent in this election is from the Ft. Wayne area. If you haven't already sent it in, mark your ballot and send it back as soon as possible. --Jim K9RU

IRC DAYTON BUS TO THE DAYTON HAMFEST – Again this year, the Indianapolis Radio Club has made arrangements to have a chartered bus to the Dayton Hamvention. The day trip to Dayton will be on Saturday, May 17.

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 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.

The ticket cost for the round trip is \$30 per person by contacting: Rhonda Curtis, WS9H, (317) 363-7457, e-mail: ws9h@arrl.net

Does not include Dayton Hamvention Tickets for admission. Dayton Hamvention are available on their website at <http://www.hamvention.org/tickets.php>.

MAY MEETING OF THE IRC – Don't miss the next meeting of the Indianapolis Radio Club, this coming Friday, May 9, at 7:30 pm. David Spoelstra, N9KT, will be giving a presentation on microcontrollers like the Arduino and the Raspberry Pi, and their use in Radio. There will be an informal social time prior to the meeting, starting around 7:00.

This meeting will be held in Room 101-2 of the IFC building of IVY Tech at 2535 N. Capitol Ave. This building is located just west of the building we had been meeting in, and there is parking adjacent to this building. Point your browser to http://www.ivytech.edu/shared/shared_hcompwg/maps/ivytech-NMC-campus13.pdf for a map.

NEXT TEST AMATEUR RADIO LICENSE TEST SESSION – No IRC / RCA exams in May due to the amateur activities during the month – Mini Marathon, Indiana QSO party, Dayton HamVention and the W9IMS Special Event Station operation. The next test session will be June 14.

HAMFESTS, OPERATING EVENTS, VOLUNTEER OPPORTUNITIES

May 16-18	Dayton Hamvention http://www.hamvention.org/
May 17	IRC Charter bus trip to Dayton Hamvention ws9h@arrl.net
May 17	Geist Half-Marathon contact Mike Karmar n9feb@comcast.net
May 24	500 Festival Parade contact Mike Karmar n9feb@comcast.net
May 24-25	CQ WW WPX CW Contest http://www.cqwpw.com/
June 14-16	ARRL June VHF QSO Party http://www.arrl.org/june-vhf
June 21	ADA Tour de Cure contact Mike Karmar n9feb@comcast.net
June 28-29	ARRL Field Day http://www.arrl.org/field-day

June 29
July 12

N.I.T.E. Ride, contact Elaine Carter KC9KZH@hotmail.com
Indianapolis Hamfest, Marion Co. Fairgrounds, www.indyhamfest.com

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.

AM BROADCASTERS, HAMS HAVE COMMON INTEREST IN CLEANING UP NOISE SOURCES

Radio amateurs and AM broadcasters have some common ground in wanting to clean up "a worsening RF noise environment in the AM broadcast band," according to recent [comments](#) filed with the FCC by the Society of Broadcast Engineers (SBE) on the issue of [revitalizing AM broadcasting](#). ARRL General Counsel Chris Imlay, W3KD, who is also general counsel for the SBE, drafted the remarks.

"There are numerous complaints from Amateur Radio operators of severe interference from power line noise annually," said the SBE comments, filed earlier this year. "Power line radiation in the HF and MF Amateur allocations will in most cases directly translate to preclusive noise in the AM broadcast band. The Commission has relied completely on the good faith efforts of electric utilities to resolve these."

While that approach has succeeded in some cases, Imlay wrote, "more often, utilities do not have available to them -- and are not willing to retain -- persons skilled in RF interference resolution, and the cases at FCC are allowed to languish unresolved for years...without any enforcement action at all." The SBE noted that AM listeners often are in vehicles adjacent to power lines that "frequently radiate RF noise" at levels to make AM reception difficult or impossible.

The SBE comments also pointed to "substantial numbers of complaints of harmful interference to Amateur Radio stations" from LED lighting systems, noting that many RF light bulbs could be within range of a typical AM broadcast receiver in the typical residential neighborhood. Imlay used recent ARRL Laboratory RF lighting test results as one example to illustrate the problem.

The SBE comments cited an RF lighting ballast used for indoor gardening that generated excessive conducted emissions that could "preclude AM broadcast reception over entire residential subdivisions." The ARRL formally [complained](#) about the device to the FCC last month. The SBE also pointed the finger at radiation from unintentional emitters, such as plasma TV sets, and conducted emissions from devices such as pulse-width motor controllers.

"[T]he goal of AM revitalization will never be realized in the medium and long term in the face of the headwind of a worsening RF noise environment in the AM broadcast band," the SBE said, noting that the same concerns apply to all bands between 9 kHz and 30 MHz. "Some regulatory relief is absolutely necessary," the SBE concluded.

The situation may already be improving. Last month the FCC cited a Washington resident for operating an "incidental radiator" -- apparently some sort of lighting device -- that has been causing harmful interference on Amateur Radio frequencies. The Commission has ordered the individual to stop using the device. Read [more](#). --ARRL Letter

ARMED FORCES DAY 2014 CROSS-BAND COMMUNICATIONS TEST SET FOR MAY 10

The 2014 Armed Forces Day Cross-Band [Communications Test](#) will take place on Saturday, May 10. The US Army, Air Force, Navy, Marine Corps, and Coast Guard co-sponsor the annual Amateur Radio/US military communication test. The 64th Armed Forces Day officially takes place on May 17, but the Armed Forces Day radio event will take place a week earlier, on May 10, to avoid conflicting with [Dayton Hamvention](#)®. The on-the-air celebration features traditional military-to-Amateur Radio cross-band communication on both SSB and CW. Some activity will continue into the early hours of Sunday, May 11 (UTC). Most activity gets underway at 1200 UTC.

"These tests give Amateur Radio operators and Short Wave Listeners (SWLs) an opportunity to demonstrate their individual technical skills, and to receive recognition from the appropriate military radio station for their proven expertise," the Armed Forces Day Cross-Band Communication Test announcement said. "QSL cards will be provided to those stations making contact with the military stations."

More than 20 military stations representing all of the services and in various parts of the Continental US, as well Hawaii (ABH), Okinawa (ADB) and Guam (NRV) are expected to be on the air, transmitting on military frequencies outside the Amateur Radio bands and listening for calls within Amateur Radio bands. Some military stations may not be on the air for the entire event, depending on propagation and station staffing.

Participating military stations will transmit on selected Military Auxiliary Radio Service (MARS) frequencies and listen for Amateur Radio stations in certain bands and frequencies, depending on the station. The military stations have asked that radio amateurs limit voice contacts to no longer than a couple of minutes. Some military stations will use CW. Much of the activity will involve frequencies outside the 80, 40, and 20 meter bands.

Participating US Army Stations will include WAR at the Pentagon, as well as AAZ, AAC, ABH, ADB, and WUG-23; US Air Force stations AIR, AGA2SY, AGA4AR, AGA5SC, and ARA9TR, and US Navy-Marine Corps stations NBL, NMC1, NMN, NNN0ASF, NNN0CQQ, NPD, NRV, NUW, NWKJ, and NWVC.

The annual event also includes the US Secretary of Defense message test, which will be transmitted in various digital modes. Stations will use RTTY, CW, PSK31, PACTOR, AMTOR (FEC), MT63, and other digital modes to transmit the message. A certificate is available for stations correctly copying the message. Read [more](#). --ARRL Letter

BLOOMINGTON HAM IS ARRL'S GOLDFARB SCHOLARSHIP WINNER

The [ARRL Foundation](#) Board of Directors has awarded the 2014 Goldfarb Scholarship to Padraig Lysandrou, KC9UUS, of Bloomington, Indiana. The 17-year-old Bloomington High School South senior has been licensed since 2011, is Indiana's Assistant Section Manager for Youth, and is in the top 10 percent of his class. Lysandrou's May 2013 QST article "[A Crazy Idea: DXpedition to Cyprus](#)," won the QST Cover Plaque Award for that month. Last August, Lysandrou was honored as "[Young Ham of the Year](#)" by [Amateur Radio Newslines](#).

"I'm honored to be recognized by the ARRL with the Goldfarb Memorial Scholarship, and very thankful to be part of the Amateur Radio community," Lysandrou said. "The ARRL and the Amateur Radio community as a whole has been one of the most amazing and supportive communities I have been a part of, and I am honored to have a place in it."

His is a "ham radio family." His mother, Carolyn, is KC9URR, his father, Plato, is KC9VIL, and his sister, Helena, is KC9VIM. As a young stamp collector, Padraig got interested in ham radio through his mother, a serious shortwave listener. She would show him stamps on letters she'd received from stations she'd heard. "I saw those, and...I got into shortwave," he told ARRL in 2013. "And, then the interest grew bigger, and it wasn't just about stamps anymore. And so I got interested in ham radio."

An ARRL member, Lysandrou holds an Amateur Extra ticket and has served as president of his school's Amateur Radio club (K9SOU). Participation in the ARRL School Club Roundup and a program on the Peter Island 3Y0X DXpedition sparked his interest in DX and led to his DXpedition to Cyprus, where he has family, and to his QST article. He has been a 4-H member for 10 years and the president of his school's 4-H Aerospace Club. A musician, Lysandrou plays the cello and the classical guitar, and has performed on the cello at Carnegie Hall.

Because of his interest in Amateur Radio, he plans to pursue a career in electronics, engineering, and physics. This week he made the decision to attend Cornell University this fall, majoring in physics and physics engineering. His sister is also a high school senior and college bound in the fall.

The William R. Goldfarb Memorial Scholarship is the result of a generous endowment from William Goldfarb, N2ITP (SK). Before his death in 1997, Goldfarb set up a scholarship endowment of close to \$1 million in memory of his parents, Albert and Dorothy Goldfarb. It is awarded to one high school senior each year. The award is based on an applicant's qualifications, need, and other sources of educational funding, but it can amount to \$10,000 or more. Read [more](#). --ARRL Letter

AMATEUR RADIO PROPAGATION GURU SAYS EXTENDED SOLAR EBB MAY LIE AHEAD

Amateur Radio propagation and solar phenomena authority Carl Luetzelschwab, [K9LA](#), said in an April 27 webinar, "Are We Headed into Another Maunder Minimum? What Does That Mean for Propagation?" that most solar scientists believe several low solar cycles lie ahead, ushering in periods of diminished HF propagation, especially on the higher bands. Luetzelschwab, who maintains [K9LA's Amateur Radio Propagation Web Site](#) and pens a regular "Propagation" column for [NCJ](#), stopped short of concluding that we'll experience a Maunder minimum -- an extended period of very few or no sunspots. As the Marshall Space Flight Center's "Solar Physics" web page explains, early sunspot records indicate that the Sun went through an inactive period from about 1645 to 1715 -- called the Maunder minimum after the scientist who discovered it -- when very few sunspots were observed.

"Right now there's nothing bulletproof to say we're heading into a Maunder minimum, so we're just going to have to wait and see," Luetzelschwab told the webinar, sponsored by the World Wide Radio Operators Foundation ([WWROF](#)). "It sure looks like something inside the sun changed around the peak of Cycle 23. There's lots of evidence that we're entering a grand solar minimum. But I don't think any of the solar scientists are 100 percent sure that we're going to see a Maunder-type minimum." A grand solar minimum, he explained, is an extended period of low sunspot activity that is not as severe as a Maunder minimum.

Many solar scientists believe that Cycle 24 -- the current solar cycle -- is the weakest in years, and that this portends even less sunspot activity in the future. Some even have predicted outright that a Maunder minimum is around the corner.

In the hour-long presentation, Luetzelschwab reviewed the conclusions of research published by several solar scientists, raising various scenarios for what might lie ahead in terms of sunspots and related HF propagation. If a Maunder minimum were to occur, he predicted "we'll probably have some pretty good low-band propagation. Most everybody believes the low bands are better at solar minimum." But he conceded that a lot of factors come into play when trying to foresee what will happen from one solar cycle to the next and how it will affect radio propagation.

"We need to gather some really good data" over the next 10 years, Luetzelschwab concluded, adding that the additional data will provide evidence one way or the other.

"Are We Headed into Another Maunder Minimum? What Does That Mean for Propagation?" will be posted in the webinar archive on the WWROF website. Read [more](#). --ARRL Letter

ARRL CONVENTION FORUMS TO FEATURE PRESENTATION BY NOBEL LAUREATE JOE TAYLOR, K1JT

Nobel Laureate Joe Taylor, K1JT, will be the featured speaker for a large-group presentation at the ARRL [Centennial Convention](#), July 17-19, in Hartford, Connecticut. Taylor's Saturday, July 19, noon presentation, "Gazing into the Future -- DXing with Weak Signals and Beyond," will take place in the large meeting hall at the Connecticut Convention Center.

"We are pleased that a technological innovator of Joe Taylor's stature has agreed to be part of our program schedule," ARRL Centennial Convention Program and Forum Chairman Dan Henderson, N1ND, said. "His work in weak-signal detection has helped revolutionize many aspects of Amateur Radio, and his forum is a 'can't miss' opportunity for Convention-goers."

Other presenters on the Convention's Friday and Saturday [Forum](#) schedule include former FCC Special Counsel Riley Hollingsworth, K4ZDH. His presentation is entitled, "Turning the 'Big Dial' -- It's More than Simply Changing the Frequency." Propagation expert Carl Luetzelschwab, K9LA, will give two presentations -- "160 Meters -- Mastering the Challenge" and "Propagation Forecasting -- a Peek Behind the Curtain."

ARRL antenna guru Dean Straw, N6BV, will discuss, "How to Blow Up Your Balun -- and Other Things in Your Antenna System Too!"

Additional details have been added to the day-long ["Training Tracks"](#) on Thursday. Sessions will include "Leadership and Training Tools for Amateur Radio," "Public Service Communications Academy," "RFI-101," "An Introduction to Amateur Satellites," "DX University," "Contest University," and "Amateur Radio Legal Seminar."

"Registration for the Thursday tracks has been quite brisk," Henderson said. "Contest University, DX University, and the Public Service Communications Academy are about 70 percent enrolled. We urge anyone hoping to attend one of the Convention presentations or forums to [register](#) now. Walk-ins for any of the Thursday training tracks will be on a space-available basis the day of the event."

Henderson said the Convention has added 6 hours of "Youth in Amateur Radio" forums and programs to the Convention schedule. Three hours will be offered on both Friday and Saturday. FEMA Administrator Craig Fugate, KK4INZ, will deliver the Friday banquet address. --ARRL Letter

HAARP-LIKE IONOSPHERIC RESEARCH PROJECT UNDERWAY AT ARECIBO OBSERVATORY

Work is underway to complete the construction of an ionospheric research facility at the [Arecibo Observatory](#) in Puerto Rico that bears some similarities to the High Frequency Active Auroral Research Program (HAARP) far to the north in Alaska, but on a different scale and with different research goals.

"It is basically the same as HAARP for the science, except that HAARP was in the Auroral Region, where the physics of the ionosphere is quite different with all the energetic particles and magnetic fields," Penn State Electrical Engineering Professor Jim Breakall, WA3FET, told ARRL. "HAARP also had 3 gigawatts of effective radiated power, where Arecibo will only be about 200 megawatts." The Arecibo Observatory Amateur Radio Club, KP4AO, is headquartered at the research facility, which celebrated its 50th anniversary last fall.

The National Science Foundation and Cornell University, which previously operated Arecibo Observatory, contracted with Penn State's Electrical Engineering Department to construct the "new and enhanced" HF ionospheric instrument. It will be used to study the interaction between HF radio energy and ionospheric plasma.

The new facility will replace an earlier ionospheric heater in Islote, Puerto Rico, that was destroyed by Hurricane Georges in 1998. Rather than rebuild that installation, the new instrument will use the observatory's 1000 foot dish for its antenna. This will keep all research activities involving ionospheric modification at the observatory proper. Plans call for a design based on a Cassegrain-screen concept of phased array at the bottom of the dish feeding a sub-reflector mesh that hangs above the dish from three support towers. Breakall and his team of graduate students at Penn State have done all of the electrical design and modeling of this new antenna system.

"There are three crossed-dipoles for 5.1 MHz and another three for 8.175 MHz, forming an array that will beam energy up to a net mesh reflector that will hang from the three big towers," Breakall explained. "This Cassegrain screen will then reflect energy back down to the 1000 foot dish and beam an effective radiated power of hundreds of megawatts up to the ionosphere to modify it." Each dipole is fed from a 100 kW transmitter, yielding a total transmitted power of 600 kW.

An even earlier HF ionosphere-heating antenna system also was suspended from the platform above the dish and driven by a single 100 kW transmitter over a frequency range of 3 to 10 MHz. That design suffered from arcing problems and was taken out of service in the 1970s.

Scale aside, Breakall said, while HAARP also tried to modulate the ionosphere's naturally flowing currents to create VLF and ELF for submarine communication, Arecibo "has much weaker currents, and that probably will not work," he said. On the other hand, he said, "Arecibo has a big advantage over HAARP in that the same 1000 foot dish can be used for diagnostics with the 430 MHz incoherent scatter radar that can measure things such as temperature, density, winds, etc, as they are modified. HAARP has nothing like this."

Breakall said he does not anticipate that the new Arecibo ionospheric research facility will attract the same degree of controversy that HAARP has over its history, but he conceded that it's possible.

"All of the conspiracy stuff about HAARP really is not true, and I am sure Arecibo could get some of the same conspiracy [talk], and I think some of it maybe has started already," he said. --ARRL Letter

FCC CITES WASHINGTON RESIDENT FOR CAUSING INTERFERENCE ON AMATEUR FREQUENCIES

The FCC has cited a Woodinville, Washington, resident for operating an "incidental radiator" -- apparently some sort of lighting device -- that has been causing harmful interference on Amateur Radio frequencies. The Commission has ordered Thomas Edward Rogers to "take steps to eliminate all harmful interference" or risk substantial fines and seizure of equipment. The Enforcement Bureau action came in the wake of repeated complaints last year of interference to Amateur Radio operations. To date, Rogers has not responded to several communications from the Commission.

"Commission agents have made multiple unsuccessful attempts in writing and via phone calls to contact Mr Rogers regarding unauthorized and unlicensed radio frequency emissions emanating from his property," the FCC said in a [Citation and Order](#) released April 24. The Commission directed Rogers to "cease operation of the incidental radiators immediately, until the interference is resolved." Last year, agents from the Enforcement Bureau's Seattle Office twice visited Rogers' neighborhood and confirmed through direction-finding techniques and the use of a spectrum analyzer that "signals on frequencies between 7 and 8 MHz were emanating from Mr Rogers' residence," the FCC recounted. The C&O said Rogers failed to reply to an "RFI Letter" and a subsequent *Warning Letter*, and the interference complaints continued.

The FCC said Rogers is violating Part 15 rules that prohibit the operation of an unlicensed intentional, unintentional, or incidental radiator that causes harmful interference to a licensed radio service. Rogers was ordered to respond in writing within 30 days stating that he has ceased operating the incidental radiators, and to tell the Commission what he has done to eliminate all harmful interference. The FCC

warned Rogers that he faces "severe penalties, including fines of up to \$16,000 per day," if he fails to take action to resolve the interference issue.

In March, FCC Chairman Tom Wheeler tapped Travis LeBlanc as acting Chief of the Enforcement Bureau, and ARRL CEO David Sumner, K1ZZ, said the Bureau already appears to have become more responsive.

"The Seattle Office's prompt investigation of an amateur's complaint in May 2013 set the wheels in motion leading to this *Citation*," Sumner said. "Today's announcement provides further evidence that with the recent change in leadership of the Enforcement Bureau, there's a new sheriff in town." --ARRL Letter

SHORTS

VOA TOURS DURING THE DAYTON HAMVENTION - If you're in Dayton for the Hamvention, the original VOA West Chester, Ohio station is open for tours on the 3rd Saturday of each month, courtesy of WC8VOA, the West Chester Amateur Radio Association. <http://www.voamuseum.org/> (Thanks, Glenn K6NA)

FCC ENFORCEMENT BUREAU SHOWING MORE BITE THAN BARK: The FCC has proposed fining a Florida man, Jason R. Humphreys, \$48,000 for using a cell phone jammer in his car during his daily commute. Humphreys claimed he did so to keep other motorists from using their cell phones while driving. Humphreys' illegal jammer operation apparently continued for up to 2 years, causing interference to cellular service along a swath of Interstate 4, and also disrupting police and other emergency communications, the FCC said this week, in a [Notice of Apparent Liability](#).

STUFF ON THE WWW WHICH MAY BE OF INTEREST – If you remember NASA's lunar orbiters launched in the 1960s, you may find this interesting: <http://www.wired.com/2014/04/lost-lunar-photos-recovered-by-great-feats-of-hackerdom-developed-at-a-mcdonalds/>

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