



Legacy Amateur Radio Club

# RCA AMATEUR RADIO CLUB



AFFILIATED CLUB

INDIANAPOLIS, INDIANA

MAY 2019

MONTHLY NEWSLETTER

THE NEXT MEETING OF THE RCA AMATEUR RADIO CLUB WILL BE  
TUESDAY, MAY 14th 6:30 PM AT  
KNIGHTS OF COLUMBUS, 2100 EAST 71<sup>ST</sup> STREET, INDIANAPOLIS, IN

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## RCA ARC NEWS

**JUNE MEETING:** This month we'll be meeting at the north side **Knights of Columbus, 2100 East 71<sup>st</sup> St.** This is just west of Keystone Ave. on the north side of 71<sup>st</sup>. The April meet at Bravo! was good but in the future, Bravo won't honor the discount coupons if we reserve the room we had in April. That makes it a little pricey.

**Summary of the April meeting** – Thanks to all who attended the April meeting at Barvo! Nice place, those in attendance voted to stay at Bravo! for the rest of the year (see above). Field Day planning is well underway. RCA ARC will go with a few other groups/clubs to the Victor Conservation Club, same as last year. RCA ARC is contributing \$50 to help cover the expenses. Brian Smith, W9IND, is again organizing this year. Last year we finished 3<sup>rd</sup> in the 3A class. This year the big push is on to finish first. The IRC will do their own thing in Speedway. Invite your friends to visit the field day site and operate the GOTA Station... More points! At the Hamvention this year, RCA ARC gathering will be the same as last year. Lunch get-together at 12:00 in grandstands at the track. Dinner will be at BJ's (see below). Remember, we need junk to sell at this year's Indy Hamfest in July. The two petitions to the FCC highlighted in the April Newsletter were discussed.

**RCA ARC AT THE DAYTON HAMVENTION** – RCA ARC Friday Dinner – The plan is to do the same as last year ...

The Hamvention closes at 6 pm. We are planning dinner at **BJ's Restaurant & Brewhouse, 2715 Fairfield Commons Dr., Beavercreek, OH 45431** (937 956-0500).

BJ's Restaurant & Brewhouse is close to the Hamvention site and is the same place we went to last year. You can check out the menu at: <https://www.bjsrestaurants.com/locations/oh/beavercreek>.

We'll get a reservation for 5:30 pm, so we can beat the crowd out of the Hamvention.

**If you are planning to attend the dinner, e-mail or contact Jim K9RU: [k9ru@arri.net](mailto:k9ru@arri.net) or call 317 721-1458. We need to know the number attending to get a reservation.**

The Friday and Saturday RCA ARC lunch get together in the bleachers by the track, the same as last year. They say there will even be more food trucks at the Hamvention this year.

**We will use the RCA ARC 144.43 MHz simplex frequency to coordinate the noon meetings and the Friday evening dinner. Be sure to bring your HT and charge the batteries (charge batteries first).**

#### **AMATEUR RADIO LICENSE TEST SESSION**

**Time:** Saturday, June 8, 2019, 12:00 pm (Walk-ins allowed)  
**Location:** Salvation Army EDS Training Facility, 4020 Georgetown Rd  
Indianapolis, IN 46254-2407  
**Contact:** Jim Rinehart, [k9ru@arrl.net](mailto:k9ru@arrl.net), 317 721-1458

### HAMFESTS, OPERATING EVENTS, VOLUNTEER OPPORTUNITIES

May 17-19 Hamvention, Green County Fairgrounds, Xenia, OH <http://www.hamvention.org/>  
May 25 500 Festival Parade  
May 25-26 CQ World-Wide WPX CW Contest <https://www.cqwp.com/rules.htm>  
June 8-10 ARRL VHF Contest <http://www.arrl.org/june-vhf>  
June 15 SMIRK <http://www.smirk.org/contestrules.html>  
June 22-23 Field Day, Victor Conservation Club  
July 12-13 Indianapolis Hamfest, Marion County Fairgrounds, <http://Indyhamfest.com/>

### DAYTON HAMVENTION TO OFFER FREE ADMISSION ON SUNDAY

Hamvention® has announced that it will open the gates to all, without charge, on Sunday, May 19, the final day of the annual gathering at Greene County Fairgrounds and Expo Center in Xenia, Ohio. Hamvention 2019 General Chair Jack Gerbs, WB8SCT, said the idea is to encourage the curious to see what attracts some 30,000 visitors to Hamvention each spring.

"This will make it a little easier and cheaper for someone with just a little interest in Hamvention to see what all the excitement is about," Gerbs said.

In addition to the features and equipment that attract radio amateurs, non-ham visitors will get to see vendors selling a variety of other electronic equipment, including computers and accessories, security devices, networking supplies, tools, and other items of interest to the general public. Those visiting the flea market area may be surprised at what's available, often at a small fraction of its original cost.

Gerbs pointed out that Sunday is Hamvention's lightest traffic day, making it convenient for anyone who just wants check out what's there. Hamvention will be open on Sunday from 9 AM until 1 PM.

Greene County Sheriff Gene Fischer, KX8GCS, has arranged to make text alerts possible again this year for those wanting up-to-the-minute mobile phone alerts regarding weather, traffic, parking, and other useful information affecting the event. Text "Hamvention19" to 888777 to sign up. Those who signed up for the text alerts in 2018 already are registered for this year's event.

The text alerts supplement the Hamvention talk-in station that has operated for many years on the Dayton Amateur Radio Association 146.94 repeater (123.0 Hz tone) to give directions and other assistance. Read [more](#).

## MOBILE EVENT APP WILL HELP DAYTON HAMVENTION VISITORS TO NAVIGATE THE SHOW

[Dayton Hamvention](#)® 2019, host of the ARRL National Convention, will mark the debut of a free mobile event app to help attendees navigate the extensive Hamvention program, activities, and exhibits using their smartphones or tablets. A collaborative effort between ARRL and Dayton Hamvention, the app was developed by TripBuilder Media™. ARRL Convention and Event Coordinator Eric Casey, KC2ERC, has been readying the app, with content contributions from Dayton Hamvention Committee members, and he just introduced it in a new ARRL YouTube video.

“Our goal is to have all of the printed program content mirrored in the app, organized so that you can schedule the forums you’re planning to attend, and find the exhibitors you want to visit,” Casey said. In addition to including exhibits and forums, the app will highlight schedules and details for affiliated events, such as dinners and other special gatherings, and a feature to allow attendees to follow the hourly prize drawings from wherever they are.

“Use the app so you don’t miss a winning ticket!” Casey suggested. The Dayton Hamvention Prize Committee will populate the app as winners are drawn.

Attendees are also encouraged to tap on the “MyProfile” icon to optionally include their name and call sign, email address, and any other information they’d like to share with other attendees. “One of the neat features of this app is connecting with other Dayton Hamvention guests who choose to share their contact info,” says Casey. “The icon labeled ‘Scan Badge’ will allow users to scan a QR Code displayed on a second device using the ‘MyBadge’ icon — instantly connecting your shared contact information with another ham. After all, Dayton Hamvention and the ARRL National Convention is where you meet with other members and friends from this great big world of Amateur Radio.”

The free 2019 Dayton Hamvention event app is available for both Apple and Android smart devices. A web-browser version is also available, which is optimized for nearly any browser or other mobile device type. Visit your app store to download the Apple and Android versions (search “Hamvention”) or find links on the ARRL National Convention web page. If you are reading this article on a mobile device, click [here](#) to be automatically redirected to the appropriate app store to download the app, or to be redirected to the web browser version. Please email [HamventionApp@arrl.org](mailto:HamventionApp@arrl.org) with any questions about the app.

Dayton Hamvention 2019 is May 17 – 19 at the Greene County Fairgrounds and Expo Center in Xenia, Ohio.

## ARRL REPLY COMMENTS STRESS NEED TO UPDATE TECHNICIAN PRIVILEGES IN A DIGITAL WORLD

In reply comments to the FCC (comments on comments already filed) on its *Petition for Rule Making* (RM-11828), ARRL has stressed that updating HF privileges for the entry-level Technician license “is the sole subject and intent” of the petition. ARRL filed its reply comments on April 29, urging the FCC to disregard comments irrelevant to its petition and maintaining that Technician privileges must be relevant within the context of today’s technological environment.

"[T]he increasingly rapid pace of change in communications technologies, coupled with the national need for self-training in science, technology, engineering, and math" necessitate the rule changes requested, ARRL asserted. "ARRL made its request because of the gap between today's digital technologies and the privileges accorded the current entry-level Technician license." ARRL characterized its proposal to update the rules as "balanced and modest."

"If adopted, there would be no change to the operating privileges for all license classes other than those of the Technician class," ARRL said. In 2018, ARRL asked the FCC to expand HF privileges for Technician licensees to include limited phone privileges on 75, 40, and 15 meters, plus RTTY and digital mode privileges on 80, 40, and 15 meters. The FCC invited comments on the proposal in April.

ARRL pointed out that some comments filed on its petition address subjects related to other open proceedings rather than expanding Technician privileges, citing comments cross-filed in such proceedings as WT Docket 16-239, RM-11708, RM-11759, and RM-11831. "Those filings should be considered in the proceedings that they address, rather than here," ARRL said.

ARRL said some opposition appears based on fears of increased interference potential due to additional digital operation by Technicians. "It is improbable that all, or even a majority, of Technician licensees suddenly would develop a passion for the same digital technology," ARRL said. "Our hope and expectation is that many will engage with digital modes on the high-frequency spectrum at issue, but it is unrealistic to suggest that every Technician licensee blessed with new privileges would suddenly appear on the same band."

The comments note the development of very efficient digital modes, such as FT8, which occupies just 90 Hz of spectrum per signal. "The experience with FT8 clearly demonstrates the attraction of the digital modes *and* the spectrum efficiencies that can be achieved," ARRL said. "This is why opening up limited digital opportunities to new radio amateurs so clearly would serve the broad public interest as well as the specific purposes of Amateur Radio in experimentation and innovation, as enumerated in the governing FCC rules."

ARRL further said that comments regarding disagreement on the definition of encryption for masking the content of certain digital transmissions are also "out of place in this proceeding" and "should not delay initiation of a proceeding" proposing to update Technician privileges.

"Technology has changed dramatically in the Amateur Radio domain, and ARRL believes the requested Technician license enhancement would foster the regulatory goals for the Amateur Service and continue to increase amateurs' historical experimentation and service in a meaningful way," ARRL concluded. --ARRL Letter

## ARRL AND FCC SIGN MEMORANDUM TO IMPLEMENT NEW VOLUNTEER MONITOR PROGRAM

ARRL and the FCC have signed a *Memorandum of Understanding (MOU)* that paves the way to implement the new and enhanced Volunteer Monitor program. The memorandum establishes the Volunteer Monitors as a replacement for the Official Observers (OO) program. Current OOs have been encouraged to participate in the new program.

"We are excited by the opportunity to codify our partnership with the FCC and to work together to achieve our mutual interests of protecting the integrity of our Amateur Radio bands," said ARRL President Rick Roderick, K5UR. "This *Memorandum of Understanding* will serve as the foundation for a new level of partnership on this very important issue."

ARRL has contracted with retired FCC special counsel and former Atlantic Division Vice Director Riley Hollingsworth, K4ZDH, to oversee the ARRL's role in the development and implementation of the Volunteer Monitor program.

Approved by the ARRL Board of Directors at its July 2018 meeting, the new Volunteer Monitor program is a formal agreement between the FCC and ARRL in which volunteers trained and vetted by the ARRL will monitor the airwaves and collect evidence that can be used both to correct misconduct or recognize exemplary on-air operation. Cases of flagrant violations will be referred to the FCC by the ARRL for action in accordance with FCC guidelines.

The intent of this program is to re-energize enforcement efforts in the Amateur Radio bands. It was proposed by the FCC in the wake of several FCC regional office closures and a reduction in field staff.

"Under this program, the FCC will give enforcement priority to cases developed by the Volunteer Monitor program, without the delay of ARRL having to refer cases through the FCC online complaint process," Hollingsworth said.

Hollingsworth has committed to FCC and ARRL officials to ensure the adequacy of training for the new positions, to review the quality and utility of Volunteer Monitor submissions to the FCC for enforcement actions, and to advocate for rapid disposition of cases appropriately submitted to the FCC.

ARRL officials estimate that the first Volunteer Monitors will be in place and ready to begin their duties within 6 to 9 months. Read [more](#). --ARRL Letter

## FASTER, MORE CONTEST-FRIENDLY FT4 DIGITAL PROTOCOL

A new, speedier, more contest-friendly digital mode is just days away, initially in beta form. *WSJT-X* developers say serious work on the new FT4 protocol began shortly after the FT8 Roundup held last December 1 – 2. The goal was a mode that could compete with RTTY contesting in terms of contact rates, while preserving many of the benefits of FT8.

The developers say FT-4 soon will be ready for testing by a larger group and they're seeking interested participants who can offer their "considered feedback." They suggest reading *The FT4 Protocol for Digital Contesting* first. A general release of the *WSJT-X* suite that includes FT4 is anticipated in July.

According to the document FT4 is an experimental digital mode designed specifically for radio contesting that — like FT8 — uses fixed-length transmissions, structured messages with formats optimized for minimal contacts, and strong forward-error correction. Transmit-receive sequences are 6 seconds, making it 2.5 times faster than FT8 and about the same speed as conventional RTTY for radio contesting. FT4 can work with signals 10 dB weaker what would be required to decode RTTY while using much less bandwidth.

Transmissions last for 4.48 seconds, compared to 12.64 seconds for FT8. Modulation uses four-tone frequency-shift keying at approximately 23.4 baud, with tones separated by the baud rate. The occupied bandwidth is 90 Hz.

"We plan to post downloadable installation packages for *WSJT-X* version 2.1.0-rc5 on Monday, April 29," the Development Group said. *The FT4 Protocol for Digital Contesting* document includes:

- Instructions for installing *WSJT-X* 2.1.0-rc5 and configuring FT4.
- FT4 operating instructions.

- A basic description of the FT4 protocol, modulation, and waveform.
- Detailed sensitivity measurements for FT4 under a wide variety of simulated propagation conditions.

“A few parameters and operating behaviors of FT4 are still being tested and optimized,” the initial FT4 guide says. “It will be very useful to hold several more mock contest practice sessions, with a larger group of active participants.”

Even if these practice sessions reveal no serious bugs or inadequacies, the WSJT-X Development Group believes FT4 is still too new to be used in the ARRL VHF Contest (June 8 – 10) and ARRL Field Day (June 22 – 23). For that reason, release candidate *WSJT-X 2.1.0-rc5* will “time out” on June 7.

Here is the proposed schedule related to the FT4 beta version roll out.

- April 29: Second announcement, with links to downloadable installation packages for WSJT-X 2.1.0-rc5  
FT4 practice contest session
- May 14 & June 5 0000 – 0100 UTC:, 7.090 MHz
- July 15: General Availability (GA) release of *WSJT-X 2.1.0*.

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**Joe, K1JT, spoke at the Fair Lawn Amateur Radio Club recently, with the two-part video ([Part 1](#), [Part 2](#)) captured and placed on YouTube. [Part 2 of the discussion](#) included details on the new FT4 mode, as well as mention of some of the *WSJT-X* derivative works such as *MSHV*, *JS8Call*, and *JTDX*. The FT4 discussion starts at about 15:00. (Jim, K7EG)**

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## NEW TECH: FCC INVITES COMMENTS ON WAIVER REQUEST FOR 24 GHZ WIRELESS POWER TRANSFER DEVICE

The FCC Office of Engineering and Technology (OET) is seeking comments in ET Docket 19-83 on a request by Auspion USA, Inc. to waive the Industrial, Scientific, and Medical (ISM) rules' "local use" requirement (FCC Part 2 and Part 18 rules) for a 24 GHz wireless power transfer device over distance. On January 3, Auspion requested a waiver of FCC rules to allow it to obtain a grant of equipment authorization for the marketing and operation of a non-“consumer system using transmission of wireless power over distance. Auspion's "WiPod" system would provide power to, and/or charge, receivers located at various distances from the transmitter.

§18.107(c) of the rules defines ISM devices as "[e]quipment or appliances designed to generate and use [local] RF energy for industrial, scientific, medical, domestic or similar purposes, excluding applications in the field of telecommunication." Auspion requests that the Commission waive the "local use" condition, as specified in ISM Part 18 rules to allow its system to operate at distances greater than 1 meter between the transmitter and receivers, as long as the transmitted power is directed to very precise locations (called "power spots") where the receivers are sited. Auspion plans to market its system exclusively for industrial, retail, and enterprise applications, such as charging industrial robots, warehouse-based drones, and smartphones in conference rooms.

Parties should file all comments and reply comments in ET Docket 19-83 using the Commission's Electronic Comment Filing System ([ECFS](#)). Comments are due by April 25, and reply comments are due by May 10. --ARRL

## IARU ARGUES FOR PROTECTION FROM WIRELESS POWER TRANSFER SPURIOUS EMISSIONS

The International Amateur Radio Union (IARU) was represented April 8 – 10, when [CEPT Committee SE24 – Short Range Devices](#) met in Ankara, Turkey, to undertake further work concerning wireless power transfer/transmission (WPT). SE24 is considering WPT for electric vehicles (WPT-EV) and also for generic applications.

IARU already provided extensive input on the potential impact on radio communications resulting from spurious emissions from WPT devices, as detailed in *CEPT ECC Report 289*, published in January. According to that report, given the planned density of WPT systems for electric vehicles operating in the 79 – 90 kHz range, it is calculated that there will be a widespread and serious impact for the Amateur Service in the vicinity of WPT systems, should spurious emissions, measured at 10 meters, be at the current limits of *ERC Recommendation 74-01*.

At the Ankara meeting, IARU and other interested parties provided further input. SE24 will meet again in early July to focus on WPT issues.

Also at Ankara, IARU attended the Short-Range Devices Maintenance Group meeting (SRD/MG), where it was noted that further work was needed in SE24 before spurious emission limits for WPT devices could be addressed in a regulatory sense. IARU was represented in Ankara by IARU Region 1 President Don Beattie, G3BJ, who is spearheading the IARU's work in this area.

The issue of WPT-EV is World Radiocommunication Conference 2019 (WRC-19) Agenda Item 9.1.6, for which studies are still under way. Broadcasters, land mobile services, and others have also expressed concern about spurious WPT-EV emissions. Further work remains regarding generic WPT systems for such applications as cell phone charging, power tools, and household appliances.

## THREE BIRDS CONSTELLATION CUBESATS DELIVERED TO ISS FOR ORBITAL DEPLOYMENT

A Cygnus resupply mission to the International Space Station (ISS) on April 11 also delivered three CubeSats of the [BIRDS-3](#) constellation and three other CubeSats. The BIRDS-3 constellation is a project of students at the Kyushu Institute of Technology. The additional CubeSats include Swiatowid, KrakSat, and EntrySat.

All BIRDS-3 CubeSats are of the same design and have been coordinated to operate on a common downlink frequency of 435.375 MHz. Each will transmit a CW beacon and 9.6 k GMSK telemetry. The CubeSat deployer in the ISS Kibo module will deploy the BIRDS-3 CubeSats at a later date.

The BIRDS-3 constellation includes CubeSats from three countries: They are Nepal's first satellite, NepaliSat-1; Uguisu from Japan, and Sri Lanka's first satellite, Raavana-1. The primary mission of the BIRDS constellation is to provide ciphered short messages via its 435.375 MHz beacon, giving the opportunity for the Amateur Radio community to decipher the messages using a publicly available key on the BIRDS-3 website. Operators able to successfully decipher the message will be recognized on the BIRDS-3 website and receive a BIRDS-3 QSL card.

In addition to their primary mission, BIRDS-3 CubeSats will conduct remote data collection based on low-powered LoRa modulation to demonstrate remote data collection and processing

aboard a CubeSat to, for example, monitor water levels in flood-prone areas. The LoRa remote station will operate at 433 MHz for Sri Lanka and Nepal and at 920 MHz for Japan. Data collected will be posted on the BIRDS-3 website. Radio amateurs contributing to receiving the processed data will receive a QSL card showing the nature of data collected.

BIRDS-3 will also carry an imaging mission for public outreach and awareness and Earth magnetic field measurement; a mission to find commercial, off-the-shelf alternatives to expensive space adhesives, and active attitude stabilization as a precursor to active aiming control for future CubeSat missions.

Other CubeSats carried aloft on the same launch include: Swiatowid, which will carry a V/U transponder, with an FM voice uplink at 436.000 MHz and downlink at 145.850. Telemetry will be transmitted on 435.500 MHz and at 2435.000 MHz; KrakSat, which will transmit 9.6 k and 1.2 k telemetry at 435.500 MHz, and EntrySat, a 3U CubeSat that will measure thermosphere parameters during its orbital phase, and satellite re-entry during the re-entry phase. It will carry an Amateur Radio FM relay with a downlink of 436.950 (uplink not available) and 9.6 k packet. — AMSAT News Service

## LOW AUDIO FOR ISS SSTV TRANSMISSIONS RAISES ISSUE OF CREW'S ABILITY TO INTERVENE

Reception problems owing to low audio levels plagued a recent round of Amateur Radio on the International Space Station-sponsored (ARISS) slow-scan TV transmissions. Some clever operators on the receiving end were able to use software to bump up the deficient audio so the images would decode properly. But the matter raised questions concerning the ISS crew's ability to troubleshoot problems and to make adjustments to the Amateur Radio gear on the fly. ARISS-International Chair and AMSAT Vice President for Human Spaceflight Programs Frank Bauer, KA3HDO, subsequently posted an explanation of how Amateur Radio fits into the operation of the ISS and the astronauts' ability to service and operate it.

"Please remember that ARISS is not the prime activity on ISS," Bauer said. "There are over 300 international experiments currently operational on ISS on this expedition. I just heard in a teleconference last week that that number will go to about 500 experiments in the next 1 – 2 years."

Bauer said the vast array of ongoing experiments means it's only possible to "occasionally get suggestions to the crew" to make changes relative to the Amateur Radio payload. "Any workarounds on any experiment/payload will compete with the crew's already fully booked

schedule," Bauer explained. "Several ARISS team members, particularly our teammate in Russia, were out of pocket this past weekend. Our Russian colleague was informed of the [low audio] issue early on and acknowledged the issue. But he also needs to get tied into Mission Control. That is difficult from afar. And even if we ask for a change, it is challenging to get the crew time to make this happen, especially if it is outside the flight planning stage."

Bauer said that once ARISS has its Interoperable Radio System on board, it plans to augment the system with ground-command capability. "We have already developed a concept for this capability," Bauer explained. "Once in place, we will be able to do many things with our radio without crew intervention, including mode changes to support SSTV, APRS, voice repeater, etc. This capability will also be important if we fly ham radio on the Lunar Gateway, which will not have crew on it 24/7."

Bauer pointed out that keeping ARISS afloat and able to implement new Amateur Radio capabilities requires "a great deal of funding."



“As an example, ARISS currently has two individuals on travel to NASA Johnson running tests for the Interoperable Radio System,” he said. “This is one of three trips required to get the radio system ready for flight. Each will cost ARISS about \$3,000 in travel — nearly \$10,000 for these three testing events. Also, this past week, we spent \$1,100 to transport the HamTV that was returned from ISS back to Italy to undergo troubleshooting to potentially repair the anomaly we experienced on ISS.”

Bauer used the opportunity to note that ARISS has a fundraising activity under way to get the Interoperable Radio System ready for launch. “We need \$150,000 by the end of this year and are well short of our goal right now,” he pointed out. “If you really want to see improvements in the ISS radio system from where it is today, please strongly consider donating to ARISS. At some donation levels, your call sign and name will be included on the interoperable radio system that will fly to ISS!” – AMSAT News Service

## WORLD SCOUT JAMBOREE GEARING UP FOR SIGNIFICANT AMATEUR RADIO PRESENCE

Amateur Radio will be a part of this summer's 24th World Scout Jamboree in West Virginia, the first World Jamboree held in North America since 1983. The Jamboree has chosen the theme "Unlock a New World." Thousands of Scouts and Scout leaders from some 200 countries are expected to attend. The Jamboree's Amateur Radio Exhibit will use the call sign [NA1WJ](#) -- **North America's 1st World Jamboree**. It will be on the air during the event, July 22 until August 2, at the Summit Bechtel Reserve, hosted by Canada, Mexico, and the US. Amateur Radio testing is expected to begin as early as July 14. Operating frequencies will be posted in real time via [Facebook](#) and [Twitter](#) or via an [NA1WJ email group](#).



"The goals of the Amateur Radio station at the World Scout Jamboree are to introduce Amateur Radio to Scouts and Scout leaders through hands-on participation in two-way communication with other stations across the globe. This activity will also serve as the Amateur Radio voice of the Jamboree," the [World Scout Jamboree Amateur Radio Exhibit Operational Vision document](#) states. Other facets of Amateur Radio at the Jamboree will include Amateur Radio direction finding (ARDF), Amateur Radio satellite contacts, and a scheduled

Amateur Radio on the International Space Station (ARISS) contact with an ISS crew member.

"We also expect to launch one or two balloons with Amateur Radio payloads and track them as they cross the Atlantic," the vision document continues.

Organizers are encouraging radio amateurs around the globe to get on the air during the World Jamboree to help NA1WJ demonstrate Amateur Radio for Jamboree visitors.

The 2019 World Scout Jamboree operation at the Summit Bechtel Scout Reserve will take advantage of lessons learned by the K2BSA Amateur Radio operation during the 2013 and 2017 USA National Jamborees. It will also take advantage of the existing infrastructure, which includes three VHF/UHF repeaters installed by Icom America, as well as the utility poles for installing antennas. K2BSA ham gear stored in West Virginia includes antennas, rotators, and cables.

Evening operation from NA1WJ will involve at least two operators using the buddy system. VHF/UHF repeaters will offer full coverage of the Jamboree area via handheld transceivers,

facilitating networking as well as emergency communication. The exhibit will include an Amateur Radio station with the special event call sign W8J.

The demonstration station will include multiple operating positions offering a variety of modes. These include six stations with 100 W HF transceivers, computer logging software, and large screen computer displays; two VHF/UHF stations for demonstrations and repeater monitoring, and two satellite communication systems. The antenna farm will include two HF directional antennas, three HF dipoles, three HF vertical antennas, VHF/UHF verticals and satellite antennas with azimuth and elevation control, a trailer-based crank-up tower, a five-band Yagi, a 40-meter rotatable dipole, and a 6-meter Yagi.

Each station will be able to accommodate four participants at a time, plus one control operator. The goal is to give each participant up to about 10 minutes of operating time.

The K2BSA Amateur Radio Association will host a "Radio Scouting" booth at [Dayton Hamvention](#)<sup>®</sup> (Booth 2205 in Building 2).

## ANNUAL ARMED FORCES DAY CROSSBAND TEST SET FOR MAY 11

The Army Military Auxiliary Radio System (MARS) will host the traditional military/Amateur Radio communication tests to mark the 68th annual Armed Forces Day (AFD) on Saturday, May 11. The event is open to all radio amateurs. Armed Forces Day is May 18, but the AFD Crossband Military-Amateur Radio event traditionally takes place 1 week earlier in order to avoid conflicting with Dayton Hamvention<sup>®</sup>. Complete information, including military stations, modes, and frequencies, is [available](#) on the US Army MARS website.

"For more than 50 years, military and amateur stations have taken part in this event, which is only an exercise scenario, designed to include hobbyist and government radio operators alike," the event announcement said. "The AFD Crossband Test is a unique opportunity to test two-way communications between military communicators and radio stations in the Amateur Radio Service, as authorized in 47 CFR 97.111. These tests provide opportunities and challenges for radio operators to demonstrate individual technical skills in a tightly-controlled exercise scenario that does not impact any public or private communications."

During the event, military stations in various locations will transmit on selected military frequencies and announce the specific ham frequencies they are monitoring.

Military stations expected to be on the air for the event include those in Arizona, Japan, Hawaii, Okinawa, Washington, DC (and elsewhere in the contiguous states), the USS *Midway*, the USS *Yorktown*, the USS *Iowa*, LST-325, the US Naval Academy in Annapolis, and the Newport Naval Radio Station Museum in Rhode Island. The MARSCOMM and MARS RADIO nationwide networks will have multiple stations on the air across the continental US.

An AFD message will be transmitted utilizing the Military Standard (MIL-STD) serial PSK waveform (M110) followed by MIL-STD Wide Shift FSK (850 Hz RTTY), as described in MIL-STD 188-110A/B. [Technical information](#) is available. The AFD message will also be sent in CW and RTTY, as indicated on the [full schedule](#). Anyone wanting a QSL should complete the [request form](#) on the MARS website.

## HAMS HELP TRACE “MYSTERY” SIGNAL DISRUPTING KEYLESS ENTRY DEVICES IN OHIO

A recent article in *The New York Times* reported that many garage door openers and keyless vehicle entry fobs in an Ohio town near Cleveland mysteriously stopped working. While the article invoked *The X-Files* and hinted initially that a NASA research center somehow could be involved, the cause was not so much mystifying as arcane.

“Garage door repair people, local ham radio enthusiasts, and other volunteer investigators descended on the neighborhood with various meters,” the May 4 article by Heather Murphy recounted. “Everyone agreed that something powerful was interfering with the radio frequency that many fobs rely on, but no one could identify the source.”

More than a dozen residents reported intermittent issues getting their key fobs and garage door openers to operate, and most lived within a few blocks of each other. At one point, the local power utility started shutting off power to areas where the strongest RF signal was detected, but the signal persisted. Dan Dalessandro, WB8ZQH, a TV repairer, was among several hams who investigated. He initially picked up “little blips” on a signal detector, but finally, on one block and at a particular house, the signal was quite loud.

“The source of the problem was a homebrew, battery-operated device designed by a local resident to alert him if someone was upstairs when he was working in his basement,” the *Times* reported. “It did so by turning off a light.” The individual, who, the article said, has special needs, was not identified for privacy concerns. The inventor, who had no malicious intent, had no inkling that his device was wreaking havoc on the neighborhood until a North Olmstead City Council member and a volunteer knocked on his door. The device operated on 315 MHz, the frequency many keyless-entry devices use under FCC Part 15 rules. The device’s battery was removed, the signal stopped, and all who were involved breathed sighs of relief.

## ASTRONAUT AND PIONEER FOR AMATEUR RADIO IN SPACE OWEN GARRIOTT, W5LFL, SK

Owen K. Garriott, W5LFL, the US astronaut who pioneered the use of Amateur Radio to make contacts from space, died April 15 at his home in Huntsville, Alabama. He was 88. Garriott’s ham radio activity ushered in the formal establishment of Amateur Radio in space, first as SAREX (the Shuttle Amateur Radio Experiment), and later as [ARISS](#) (Amateur Radio on the International Space Station).

“Owen inspired legions of Amateur Radio operators worldwide to support human spaceflight Amateur Radio endeavors and for countless individuals to become ham radio operators,” observed ARISS-International President Frank Bauer, KA3HDO.

Garriott, an Oklahoma native, thrilled radio amateurs around the world by making the first contacts from space during 10 days aboard *Spacelab-1* during a 1983 Space Shuttle *Columbia* mission. Thousands of hams listened on 2-meter FM, hoping to hear him or to make a contact. Garriott ended up contacting stations around the globe, among them such notables as the late King Hussein, JY1, of Jordan, and the late US Senator Barry Goldwater, K7UGA.

“I managed to do it in my off-duty hours, and it was a pleasure to get involved in it and to talk with people who are as interested in space as the 100,000 hams on the ground seemed to be,” Garriott recounted during an interview published in the February 1984 edition of *QST*.

Garriott simply used a handheld transceiver with its antenna in the window of *Spacelab-1*. His first pass was down the US West Coast.

"[A]s I approached the US, I began to hear stations that were trying to reach me," he told QST. "On my very first CQ, there were plenty of stations responding." His first contact was with Lance Collister, WA1JXN, in Montana.

Garriott shared a Hamvention Special Achievement Award in 2002 with fellow Amateur Radio astronaut Tony England, W0ORE. His son, Richard Garriott, W5KWQ, was a private space traveler to the ISS, flown there by the Russian Federal Space Agency, and he also carried ham radio into space.

## SHORTS

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**AMSAT Academy will take place on Thursday, May 16, the day before [Dayton Hamvention](#)**<sup>®</sup>. AMSAT says this is a unique opportunity for both beginners and advanced satellite operators to learn about Amateur Radio in space and working the FM, linear transponder, and digital satellites now in orbit. AMSAT Academy will take place on Thursday, May 16, 9 AM until 5 PM, at the Dayton Amateur Radio Association (DARA) clubhouse, 6619 Bellefontaine Road, in Dayton, Ohio. The \$85 registration fee includes a full day of instruction taught by some of the most-accomplished AMSAT operators; a digital copy of *Getting Started with Amateur Satellites* (2019 ed.); 1 year of AMSAT Basic membership; pizza buffet lunch, and an invitation to the Thursday night AMSAT get together at Ticket Pub & Eatery in Fairborn. Registration closes on May 10 and will not be available at the door. No refunds or cancellations. Register at the [AMSAT Store](#).

**HamSCI, Ham Radio 2.0 to Combine Efforts at Dayton Hamvention 2019** - Thanks to support from the [Yasme Foundation](#), the citizen science organization [HamSCI](#) and Ham Radio 2.0 will share space and combine efforts at [Dayton Hamvention](#)<sup>®</sup> 2019, which is also the 2019 ARRL National Convention. Their displays will be in Building 4 (Volta), which is between the food trucks and the flea market.

The Ham Radio 2.0 area will serve to host a series of "booth talks" both by HamSCI presenters and presenters with a "2-point-0" perspective on operating and technology that looks to the future of ham radio. Presentations begin at 10 AM on Friday and continue through 3 PM on Saturday.

In addition to the presentations, the Ham Radio 2.0 area will be home to a mini-booth staffed by members of the Young Amateurs Radio Club ([YARC](#)) and the Young Contesters Program ([YCP](#)) that is associated with the European Youngsters On The Air ([YOTA](#)) program. It's an opportunity to get acquainted with radio amateurs doing interesting things in interesting places.

HamSCI also will offer the HamSCI Forum Saturday, 9:15 - 10:30 AM (Forum Room 4). [Full details](#) are on the HamSCI website.

**ARRL's Free Exam Review for Ham Radio Updated** - [ARRL Exam Review for Ham Radio](#)<sup>™</sup> has been updated in advance of the release of the ninth edition of [The ARRL General Class License Manual for Ham Radio](#). ARRL Exam Review is a free online resource for use with current editions of [ARRL License Manuals](#). The service can be accessed via a web browser, and uses the official examination question pools to construct chapter-by-chapter reviews. Upon completing study, Exam Review helps the license candidate take practice exams with the same number and variety of questions that he or she will encounter on exam day. Practice tests can be taken over and over, scored in complete privacy, or even printed with an answer key. Exam Review includes quick feedback about the questions missed.

**Ulrich Rohde, N1UL, Wins 2019 IEEE CAS Industrial Pioneer Award-** Ulrich Rohde, N1UL, has been selected to receive the 2019 Circuits and Systems (CAS) Society Industrial Pioneer Award. The Industrial Pioneer Award recognizes exceptional and pioneering contributions in translating academic and industrial research results into improved industrial applications and/or commercial products. The IEEE Circuits and Systems Society sponsors the award, which will be presented at the International Symposium on Circuits and Systems 2019 conference. CAS awards are intended to highlight the accomplishments of CAS Society members and celebrate their dedication and contributions both within the field and to the CAS Society. Award recipients are nominated by their Society peers in order to honor the service and contributions that further strengthen the CAS Society.

While working under a US Department of Defense contract at RCA in 1982, Rohde's department developed the first SDR, which used the COSMAC (Complementary Symmetry Monolithic Array Computer) chip. Introduced by RCA in early 1976, the RCA CDP1802 eight-bit CMOS microprocessor — a 40-pin LSI integrated circuit chip — was the company's first single-chip microprocessor. Rohde was among the first to present publicly on this topic with his February 1984 talk, "Digital HF Radio: A Sampling of Techniques" at the Third International Conference on HF Communication Systems and Techniques in London.

**ARRL has rolled back Outgoing QSL Bureau rates to 2011 levels.-** Effective May 15, 2019, the new rates will be: \$2 for 10 or fewer cards in one envelope; \$3 for 11 - 20 cards in one envelope, or 75 cents per ounce for packages with 21 or more cards. For example, a package containing 1.5 pounds of cards -- 24 ounces, or about 225 cards -- will cost \$18. There are no transaction service fees. Any cards received before May 15 will be charged the current rate. There will be no adjustments for cards received before May 15. [More information](#) is on the ARRL website.

***THANKS FOR READING !***

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THE RCA ARC MONTHLY NEWSLETTER IS COMPILED AND EDITED BY JIM RINEHART, K9RU AND JIM KEETH, AF9A. 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/>

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