RCA Amateur Radio Club
Indianapolis, IN
www.w9rca.org

APRIL 2021 MONTHLY NEWSLETTER

A VIRTUAL ZOOM MEETING WILL BE SCHEDULED FOR
TUESDAY APRIL 13th AT 7:00 EDT
INVITATIONS TO JOIN WILL BE EMAILED BY APRIL 12th

RCA ARC NEWS

THE APRIL 13th MEETING – For the April 13th meeting, we shall again use a Zoom virtual meeting. The meeting will start at 7:00 pm and is being hosted on the Indiana ARRL Section Zoom courtesy of the Indiana SCM Jimmy Merry, KC9RPX.

You will receive an email message with a link, meeting ID and password by April 12th. If you can access your emails by your smart phone, then you can join using it. If you join using your desktop or laptop and do not have a video camera, then it will join you with audio only assuming you have some type of microphone connected to the computer. If not, then you will be logged as listen only. You can also use your phone and call in using the numbers listed in the email for the session.

MARCH MEETING SUMMARY – Thanks to all who attended our March Zoom meeting. The March meeting was a rather informal group discussion. Among other things, Dick, W9ZB, shared experiences with some of his meteor scatter work using WSJT. Harold, KE6TI, shared experiences with wire antennas and trees.

AMATEUR RADIO LICENSE TEST SESSION

Date: **Saturday, April 10, 2021**
Time: Starting at 12:00 pm **by appointment only**.
(Required: FRN and completed form NCVEC 605. A mask is required)
Location: Salvation Army EDS Training Facility, 4020 Georgetown Rd
Indianapolis, IN 46254-2407
Contact: **Jim Rinehart, k9ru@arrl.net, 317 721-1458**

PLANNING MEETINGS FOR THE 2021 INDY HAMFEST – If you would like to be a part of the committee (meetings held on the 3rd Monday via Zoom) please contact Mike Sercer, WA9FDO. This is the 50th anniversary of the Indy Hamfest and they are looking for new people wanting to be involved with the hamfest.

HAMFESTS, OPERATING EVENTS, VOLUNTEER OPPORTUNITIES

May 1	Indiana QSO Party - http://www.hdxcc.org/inqp/rules.html
May 8	INDY 500 Mini-Marathon - Virtual again this year
May 22	HAMVENTION QSO Party - 8am to 8pm EDST
May 29-30	CQ WPX CW contest https://www.cqwpx.com/
June 26-27	ARRL Field Day
July 9-10	Indianapolis Hamfest - http://indyhamfest.com/

For more contest info: **https://www.contestcalendar.com/contestcal.html**

CELEBRATE WORLD AMATEUR RADIO DAY 2021 ON APRIL 18

Sunday, April 18, is World Amateur Radio Day (WARD), with this year marking the 96th anniversary of the International Amateur Radio Union (IARU), which was founded at the 1925 International Radiotelegraph Conference in Paris. ARRL cofounder and first president Hiram Percy Maxim, 1AW, was there, and today ARRL is the International Secretariat of the IARU. ARRL has resources members can use to celebrate World Amateur Radio Day, including graphics for social media posts and radio club websites, as well as a printable flyer.

IARU has chosen "Amateur Radio: Home but Never Alone" as the theme for World Amateur Radio Day 2021. The theme acknowledges that during our physical distancing to reduce the spread of COVID-19, amateur radio stands out as a welcome respite for its variety of activities and opportunities.

ARRL member Anne Frank, KD9LRB, of Deer Park, Wisconsin, is featured on ARRL's World Amateur Radio Day poster.

Amateur radio experimenters were the first to discover that the HF spectrum was not the wasteland experts of the time considered it to be, but a resource that could support worldwide communication. In the rush to use these shorter wavelengths, amateur radio was "in grave danger of being pushed aside," IARU history has noted, prompting the founding of the IARU. At the 1927 International Radiotelegraph Conference, amateur radio gained allocations still recognized today -- 160, 80, 40, 20, and 10 meters. Over the years, the IARU has worked to defend those allocations and to give all radio amateurs new bands at 136 kHz, 472 kHz, 5 MHz, 10 MHz, 18 MHz, 24 MHz, and 50 MHz.

The 25 countries that formed the IARU in 1925 have grown to include more than 160 member-societies in three regions. The International Telecommunication Union (ITU) has recognized the IARU as representing the interests of amateur radio.

On World Amateur Radio Day, all radio amateurs are invited to take to the airwaves to share global goodwill with other amateurs. ARRL encourages members to promote the value of amateur radio to family and friends, and in their communities. Many volunteer ARRL Public Information Officers and Public Information Coordinators throughout the US use the run-up to WARD as an opportunity to reach out to the media to share information about amateur radio.

"The amateur radio community has a great story to tell on the occasion of World Amateur Radio Day," ARRL Product Development Manager Bob Inderbitzen, NQ1R, said. "While the pandemic has kept many of us at home, radio amateurs have still been able to get on the air."

"Over the last year, many ARRL-affiliated radio clubs and in-person ham radio events have moved their group activities online. This has helped to keep radio amateurs active and involved in the common pursuit of skill, service, and discovery in radio communication and radio technology," Inderbitzen added.

Coincidentally, the SSB running of the ARRL Rookie Roundup falls on World Amateur Radio Day (1800 - 2359 UTC). The event is aimed at hams licensed for 3 years or less. Take the opportunity to wish participants "Happy World Amateur Radio Day 2021" on the air. Read an expanded version.

Some WARD 2021 Activities Around the Globe

•Bahrain: The Bahrain Amateur Radio Society will operate A91WARD April 14 - 18, 2021 using SSB, FT8, and DMR modes.

•Canada: Radio Amateurs of Canada are sponsoring a "Get on the Air on World Amateur Radio Day" special event.

•Germany: The Deutscher Amateur Radio Club is operating DA21WARD for World Amateur Radio Day through June 30. World Amateur Radio Day is April 18. WSL to DK5ON.

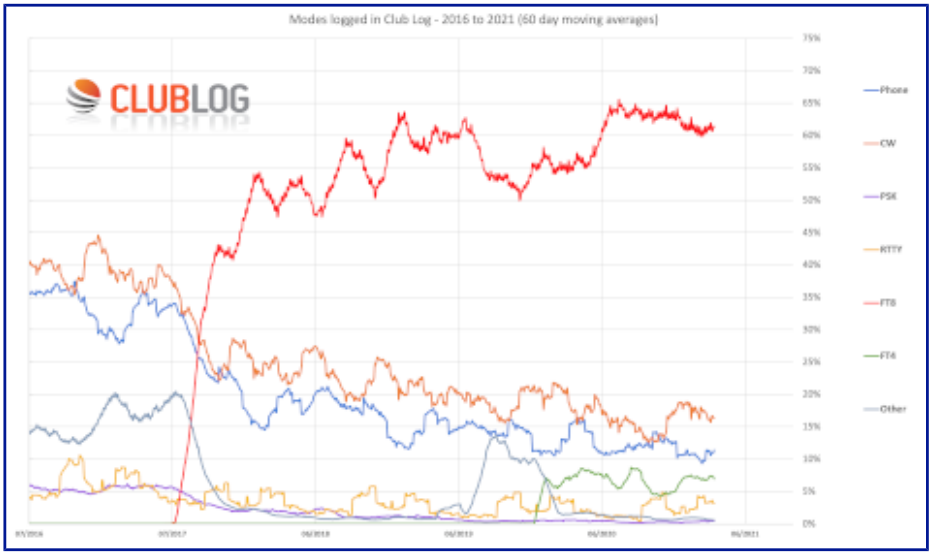
•New Jersey: The Fair Lawn (New Jersey) Amateur Radio Club will operate club station W2NPT on CW and phone throughout the day on April 18. In support of the theme of this year's event, the operators will share information about the Health and Welfare Net that the club is running during the pandemic.

•Alabama: The Disaster Communication Action Team will operate club station KD1CAT on April 18 in support of World Amateur Radio Day. Operation will be on all HF bands.

•VOIP/ECHOLINK *ROC-HAM* Conference node #531091, April 18 - 19, 1300 -- 0500 UTC via VOIP/ECHOLINK *ROC-HAM* Conference node #531091/Allstar #2585. W2JLD, VO1UKZ, GW8SZL, 2W0KYH will be net controllers. All stations from around the world are encouraged to check in. A QSL card will be available via SASE.

FT8 ACCOUNTS FOR NEARLY TWO-THIRDS OF HF ACTIVITY

Since zooming to prominence after its debut in mid-2017, the popular FT8 digital protocol has become the mode of choice for some 60% of HF operators, according to Club Log's



latest activity report compiled by Michael Wells, G7VJR. FT8 is one of the protocols in the *WSJT-X* suite of free programs. Wells says FT8 activity level sits at nearly 85% on 6 meters. The dramatic FT8 upswing has come at the expense of phone, CW, RTTY, PSK, and other modes. Over the same period, the number of FT8 contacts logged each year per active call sign has continued to climb to about 60% between 2015 and 2021, with the most dramatic increase being nearly 29% in the past year. The use of all other modes has continued to flutter downward since the advent of FT8, which occupies vastly less spectrum than the more traditional ham radio operating modes. (Click for larger image.)

Between 2015 and 2020, the number of contacts logged per day by Club Log users has trended steadily upward, regardless of mode. The report draws on data of more than 84,000 logs uploaded to the Club Log site -- some 730 million contacts in all.

Wells reported that in 2025, the "typical call sign" logged 620 CW contacts, 558 SSB contacts, and 372 data (digital) contacts. Five years later, the statistics were 500, 300, and 1,700, respectively.

ARRL's Logbook of The World (LoTW) does not typically report this level of detail as far as mode usage is concerned, but the statistics available certainly confirm FT8's increasing popularity. The rocketing usage of FT8 over the past few years may be demonstrated most dramatically by a comparison in contacts-by-mode statistics between March 2017 and March 2018, when FT8 contact numbers in the hundreds shot to some 2.6 million contacts by the following year -- an increase of nearly 1 million percent.

From mid-2019 to mid-2020, FT8 usage appears to have slumped slightly to 50% before climbing back to 60%. FT8 usage peaked at just over 65% in late 2020 and has held steady at 60 - 65% since.

The same period saw SSB usage dip by 15%, CW activity by 10%, and RTTY by 29%. Introduced later, FT4, the contest mode of FT8, also showed an initial fast upward trajectory, before steadying at 5 - 8%.

Named after its developers, Steven Franke, K9AN, and Joe Taylor, K1JT, FT8 indicates the mode's eight-frequency shift-keying format. Tones are spaced at 6.25 Hz, and an FT8 signal occupies just 50 Hz bandwidth.

ARISS HAM STATION IN COLUMBUS MODULE IS ONCE AGAIN OPERATIONAL

Some 6 weeks after going silent following a spacewalk that installed new antenna cabling, the Amateur Radio on the International Space Station (ARISS) ham station in the Columbus module is once again operational. The Columbus station, which typically uses the call sign NA1SS, is the primary ARISS amateur radio station used for school contacts and other activities. The problem arose after a January 27 spacewalk replaced a coax feed line installed 11 years ago with another built by the European Space Agency (ESA) and Airbus.

While the specific cause of the problem has not yet been determined, a March 13 spacewalk that restored the antenna cabling to its original configuration provided the cure. The plan to return the ARISS cabling to its original configuration had been a "contingency task" for a March 5

spacewalk, but the astronauts ran out of time. The ARISS work was appended to the to-do list for astronauts Mike Hopkins, KF5LJG, and Victor Glover, KI5BKC, to complete a week later.

During the weekend spacewalk, Hopkins swapped out a cable for the Bartolomeo commercial payload-handling platform that had been installed in series with the ARISS VHF-UHF antenna feed line, returning the ARISS system to its pre-January 27 configuration. Hopkins raised a question concerning a sharp bend in the cable near a connector, but no further adjustments were possible.

On March 14, ARISS was able to confirm the operation's success when Automatic Packet Reporting System (APRS) signals on 145.825 MHz were heard in California, Utah, and Idaho as the ISS passed overhead. ARISS team member Christy Hunter, KB6LTY, was able to digipeat through NA1SS during the pass. With additional confirmation from stations in South America and the Middle East, ARISS declared the radio system operational again.

Work during the March 13 spacewalk also made Bartolomeo operational. "Yesterday was a great day for all!" Bauer said. "Ad astra!" Read an expanded version.

SEVERAL SATELLITES OPERATING IN BANDS ALLOCATED TO THE AMATEUR SATELLITE SERVICE WENT INTO ORBIT ON MARCH 22.

Most have been coordinated by the International Amateur Radio Union (IARU) Satellite Frequency Coordination Panel. They include BeeSats -5, -6, -7, and -8; FEES; SMOG; GRBAlpha; KSU Cubesat; DIY-1; STECCO; CubeSX-HSE; CubeSX-Sirius-HSE; Orbicraft-Zorkiy, and NanoSatC-BR2. Operating in Amateur Satellite spectrum without IARU frequency coordination is KMSL. Additional satellites may follow. The IARU Satellite Frequency Coordination Panel has declined coordination for UNISAT-7 and WildTrackCube-Simba. It's reported that the UNISAT-7 platform has deployed DIY-1 - Arduiqube, which is coordinated. Further information, including IARU-coordinated frequencies, is on the IARU Amateur Satellite Frequency Coordination page. -- *Thanks to* AMSAT News Service

HAM RADIO SATELLITE RETURNS FROM THE DEAD

After 7 years of silence, the Delfi-n3Xt satellite is again transmitting a signal. The 3U Delfi-n3Xt nanosat, launched by Delft University of Technology (TU Delft), has not been heard since 2014, and its sponsors were surprised to learn that it was transmitting again. Delfi-n3Xt carries a linear amateur radio transponder. It was the second satellite launched by TU Delft, as part of the Delfi Program, which develops very small satellites. The first Delfi satellite, Delfi-C3, is still working as well. Now that Delfi-n3Xt is transmitting again, steps are being taken to further its mission. The Delfi-n3Xt project started in 2007, and the satellite was launched in November 2013. The satellite operated successfully for 3 months, achieving mission success. Contact with the satellite was lost in late 2014 after an experiment with the linear transponder.

When functioning properly, the Delfi-n3Xt satellite transmits telemetry on 145.870 MHz and 145.93 MHz, and high-speed data on 2405 MHz. The inverting SSB/CW transponder has an uplink passband of 435.530 - 435.570 MHz LSB and a downlink passband of 145.880 - 145.920 MHz USB. The ham transponder was a last-minute addition to the project.

On February 9, an automatic email notification was received from the satellite's ground station, indicating that a signal from the Delfi-n3Xt had been picked up. Student and ground station operator Nils von Storch said he'd programmed the ground station software so that it would continue to track Delfi-n3Xt and notify him if it ever came back to life. Relevant checks and

analysis of telemetry frames prove the satellite is transmitting again. The reason it stopped transmitting has not yet been determined, and the big question now is how it was able to resume operation.

Hypotheses include a bit flip in the software or a short circuit, given the extreme conditions in space.

"Of course, in the past, we have looked for all kinds of explanations, and we also had theories about how the contact could ever come back," nanosatellite program manager Jasper Bouwmeester, PC4JB, said. "But after so long, I hadn't counted on it anymore." Bouwmeester, who has been managing the mission since 2007, expressed confidence that the satellite can still be of use to science.

"But I am sure that we will be able to find solutions," operations manager Stefano Speretta said. "If we don't lose the signal again, there are interesting times ahead." -- *Thanks to* AMSAT News Service and Delft University of Technology

FEBRUARY 2021 VOLUNTEER MONITOR PROGRAM REPORT

The Volunteer Monitor (VM) Program is a joint initiative between ARRL and the FCC to enhance compliance in the Amateur Radio Service.

To date, Volunteer Monitors during February reported 1,762 hours monitoring the HF frequencies and 2,158 hours monitoring VHF frequencies and above. The Volunteer Monitor Program Administrator issued 10 Advisory Notices. An Advisory Notice is an attempt to resolve rule violation issues informally before FCC intervention.

- •Operators in Holdenville, Oklahoma; Luzerne, Michigan; Miami, Florida, and Merrick, New York, received Advisories concerning operation outside their license class.
- •Operators in Magalia, California; Jefferson, Georgia, and Redway, California, received Advisories concerning interference to repeater systems and HF net operations.
- •An operator in Mansfield, Arkansas, received an Advisory regarding failure to properly identify.
- •An operator in Charlottesville, Virginia, received an Advisory concerning improper bandwidth that resulted in interference.
- •A desert racing association in Odessa, Texas, received a warning about the use of amateur 2-meter frequencies for racing events.

The Volunteer Monitor Program Administrator had two meetings during February with FCC Enforcement Bureau personnel. -- *Thanks to Riley Hollingsworth, K4ZDH, VM Program Administrator*

DAYTON HAMVENTION® ANNOUNCES 2021 AWARD WINNERS

Dayton Hamvention® has announced its 2021 award winners. Hamvention Awards Committee Co-Chairs Michael Kalter, W8CI, and Frank Beafore, WS8B, said that despite the COVID-19 pandemic, the Hamvention committee elected to go forward in announcing its selection of outstanding radio amateurs and predicted that Hamvention will return in 2022.

Amateur of the Year

Angel M. Vazquez, Jr., WP3R, the head of telescope operations and Puerto Rico Coordination Zone Spectrum Manager for Puerto Rico's famous Arecibo Observatory, was cited as Amateur of the Year for "his unswerving and diligent support of amateur radio throughout the entire territory of Puerto Rico and worldwide."

Although he was born in Puerto Rico, Vazquez grew up in Brooklyn, New York, and returned to Puerto Rico after college in 1977, taking a job at the Arecibo Observatory. Vazquez earned his amateur radio license in 1993, and headed the 2010 moonbounce effort from the observatory, as well as multiple special events using the KP4AO club call sign.

Vazquez helped to provide communication support in the wake of Hurricane Maria. He was named Amateur of the Year in Puerto Rico in 2018 and received the Yasme Excellence Award in 2019. He's also a Volunteer Examiner and inaugurated the first virtual/online bilingual testing program as part of the Greater Los Angeles Amateur Radio Group (GLAARG) VEC.

Technical Achievement

Tamitha Skov, WX6SWW, is well-known as the Space Weather Woman. Calling her "a real space pioneer," the Awards Committee said those who have seen her space weather forecasting shows will agree that she is energetic and excited about her work.

A credentialed space weather forecaster, Skov's forecasting work is widely known on social media and has been featured in publications and on TV. Her weekly space weather video podcasts are frequently featured on www.qrz.com. Skov said she specifically got her ham license in 2018 to better understand and serve the needs of the amateur radio community.

Professionally, Skov is a research scientist for The Aerospace Corporation. She also teaches the art of space weather forecasting to meteorologists at Millersville University and is working with ARRL and HamSCI to create educational materials.

Special Achievement

Wesley Lamboley, W3WL, was nominated by his peers for his lifelong, high-energy support for the science and art of amateur radio. "Not only has he supported youth coaching, membership recruiting, and technical problem assistance, he always does it with a smile and great humor," the Awards Committee said. Lamboley spent 40 years in the aerospace industry as a technical writer, electrical and systems engineer, and manager. Introduced to amateur radio in 1955 when a friend invited him to Field Day, Lamboley credits ham radio for much of his success.

"Many mentors helped me and I try to pay it forward as best I can, especially for young people," he said. He's also participated in several DXpeditions, and five SouthWest Ohio DX Association "DXpedition of the Year" plaques adorn his ham shack.

Club of the Year

The Hamvention Awards Committee named the ARRL-affiliated Vienna Wireless Society (VWS), K4HTA, in Virginia as the Club of the Year. The committee noted that the club's 280 members focus on youth education and public service, and promote the growth of ham radio. The club is now the largest and most active in the Washington, DC, area.

The club offers licensing classes, workshops, and four educational programs a month at its meetings, and these are archived for broader use. Their annual Winterfest is host to the ARRL Virginia Section Convention. The Vienna Wireless Society operates two repeaters in the DC area, and actively supports public service communications. Read an expanded version.

DAYTON HAMVENTION® SPECIAL ANNOUNCEMENT!

On Thursday May 20 Virtual Contest University 2021 will be held 9 AM 1300Z

On Thursday May 20. 2021 the Virtual Contest University will be held starting at 9 AM EDT 1300Z. The course outline will be available soon. This will be a *free* event!

Even if you are not a contester you will learn so much about Amateur Radio and hear the techniques and critiques of many of the world's foremost Hams. Hamvention is a proud sponsor along with Icom and DXEngineering. Plan on attending this amazing free event!

Several Icom radios will be given away during the all-day event. You must be registered on Zoom and present online at the time of the drawing to win the radios.

Please check http://contestuniversity.com for updates.

On Friday May 21 Starting at 11 AM EDT 1500Z we will have the 2021 Virtual Hamvention Forums.

The Hamvention Virtual Forums celebrates the 2021 Hamvention Award winners. Each awardee will give a 45 minute presentation followed by Q&A.

The Hamvention Forums will be presented via Zoom Webinar. Registration for the Zoom Webinar will start 30 days before the event – look for the registration information on the Hamvention Website. Several Icom radios will be given away during the 2021 Hamvention Forums. The winners will be selected at random.

The winner must have registered on Zoom for Hamvention Forums and be present during the drawing to win. Drawing times are random throughout the Virtual Forums event. Thanks to Hamvention, Icom and DX Engineering for their support of the 2021 Hamvention Virtual Forums.

Our presenters are:

Technical Achievement: WX6SWW – Tamitha Mulligan Skov is well known as the "Space Weather Woman".

Special Achievement: W3WL – Wesley Lamboley was nominated by his peers for his lifetime, high energy support for the science and art of amateur radio.

Amateur of the Year: WP3R – Angel M. Vazquez is known for being one of the principal support engineers for what was one of the greatest antennas in the world

Club of the Year: K4HTA – As always, it is very difficult to choose the club of the year as we receive many deserving club nominations from around the world.

Hamvention QSO Party will be held as a 12 hour event on Saturday of what would have been the Hamvention weekend: May 22, 2021 8am to 8pm EDST Hamvention QSO Party info: https://hamvention.org/qso-party-2021/

FCC NOT YET COLLECTING $35 APPLICATION FEE

The majority of the FCC's revised Part 97 rules (adopted in December 2020) establishing new application fees become effective on April 19, but the new amateur radio application fees will *not* become effective on April 19. The FCC announced on March 19 that the amateur radio

application fees, including those associated with Form 605 filings, would not become effective until the "requisite notice has been provided to Congress, the FCC's information technology systems and internal procedures have been updated, and the Commission publishes notice(s) in the *Federal Register* announcing the effective date of such rules."

The $35 fee, when it becomes effective, would apply to new, modification (upgrade and sequential call sign change), renewal, and vanity call sign applications, as well as applications for a special temporary authority (STA) or a rule waiver. All fees will be per application. Administrative updates, such as a change of mailing, email address, or name, are exempt.

It is expected that such fees will not become effective before summer 2021. The FCC has stated that amateurs will have advance warning of the actual effective date, because it will publish such date in the *Federal Register*.

ARRL Volunteer Examiner Coordinator (VEC) Manager Maria Somma, AB1FM, said VECs and Volunteer Examiner (VE) teams will not have to collect the $35 fee at exam sessions. Once the FCC application fee takes effect, new and upgrade applicants will pay the $15 exam session fee to the VE team as usual, and pay the $35 application fee directly to the FCC via the Fee Filer System or License Manager System. Somma said this information was provided in a VE Newsletter distributed this past week. "Further news and instructions will follow when we have them," she said.

FCC AGREES WITH ARRL AND ALLOWS PARTIAL REPRIEVE ON 3.5 GHZ

Pending future FCC action, amateur radio secondary use of the 3.3 - 3.45 GHz band segment may continue indefinitely. The FCC, as part of a lengthy *Second Report and Order* (*R&O*) for commercial licensing of 3.45 - 3.55 GHz adopted on March 17, agreed with ARRL that continued access by amateur radio to 3.3 - 3.45 GHz should be allowed until consideration of the 3.1 - 3.45 GHz spectrum in a later proceeding. The FCC action in WT Docket 19-348 represents a partial -- and temporary -- reprieve from the FCC's December 2019 proposal to remove amateur radio from the entire band, and it makes available an additional 50 MHz than an FCC proposal last fall to allow amateur temporary use of 3.3 - 3.4 GHz.

Amateur secondary operation in the 3.45 - 3.50 GHz band must cease 90 days after public notice that the spectrum auction has closed and licensing has begun. That is expected to happen early in 2022. The FCC announced the opening of 3.45 - 3.55 GHz for auction to commercial 5G interests on March 17.

The FCC stated that "While we adopt our proposal to bifurcate the band, we adjust our proposal and set 3450 MHz as the frequency at which the band will be split." It agreed "with the ARRL's assessment that the guard band is not necessary from a technical standpoint. We also recognize that the nature of amateur equipment realities makes the 50 MHz at 3400 - 3450 MHz particularly valuable to amateur operators because it means existing equipment can continue to operate in the band for the time being."

This allows "amateur operations to continue in the lower portion of the band while the [FCC and federal government users] continue to analyze whether that spectrum can be reallocated for flexible use," the FCC said. The FCC had proposed splitting the band at 3.4 GHz, permitting amateur use in 100 MHz of spectrum "while also providing a buffer to protect flexible-use operations at the lower edge of the 3.45 GHz band."

"We therefore allow secondary amateur operations to continue in the 3.4 - 3.45 GHz portion of the band," the FCC said. "We emphasize, however, that amateur licensees remain secondary users, and those that operate on frequencies close to the 3450 MHz band edge must do so with

particular caution to avoid causing harmful interference to flexible-use licensees in the 3.45 GHz Service, which hold primary status. In light of these considerations, while amateur operations between 3450 MHz and 3500 MHz must cease within 90 days of the public notice announcing the close of the auction for the 3.45 GHz Service, as specified in the *Report and Order*, amateur operations may continue between 3300 MHz and 3450 MHz while the Commission, NTIA, and the DoD continue to analyze whether that spectrum can be reallocated for commercial wireless use."

"There is no expectation that such operations will be accommodated in future planning for commercial wireless operations in this spectrum, or that amateur operators will receive more than a short period of notice before their operations must cease," the FCC said.

COOPERATIVE EFFORT UNDER WAY TO RESOLVE POTENTIAL 70-CENTIMETER INTERFERENCE ISSUE

ARRL, the FCC, and the US Department of Defense are cooperating in an effort to eliminate the possibility of amateur radio interference on 70 centimeters to a future missile control system at White Sands Missile Range (WSMR) in New Mexico. The Defense Department's Regional Spectrum Coordinator contacted the FCC in March, seeking information on whom to contact regarding amateur transmissions operational on 70-centimeter frequencies slotted for use on the new control system. The FCC, in turn, asked ARRL to oversee the coordination efforts. It is to be noted that the Amateur Radio Service is a secondary service on the band.

Investigation revealed that the potential problem was not with individual operators or repeaters, but with RF control links at 420 - 430 MHz used to establish a linked repeater system within New Mexico. "Based on the investigation, and with the support of the FCC, the owners of the RF control links being used in the 420 - 430 MHz portion of the amateur allocation within a certain proximity to WSMR are being asked to re-coordinate the link frequency to a new one above 430 MHz," explained ARRL Regulatory Information Manager Dan Henderson, N1ND.

ARRL enlisted the assistance of the state's designated repeater frequency coordinator for information on specific links in that part of the band. New Mexico Repeater Frequency Coordinator Bill Kauffman, W5YEJ, agreed to work with the control link operators to find new frequencies that will meet the needs of the link operators.

"Time is a factor in this request," Henderson said. "The new WSMR systems are in advanced testing and will become fully operational by early summer 2021." The negotiated deadline for the affected control links to change frequencies is set for May 31, 2021.

"It appears a total of 32 control links will have to be addressed," Henderson said. ARRL has mailed letters to each of the RF control link operators, based on the record keeping of the frequency coordinator, to advise them of the DoD's request. "Any links with the potential to affect the identified control systems at WSMR still in operation after May 31, 2021 will be subject to action by the FCC."

Henderson said the changes should have no direct impact on the use of any local repeater, but until all the affected RF control links are transitioned to new frequencies, certain links may be temporarily inoperative. Links unable to be relocated by May 31 will have to be shut down until the situation can be resolved. ARRL will maintain contact with the FCC to advise it of the status of the coordination efforts.

IARU AND EUROPEAN COMMISSION MEET ON WIRELESS POWER TRANSFER FOR

ELECTRIC VEHICLES

International Amateur Radio Union Region 1 (IARU-R1) President Don Beattie, G3BJ, has reported a meeting between the IARU and the European Commission that discussed potential RF interference from wireless power transfer for electric vehicles (WPT-EV) systems. At the request of the European Commission, IARU met on March 25 with representatives of the automotive industry, standards bodies, and the European Commission to review the current position on the development of an emission standard for WPT-EV.

There was a frank exchange of views, during which IARU made clear the technical basis for its concerns about unwanted emissions from WPT-EV. WPT-EV developers presented their case, based on the tests they had undertaken. After exploring the issues, the European Commission determined that further joint tests should be arranged and asked the European Committee for Standardization/European Committee for Electrotechnical Standardization (CEN/CENELEC) to facilitate these. IARU confirmed it was content to participate and welcomed the initiative, stressing that the tests needed to be conducted in an electrically quiet environment.

Another meeting will take place once the relevant tests have been completed, with a view to making progress toward an emission standard.

In attending the meeting, IARU was clear that it viewed the discussions as being without prejudice to the ongoing work in the European Conference of Postal and Telecommunications Administrations (CEPT), Comité International Spécial des Perturbations Radioélectriques (CISPR), and International Telecommunications Union (ITU) on the same topic. -- *Thanks to IARU Region 1*

NCVEC QUESTION POOL COMMITTEE SEEKS INPUT FOR UPDATED TECHNICIAN QUESTION POOL

The National Conference of Volunteer Examiner Coordinators (NCVEC) Question Pool Committee (QPC) is requesting input from theamateur radio community on new or modified questions for the 2022 - 2026 FCC Element 2 (Technician pool), which goes into effect on July 1, 2022. This may include suggestions for new questions, changes to current examination topic areas, or changes to existing questions in the current Technician question pool.

The QPC said it's seeking input that focuses on:

- Topics and subjects that enhance public interest and understanding and use of amateur radio, or focus on STEM hands-on learning and education.
- Questions on new technology, digital modes, station setup and operation, antennas, and emergency and non-emergency operation.

To submit suggested questions for QPC review, the committee asks that questions have no more than two 70-character lines, including spaces. Distractors should be no more two 70-character lines long, and shorter if possible. Each multiple choice question must be accompanied by four possible distractors and only one correct answer. The answer choices may be in any order, but the correct answer must be indicated by the letters A, B, C, or D at the beginning of the question. Those submitting suggestions should provide the resource information that supports the correct answer or the FCC Part 97 rule.

The QPC will accept question comments, revisions, and submissions from the amateur radio community via email through June 30, 2021. This email address is a bulk forwarding mailbox, so no acknowledgement will be sent by return email. The NCVEC QPC will take all comments into consideration as it updates the Technician question pool for 2022 - 2026.

TRADITIONAL AMATEUR RADIO CONTESTING FACES A DEMOGRAPHIC CLIFF

Frank Howell, K4FMH, followed up his two-part *National Contest Journal* (*NCJ*) series, "The Demographics of Contesting," with a post to his "Social Circuits" blog, called "Lemmings over a Demographic Cliff?" (His original articles appeared in the July/August and September/October 2020 issues of *NCJ*.) Howell points to data showing that radio contesters are older than the average ARRL member. Taking into account information from the Bureau of Labor and Statistics on Leisure Time Use, Howell opines that this should be expected.

"Leisure pursuits are highest during youth and young adulthood but dramatically taper off about ages 25 - 34 until age 55 and over," Howell said. "This hollowing out of leisure and sport time is a predictable outcome of competing and more important activities." According to Howell, the main competitor to radio amateurs engaging in on-the-air or workshop activities is television (now more broadly referred to as "screen time").

A Brookings Institution study on the topic using the 2005 - 2015 Time Use Survey documents how "free time became screen time." Around 2007, screen time (not just TV) surpassed other active leisure activities in the average time spent category. By 2015, the gap favoring screen time was more than 1 hour, reflecting an average of some 11 hours per week of activity. Howell argues that formats of major radio contests may serve the leisure interests of established contesters -- those on the far end of the demographic spectrum -- but may not offer the best experience for contesting newcomers.

"Traditional radiosport is facing a demographic cliff of aging ham contesters," Howell asserts. "Those highly invested in the status quo won't be around to experience the diminishing [number of] participants, [but] they now have the political clout to direct strategic actions."

The ability for single operators to compete at a high level in a major contest requires time, equipment, and skill that are probably beyond many in the "caterpillar" stage, *ARRL Contest Update* Editor Brian Moran, N9ADG, recently observed. He suggests that most school-aged operators don't have the time to stay in the chair all weekend.

"Those fortunate to be able to join seasoned teams of multioperators at well-equipped stations have a different contesting experience than those plugging away solo," Moran said. "With the opportunity for mentorship, camaraderie of a group effort, and a chance to be part of something bigger, they'll be more likely to emerge from their expected dormancy period as a contest butterfly."

Howell argues that demography does not have to be destiny. "It does require taking the blinders off tradition and evaluating it for what it is today and what it means for the future," he concluded. -- *Thanks to* The ARRL Contest Update

SHORTS

Radio Society of Great Britain - InRadio Surfer Award -interesting set of challenges that RSGB has come up with for younger people (though anyone can participate - the article pointing to the rules said they were targeting young people). https://rsgb.org/main/operating/amateur-radio-awards/youth-award/radio-surfer-award/

KA9Q tweeted that a second version of a marine buoy transmitter carrying a WSPR beacon transmitter is now floating in the Pacific Ocean. You can track progress on the APRS website. It's based on some of the same electronics that are used for high-altitude balloon flights. One of

his later tweets: "Our buoy continues to work well, but we're getting concerned that, with our luck, we may actually hit Guadalupe Island."

Monster Dipole Can Deliver Monster Signal - A video shows how Gary Watson, ZL3SV, in Nelson, New Zealand, installed an enormous all-band dipole with each leg extending 320 meters (about 1,050 feet). The antenna is multiple wavelengths on HF, and on 20 meters it has a gain of more than 16 dB, Watson says. It hears quite well, too.

A huge 12:1 balun resembling a utility pole power step-down transformer converts the impedance from 50 W unbalanced to 600 W balanced. The wire he uses for each leg is aluminum-wrapped, power-line cable (10-millimeter cable with wrap), and he uses power-line fittings, because they're designed to handle the wire. The line has a 60-ton breaking strength.

Watson said he made the 600 W ladder line himself and he uses the antenna on all bands, typically running only 200 W. The coaxial feed line goes to his house down a slope from the antenna via a conduit. His home is entirely off the grid, powered by solar power. The noise level is very low at his location, with power lines some distance away, although his solar power system's inverter is nearby.

Watson says he can copy stations with the "monster" antenna that remain undetectable with a half-wave dipole.

The 2021 Comm Academy April 10 - 11 is 2 days of training, talks, and information on emergency communications and amateur radio. This year's theme is *Disasters Here, There, and Everywhere -- Are We Ready?* Registration is free and required to gain access to the complete schedule and academy materials. The academy is entirely virtual and hosted online. Headquartered in Seattle, Washington, Comm Academy is attended and supported by organizations including the Amateur Radio Emergency Service (ARES®); Radio Amateur Civil Emergency Service (RACES); Auxiliary Communications Service (ACS); EOC Support Teams; Civil Air Patrol; Coast Guard Auxiliary; REACT, and CERT, among others. Anyone interested in emergency and amateur radio communications are welcome to network and share experiences. The event focuses on education for communications leaders, volunteers, and professionals.

Radio amateurs in Europe recently were able to grab and decode some portions of a recent telemetry transmission from the second stage of the SpaceX Falcon 9 launcher while in orbit. "The data was in a somewhat standard format, but decoding still required some custom tools to extract the bitstream," says presenter Scott Manley. The video includes images not available in the SpaceX public video stream.

The National Institute of Standards and Technology (NIST) has announced that its WWVB transmission system is being upgraded to improve signal reliability. Many rely on the 60 kHz WWVB signal to synchronize specially equipped clocks and watches. NIST says the WWVB signal may operate on a single antenna at approximately 30 kW radiated power for several days, with periodic outages. Upgrades are expected to be complete by April 9.

Steve Johnston, WD8DAS, has purchased AF4K Crystals and plans to reopen it soon. AF4K Crystals was a source for vintage and modern radio crystals for nearly 2 decades. The company will fill a gap for those seeking to buy quartz crystals for various projects.

ARRL Life Member Bob Leo, W7LR, of Bozeman, Montana, turned 100 years old on February 26. He has been a radio amateur for 88 years and is well known as a DXer and DXpeditioner. He has detailed his biography and ham radio exploits on his QRZ.com profile.

Years ago, a mysterious signal dubbed "the ditter" showed up on 20 meters. The transmissions turned out to be unintentional. Now, the IARU Region 1 Monitoring System February newsletter reports that mysterious groups of dashes -- sometimes five, sometimes 16, sometimes continuous -- are being transmitted over long periods daily at or

around 7075 kHz, a segment of 40 meters typically occupied by FT8 operators. So far, no one's been able to pinpoint the source of the transmissions. The "dasher" aside, over-the-horizon radars (OTHRs) continue to be the biggest source of interference in the HF amateur bands. A "numbers station" continues to be heard Wednesdays on 7062 kHz and 14280 kHz. The voice is female, speaking Russian. The signal is believed to belong to the Ukraine Security Service. The broadcasting stations Voice of Broad Masses (VOBM1 and VOBM2) from Eritrea continue to cause interference daily at 7140 and 7180 kHz. Another station at 7200 kHz -- believed to be National Unity Radio -- also broadcasts daily from 1100 to 1300 UTC. -- *Thanks to IARU Region 1 Monitoring System*

Know DX Frequency Allocations - Not all countries have the same frequency allocations as the U.S. For example, calling CQ on 7.205 MHz in a 40-meter phone contest won't yield any Japanese contacts, since the JA 40-meter band ends at 7.200 MHz. Similarly, be aware that IARU Region 1 stations have phone privileges below 7.100 MHz and may be calling CQ there in some contests, but U.S. phone privileges start at 7.125 MHz. Sometimes a Region 1 station will announce a listening frequency that is legal for U.S. stations.

You can usually find information on a given country's allocations from the country's national radio association, for example the JARL in the case of Japan, or WIA for Australia. Or via Google.

Fiji has a new ham. Joanna "JK" Korczak, 3D2ZK, has announced plans to be active from 3D2/C (Conway Reef), 3D2/R (Rotuma Island), and several rare islands around Fiji starting in May.

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