



RCA Amateur Radio Club Indianapolis, IN

www.w9rca.org



JUNE 2020

MONTHLY NEWSLETTER

A VIRTUAL ZOOM MEETING WILL BE SCHEDULED FOR
TUESDAY JUNE 9 AT 7:00 EDT
INVITATIONS TO JOIN WILL BE EMAILED BY JUNE 8

RCA ARC NEWS

JUNE 9 MEETING – For the June 9 meeting we shall again use a Zoom virtual meeting. If you're not familiar with Zoom... Their basic service is free and allows up to 100 attendees. The only restriction is the meeting can only last 40 minutes. We will schedule two meetings, one at 7:00 and another at 7:30pm. You will receive an email message with a link, meeting ID and password by June 8. 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.

MAY MEETING SUMMARY – Thanks to all those who participated in the May Zoom meeting. Jim K9RU reported on the latest regarding Field Day with the Indy United FD club. Our Club donated to help cover some of the expenses. The June 13th test session is still on with restrictions. The actions which various testing groups are taking were discussed. WSJT-X has a “release candidate” rc1 which is available for download.

ED JENSEN K5ED, SK — Ed Jensen passed away of a stroke while recovering from COVID-19. He had been on a ventilator, but now have better and was planning on going home.

Ed worked in RCA B&W TV Engineering and later in ATE and relocated to El Paso, TX. After RCA, he for GE (El Paso and Louisville), DEC (Boston, MA), Schlumberger R&D (Houston, TX), Compaq Computer (Spring, TX), Rockwell Collins (El Paso) and taught at New Mexico Southern University in Las Cruces, NM..

Ed and his wife Chris's final move was from Houston, TX back to El Paso where they retired.

He was one of the hams that was responsible reactivating the RCA ARC and was President for several years. He enjoyed DXing and contesting was a member of the Indy DXers and served as President.

Ed enjoyed playing the guitar and piano. After retiring began playing in bands and had master many other instruments. —K9RU

AMATEUR RADIO LICENSE TEST SESSION

Time: Saturday, June 13, 2020, Starting at 12:00 pm with appointment (**Registration, FRN, form NCVFC 605 filled out and a mask. All will be required**).

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

Contact: Jim Rinehart, k9ru@arrl.net, 317 721-1458

HAMFESTS, OPERATING EVENTS, VOLUNTEER OPPORTUNITIES

June 27-28 ARRL Field Day (**Indianapolis Radio Club has cancelled its FD**)

July 10-11 Indianapolis Hamfest **CANCELED**

July 11 Auburn Hamfest - Free admission - 9AM to 3PM <https://w9ou.org/>

July 9-10, 2021 Indianapolis Hamfest

For more information: <http://www.indyhams.org/events>

2020 FIELD DAY JUNE 27 - 28 --This year the RCA ARC is participating with the Indy United field day club. This is a 3A operation with a GOTA and VHF station. The same location as last year the Victor Conservation Club south of Mooresville. You can bring a tent and camp overnight.

There will be food and soft drinks provided. Setup will begin on Friday afternoon. Setup continues on Saturday starting at 10 AM with FD operations starting at 1 PM EDT.

The RCA ARC is responsible for setting up the VHF station, the FT8 operation, and AF9A is supplying the generator and copying the FD message.

A wide array of protective measures will be implemented. For more information contact: K9RU k9ru@arrl.net

ARRL ANNOUNCES NEW LIFE 70+ MEMBERSHIP

The ARRL Board of Directors recently voted to create a special Life Membership opportunity for individuals who are at least 70 years old. Starting on June 1, the Life 70+ Membership will be available to individuals who have turned 70 and have a combined 25 years of paid annual ARRL membership.

Life 70+ Members receive all benefits of an annual membership, including their choice of print magazine delivery (*QST* or *On the Air*), and digital access to these publications, plus the digital versions of *QEX* and *National Contest Journal (NCJ)*. In addition, each Life 70+ Member will receive a Life Member pin and a window decal and may purchase an exclusive Life Member plaque.

Qualifying members selecting this level of membership will enjoy the convenience of having to make a single payment for their entire tenure as an ARRL Member and not be subject to any future ARRL dues increase.

To apply for Life 70+ membership, individuals must complete the special Life 70+ Member application -- available on June 1 -- and submit proof of date of birth, if this information is not already on file with ARRL. The Life 70+ membership fee must be made in a single payment. Past membership dues payments will not apply toward Life 70+ Membership, but a credit will be applied for applicants who paid their dues in full between April 1 and May 31, 2020.

Life 70+ Membership Dues Rates

\$750 US Life 70+ Membership

\$750 International Digital Life 70+ Membership
\$1,515 International Life 70+ Membership with a Print Subscription
\$250 Family Life 70+ Membership as an add-on to a paid Life 70+ membership

ARRL reserves the right to change or substitute the benefits, products, or services associated with a member's original Life 70+ Member package at any time during the membership. Dues are non-refundable.

Life 70+ [membership applications](#) will be available for download beginning on June 1.

ARRL SEEKS CLARIFICATION OF AMENDED AMATEUR SERVICE RF SAFETY RULES

ARRL has filed a [Petition for Clarification](#) addressing two issues arising from amended FCC RF safety rules that go into effect on June 1 for the Amateur Service and other FCC-regulated services. Licensees will have 2 years to determine if an RF safety evaluation is now required under the new rules and to perform an evaluation and implement any needed mitigation measures. Current rules already require amateur stations to meet RF exposure limits, but more radio amateurs will have to evaluate their stations under the new rules. The revised [final rules](#), adopted last November, appeared in the April 1 edition of *The Federal Register*.

"For applicants and licensees in the Amateur Radio Service, we substitute our general exemption criteria for the specific exemption from routine evaluation based on power alone in §97.13(c)(1) and specify the use of occupational/controlled limits for amateurs where appropriate," the FCC said. While radio amateurs have always had to comply with RF exposure limits, certain stations have been exempted from having to conduct evaluations based upon power and frequency.

On May 8, ARRL asked the FCC to clarify that using maximum permissible exposure (MPE) limits be permitted in the Amateur Service for required RF safety evaluations of 2200-meter operations, just as they are elsewhere in the amateur spectrum. Removal of the exemption for amateurs resulted in a requirement to use specific absorption rate (SAR) limits for amateur frequencies between 100 and 300 kHz.

"Near-field calculation of a uniform field applied to a transmitter and antenna operating at 1 W EIRP on 2200 meters would result in a very conservative estimate of specific absorption rate (SAR) and is a valid measurement for determining safety of operation," ARRL told the FCC. "We request clarification that the rules do not intend to preclude the use of MPE as a surrogate for SAR to evaluate amateur operations in the 2200-meter band."

ARRL also wants the FCC to clarify that its amended rules permit the use of near-field regression rates, using the MPE table to compare against the maximum field strength that may occur from a handheld portable device, instead of using the SAR. In its filing, ARRL maintained that SAR data is not available for amateur equipment, as it is for equipment used in other services. Before the rules were amended, mobile and portable transmitters generally were exempt from the requirement to perform routine environmental evaluations.

Under §97.13(c)(1) as amended, effective on June 1, amateur licensees must ensure compliance with FCC RF exposure requirements spelled out in sections 1.1307(b), 2.1091, and 2.1093 of the FCC rules, where applicable. The rule directs radio amateurs to [OET Bulletin 65](#), Supplement B for methodologies and guidance to evaluate amateur radio operation.

The FCC has provided 2 years -- until May 31, 2022 -- for licensees to determine if evaluations are now required, to perform such evaluations where necessary, and to implement any needed mitigation measures.

The FCC did not amend the actual RF exposure limits that were adopted in 1996. Read [more](#).

AMATEUR RADIO GEARING UP FOR PREDICTED "ABOVE AVERAGE" ATLANTIC HURRICANE SEASON

Long-range forecasts for the 2020 Atlantic Basin hurricane season, which begins on June 1 and extends until November 30, anticipate above-normal activity. The National Hurricane Center ([NHC](#)) 2020 outlook calls for a season about 140% more active than average, with four Category 3 to Category 5 hurricanes. The 2019 season saw three major hurricanes (out of six).

"The above-average prediction is largely due to the hot Atlantic and Caribbean waters and lack of a substantial El Niño in the Pacific," the NHC explained, noting that the combination of a busy hurricane season and the ongoing COVID-19 pandemic could create a nightmare scenario for affected areas. FEMA and local emergency management agencies are already issuing COVID-19 guidelines for hurricane shelters, which include face masks and social distancing.

The NHC Annual Station Test -- to check readiness of amateur radio stations and operators -- takes place on Saturday, May 30, 1300 - 2100 UTC. The NHC's [WX4NHC](#) will be on the air, marking its 40th year of public service at the NHC. Julio Ripoll, WD4R, the Assistant Amateur Radio Coordinator at the NHC, said the event offers an opportunity for radio amateurs worldwide to exercise the sorts of communications available during severe weather. "We will be making brief contacts on many frequencies and modes, exchanging signal reports and basic weather data -- sunny, rain, temperature, etc.) with any station in any location," Ripoll said.

Operation will be on HF, VHF, UHF, APRS, and Winlink. WX4NHC will center its activity on the Hurricane Watch Net ([HWN](#)) frequencies of 14.325 MHz and 7.268 MHz, depending on propagation, but will operate elsewhere as conditions dictate. WX4NHC will also operate on the [VoIP Hurricane Net](#) from 2000 until 2100 UTC.

Dr. Philip J. Klotzbach *et al* of the Colorado State University (CSU) Department of Atmospheric Science cite a variety of factors that led them to conclude this hurricane season could get serious. Pointing to the "somewhat above normal" tropical Atlantic sea-surface temperatures, the scientists estimate "about eight hurricanes," four of them major, during the 2020 season.

"I must say, I'm not liking what I'm seeing," reacted Hurricane Watch Net Manager Bobby Graves, KB5HAV, pointing to additional extended forecasts posted by Tropical Storm Risk (TSR), the University of Arizona, and North Carolina State University. The TSR forecast calls for three major hurricanes, while the University of Arizona and North Carolina State predict between three and five major hurricanes.

"Since 2014, the Hurricane Watch Net has been very busy," Graves told ARRL. "We've had 20 net activations for 19 hurricanes and one tropical storm. Since 2015, we've worked nine major land-falling hurricanes, including four land-falling Category 5 storms."

Graves pointed out that the past six hurricane seasons not only were busy and historic but very deadly, and he's hoping the 2020 hurricane season will not turn in a repeat performance. --ARRL Letter

TEMPORARY RULE WAIVERS ANNOUNCED FOR 2020 ARRL FIELD DAY

With one month to go before 2020 [ARRL Field Day](#), June 27 - 28, the ARRL Programs and Services Committee (PSC) has adopted two temporary rule waivers for the event:

1) For Field Day 2020 only, Class D stations may work all other Field Day stations, including other Class D stations, for points.

[Field Day rule 4.6](#) defines Class D stations as "Home stations," including stations operating from permanent or licensed station locations using commercial power. Class D stations ordinarily may only count contacts made with Class A, B, C, E, and F Field Day stations, but the temporary rule waiver for 2020 allows Class D stations to count contacts with other Class D stations for QSO credit.

2) In addition, for 2020 only, an aggregate club score will be published, which will be the sum of all individual entries indicating a specific club (similar to the aggregate score totals used in ARRL affiliated club competitions).

Ordinarily, club names are only published in the results for Class A and Class F entries, but the temporary rule waiver for 2020 allows participants from [any Class](#) to optionally include a single club name with their submitted results following Field Day.

For example, if Podunk Hollow Radio Club members Becky, W1BXY, and Hiram, W1AW, both participate in 2020 Field Day -- Hiram from his Class D home station, and Becky from her Class C mobile station -- both can include the radio club's name when reporting their individual results. The published results listing will include individual scores for Hiram and Becky, plus a combined score for all entries identified as Podunk Hollow Radio Club.

The temporary rule waivers were adopted by the PSC on May 27, 2020.

ARRL Field Day is one of the biggest events on the amateur radio calendar, with over 36,000 participants in 2019, including entries from 3,113 radio clubs and emergency operations centers. In most years, Field Day is also the largest annual demonstration of ham radio, because many radio clubs organize their participation in public places such as parks and schools.

Due to the COVID-19 pandemic, many radio clubs have made decisions to cancel their group participation in ARRL Field Day this year due to public health recommendations and/or requirements, or to significantly modify their participation for safe social distancing practices. The temporary rule waivers allow greater flexibility in recognizing the value of individual and club participation regardless of entry class.

ARRL is contacting logging program developers about the temporary rule waivers so developers can release updated versions of their software prior to Field Day weekend.

Participants are reminded that the preferred method of submitting entries after Field Day is via the [web applet](#). The ARRL Field Day rules include instructions for [submitting entries](#) after the event. Entries must be submitted or postmarked by Tuesday, July 28, 2020.

The ARRL Field Day [web page](#) includes a series of articles with ideas and advice for adapting participation this year. --ARRL Letter

PLANNING YOUR ARRL FIELD DAY 2020 OPERATION

For most of us, ARRL [Field Day](#) 2020 is going to look quite different than it has in past years. Considering the impact of social distancing due to the COVID-19 pandemic, many radio clubs and large groups will not be gathering in their usual Field Day locations this year. Here are some tips and suggestions to help participate in amateur radio's largest annual on-air event under these unusual circumstances.

Don't Forget 6 Meters

Field Day is a non-adjudicated operating event and not a "full speed ahead" contest. It is also not just an HF event. All amateur radio bands above 50 MHz may be used during the event too.

This includes 6 meters, which often offers significant propagation enhancements around the time of Field Day weekend. The band is available to amateurs holding a Technician-class license or higher. If you have an HF/VHF/UHF multi-mode transceiver, try making SSB, CW, or digital contacts on 6 meters. Even a simple vertical or dipole will allow you to experience the "magic band."

Activities for Techs

One suggestion for clubs to consider in order to increase participation among their Technician-class members is to schedule specific times when these club members will monitor designated VHF and UHF simplex frequencies for Field Day activity. (Avoid published national FM simplex calling frequencies; repeaters are prohibited for Field Day contacts.) This way, members having equipment capable of VHF/UHF-only operation may be able to participate from home or a vehicle. Clubs can choose a list of frequencies and schedule times in advance.

On HF, Technician-class licensees have CW privileges on 80, 40, and 15 meters, as well as RTTY/data and SSB phone privileges on 10 meters. If you aren't a CW operator, try calling CQ on 10-meter SSB in the late afternoon and early evening on Saturday to see if conditions are favorable for long-distance communications. Try experimenting with a simple wire antenna for 10 meters. You might discover that the band can offer plenty of unexpected propagation.

Set Up for Digital Modes

You might want to explore using FT4/FT8 (or other) digital modes on 10 meters, 6 meters, or even on VHF/UHF. These modes offer an opportunity to make weak-signal contacts when band conditions often do not support voice communication. There have been reports of some great 6-meter openings in recent weeks, and these are likely to occur more frequently as summer approaches.

Setup is relatively straightforward. You'll need a computer and a digital interface to connect the radio to the computer, and you'll need to download one of the digital mode software packages, such as the free [WSJT-X](#) suite, which incorporates FT8 and FT4. Software should support the ARRL Field Day exchange (WSJT-X version 2.0 or later, for example).

ARRL Field Day rules place a premium on "developing skills to meet the challenges of emergency preparedness as well as to acquaint the general public with the capabilities of amateur radio." Field Day 2020 is June 27 - 28.

The Excitement of Ham Satellites

Another area to explore is satellite operation. Many hams have had success making contacts via the FM satellites with just a VHF/UHF handheld radio and a small handheld directional antenna. You'll need a multi-mode VHF/UHF transceiver for the linear (SSB and CW) satellites. To determine when a satellite will be making a pass over your location, visit AMSAT's [Online Satellite Pass Prediction](#) page.

An Opportunity for Learning

ARRL Field Day 2020 may be the year you decide to participate solo, or with other members of your household. If you're a mentor to a newer ham, Field Day can be an opportunity to share some of your knowledge with them, as well as for you to expand your own operating horizons. This might be the year to leave your Field Day comfort zone and try something new!

SPACE SECURITY CHALLENGE, HACK-A-SAT

Not a ham radio contest, but hams are involved. If you haven't heard of Hack-A-Sat, you can read about it here:

<https://afresearchlab.com/events/hack-a-sat-space-security-challenge-2020-event-1/>

<https://www.hackasat.com/>

Pull together a team for our Hack-A-Sat capture the flag! Participants who successfully complete a set of qualification challenges on cyber security and space this spring will be invited to the ultimate challenge: to (ethically!) hack a satellite.

EVENT 1: Online Qualification, May 22 – 24, 2020, Ten \$15K prizes

The first event is now completed. Here is a summary by Michelle Thompson, W5NYV...

Hack-a-Sat Qualifications recap:

Greetings all!

1500+ teams registered for the event.

1283 teams scored at least a point.

Our team (Vaporsec) finished 20th.

The interdisciplinary nature of the team served extremely well! Amateur radio satellite service operators made fundamental and significant contributions to the final score, everyone learned a lot, and we all had fun.



The challenges ranged from mastering Apollo-era assembly code, to reverse engineering IQ files received from space, to controlling ADAC systems, to correctly configuring star trackers, to understanding what's required to precisely observe the Earth from orbit - and plenty more. The range and breadth of the challenges was daunting, but our diverse and positive team carried the day.

The finals are 7-9 August 2020. This is a virtual event held during the weekend of DEFCON. All of the challenges from the qualification round will be up until the final event at <https://www.hackasat.com/>

Even better news? A lot of us from the amateur radio satellite service community will be participating in the finals with teams that made the top ten and recruited us to add to their roster.

I can't wait to share what we learn and how we do in the finals. I'll be with ADDVulcan.

Contests and competitions have a long and storied history in amateur radio. The active and thriving Capture the Flag (CTF) scene should be familiar to any amateur radio contester, because there are so many similarities. The incorporation of advanced digital, computing, RF, and networking technology into contesting, at events like Hack-a-Sat, is very exciting and it will definitely test your skills. Being involved with a team that welcomes people willing to learn is an especially enjoyable privilege! Some teams are closed to newcomers and approach competitions more like a professional sports team. Some teams are composed only of people that work at a particular company, or know each other well.

Hack-a-Sat offered a very broad opportunity this year, so teams that were open to newcomers were plentiful. We owe a debt to the organizers at the Department of Defense (Thank you Air Force) for the high-quality outreach, accessibility, and challenging and engaging content.

If you want to get involved with competitions like this, please write me and I will help you. Hack-a-Sat was very difficult, but there are contests at every level almost every weekend and a growing number incorporate amateur radio.

Want to be involved with creating a real live CTF? I'm chairing the GNU Radio Conference CTF this year (will be held in September, website is <https://www.gnuradio.org/grcon/grcon20/>), and amateur radio has traditionally been a very large part of this event in every way. Your ideas for amateur radio satellite themed challenges are welcome and I look forward to working with you. Wouldn't it be great to see AMSAT host a satellite themed CTF? Especially if the solutions of the challenges could directly support engineering efforts. Many hands make light work!

-Michelle W5NYV, Director of Amateur Radio Satellite Communications (AMSAT), Chair of [GNU Radio Group](#), Conference CEO of **Open Research Institute**

ARISS MULTIPOINT TELEBRIDGE CONTACT VIA AMATEUR RADIO CONCEPT PROVING SUCCESSFUL

Judging by the outcome of two tests so far, the new Amateur Radio on the International Space Station ([ARISS](#)) Multipoint Telebridge Contact via Amateur Radio concept appears to be a winner. ARISS completed the second test of the new-style radio contact, called Multipoint Telebridge Contact via Amateur Radio, on May 15, when Airdrie Space Science Club members in Airdrie, Alberta, Canada, interviewed

International Space Station Commander Chris Cassidy, KF5KDR, via ham radio.

"What makes this contact a little different from the usual ARISS contact is [that] everyone involved will be speaking from their homes in Canada, as we all shelter in place," said the contact moderator, John Kludt, K4SQC, in introducing the event. The multipoint telebridge concept was developed to make it possible for students -- now at home and engaged in distance learning due to the COVID-19 pandemic -- to take part in scheduled ARISS contacts. An ARISS telebridge ground station operated by John Sygo, ZS6JON, near Johannesburg, South Africa, made direct contact with NA1SS onboard the ISS, which was passing overhead. Sygo then patched two-way audio into the telebridge network for distribution to each student's home by telephone.

Each student then took turns asking questions of Cassidy, and their families, faculty members, and the public could also listen from home. One of the participants, Lucas, wanted to know how the COVID-19 pandemic has affected life aboard the space station.

"The pandemic has affected us because it's affected our families," Cassidy responded. "Our daily life here on the space station is largely the same, with or without the pandemic."

The initial multipoint telebridge contact earlier this month, while successful, suffered from some issues on the space station that were unrelated to the new multipoint system. During the more-than 11-minute contact on May 15, some of the students got to ask more than one question.

Prior to the restrictions imposed by the COVID-19 pandemic, the Canadian students had engaged in lessons about space and radio communication, such as launching balloons carrying ham radio payloads and building model rockets to launch. -- *Thanks to ARISS*

FEDERAL JUDGE OKAYS RETRIEVAL OF TITANIC MARCONI WIRELESS EQUIPMENT

A US federal judge in Virginia has given permission to retrieve the ill-fated RMS *Titanic's* Marconi wireless gear, which transmitted distress calls from the sinking ocean liner during its maiden voyage. Judge Rebecca Beach Smith of the US District Court in Norfolk ruled that the radio gear is historically and culturally important and could soon be lost within the rapidly decaying wreck. The *Titanic* sank in 1912 some 370 miles off the coast of Newfoundland after striking an iceberg.

"The Marconi device has significant historical, educational, scientific, and cultural value as the device used to make distress calls while the *Titanic* was sinking," Judge Smith wrote in her ruling. She said the company would be permitted "minimally to cut into the wreck" to access the radio room.

David Concannon, a lawyer for R.M.S Titanic Inc., which the court has recognized as the steward of the vessel's artifacts, said the company would try to avoid cutting into the ship, noting that the radio room may be reachable via a skylight that was already open. More legal wrangling may lie ahead. The National Oceanic and Atmospheric Administration (NOAA) contends that the retrieval expedition is still prohibited under US law and under an international agreement between the US and the UK.

R.M.S Titanic has said the radio transmitter could unlock some of the secrets about a missed warning message and distress calls sent from the ship.

"It tells an important story," Concannon said. "It tells of the heroism of the operators that saved the lives of 705 people. They worked until water was lapping at their feet."

In an April court filing, NOAA argued against the salvage effort, saying that any benefit to be realized from cutting into the vessel to recover the Marconi equipment would not be "worth the cost to the resource and not in the public interest."

RMS *Titanic* sought permission to carry out what it called a "surgical removal and retrieval" of the Marconi radio equipment. As might be expected, the deteriorating Marconi equipment is in poor shape after more than a century under water. The undersea retrieval would mark the first time an artifact was collected from within the *Titanic*, which many believe should remain undisturbed as the final resting place of some 1,500 victims of the maritime disaster. The wreck sits on the ocean floor some 2 1/2 miles beneath the surface, and remained undiscovered until 1985. R.M.S. Titanic said it plans to use a manned submarine to reach the wreck and then deploy a remotely controlled sub to retrieve the radio equipment. --ARRL Letter

GLOBAL COVID-19 RADIO EVENT SET FOR JUNE 6 - 7

Stations bearing call signs that promote the "stay-at-home" message and the value of social distancing and isolation have sprung up during the COVID-19 pandemic, with some 150,000 messages of support shared around the world. An [on-air gathering](#) over the June 6 - 7 weekend will offer a further opportunity for stay-at-home stations and radio amateurs to share greetings in a contest-like framework, looking toward the day that restrictions will ease, eventually making the stay-at-home injunction obsolete. The patron of the STAYHOME radio [campaign](#) is Finland's Foreign Minister Pekka Haavisto, and the worldwide activity has the endorsement of International Amateur Radio Union (IARU) President Tim Ellam, VE6SH/G4HUA, and the United Nations Amateur Radio Club.

"Amateur radio operators across the world are experiencing something we have never seen before, with the current COVID-19 pandemic," Ellam said. "In times like this, on-the-air activities can benefit our communities and ourselves. Events such as this are important to improve operating skills. It is also encouraging us to get on the air and keep active, as well as promoting social distancing." Ellam expressed thanks to the national regulators in more than three dozen countries that made special stay-at-home-suffix call signs available for amateur use.

Sponsoring the event and campaign are the Finnish Amateur Radio League (SRAL), in cooperation with Araucaria DX Group (ADXG) of Brazil, and Radio Arcala (OH8X) in Finland.

UN Amateur Radio Club President James Sarte, K2QI, has said that 4U1UN will be on the air to support of the global STAY HOME movement, as will sister stations 4U1GSC (operated as

4U9STAYHOME) and 4U1A (operated as 4U2STAYHOME).

Special event station W2I/STAYHOME, helmed by Ria Jairam, N2RJ, and Peter Dougherty, W2IRT, will also be on the air, operating CW, SSB, and FT8 simultaneously. (Jairam is ARRL Hudson Division Director.)

The STAYHOME event gets under way at 1000 UTC on Saturday, June 6, concluding 24 hours later. Bands will include 80, 40, 20, 15, and 10 meters, with CW, SSB, and digital (FT4/FT8 only). Exchange is a signal report and operator age, except for FT4/FT8 reports. Awards and certificates in the various operating categories will be available. [Email](#) for more information.

COVID-19 EVENT TO ENTER HIGH SCORERS INTO A FREE DRAWING FOR A TRIP

The COVID-19 Stay Home event over the June 6 – 7 weekend will enter the top 63 event participants into a drawing for a week-long trip, either to Finland — and a visit to OH Summer Camp and DX summertime activities, plus a visit to Radio Arcala's OH8X superstation — or to Brazil, including participation in the CW World Wide phone or CW and a visit to the PS2T or ZW5B superstations.

These trips are scheduled for 2021 because of the current coronavirus pandemic. The top 30 multimode scores, top five single-mode scores on each mode, and the top three scores from each continent will receive an online certificate and may participate in the free drawing.

A Yaesu FT-891 transceiver is also being given away as a grand prize.

As part of the global COVID-19 "Stay Home" event, four young members of the New York City DX Association (NYCDXA) will operate as W2I/STAYHOME from a remote station in Eastport, Maine. The team will set up a server for live updates on ClubLog and real-time streaming via YouTube. OH3JR hopes to be on the air for the event from Market Reef as OJ0JR. He will remain on Market Reef for the entire week. OJ0JR will be an event multiplier.

WSJT-X VERSION 2.2.0 GENERAL RELEASE IS NOW AVAILABLE

WSJT-X version 2.2.0 is now in general availability release, after a short stint in beta (or release candidate) status. *WSJT-X* version 2.2 offers 10 different protocols or modes — FT4, FT8, JT4, JT9, JT65, QRA64, ISCAT, MSK144, WSPR, and Echo. The first six are designed for reliable contacts under weak-signal conditions, and they use nearly identical message structure and source encoding. JT65 and QRA64 were designed for EME ("moonbounce") on VHF/UHF bands but have also proven very effective for worldwide very low-power communication on HF bands.

"FT8 is operationally similar but four times faster (15-second T/R [transmit-receive] sequences) and less sensitive by a few decibels," developer Joe Taylor, K1JT, explains in the version 2.2.0 User Guide. "FT4 is faster still (7.5-second T/R sequences) and especially well suited for contesting."

Taylor noted that even with their shorter transmit-receive sequences, FT4 and FT8 are considered "slow modes," because their message frames are sent only once per transmission. "All fast modes in *WSJT-X* send their message frames repeatedly, as many times as will fit into the [transmit] sequence length," he explained.

Compared with FT8, FT4 is 3.5 dB less sensitive and requires 1.6 times the bandwidth, but it offers the potential for twice the contact rate.

New in *WSJT-X* version 2.2.0: FT8 decoding is now spread over three intervals, the first starting at 11.8 seconds into a receive sequence and typically yielding around 85% of the possible decodes. This means users see most decodes much sooner than with previous versions. A second processing step starts at 13.5 seconds, and a third at 14.7 seconds.

"Overall decoding yield on crowded bands is improved by 10% or more," Taylor said.

Other changes: Signal-to-noise (SNR) estimates no longer saturate at +20 dB, and large signals in the passband no longer cause the SNR of weaker signals to be biased low. Times written to the ALL.TXT cumulative journal file are now correct, even when decoding occurs after the T/R sequence boundary.

"Increasing FT8 usage on 40, 30, and 20 meters means that the default 3 kHz subbands are often wall-to-wall with signals. Overcrowding encourages some to turn on their amplifiers, which only makes things worse. On a trial basis, and in response to numerous suggestions from around the world, we have added a second set of suggested dial frequencies for FT8 on three HF bands and also on 6 meters...7.071, 10.133, 14.071, and 50.310 MHz.

"These frequencies will appear in your dropdown band-selector list after you go to the 'Settings | Frequencies' tab, right-click on the frequency table, and select 'Reset.' Alternatively, you can add the new FT8 frequencies manually. When the conventional FT8 subband on 6, 20, 30, or 40 meters seems too full, please try moving your dial frequency down 3 kHz! [A]s currently implemented, *WSJT-X* will set your dial to the lowest frequency for the selected mode and band, when you switch bands."

MOONBOUNCE CONTACT VIA FT8 COULD BE A FIRST

[FT8](#) codeveloper Joe Taylor, K1JT, has reported what is possibly the first FT8 contact via moonbounce (Earth-Moon-Earth or EME) on May 21 between Paul Andrews, W2HRO, in New York, and Peter Gouweleeuw, PA2V, in the Netherlands. The contact was made possible using the currently available beta-release candidate of *WSJT-X*, version 2.2-rc1.

"Why might you want to use FT8 instead of 'Old Reliable JT65' for EME QSOs?" Taylor asked in a subsequent Moon-Net [post](#). "FT8 is about 4 dB less sensitive than JT65, but with 15-second T/R [transmit/receive] sequences it's four times faster, and it doesn't use Deep Search," he said, answering his own question.

The FT8 protocol included in the beta version of *WSJT-X* has an optional user setting to work around the 2.5-second path delay. "For terrestrial use, the FT8 decoder searches over the range -2.5 to +2.4 seconds for clock offset DT between transmitting and receiving stations," Taylor explained. "DT" represents the difference between the transmission time and actual time. "When 'Decode after EME delay' is checked on the *WSJT-X* 'Settings' screen, the accessible DT range becomes -0.5 to +4.4 seconds. Just right for EME."

As Taylor explained in his post, FT8 uses 8-GFSK modulation with tones separated by 6.25 Hz. At the time of the contact, the expected Doppler spread on the W2HRO - PA2V EME path was 8 Hz, which would cause some additional loss in sensitivity. Despite the path losses, however, copy between W2HRO and PA2V was "solid in both directions," Taylor said.

Taylor said that when he was active in EME contests on 144 MHz, he was always frustrated that, even with reasonably strong signals, the maximum JT65 contact rate is about 12 per hour. "With FT8, you can do 40 per hour, as long as workable stations are available," he said.

As for using FT8 for EME contacts on 1296 MHz, Taylor said it "might sometimes work, but Doppler spread will probably make standard FT8 a problem." Given sufficient interest, however, he said the *WSJT-X* development team could design an FT8B or FT8C with wider tone spacing.

He encouraged the use of FT8 for moonbounce on 144, 432, and 1296 MHz and asked users to report their results to the development team.

"A 'slow FT8' mode is indeed a sensitivity winner on suitable propagation paths," he said in a later Moon-Net [post](#). "We are busy implementing such a mode, but with particular emphasis on its use on the LF and MF bands."

Taylor said FT8 has the operational advantage of putting all users in one (or a few) narrow spectral slices on each band. "So, it's easy to find QSO partners without skeds or chat rooms," he said. "Everything is done over the air, with no 'side channels' needed."

Taylor also remarked in response to posts from those who, like him, "love CW."

"I agree it's a thrill to hear your own lunar echo, and to make CW EME QSOs," he said. "Sometimes I pine for the bygone world of commercial sailing ships, which happen to be very much a part of my family's history," Taylor concluded. "But I know that technologies evolve, and the world does not stand still." --ARRL Letter

SIX METERS RECENTLY RUNNING HOT

In recent days, 6 meters has been living up to its name — “the Magic Band.” On May 30 at around 1200 UTC, Rich Zwirko, K1HTV, in Virginia, worked Nicolas Sinieokoff, TT8SN, in Chad, who answered his CQ on FT8. After the quick exchange, K1HTV alerted several local 6-meter DXers who were also able to snag the rare one. TT8SN was able to work into the US mid-Atlantic and Arkansas as well as West Virginia on FT8 before switching to CW at about 1300 UTC and then alternating between the two modes over the next hour. Yves Collet, 6W1TA, in Senegal also showed up on the band, and K1HTV and other stations were also able to put him in the log as well.

“So the 6-meter E-skip season has begun,” Zwirko remarked. “Who knows what kind of magic the band will serve up?”

What's being called “a historic opening” on 6 meters occurred on May 31, when David Schaller, W7FN, in the Pacific Northwest saw the band open at about 1430 UTC and stay open for a couple of hours. W7FN worked 12 DXCC entities on FT8 (on 50.323 MHz); other stations had similar success. Schaller said longtime 6-meter DXers from his area reported never having experienced a 6-meter opening to Europe like the one on May 30.

On May 28, Bill Steffey, NY9H, just south of Pittsburgh in western Pennsylvania, reported working three European stations on FT8 at around 2200 UTC. “Six [meters] has been great this week,” Steve Fetter, WA8UEG, in eastern Pennsylvania, observed after working stations in the Caribbean and in Europe.

From Greenland, Bo Christensen, OX3LX, has been showing up on 6 meters on FT8 between 2230 and 0000 UTC. He's been reported working into the mid-Atlantic stations with a good signal. Mark Murray, W2OR, in Florida, took advantage of an opening to Japan on the evening of May 22. Two Florida stations each worked 20 or more Japanese stations, and one was said to have had 40 stations in Japan. W2OR said it was “an incredible number for an opening that did not last.” On the previous evening, a similar opening occurred from Wisconsin and other parts of the upper midwest.

Jim Reisert, AD1C, reported that stations in Wisconsin and Minnesota were able to work Hawaii on 6 meters starting around 2300 UTC on May 24. The stations he made contacts with included NH6Y, KH6ZM, and KH6U. The stations used FT8 during all of these openings.

John Sweeney, K9EL, in Illinois, worked three Hawaiian stations from 2240 – 2250 UTC. Confirmations came through quickly on LoTW, too. He called it “the best 6-meter opening to Hawaii from W9 that I have seen.”

Kev Hewitt, ZB2GI, in Gibraltar, made his first 6-meter contact of the season, working K1TOL, in Maine. ZB2GI said the band sounded dead, except for K1TOL's signal. ZB2GI has begun using a 6-meter mobile whip for an antenna.

Past ARRL President Joel Harrison, W5ZN, in Arkansas, reported a “massive JA opening on 6 meters” on June 3. Between 2300 and 0116 UTC, he worked 85 JA stations on 6 meters, all on FT8 with strong signals.

[The Daily DX](#) noted on June 3: Over the past 2 days, US and Canadian operators on 6 meter FT8 have reported activity from: 4U1UN, 4X4DK, 7Z1IS, 9A5X, 9K2NO, A92HK, CO8ZZ, CT1FPQ, DK2EA, EA7AH, EA8TL, ES6RQ, F6GCP, FG8OJ, G8BCG, GU8FBO, HA5JI, HI3T, IS0AWZ, IT9TYR, J68HZ, KP4AJ, LA2XPA, LY2IJ, NP2J, OD5ET, OD5KU, OH4BCS, OK2ZI, OM5XX, ON7GB, OX3HI, OZ8ABE, PA5Y, S58T, SP4MPB, SV1DH, SV9CVY, TF3ML, US0KW, VP9GE, XE2JS, YS1AG, Z32KF, and ZF1EJ. — *Compiled from reports in The Daily DX*

SHORTS

Indiana ARRL Section Manager Elections results-- Jimmy Merry, KC9RPX (incumbent) won reelection with 515 votes with Brian Jenks, W9BGJ, receiving 384 votes. Jimmy Merry, KC9RPX, will begin his second term of office on July 1. --ARRL Central Division, Director: Kermit A Carlson, W9XA

The [W9DXCC DX Convention](#) has been canceled for 2020, due to the coronavirus pandemic. The Northern Illinois DX Association sponsors the annual event, and plans are already under way to book accommodations for the 2021 convention.

Islands On The Air (IOTA) users may now obtain contact credits via ARRL's Logbook of The World (LoTW). "Islands On The Air (IOTA) Ltd. is delighted to announce the implementation of the ARRL application, which allows the use of QSO-matching via LoTW," IOTA's Roger Balister, G3KMA, said. ARRL Director of Operations Norm Fusaro, W3IZ, points out that LoTW has, for years, allowed award sponsors access to a utility that lets them verify contacts in LoTW. "The IOTA folks have begun using this utility, but still check the QSOs against known IOTA operations," he explained, noting that applicants cannot apply for IOTA awards through LoTW. See [Instructions for LoTW QSO Matching](#) for details. [Direct correspondence](#) to the IOTA Support Desk. Read [more](#).

Several satellite operators have reported that the FM repeater on the vintage AO-27 satellite recently has been active for brief intervals. When commanded on by control operators, the transponder is active for about 2 minutes before it reverts to telemetry transmission only. Patrick Stoddard, WD9EWK, points out that AO-27 was never designed to be an FM satellite; it lacks the audio filtering typically used in an FM receiver, since AO-7's uplink receiver was going to be used for data. With the lack of audio filtering on the uplink receiver, AO-27 was used for tests with D-STAR radios. (The Wayback Machine has captures of the former [ao27.org](#) website, detailing how those tests were done. Two radios were used for those D-STAR contacts -- one for uplink and the other for downlink.) Many hope that control stations will eventually be able to recover the satellite sufficiently to provide more regular FM operation. In the meantime, if you

hear the satellite active, make your contacts quickly! -- *Thanks to AMSAT News Service via Patrick Stoddard, WD9EWK*

AMSAT has spelled out its GOLF program objectives. AMSAT says the aim of its developing "Greater Orbit, Larger Footprint" ([GOLF](#)) satellite program is to place amateur radio transponders in low-Earth orbit (LEO), medium-Earth orbit (MEO), and eventually high-Earth orbit (HEO). "The goal of the GOLF program is to work by steps through a series of increasingly capable spacecraft to learn skills and systems for which we do not yet have any low-risk experience. Among these are active attitude control, deployable/steerable solar panels, radiation tolerance for commercial off-the-shelf components in higher orbits, and propulsion," AMSAT explained. "The first step is to be one or more LEO satellites similar to the existing AO-91 and AO-92, but with technologies needed for higher orbits." AMSAT says the eventual goal is an HEO satellite similar to AO-10, AO-13, and AO-40, "but at a currently affordable cost combined with significantly enhanced capabilities."

The transponder on [HuskySat-1](#) has been activated and is open for use and testing, AMSAT Vice President - Operations Drew Glasbrenner, KO4MA, reports. "It's fairly sensitive, and 5 - 10 W is plenty most of the time. There are some fades due to satellite orientation, and some passes are definitely better than others. Strong signals may impact the beacon strength." HuskySat-1 is the first CubeSat from the Husky Satellite Lab at the University of Washington and the first mission with AMSAT's linear transponder module (LTM-1), a V/u transponder and integrated telemetry beacon and command receiver. University researchers recently completed their Part 5 (Experimental) operations and have opened up the amateur radio transponder, which is available for use in educational CubeSat missions that are willing to enable the transponder for worldwide use. The HuskySat-1 V/u transponder is inverting, with an uplink passband of 145.910 - 145.940 MHz, and a downlink passband of 435.810 - 435.840 MHz. The 1200-baud BPSK telemetry beacon is at 435.800 MHz.

THANKS FOR READING !

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