



RCA Amateur Radio Club

Indianapolis, IN

www.w9rca.org



OCTOBER 2020

MONTHLY NEWSLETTER

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

RCA ARC NEWS

THE OCTOBER 13 MEETING – For the October 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 October 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.

SEPTEMBER MEETING SUMMARY – Field Day 2020: From those folks who research such things, what they know about what other usually high scoring FD Clubs, it still looks like we (the Indy United FD Club) may score very well. The possibility of resuming in-person Club meetings was discussed. The conclusion was “maybe in January.” The FCC proposal to charge \$50 for an amateur license was discussed. Some of those folks who are still working (not retired) shared experiences about working at home. Thanks to all those who participated in the September Zoom meeting.

AMATEUR RADIO LICENSE TEST SESSION

Time: Saturday, October, 10 2020, Starting at 12:00 pm **by appointment only.**
(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: Ken Bandy, kj9b@arrl.net, 317 446-3312

HAMFESTS, OPERATING EVENTS, VOLUNTEER OPPORTUNITIES

Oct 17	Shelbyville Tailgate http://brvars.com/
Oct 24-25	CQ WW DX Phone Contest
Nov 7-9	ARRL SS CW contest

Nov 7 Hoosier Hills Hamfest <http://www.w9qyq.org/hamfest/>
Nov 14-15 FT Wayne Hamfest & Computer Expo - Cancelled
Nov 28 - Wabash Valley ARA Turkey Fest <https://www.w9uuu.org/>

FCC APPLICATION FEE PROPOSAL PROCEEDING IS OPEN FOR COMMENTS

Comments are being accepted on the *Notice of Proposed Rulemaking (NPRM)* in MD Docket 20-270, which proposes application fees for radio amateurs. Formal deadlines for comments and reply comments will be determined once the *NPRM* appears in the *Federal Register*. Comments may be filed now, however, by using the FCC's Electronic Comment Filing System ([ECFS](#)), posting to MD Docket No. 20-270. The docket is already open for accepting comments, even though deadlines have not yet been set.

AIR FORCE RESEARCH LABORATORY TRACKS SPORADIC E

Researchers at the Air Force Research Laboratory ([AFRL](#)) in New Mexico have discovered a new way to track and characterize sporadic E, which occurs when large structures of dense plasma form naturally in the upper atmosphere. These plasma structures, which occur at mid-latitude locations around the world, can affect radio wave propagation in both positive and negative ways. VHF enthusiasts frequently take advantage of sporadic-E propagation (or E-skip) to work stations outside of their local area.

"Previous methods to observe these structures were insufficient for identifying and tracking these structures over large regions," said Ken Obenberger, a research physicist at AFRL. "It would be advantageous to actively identify where these structures are, where they are going, and how dense they are. And we thought we could find a better way."

The new method, developed by Obenberger and collaborators at AFRL and the University of New Mexico, leverages unintentional RF emissions from power lines, and using broadband radio noise, they can map and track dense sporadic-E structures.

"Since power lines are widespread, we can observe sporadic E over a very large region surrounding our observatory, the Long Wavelength Array (LWA), an asset of our collaborators at the University of New Mexico," Obenberger said. "This technique could be used anywhere in the world where there is an electrical grid and an instrument similar to the LWA, and we are lucky because there are not many."

This kind of technology could be of interest to those who rely on HF and VHF frequencies, such as radio amateurs, mariners, broadcasters, and the military.

Radio amateurs have long taken advantage of sporadic E for long-range communication in the VHF bands, such as 6 and 2 meters. Climatology of sporadic E can provide a probability that it will occur, but the actual presence of sporadic E can only be determined through trial-and-error observations.

"This is similar to how meteorologists can predict how likely thunderstorms will occur in the afternoons above New Mexico during monsoon season, but use Doppler radar to identify and track specific thunderstorms as they occur," notes Chris Fallen, KL3WX, one of Obenberger's collaborators at AFRL. "Ken's technique basically provides weather radar for sporadic E, only using radio noise from power lines as the radar transmitter."

Having accurate "now-casting" of sporadic E could prove critical during disaster situations where hams may play a key role in supporting communication of vital information.

“Better understanding will lead to improved design and use of radio systems that mitigate the negative effects and take advantage of the good effects, thereby ensuring a stronger emergency communication network,” Obenberger said. “We are interested in sporadic E and the effect it has on radio wave propagation, both good and bad.” — *Thanks to Joanne Perkins, Air Force Research Laboratory*

WSJT-X BETA RELEASE INTRODUCES DIGITAL PROTOCOLS DESIGNED FOR LF AND MF BANDS

The latest beta release of the *WSJT-X* digital software suite includes digital protocols particularly designed for communication on LF and MF bands, such as 2200 meters and 630 meters, and its developers say that during its first few months of testing, contacts have spanned intercontinental paths “many times” on those bands. New protocols FST4 and FST4W are included in *WSJT-X* version 2.3.0-rc1 (release candidate 1). FST4 is for two-way contacts, while FST4W is for “quasi-beacon” style WSPR transmissions. Both modes offer a range of options for T/R-sequence lengths and threshold decoding sensitivities extending well into the –40 dB range, developers said.

“On these bands, their fundamental sensitivities are better than other *WSJT-X* modes with the same sequence lengths, approaching the theoretical limits for their rates of information throughput,” the *WSJT-X* development team said in releasing version 2.3.0-rc1. The developers said, “FST4 and FST4W do not require the strict, independent time-synchronization and phase-locking of modes like EbNaut,” a protocol for VLF and LF communication.

The *WSJT-X* development team said operators familiar with the software suite will find using FST4 and FST4W straightforward. “Most on-screen controls, auto-sequencing, and other features behave as in other modes,” the developers said. “Operating conventions on the LF and MF bands make it useful to have additional user controls to set the active frequency range used by the decoder.”

The new modes use 4-GFSK modulation and share common software for encoding and decoding messages. FST4 offers T/R sequence lengths of 15, 30, 60, 120, 300, 900, and 1,800 seconds, while FST4W omits the lengths shorter than 120 seconds. Submode names, such as FST4-60 and FST4W-300, indicate sequence length in seconds.

Message payloads contain either 77 bits — as in FT4, FT8, and MSK144 — or 50 bits for the WSPR-like messages of FST4W. Message formats displayed to the user are like those in the other 77-bit and 50-bit modes in *WSJT-X*. Forward error correction uses a low-density parity check (LDPC) code with 240 information and parity bits. Transmissions consist of 160 symbols: 120 information-carrying symbols of two bits each, interspersed with five groups of eight predefined synchronization symbols.

Threshold sensitivity (SNR in a 2500 Hz bandwidth, yielding a 50% probability of decode) was measured for each sub-mode using simulations over the additive white Gaussian noise (AWGN) channel. As with other recently developed modes in *WSJT-X*, a feature called a priori (AP) decoding can improve sensitivity by several additional decibels as information is accumulated during a standard minimal contact or FST4W operating session.

“Keep in mind that these are very narrow-band modes; achieving the sensitivities listed in the table requires that oscillator drifts and path-induced Doppler shifts must be less than the tone spacing, over the full sequence length,” the developers said.

WSJT-X version 2.3 offers 12 different protocols: FST4, FT4, FT8, JT4, JT9, JT65, QRA64, ISCAT, MSK144, WSPR, FST4W, and Echo. The first seven are designed for making reliable

contacts under weak-signal conditions and use nearly identical message structure and source encoding.

The *WSJT-X 2.3 User Guide* and the Release Notes include additional information.

ANALYSIS DETERMINES WE ARE IN SOLAR CYCLE 25

It's now official. The solar minimum between Solar Cycles 24 and 25 -- the period when the sun is least active -- occurred in December 2019, when the 13-month smoothed sunspot number fell to 1.8. This is according to the Solar Cycle 25 Prediction Panel, co-chaired by the National Oceanic and Atmospheric Administration (NOAA) and the National Aeronautics and Space Administration (NASA). We are now in Solar Cycle 25, with peak sunspot activity expected in 2025, the panel said. The panel expressed high confidence that Solar Cycle 25 will break the trend of weakening solar activity seen over the past four cycles.

"We predict the decline in solar cycle amplitude, seen from Cycles 21 through 24, has come to an end," said Lisa Upton, panel co-chair and solar physicist with Space Systems Research Corporation. "There is no indication we are approaching a Maunder-type minimum in solar activity."

At 11 years, Solar Cycle 24 was of average length and had the fourth-smallest intensity since regular record-keeping began in 1755, with what is considered Solar Cycle 1. It was also the weakest cycle in a century. At solar maximum in April 2014, sunspots peaked at 114 for the cycle, well below the 179 average.

Solar Cycle 24's progression was unusual. The sun's northern hemisphere led the sunspot cycle, peaking more than 2 years ahead of the southern hemisphere sunspot peak. This resulted in fewer sunspots at solar maximum than if the two hemispheres were in phase.

For the past 8 months, activity on the sun has steadily increased, indicating that we have transitioned to Solar Cycle 25, [forecast](#) to be a fairly weak cycle -- about the same as Solar Cycle 24. Solar Cycle 25 is expected to peak in July 2025, with a predicted 115 sunspots.

"How quickly solar activity rises is an indicator on how strong the solar cycle will be," said Doug Biesecker, the NOAA-NASA panel co-chair and a solar physicist at NOAA's Space Weather Prediction Center ([SWPC](#)). "Although we've seen a steady increase in sunspot activity this year, it is slow."

"While we are not predicting a particularly active Solar Cycle 25, violent eruptions from the sun can occur at any time," Biesecker added.

Before Solar Cycle 25 peaks in 2024, NOAA is slated to launch a new spacecraft dedicated to operational space weather forecasting. The Space Weather Follow-On L-1 observatory ([SWFO-L1](#)) will be equipped with instruments that sample the solar wind, provide imagery of coronal mass ejections, and monitor other extreme activity from the sun in finer detail than before. NOAA's next Geostationary Operational Environmental Satellite (GOES-U) is also scheduled to launch in 2024. GOES-U will carry three solar monitoring instruments, including the first [compact coronagraph](#), which will help detect coronal mass ejections. Enhanced observations of the sun from these satellites will help improve space weather forecasting.

FORMER DAYTON HAMVENTION VENUE HARA ARENA IS BEING DEMOLISHED

[There are a lot of Hara Arena videos floating around the last few years. Here is one shot from a drone last month: https://www.youtube.com/watch?reload=9&v=91tSYa_9kEO]

Hara Arena, the former venue for Dayton Hamvention® and myriad sports, entertainment, and other presentations over the years, will soon be history. In the wake of a failed attempt to revitalize the tornado-damaged complex, officials in the city of Trotwood, Ohio — where Hara Arena is actually located — began last week to raze the complex. The property will be rezoned from commercial recreation to light industrial.

“The complex suffered extensive damage during the 2019 Memorial Day tornado outbreak,” the city said in a news release on September 25, taking note of hopes to salvage the complex. “However, redeveloping the property would be a challenge due to the extent of the damage, so the decision was made, and a contract has been secured to demolish the legendary venue.”

The *Dayton Daily News* reported that the owners of the property have said the iconic marquee spelling out “Hara Arena” atop the main arena will be preserved and auctioned off at a later date, with the proceeds donated to charity.

The Hara complex and the surrounding real estate occupy some 128 acres all together.

Owner Corey Heitz told the *Dayton Daily News* that it will take up to 6 months to tear down the buildings completely, and he hopes to have “something” there in the next 12 months.

Hara Arena had served as the venue for Dayton Hamvention from 1964 until 2016. Hamvention **announced** in July 2016 that Hara Arena would be closing and that Hamvention would continue. The show is now held at the Greene County Fairgrounds and Expo Center.

Over its six-decade history, Hara Arena hosted concerts by performers that included the Rolling Stones and the Grateful Dead; it was also where hockey legend Wayne Gretzky played his first professional hockey game.

FIRST ELEMENT OF ARISS NEXT-GENERATION RADIO SYSTEM INSTALLED AND OPERATING ON ISS

The initial element of the Amateur Radio on the International Space Station ([ARISS](#)) next-generation radio system has been installed onboard the ISS, and amateur radio operations using the new gear are now under way. The first element, dubbed the InterOperable Radio System (IORS), was installed in the ISS *Columbus* module. The IORS replaces the Ericsson radio system and packet module that were originally certified for spaceflight in mid-2000.

“Finally! It’s been a scramble the last few days with coordination over the weekend and yesterday with astronaut Chris Cassidy, KF5KDR,” ARISS-US Delegate for ARRL Rosalie White, K1STO, said. “But the new ARISS radio system is now installed, set up, and functioning. What a long road we’ve traveled over the past 5 years!”

Initial operation of the new radio system is in FM cross-band repeater mode using an uplink of 145.99 MHz (CTCSS 67 Hz) and a downlink of 437.800 MHz. System activation was first observed at 01:02 UTC on September 2. Special operations will continue to be announced, ARISS said.

The IORS was launched from Kennedy Space Center last March onboard the SpaceX CRS-20 resupply mission. It consists of a special, “space-modified” JVC-Kenwood D710GA transceiver, an ARISS-developed multi-voltage power supply, and interconnecting cables. The design,

development, fabrication, testing, and launch of the first IORS was the culmination of a 5-year engineering effort by the ARISS hardware team of volunteers.

ARISS says the system “will enable new, exciting capabilities for ham radio operators, students, and the general public.” Capabilities include a higher-power radio, voice repeater, digital packet radio (APRS) capabilities, and a Kenwood VC-H1 slow-scan television (SSTV) system.

A second IORS will undergo flight certification for later launch and installation in the Russian Service Module. The second system enables dual, simultaneous operations, such as voice repeater and APRS packet. It also provides on-orbit redundancy to ensure continuous operations in the event of an IORS component failure.

“Next-gen development efforts continue,” ARISS said. “For the IORS, parts are being procured and a total of 10 systems are being fabricated to support flight, additional flight spares, ground testing, and astronaut training.” Follow-on next-generation radio system elements include L-band repeater uplink capability — currently in development — and a flight Raspberry-Pi, dubbed “ARISS-Pi,” that is just in the design phase. The ARISS-Pi promises operations autonomy and enhanced SSTV operations, ARISS explained.

ARISS this year marks 20 years of continuous amateur radio operations on the ISS. The largely volunteer organization welcomes [donations](#) to the ARISS program for next-generation hardware development, operation, education, and administration.

ARRL TO SEEK CHANGES IN FCC DRAFT ON AMATEUR 9-CENTIMETER BAND

ARRL efforts are under way to preserve amateur radio access to the 3.3 - 3.5 GHz (9-centimeter) band. In an 80+ page draft *Report and Order and Further Notice of Proposed Rulemaking (R&O)* in WT Docket 19-348, the FCC announced its intention to delete the 3.3 - 3.5 GHz amateur secondary allocation, subject to a phased withdrawal tied to its licensing of new primary users. According to the FCC, the 3.450 - 3.550 GHz spectrum will be put up for auction as early as December 2021. Incumbent users will be permitted to continue operating in the band until licensing to commercial interests -- presumably 5G -- begins. That's estimated to be about 3 months after the spectrum auction concludes, or around mid-2022. No alternative spectrum was proposed to replace the 9-centimeter spectrum for amateur radio operations. In an associated *Further Notice of Proposed Rulemaking*, the FCC said it seeks comment "on whether it is in the public interest to sunset amateur use in the 3.3 - 3.55 GHz band in two separate phases," -- first above 3.4 GHz, and later below 3.4 GHz.

"We find that removing the existing secondary non-federal allocations from the 3.3 - 3.55 GHz band and clearing these non-federal operations from the band is in the public interest, and therefore, we adopt this proposal," the draft *R&O* says. "Because the [Department of Defense and the National Telecommunications and Information Agency] agree that commercial users operating pursuant to flexible use licenses can be accommodated in the 3.45 - 3.55 GHz band at full power, and given continued interest in the 3.3 - 3.45 GHz band for future sharing for flexible-use licenses, we find that retaining the secondary non-federal allocations across this spectrum would hinder the Commission's ability to offer flexible-use licensing in the future and would undermine the intensive and efficient use of valuable mid-band spectrum."

"Further, to prevent adjacent-channel issues and to preserve the possibility of additional clearing for flexible use licensing below 3.45 GHz, we find that sunsetting the secondary amateur allocation from the entire 3.3 -- 3.5 GHz portion of the band is in the public interest," the FCC said.

Last February, ARRL filed comments opposing the FCC's proposal to delete the 3.3 - 3.5 GHz

secondary amateur allocation, pointing to amateur radio's long history of successful coexistence with primary users of the band.

The absolute deadline to submit additional comments on the draft *R&O and Further Notice of Proposed Rulemaking* via the Electronic Comment Filing System ([ECFS](#)) or to contact FCC staff on this issue is Wednesday, September 23 -- 7 days before the full Commission's consideration of the draft for final adoption -- in order to comply with FCC "Sunshine Rules."

In August, the White House and the Department of Defense announced plans to allow for commercial 5G systems to operate in the 3.45 - 3.55 GHz band throughout almost all of the contiguous US. The plan would leave radio amateurs to "individually determine appropriate alternate spectrum from existing available spectrum allocations."

The 3.45 - 3.55 GHz segment would be teed up for a spectrum auction that's expected to commence by the end of 2021. This would mean amateurs would have to cease all operations at 3.45 GHz and above by the middle of 2022 at the earliest, based on an FCC estimate.

The 3.3 - 3.45 GHz segment is not immediately available for reallocation and auction, because more work is needed to accommodate the Department of Defense. Under the rules as proposed, amateur operations will be permitted to continue in this spectrum until sometime in the future, when FCC rulemakings establish new rules and conduct a spectrum auction and commercial licensing.

HAM RADIO WIRELESS NETWORK CAMERA DETECTS WASHINGTON WILDFIRE

Nigel Vander Houwen, K7NVH, reported on September 8 that some [HamWAN](#) users in the Puget Sound region of Washington, who were viewing the network's camera feeds, spotted a large brush fire.

"They reported it to the DNR [Department of Natural Resources], which thanked them for the first report they'd gotten on the fire, and they've sent a team to try and keep it small and under control," Vander Houwen said. "It's estimated currently at around 50 acres, southeast of Enumclaw, along Highway 410." The fire was not said to be threatening any homes. State Route 410 was reported closed between Enumclaw and Greenwater, and drivers heading to Mount Rainier National Park were advised to take another route.

HamWAN is a nonprofit organization developing best practices for high-speed amateur radio data networks. It runs the Puget Sound Data Ring. So far, HamWAN networks have been used for such applications as low-latency repeater linking (including DMR), real-time video feeds, APRS internet gateways (I-gates), providing redundant internet access to emergency operations centers, and more

Amateur radio licensees in the HamWAN service area can connect directly to the network with a modest investment in equipment and no recurring costs. The HamWAN Puget Sound Data Ring has cells deployed at numerous wide-coverage sites, interconnected with 5 GHz radios. The HamWAN technical team has been installing remotely controllable cameras at HamWAN link sites, and one of these was used for the wildfire report.

NCVEC HOLDS ITS ANNUAL MEETING VIA TELECONFERENCE

ARRL Volunteer Examiner Coordinator ([VEC](#)) Manager Maria Somma, AB1FM, reports that the National Conference of Volunteer Examiner Coordinators (NCVEC) held its annual meeting via teleconference on August 21. Somma is the NCVEC Vice Chair. NCVEC Chair Larry Pollock,

NB5X, presided at the 35th annual meeting. The NCVEC functions to facilitate communication between the FCC and VECs. Representatives of all 14 FCC-certified VECs took part in the conference, while nine FCC staff members were on hand.

FCC Enforcement Bureau (EB) Special Counsel Laura Smith advised VEC delegates that the FCC has been on lockdown since March and that staff members will be teleworking indefinitely. This includes staff at FCC Headquarters in Washington, DC; the Gettysburg, Pennsylvania location, and the other field offices. Smith said field engineers aren't going out unless the issue involves safety or if lives are in danger.

FCC Mobility Division ([MD](#)) Deputy Chief Tom Derenge explained that one of his areas of responsibility is processing paperwork for applicants answering "yes" to the basic qualification question (BQQ) that asks if they've ever been convicted of a felony. Derenge said that paperwork from his office goes to the FCC General Counsel and the Investigations and Hearings Division (IHD). Those divisions are responsible for resolution in non-compliant conduct. Paperwork in these instances may take a while to be processed, Derenge said.

Derenge recommended that VECs make it clear to applicants that their address will be public information when the new license is issued. He pointed out that once an address is in the FCC database, it's nearly impossible to be permanently removed.

Dorothy Stiffemire, the Associate Division Chief of the [WTB Technologies Systems and Innovation Division](#), told VECs that new license applicants should create an FCC user account and register their Social Security number (SSN) in the FCC Commission Registration System (CORES) before attending exam sessions. Registrants will be assigned a Federal Registration Number (FRN), which will be used in all license transactions with the FCC.

She explained that auto-registration in CORES at exam sessions using a Social Security number will be going away. In addition, because no mail is being sent due to the COVID-19 pandemic, applicants will not receive their auto-created password and FRN and will not be able to access the Universal Licensing System (ULS), the FCC license records database. Going forward, she said, VECs should make sure all applicants have an FRN before exam day.

Remote administration of amateur radio exam sessions was the hot topic of discussion, Somma said. Since April 1, ARRL VEC, W5YI-VEC, and the Greater Los Angeles Amateur Radio Group VEC (GLAARG) have remotely tested more than 4,000 applicants using videoconferencing and online examinations. Proof-of-concept and procedural information were discussed for the benefit of other VECs that might be interested in pursuing remote testing. Exam candidates can search for upcoming remote online examination dates on the [HamStudy website](#).

Somma and Assistant ARRL VEC Manager Amanda Grimaldi, N1NHL, represented ARRL at the virtual gathering. Read [more](#).

VENERABLE AO-7 SATELLITE APPROACHING A RETURN TO FULL SOLAR ILLUMINATION

AMSAT-OSCAR 7 ([AO-7](#)), the oldest amateur radio satellite still in operation, is nearing a return to full illumination by the sun, which should take place around September 25 and continue until around December 26. AMSAT's vice president of operations Drew Glasbrenner, KO4MA, says that during this period, AO-7 likely will switch between modes A (2 meters up/10 meters down) and B (70 centimeters up/2 meters down) every 24 hours. He reminded users to use only the minimum necessary power and to avoid "ditting" to find their signals in the passband, which can bounce the entire passband up and down and sometimes even cause the transponder to reset to mode A.

"Try to find yourself with very low power, or on SSB, or best, with full Doppler control," Glasbrenner said. "If you have to use high power to find yourself, your receive antenna and system probably needs improvement."

Last May, the nearly 46-year-old AO-7 made possible a contact between Argentina and South Africa -- a distance of more than 4,300 miles. Both stations were aiming just 2° or 3° above the horizon. AO-7 only works when it's receiving direct sunlight and shuts down when in eclipse.

Launched in 1974, AO-7 surprised the amateur satellite community by suddenly coming back to life in 2002 after being dormant for nearly 30 years and periodically re-emerging. AMSAT considers AO-7 "semi-operational." Theory is that AO-7 initially went dark after several years of operation when a battery shorted, and it returned to operation when the short circuit opened. With no working batteries, AO-7 now only functions when it's receiving direct sunlight, and it shuts down when in eclipse.

Built by a multinational team under AMSAT's direction, AO-7 carries a non-inverting Mode A transponder (145.850 – 145.950 MHz up / 29.400 – 29.500 MHz down) and an inverting Mode B (432.180 – 432.120 MHz up / 145.920 – 145.980 MHz down) linear transponder. AO-7 has beacons on 29.502 and 145.975 MHz, used in conjunction with Mode A and Mode B/C (low-power mode B), respectively. A 435.100 MHz beacon has an intermittent problem, sometimes switching between 400 mW and 10 mW.

FCC GRANTS WAIVER PERMITTING GARMIN TO MARKET A COMBINATION PART 95/PART 25 DEVICE

The FCC has granted the request of Garmin International for a waiver of Section 95.2761 of the FCC's rules, permitting it to obtain equipment certification for a handheld unit that combines a low-power, terrestrial Part 95 Multi-Use Radio Service (MURS) transmitter and a Part 25 emergency satellite communication module in the same device. The FCC responded to Garmin's request in an [Order](#) released on September 21. Section 95.2761(c) precludes combining MURS transmitting capabilities in equipment that is also capable of transmitting in another service, with the exception of Part 15 unlicensed services.

The FCC said it determined that it would be in the public interest to waive Section 95.2761(c), so that Garmin may obtain authorization to produce its proposed handheld device.

"We find here that Garmin's proposed device contains an important public safety feature, which would not be brought to market if we were to strictly enforce the rules in this case. As Garmin noted in its request, the certified Part 25 module in the MURS unit would allow emergency communication to the outside world at the push of a button."

Garmin's proposed product would include two transmitters: a low-power MURS transmitter for short-range terrestrial communication, and a previously certified Part 25 module that would allow emergency communication via the Iridium satellite system under a blanket license held by Iridium. End users would have to subscribe to the Iridium service.

Garmin argued in its petition that the purpose of the original equipment authorization restriction was "to prevent consumer confusion with other terrestrial services that either had different licensing regimes or were for different types of communications" and that it is inappropriate in this case.

"We agree with Garmin that its device's intended use does not flout the purpose of Section 95.2761(c)," the FCC said in its *Order*. "Garmin maintains that the Part 95 MURS transmitter and the Part 25 module operate on different frequencies and will not operate simultaneously. Provided the device is constructed in this manner, we are persuaded that its dual purposes will be well

segregated."

HAMS HELP FIND KIDS BY MONITORING FRS CHANNEL

Late on the afternoon of September 16, the police department in Post Falls, Idaho, received a 911 call that two juveniles -- ages 9 and 11 -- were missing from a Post Falls residence for about an hour. According to the report, the pair had left home intending to play in the neighborhood with some Family Radio Service (FRS) radios. Several patrol cars were dispatched to the area to conduct a visual search, and detective Neil Uhrig, K7NJU, responded as officer in charge due to his training and experience with missing persons investigations. The initial search focused on a 2-mile radius from the missing kids' residence.

One officer received information from witnesses that the pair was probably using FRS Channel 1 (462.5625 MHz). An officer returned to police headquarters to retrieve some FRS radios for distribution to the patrol officers, in the event they might be able to hear the youngsters talking.

Uhrig, meanwhile, pulled out his VHF/UHF handheld with the thought of setting up FRS Channel 1 as an auxiliary frequency, but without the manual at hand, he wasn't able to execute the channel setup. But Uhrig did hear the Northwest Traffic Net (NWTN) that had begun at 6:30 PM on the local 2-meter repeater.

Checking into the net at about 6:45 PM, Uhrig explained the missing persons situation to net control station Shannon Riley, KJ7MUA, and asked if net participants in the Post Falls area with FRS capability could listen for the youngsters talking.

A number of stations promptly checked in to say they had FRS radios and were monitoring FRS Channel 1. It was assumed that only stations located near the missing youngsters would hear them, given the limited range of FRS radios.

Not long after 7 PM, Jim Hager, KJ7OTD, reported hearing children talking on FRS Channel 1. Uhrig went to Hager's home to confirm his observation, and the patrol units were redirected to the new search vicinity. A short time later, the missing pair was found safe and returned home.

Uhrig said the most remarkable thing about the incident was that the missing youngsters turned out to be some distance from the original search area, and in the opposite direction from where they were thought to have been headed.

Net Manager Gabbee Perry, KE7ADN, said, "I'm so proud of what a superior job NWTN NCS Shannon [KJ7MUA] and all the operators did last Wednesday. It was a very unusual situation, but everyone had excellent focus and used their resourcefulness to help quickly find the missing kids." -- *Thanks to ARRL Assistant Idaho Section Manager Ed Stuckey, A17H*

ARRL FOUNDATION SCHOLARSHIP PROGRAM NOW ACCEPTING APPLICATIONS

Applications for the 2021 ARRL Foundation Scholarship Program will be accepted between **October 1 and December 31, 2020**. All applicants must be FCC-licensed radio amateurs, and many scholarships have other specific requirements, such as intended area of study, residence within a particular ARRL Division, Section, or state, and license class.

Applicants should review the scholarship descriptions and check off the ones for which they are eligible. If you complete an online application, you must also email a PDF of academic transcripts from your most recently completed school year by **January 11, 2021**. Some scholarships require additional documents to be submitted (e.g., letter of recommendation from an officer of an ARRL-affiliated club). Applications not accompanied by transcripts and additional documents, where

bunch of presentations applicable, will not be considered.

The ARRL Foundation Scholarship Committee will review all applicants for eligibility and award decisions. Scholarship recipients will be notified in May 2021 via USPS mail and email. For more information, visit the ARRL Foundation Scholarship Program page.

SCOUTING'S JAMBOREE ON THE AIR SET FOR OCTOBER 16, 17, AND 18

Jamboree on the Air ([JOTA](#)) and Jamboree on the Internet (JOTI) will be held this year on October 16, 17, and 18. [Register](#) online as an individual or as a group.

Jamboree on the Air is the largest Scouting event in the world. In a typical year, more than 1 million Scouts participate in JOTA, with over 11,000 stations operated by 20,000+ young radio amateurs from 150+ countries around the world.

[JOTA details](#) are available on the K2BSA website. The website menu will direct users to additional supporting information. K2BSA's Jim Wilson, K5ND, says many locations are already offering virtual radio merit badge classes "and no doubt will be using similar approaches for Jamboree on the Air."

QSO TODAY VIRTUAL HAM EXPO AND HOMEWORK ASSIGNMENT !

Ok, you might have missed this in August. I know, I didn't take time to watch. But, it's all still here for you to take a look. There are a bunch of presentations presented by very good presenters. Click on "**August Speaker Presentations**"... <https://www.qsotodayhamexpo.com/blind.html>

Your homework assignment is to watch a couple of these presentations which interest you then let us know which ones you liked and we'll publish it in the newsletter. A couple I found interesting:

GPS Today – John Ackermann, N8UR,

FT8 DXpedition Mode: Will Dxing Ever Be The Same? - Ned Stearns, AA7A.

SHORTS

Opportunities for Multi-Multi Operations in the CQWW- K3LR and W3LPL have both decided not to compete in the multi-operator/multi-transmitter category in this year's CQ World Wide DX Contest; this means other groups capable of mounting a COVID-safe M/M operation in the category might have an actual chance of winning!

HF Station Grounding and Microcontroller Projects are Next ARRL Webinar Topics --Two well-known ham radio authors and speakers will share their expertise with members in October during ARRL Learning Network webinars.

- ARRL Contributing Editor Ward Silver, N0AX, will present "Grounding & Bonding for Home HF Stations" on Tuesday, October 6, at 10 AM PDT/1 PM EDT/0500 UTC.
- Popular ARRL author Glen Popiel, KW5GP, will present "Welcome to the World of Arduino" on Thursday, October 15, at 5 PM PDT/8 PM EDT (0000 UTC on Friday, October 16). Members must log in to the ARRL website to register for each webinar.

Ulrich Rohde, N1UL, Receives 2020 IEEE Region 1 Technological Innovation Award – IEEE Region 1 has selected Ulrich Rohde, N1UL, as the recipient of the 2020 IEEE Region 1 Technological Innovation (Industry or Government) Award. The selection was made by the Region 1 Awards and Recognition Committee and approved by the Region 1 Board of Governors. The award recognizes “pioneering research and leadership in signal processing.”

The Technological Innovation (Industry or Government) Award cites “significant patents, discovery of new devices, development of applications, or exemplary contributions to industry or government fitting Dr. Rohde’s accomplishments in our industry.” A partner of Rohde & Schwarz, Rohde has published more than 300 scientific papers and written several books and book chapters. He holds several dozen patents.

Enjoy RTTY contesting? Consider Joining the RTTY Operators Facebook group, and the [RTTY group on Groups.io](#).

Surrey Amateur Radio Communications is out with the [September/October 2020 edition of The Communicator](#). There's something for everyone in this edition, including an AFSK Transmitter using GnuRadio, a 23cm Antenna, review of songs about ham radio (!?), and more!

Scott, N3FJP, writes that his [Amateur Contest Log version 6.7 is available on his website](#). New to this version is the ability to connect up to three radios, improved LOTW functionality, and more. He also notes that his son, Chris, KB3KCN, is taking a much more active role in N3FJP software development.

Ward, N0AX, writes: "Two new items have been uploaded to the [ARRL Antenna Book's web page](#) to help with antenna modeling and system design:

- "Antenna and Electromagnetic Modeling Software" - by Steve Stearns, K6OIK, is a short overview of modeling and simulation programs available to hams, along with a table of software and links to their websites. Look in the "Supplemental Information and Files" section.
- "Guy Clearance - by Hal Kennedy N4GG" is an Excel spreadsheet that calculates the clearance between Yagi antennas and guy wires on a guyed tower. Look in the "Software" section of the web page.

Both resources will come in handy to the ham building or maintaining an antenna system."

[TinySA](#), a \$49 spectrum analyzer, is to Spectrum Analyzers what TinyVNA is to VNAs. According to a reviewer, if input signals are kept in check to avoid overload, it works effectively

THANKS FOR READING !

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

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