RCA AMATEUR RADIO CLUB

Legacy Amateur Radio Club

AFFILIATED CLUB

INDIANAPOLIS, INDIANA

JULY 2017 MONTHLY NEWSLETTER

THE NEXT MEETING OF THE RCA AMATEUR RADIO CLUB WILL BE
TUESDAY, JULY 11th, 6:30 PM AT G.T. SOUTH'S,
5711 E. 71st STREET, INDIANAPOLIS, IN

RCA ARC NEWS

SUMMARY OF THE JUNE MEETING – Thanks to all who attended the June meeting! The Dayton (Xenia) Hamvention was reviewed, including the new products introduced and the new venue. Field Day is coming up. We will be participating along with several other local clubs, operating in class 3A from Camp Belzer. Setup will begin at 10AM Saturday morning. Additional details and operating scheduling will be emailed to the IRC mailing list. Also the Indy Hamfest is July 7-8. We'll need help transporting junk to the Hamfest as well as help Fri. and Sat. selling stuff. K9RU annaounced we may have buyers for Dave Brown's towers.

JULY AMATEUR RADIO LICENSE TEST SESSION

Time: Saturday, July 8, Exams 8:00 – 11:00 AM.
Location: Indianapolis Hamfest, Marion Co. Fairgrounds, 7300 Troy Ave., Indianapolis
Contact: Pre-register at www.n9ag.org.
Applicant must have an FCC Federal Registration Number required (FRN)
No fee required. How to apply for the FCC FRN:
https://www.fcc.gov/help/getting-fcc-registration-number-frn-universal-licensing-system-uls

HELP NEEDED FOR THE RCA ARC AT THE INDIANAPOLIS HAMFEST – The Indianapolis Hamfest is Friday July 7th and Saturday July 8th. The hamfest opens to the public at 2 PM Friday so we need help loading and moving stuff to the hamfest Friday morning.

The plan is to meet at K9RU's home, 1455 Shannon Ave, at 10 AM to load stuff and move it to the the Hamfest. We need manpower as well as vehicles. Also we will need help to man the tables both Friday and Saturday, so if you can help for an hour, that would be great.

We allow personal ham radio items to be sold at the booth, but the pricwe must be marked on them and what you will take and you will have to help man the booth.

If you can help contace Jim know: k9ru@arrl.net

FIELD DAY - This year Field Day was a combined effort of several clubs in the Indianapolis Area. We did have a great turnout with about 60 people showing up including guests.

The weather was great, Jace, Bill and Brian did a great of organizing and operator scheduling.

The RCA ARC had a good turn out with Jim Keeth, Jim Rinehart, Dick Davis, Dave Jarvis, John Garino and Glen Ruch.

We did have antenna problems with the 40 meter dipole at the phone station and the triband dipole at the CW station. The 40 meter meter was a coax problem and the triband dipole at the

CW station was a problem we worked around.

We had unexpectedly good 10 meter and 15 meter band conditions Sunday, we even had a 6 meter opening.

We did a 3A operation with the logging on all the computers link by WiFi thanks to Dave K9DC and Bill WY9T.

We had a good time and thanks to everyone that came out to Field Day and helped out. -Jim K9RU

HAMFESTS, OPERATING EVENTS, VOLUNTEER OPPORTUNITIES

July 7-8	Indianapolis Hamfest http://www.indyhamfest.com/
July 8-9	IARU HF World Championship
July 15-16	North American RTTY QSO Party
July 15-16	CQ World Wide VHF Contest

Opportunities for public service: http://indyhams.org/events

HAMVENTION REPORTS SECOND-LARGEST ATTENDANCE EVER FOR 2017

The tally is in, and Hamvention® 2017, at its new venue in Xenia, Ohio, attracted 29,296 attendees, official spokesperson Mike Kalter, W8CI, told ARRL. That is the second-largest attendance in the history of the event. Hamvention attendance peaked in 1993 at 33,669, before the 1996 change in date from April to May, when the show was still being held at Hara Arena. Attendance in 2016 for the show's final year at Hara was 25,364.

Hamvention relocated to the Greene County Fairgrounds and Expo Center this year, after Hara Arena closed last summer. Hamvention General Chair Ron Cramer, KD8ENJ, called 2017 "a most successful year."

"We knew this would be a big year, but this was even beyond our expectations," Cramer said. "The challenge was great to reinvent Hamvention at a new venue in a very short time period.

From all the e-mails, letters, and calls I have received over the last few weeks, we have accomplished it successfully." Cramer expressed appreciation for all constructive criticisms and said each idea is being evaluated. Held May 19-21, Hamvention 2017 has received largely positive reviews, despite traffic problems on opening day and heavy rain during the weekend.

We all recognize the traffic, rain, mud, and parking issues, but part of those issues were corrected even before show weekend was over,"Cramer said. "Other issues are being worked on already for next year's show." He and Kalter said the Hamvention Committee has joined Greene County, municipal officials, and the Greene County Fairgrounds and Expo Center Advisory Board in addressing improvements for 2018. Kalter and Cramer also thanked the 657 volunteers who put in long hours to make Hamvention 2017 a reality. The Dayton Amateur Radio Association (DARA) sponsors Hamvention.

"We can't control the rain, but we promise there will not be some of the other issues next year," Cramer said. "There may even be some new surprises in store," he added, pointing out that Hamvention has 3 more months to plan for the 2018 event than it did for this year's. --ARRL Letter

HAMVENTION IMPROVEMENTS ALREADY IN THE WORKS FOR 2018!

Even before Hamvention® 2017 had wound down at its new Xenia, Ohio, location, plans were on the drawing board to enhance next year's show. Hamvention 2017 "went reasonably well," spokesperson Mike Kalter, W8CI, allowed, but he acknowledged that there are still a "lot of things to work on" for 2018. Kalter, who lives in Xenia, made the remarks in a video

interview with DX Engineering's Tim Duffy, K3LR, in the wake of the May 19-21 show, which is sponsored by the Dayton Amateur Radio Association (DARA).

Kalter told Duffy that the staff of the Greene County Fairgrounds and Expo Center on its own initiative met with him, Hamvention General Chair Ron Cramer, KD8ENJ, and others to say they were already formulating plans for improvements. The food and forum venues at the new location got high marks, Kalter told Duffy, but the flea market suffered badly from the effects of heavy rainfall.

"It rained hard, and it rained a lot," Kalter recounted, adding that the flea market area was not as well drained as organizers had expected. "What exactly we're going to do at this point, I don't know," he conceded. "We felt bad about that."

The exhibitor tents were another issue, with crowded quarters, wind-blown rain getting into booth spaces, and a lack of lighting. Kalter told Duffy that DARA didn't get the tents it wanted, and that more and better tents are high on the list for next year. DARA also has asked the Greene County Commission to purchase another building for the site, and the Commission will be installing air handlers in buildings for 2018.

On-site parking improvements also are in the works, after a massive traffic jam on opening day. "Traffic on Friday morning was pretty rough, for those that got caught in that, but we worked with the officials...and they fixed it overnight," Kalter said.

"We know that we are stewards of a very important event [for Amateur Radio]," Kalter told Duffy. Hamvention "is not just DARA's show," and exhibitors and organizers alike are buying into the concept of "our Hamvention" and contributing to an effort to improve the event. Kalter called Hamvention "a pillar" that helps to keep Amateur Radio alive and "growing and functioning at a much higher level" than anywhere else.

"We're out in front of it," Kalter assured, "and I want to thank all of our volunteers," referring to the 657 individuals who made Hamvention 2017 happen. "Most of what I heard was very positive."

In a separate interview with HamRadioNow's Gary Pearce, KN4AQ, Kalter said that while he could offer no firm numbers, attendance was "the biggest I've seen at any Hamvention I've ever been to. It was absolutely wall to wall, from one end to the other." --ARRL Letter

CONSENT DECREE, FORFEITURE TERMINATE FCC INTERFERENCE INVESTIGATION

The FCC has again used a consent decree to resolve an enforcement matter. The FCC Enforcement Bureau recently concluded a radio interference investigation with "a negotiated settlement" and a $90,000 civil penalty. The case against AFX Inc. involved the marketing of unauthorized RF devices that interfered with AM/FM radio reception.

After the company's NLL Series LED lighting fixtures were reported to be causing interference to broadcast radio reception last year, the Enforcement Bureau's Spectrum Enforcement Division issued a Letter of Inquiry (LOI) to AFX directing it to submit a sworn written response regarding its marketing and sale of the fixtures, considered unintentional radiators under FCC rules. According to the FCC, evidence revealed that the suspect lighting fixtures had not been tested and authorized under FCC rules prior to marketing, and that AFX continued to market them during an approximately 5-month period after receipt of the LOI.

"We find that the public interest would be served by adopting the Consent Decree and terminating the referenced investigation regarding AFX's marketing of unauthorized radio frequency devices, and compliance with Section 302(b) of the Communications Act of 1934, as amended and Sections 2.803(b)(2), 15.107(a), and 15.109(a) of the Commission's rules (Rules)," the FCC said. --ARRL Letter

FEDERAL REGISTER PUBLISHES NEW MF/LF RULES, BUT OPERATION IS NOT YET LEGAL

The FCC Report and Order (R&O) spelling out operational rules to allow secondary Amateur Radio access to 630 meters and 2,200 meters now has appeared in the Federal Register, but radio amateurs still may not access the new bands. That's because specific procedures specific procedures, now under development, to detail how radio amateurs will notify the Utilities Technology Council (UTC) of their proposed station location prior to commencing operation, still must undergo approval. The FCC said the notification requirement is necessary to confirm that a station is not located within 1 kilometer of an active power line communication (PLC) system.

"While the R&O has been published in the Federal Register, amateurs may not begin using the new bands until after the FCC's Wireless Telecommunications Bureau issues a Public Notice outlining necessary procedures to notify UTC of pending operation, as the new rules require," ARRL Regulatory Information Manager Dan Henderson, N1ND, said. "There is no timetable for that Public Notice to be released. Amateurs need to practice patience."

The FCC said the notification requirements it adopted "seek to strike a balance between amateur operations used for experimental purposes and PLC operation used by electric utilities for the reliability and security of electric service to the public." Once notification procedures are in place, radio amateurs intending to operate on either band will notify UTC of their geographical location. If UTC does not object within 30 days, amateur operation may commence. The FCC turned away an ARRL request for direct access to the PLC database that UTC maintains.

Once UTC has developed the new information collection procedures, the FCC must submit them for review to the Office of Management and Budget (OMB). "The Commission will publish a separate notice in the Federal Register, inviting comment on the new information collection requirements adopted herein," the FCC said in the R&O. "The requirements will not go into effect until OMB has approved [the notification procedures and the Commission has published a notice announcing the effective date of the information collection requirements."

In an unrelated action, the FCC allocated 1,900-2,000 kHz to the maritime mobile service (MMS) on a primary basis for non-Federal use in ITU Regions 2 and 3, and limited the use of this allocation to radio buoys on the open sea and the Great Lakes. Amateur Radio was upgraded from secondary to primary in the 1900-2000 kHz segment in 2015. --ARRL Letter

AMATEUR RADIO POISED TO RETAIN FULL 76-81 GHZ BAND, SHARING WITH VEHICULAR RADARS

In a draft Report and Order (ET Docket No. 15-26) to be considered at its July 13 open meeting, the FCC has proposed lifting a nearly 2-decade-old suspension of Amateur Radio access to 76-77 GHz, giving the Amateur and Amateur-Satellite services access to the full 76-81 GHz band on a secondary basis. The FCC also reduced Amateur Radio's status from primary to secondary in the 77-77.5 GHz segment, to match the rest of the 76-81 GHz band, and it imposed a uniform power-level limit for users of the band. The draft Report and Order (R&O) concluded that Amateur Radio and vehicular radars will be able to successfully share the millimeter-wave band with minor adjustments in the Amateur Service rules. A goal of the proceeding has been to expand and consolidate the spectrum available worldwide for 76-81 GHz radar operations. It would bring the US Table of Allocations into line with decisions at the 2015 World Radiocommunication Conference (WRC-15) and make the entire band available internationally for vehicular radars operating in the Radiolocation Service (RLS).

"The rule changes we adopt modifying the regulatory status of amateur stations and capping their power levels will ensure the continued operation of amateur stations in this band, and are a reasonable alternative to expanding the suspension of amateur operations from the 76-77 GHz band to the remainder of the 76-81 GHz band or removing the amateur allocations

altogether from the 76-81 GHz band," the draft R&O said. "In addition, these changes, coupled with the nature of amateur operations in the band...will ensure that the potential for harmful interference from amateur operations to vehicular radar operations in the 76-81 GHz band is negligible and satisfy our efforts to ensure protection for the important safety functions that vehicular radars will provide."

The FCC R&O would impose a 55 dBm peak effective isotropic radiated power (EIRP) limit (316 W EIRP) on Amateur Radio operations in the band. This is the same as that allowed to vehicular radars. The R&O reasons that the risk for potential interference between Amateur Radio operation and RLS operations "is mitigated by the directionality of vehicular radars' antennas -- downward in orientation and mounted on a low position on the vehicles." The R&O also cited the periodic and transient nature of amateur operations in the band coupled with high path losses in a band that is conducive to frequency re-use.

In reaching its tentative conclusions relative to the amateur allocation in the 2015 proceeding, the FCC considered the comments of several individual radio amateurs as well as ARRL, Bosch, Delphi, the Automotive Safety Council, the Consumer Technology Association (CTA), and automakers and their representatives, among others. Several automotive manufacturers had asked that Amateur Radio be ousted from the band. --ARRL Letter

US FISH AND WILDLIFE SERVICE OKAYS BAKER ISLAND DXPEDITIONS, WITH STRICT CONDITIONS

The US Fish and Wildlife Service (FWS) has agreed that a DXpedition to Baker and Howland Islands (KH1) -- the fourth most-wanted DXCC entity -- would be an acceptable use, but has detailed strict conditions under which it would issue a special use permit (SUP). The FWS recently completed a compatibility determination for Amateur Radio operation on Baker Island National Wildlife Refuge, and two dozen comments showed "strong support" for Amateur Radio operation on the ecologically sensitive island refuge, the FWS said. Baker Island is 1,830 nautical miles southwest of Honolulu -- an 8-day voyage.

"While...not a wildlife-dependent public use according to National Wildlife Refuge Administration Act of 1966, as amended, Amateur Radio operation is a use that assists in the management of the resources indirectly," the FWS said in its Compatibility Determination, released on June 8. "By allowing Amateur Radio operators to visit the PRIMNM [Pacific Remote Islands Marine National Monument] refuges, the refuges benefit through the ability of staff to visit remote island sites to monitor wildlife populations, habitats, detect invasive species introductions, and perform management actions that would otherwise require the Service to charter a vessel."

Citing an estimated cost of at least $250,000 to charter a vessel with a 14-day layover, the FWS noted that "most of the remote island refuges within the PRIMNM are rarely visited due to budget constraints." --ARRL

BAKER AND HOWLAND ISLANDS ARE PART OF THE PACIFIC REMOTE ISLANDS MARINE NATIONAL MONUMENT

(PRIMNM), created by former President George W. Bush under the authority of the Antiquities Act of 1906. The monument was expanded by President Barack Obama.

The Compatibility Determination mandated 18 stipulations for Amateur Radio DXpeditions visiting the refuge. A DXpedition to the refuge could last up to 14 days, with only 12 days of radio operation.

"Complete avoidance of seabird colonies will minimize nest disturbance and prevent burrow nest cave-ins," the FWS said in its Compatibility Determination. "Activities on Baker Island will always attract the land crabs that inhabit this location. All efforts must be taken to avoid inadvertently feeding or entrapping these animals."

The FWS would also have to approve QSL cards to ensure that they include "an informative or educational statement about the refuge." -- Thanks to The Daily DX, FWS

REGION 1 INTRUDER WATCH REPORTS THE USUAL SUSPECTS

International Amateur Radio Union Region 1 Monitoring System (IARUMS) volunteers continue to document many of the same signals intruding on Amateur Radio bands -- some of them audible in other parts of the world, according to the latest editions of the IARUMS Region 1 newsletter. IARUMS Region 1 Coordinator Wolf Hadel, DK2OM, reported last month that his own band-monitoring activity has been hampered by interference from a neighbor's LED lamp, and that Germany's telecoms regulator was not helpful in resolving the situation, which Hadel says affects all bands from 80 through 10 meters. Nonetheless, he has worked around the local interference to document many of the same bad actors that show up in the IARUMS Region 1 newsletter month after month. IARU Region 1 includes Europe and Africa.

These usual suspects include a Russian Navy F1B RTTY signal on 14.180 MHz in Sevastopol in Crimea that is, "still active, not regarding official complaints." Last fall, IARUMS reported that complaints had been successful in silencing the intruder. Another Russian F1B RTTY signal had been showing up on 7.051 MHz, "mostly idling and every evening," Hadel reported in May. German telecoms regulators registered an official complaint, which apparently was successful in that instance. Hadel also reported "daily" transmissions of music on 7.050 MHz (LSB), possibly originating in Russia.

The "mysterious beacon 'D'" from Asiatic Russia has been reported on CW on 7.093.3 kHz, with spurious transmissions on 7.078.6, 7.117.9, and 7.157.2 MHz, as well as outside the band.
Broadcaster Radio Hargeysa in Somalia continued to be reported on 7.120 MHz (AM) daily. Hadel indicated that the signal is audible in Australia and Japan, as well as in Europe and Africa. On 7.175 MHz, Radio Eritrea continues to be jammed daily with white noise transmissions attributed to Radio Ethiopia. IARUMS reported jamming of Radio Taiwan on 7.200 MHz, apparently originating in China and audible "every evening" in Europe. The Chinese "foghorn" over-the-horizon radar (OTH-R) continues to intrude on 20 meters, with signals on 14.211 MHz "jumping to 14.290 and 14.302 MHz." The Russian "Konteyner RLS" OTH-R remains a problem on 14.280 MHz. Read more. --ARRL Letter

CHINA LAUNCHES SATELLITES CARRYING AMATEUR RADIO TRANSPONDERS

CAMSAT has announced that two Amateur Radio payloads piggybacked on the optical remote-sensing microsatellites OVS-1A and OVS-1B were launched on June 15 from China's Jiuquan Satellite Launch Center. The primary launch mission is a hard X-ray modulation telescope satellite. The Amateur Radio payloads are designated CAS-4A and CAS-4B.

CAS-4A (call sign BJ1SK) carries an inverting U/V linear transponder, with a CW telemetry beacon at 145.888 MHz and 4.8 kb GMSK telemetry at 145.835 MHz. The transponder uplink is 435.220 MHz; the downlink is 145.870 MHz.

CAS-4B (call sign: BJ1SL) carries an essentially identical inverting U/V linear transponder, with a CW telemetry beacon at 145.910 MHz and GMSK telemetry at 145.890 MHz. The transponder uplink is 435.280 MHz; the downlink is 145.925 MHz.

"The frequencies of transponders are center frequencies, and uplinks/downlinks are both 20 kHz wide," CAMSAT's Alan Kung, BA1DU, explained. "The transponders are linear and good for SSB/CW operation."

Both CAS-4A and CAS-4B are equipped with quarter-wave monopole antennas for VHF and UHF. -- Thanks to Alan Kung, BA1DU/CAMSAT

INSPIRE-2 GROUND CONTROLLERS TURN TO AMATEUR RADIO TO RESCUE STALLED SATELLITE

Amateur Radio came to the rescue of the INSPIRE-2 CubeSat, built by the University of Sydney in collaboration with the Australian National University, and the University of New South Wales. According to the Wireless Institute of Australia (WIA), the CubeSat is designed to "explore the lower thermosphere, for re-entry research and in-orbit demonstration of technologies and miniaturized sensors" and is part of the QB-50 constellation of research CubeSats. Its operational frequency was coordinated by IARU to be in the satellite segment of the 70-centimeter Amateur Radio band.

After its deployment from the International Space Station (ISS) in late May, INSPIRE-2 showed no signs of life. The engineering group on the ground tested various scenarios on the INSPIRE-2 engineering model, concluding that the spacecraft's battery had depleted due to the CubeSat's extended stay on board the ISS prior to orbit. The ground controllers theorized that the satellite was trapped in an endless loop, but was still listening while trying to deploy its antenna, making reception of signals from Earth difficult.

The ground team devised a set of commands that, if received, would instruct the satellite to wait until its battery was charged before attempting to deploy its antenna. UNSW and ANU ground stations transmitted the recovery command without success, however, eventually deciding that more power was needed to overcome the lack of receiver sensitivity caused by the still-stowed antenna.

PI9CAM at the CAMRAS Foundation Dwingeloo Astronomic Observatory in Leiden, the Netherlands, responded to a call to the moonbounce community and offered to transmit a high-power signal using a 25-meter dish that's normally used for radio astronomy but also for EME.

Success of the approach was confirmed on June 11, and Dimitrios Tsifakis, VK1SV, who is part of the ANU team, was subsequently able to send commands to the satellite from the ANU Earth station for the first time. The satellite had come back to life!

WIA called it, "a wonderful example of successful collaboration between radio amateurs and the academic community." -- Thanks to WIA News.

QUICKER-TURNAROUND DIGITAL MODES IN EXPERIMENTAL STAGE FOR WSJT-X SUITE

Recent sporadic-E propagation openings on 6 meters and elsewhere have demonstrated the need for a digital mode with a faster turnaround time than what is offered by currently available software versions. A recent WSJT-X reflector discussion allowed that, while the slow 'JT modes like JT65 and JT9 have excellent sensitivity, their nearly 1-minute-long transmissions may not permit completion of a contact when evanescent signals pop up and quickly disappear under certain E-skip conditions.

MSK144 and the fast JT9 submodes allow much shorter transmissions, but they do not offer the multi-decode capability that JT65 users find so effective. Iain MacDonnell, N6ML, was among those remarking that, while the use of JT65 for working E-skip on 6 meters has really taken off, it's too slow to be practical for openings that only last a couple of minutes or so.

Joe Dzekevich, K1YOW, of Harvard, Massachusetts, sounded a similar theme. "A few days ago we had a great opening on 6 meters, especially here in the New England area, given our latitude," he noted. "I often find that often one cannot complete a QSO due to QSB and the ins and outs of Es. Yet, being a propagation buff, I love the idea that I can leave the rig on 50.276 in JT65 mode and then see who I hear throughout the day via PSK Reporter."

WSJT-X developer Joe Taylor, K1JT, weighed in to express his appreciation to all who shared their ideas and experiences using JT9 and JT65 modes during recent multi-hop E-skip openings on 6 meters.

"We are very much aware that a mode with most of the excellent characteristics of JT65, but

with faster turnaround time, would be a big winner in such situations," Taylor commented on behalf of the WSJT-X development team. "We are experimenting with several such possibilities. Tentative goals include 15-second T/R sequences, sensitivity around S/N = -20 dB, occupied bandwidth less than that of JT65, and capability to decode as many as 10 or 20 signals in a 2-kHz bandwidth."

But, Taylor added, developing new modes takes a lot of time, and results are not guaranteed. "We will report significant progress if and when available," he pledged. -- Thanks to Joe

HUNDREDS OF STATIONS REPORT HEARING WSPR SIGNAL FROM CANADA C3 EXPEDITION

Hundreds of Amateur Radio stations have reported receiving the WSPR signal being transmitted by CG3EXP on 20, 30, and 40 meters from the Canada C3 expedition to track the vessel Polar Prince as it transits Canada from east to west via the Northwest Passage in 150 days to celebrate Canada's 150th anniversary. This marks the first time that WSPR has been used to track a vessel. The expedition, which started on June 1, will continue until October 28, ending in Victoria, British Columbia. It's currently on the third of 15 planned legs of its journey, en route from Baie-Comeau, Quebec, to Charlottetown, Prince Edward Island. The 220-foot-long Polar Prince, a former Canadian Coast Guard vessel, is a research icebreaker.

CG3EXP has been transmitting on 20, 30, and 40 meters at 20-minute intervals since leaving Toronto on June 1. The CG3EXP WSPR HF end-fed antenna, on the ship's port side, slopes up to the mid mast at 62° -- some 46 feet of insulated wire, approximately 0.5 λ on 30 meters. A live tracking link, generated by QRP Labs, the supplier of the transmitting hardware, is being hosted by Jeff Milne, VE3EFF.

Stations with an HF receiver and the free WSPR application can receive the CG3EXP signals directly from the ship on 40, 30, or 20 meters, and the location can be gated to the internet and tracked on WSPRnet.

The project is seeking radio amateurs who are in close radio proximity to the route to receive the CG3EXP signal using the WSPR application on their existing equipment and uploading the data to the internet. This can be entirely automated via the WSPR application.

For more information, contact Barrie Crampton, VE3BSB. -- Thanks to Radio Amateurs of Canada

TECHNICAL

Ultra Portable Plug And Play PSK/RTTY/CW Digital Modem - So, when you want to go QRP or portable with your gear, and you want to eliminate your laptop from your Go-Kit, you may want to check one of these out. 2 AA batteries lasts more than a solid weekend. Plug and play. https://www.youtube.com/watch?v=65qOu9xWeG0

Radio Amateur Hears Cassini Spacecraft: Paul Marsh, M0EYT, has confirmed reception of the Cassini spacecraft, now in orbit around Saturn. "I copied Cassini on 8,429.247035 MHz during its last radio occultation experiment, where the TX is carrier-only mode on S, X, and Ka bands," Marsh told ARRL. "I was using my 2.4-meter antenna at the time." Marsh said his homebrew downconverter is locked to a 10-MHz station reference, and SDR processing is done with the RF Space kit. Launched in 1997, Cassini will crash into Saturn in early September. The research spacecraft, which carried the European Space Agency's Huygens probe now on the surface of Saturn's moon Titan, currently is executing about 2 dozen dives through Saturn's rings. The Huygens probe separated from the orbiter in 2004 and transmitted data to Earth using the orbiter as a relay. This was the first successful landing in the outer solar system. Marsh is heavily involved with satellite tracking and monitoring activities and is a contributor to the Amateur Deep Space Network (Amateur-DSN) Yahoo! Group.

The 2017 Hamvention TAPR forum included presentations referenced in the three paragraphs below. See the whole forum in the HamRadioNow video: https://www.youtube.com/watch?v=FrVDL_-HOds

> This is the TAPR Forum at the 2017 Dayton Hamvention.
> - Studio introduction by Gary KN4AQ
> - **9:20** Opening remarks by moderator Scotty Cowling WA2DFI and TAPR President Steve Bible N7HPR
> - **17:25** "Low Cost, Open Source Spectrum Monitoring" by Michael Ossmann AD0NR and Dominic Spill.
> - **40:39** "Advanced SDR Algorithms for Noise Blanking and Noise Reduction" by Warren Pratt NR0V.
> - **1:07:08** "Introduction to RTL-SDR: Ultra cheap software defined radio" by Carl Laufer. (Carl also gave the Banquet talk - not on HamRadioNow... sorry), and came to the HRN/PhasingLine booth for an interview that WILL be on the show soon.

"Open Source Spectrum Monitoring," was presented by Michael, AD0NR, and Dominic Spill. By using open source SDR hardware on a pre-programmed tuning-and-capture schedule instead of being commanded by the attached computer, approximately 6 GHz of spectrum can be captured and displayed in less than 750 milliseconds - a sweep rate of 8 GHz per second. Combined with a waterfall display, a much better picture of spectrum utilization is possible. Some other interesting tricks and tools are described which may provide additional ways to visualize various spectra, and with multiple antennas, to potentially identify and direction find signals in near real time.

"**SDR Noise Reduction Techniques"** by Warren, NR0V describes how increasing computing power combined with new algorithms can lead to better noise blanking, and improved signal to noise ratios. Many of the concepts are already realized in the WDSP library, part of the High Performance SDR (HPSDR) project. A method called "Spectral Noise Blanking" uses a prediction algorithm that classifies impulse noise as errors in the original signal. The prediction algorithm can provide correction to the original signal, effectively removing the impulse noise. Dramatic improvements can be realized. NR0V's presentation at SDR Academy in Friedrichshafen 2016 is here: **https://www.youtube.com/watch?v=OuDcMZv7NxY&t=1s**

"Introduction to RTL-SDR, Ultra Cheap Software Defined Radio" was presented by Carl Laufer, the person behind the RTL-SDR website. His talk, aimed for newcomers to the topic area, focused on version three of the USB RTL-SDR dongle, which improves the performance and increases the utility over previous versions. Of particular interest to contesters in the never-ending quest to eliminate RFI is the description of Tim Havens' DRIVEBY RFI finding techniques, and Disney's (yes, that Disney) EM Sense project, which uses a database to match EMI signal signatures to electronic devices. Carl Laufer's Hamvention interview with Ham Radio Now: **https://www.hamradionow.tv/episodes/2017/6/10/hrn-328-carl-laufers-rtl-sdr-from-the-2017-hamvention**

SHORTS

Extreme Remote Amateur Satellite Tracker VHF/UHF Satellites - This is the set up for Field Day this year and I wanted everyone to see it. Remote operated, remote view with a wireless camera, and powered by 2 Icom IC-7000 radios. K0WOF https://www.youtube.com/watch?v=kpgV8P6ocLE

The FCC and OSHA have partnered to publish a document entitled "Communication Tower Best Practices. - " This document is not a how-to, nor prescriptive on practical tower construction or maintenance -- it's more of a description of the practices and procedures the

various entities involved in commercial towers should use for management, coordination, and documentation of work practices

In the most recent June ARRL VHF Contest many stations were reporting the use of the MSK144 digital mode for making QSOs where a SSB or CW path did not appear to exist. - MSK144 can be sent and received using the WSJT-X program by Joe Taylor, K1JT. MSK144 uses exchange sequences as fast a five seconds to take advantage of propagation that might occur due to meteor scatter.

Attention EZNEC users! If you export data from EZNEC into other programs using files ending in the ".s1p" extension, you'll want to update to at least the 6.0.13 version. The newer version corrects an issue in the file's header field. EZNEC is a popular Microsoft Windows based application for antenna modeling. (Ward, N0AX)

In this YouTube video, R4WBF can be seen working a bunch of stations in the CW WPX contest at a CW speed of something over 40 words per minute. As contest videos go, this one would be pretty standard, except that then you realize that R4WBF is just 9 years old. (Ward, N0AX) https://www.youtube.com/watch?v=dn2brVpfcWw

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 CREDITED AND EDITED FOR THIS NEWSLETTER. EMAIL TO mailto:WebMaster@w9rca.org. Check our web site at http://www.w9rca.org/