RCA AMATEUR RADIO CLUB

JULY, 2011 **MONTHLY NEWSLETTER** INDIANAPOLIS, IN

THE NEXT MEETING OF THE **RCA AMATEUR RADIO CLUB** WILL BE
TUESDAY, JULY 12th, 6:30 PM AT G.T. SOUTH'S,
5711 E. 71st STREET, INDIANAPOLIS, IN

RCA ARC NEWS

SUMMARY OF THE JUNE MEETING -- We discussed the future of the repeater. W9IMS was using the repeater during the Indy 500 for communication between their two stations, one located in Acton and the other one in Fishers. We paid the electric bill for April and May. We are living on borrowed time as Bob Koss has told us we will need to move the repeater. We have looked at the Home School, now owned by IVY Tech as a new site for the repeater. There are other options, such as the west side site, but we have to follow up on them. Feelings were mixed on continuing the operation of the repeater. We don't here that many users and listening to other repeater in the area we don't see that much activity other than the 146.70 repeater. We are not sure there is a need for another repeater in Indianapolis.

K9RU reported on the W9IMS operation which ended up as a big success with over 4000 QSO's. This was a major effort to get everything setup after Mike Koss's death.

N9KZJ report that the WW2IND, ship event went well despite poor band conditions.
Field Day was discussed and there is a planning the Saturday a week before FD to work out the details. Plans are similar to last year, location is the Marion County Fairgrounds. Setup starts at 9:30 AM.

Plans for the Indy Hamfest include loading the "junk" located in K9RU's basement and AF9A's garage. AF9A thinks he can get the stuff at his place in one pickup truck load. K9RU thinks there is 2 or 3 loads of stuff at his place and will need help moving it. Volunteers will be welcomed.

WA4OTD, N9KZJ, W9ZB and K9RU operated in the June ARRL VHF contest, condition were great both Saturday and Sunday.

FIELD DAY 2011

This was another great field day! The surprise was that Chuck Crist, W9IH, had arranged for a crane to be used for the SSB and GOTA station antennas. This allowed us to have our 20-15-10m antennas at 90 feet. The CW station operated from an RV with antennas at 50 feet and the VHF station had a beam at 25 feet. We had real good conditions on 6 meters working over 300 QSOs but on the down side thunder storms made 80 meters unusable. We also had some noise or signal that was about S-5, that did give some problems on 20 meters and a thunder storm came through overnight that took us off the air for an hour and a half. Probably our best effort to date, we made over 2800 QSOs and had a great time and good food! Check out the pictures on: www.w9rca.org --K9RU

HAMFESTS, OPERATING EVENTS & TESTING

July 9 Indy Hamfest, Camp Sertoma, Indianapolis http://www.indyhamfest.com

July 11	VE Testing, Salvation Army EDS Training Center, 4020 Georgetown Rd, Indy Contact : Jim Rinehart, k9ru@arrl.net
Aug 6	Broad Ripple Hamfest & IRC Annual Picnic
Aug 27	Indy Radio Club Hilltop Contest
Aug 27	Ripley County 4th annual indoor hamfest
Sep 24	Hancock County Tailgate Hamfest

All dates, unless otherwise stated, are UTC. See the ARRL Contest Branch page, http://www.arrl.org/contest-update-issues, the WA7BNM Contest Calendar, http://www.hornucopia.com/contestcal/ and the ARRL Special Event Stations page, http://www.arrl.org/special-event-stations for more info. See ARRL training page for test sessions: http://www.arrl.org/exam_sessions/search
http://indyhams.org/events/ for Indiana events and public service opportunities.

TEXAS HAMS INJURED AT FIELD DAY SITE

On the morning of June 26, two Texas radio amateurs -- Danny Caldwell, AD5IP, of Kamay, and Mike Byrne, AE5CO, of Iowa Park -- received electric shocks as they took down an inverted V antenna. According to Wichita County Emergency Coordinator Larry Ballard, KE5KNV, the two were taking part in Field Day as part of the Wichita Amateur Radio Society (WARS).

"The Wichita Amateur Radio Society decided to terminate the participation in the exercise at 10 AM on Sunday, due to extreme heat and gusty wind conditions," Ballard told the ARRL. "Danny and Mike were injured while lowering the center pole of the inverted V dipole antenna to the ground. They were knocked to the ground when a guy wire, or the antenna lead-in, was hit with very high wind gust that blew it into a high [power] line wire." According to reports from witnesses, winds were gusting up to 40 miles per hour.

Ballard said 911 was called immediately and a rescue van arrived in a matter of minutes. The Fire Rescue Team determined that the two men were stable and they were transported to United Regional Hospital in Wichita Falls. Caldwell received CPR at the scene and was air lifted to Parkland Hospital in Dallas. Byrne was transported to Parkland later by ambulance.

"This was the second year that the Wichita Amateur Radio Society had set up at Oscar Park in the City of Iowa Park for Field Day event," Ballard explained. "The antennas were located in the same location as the prior year, using the same safety practice of locating the antennas a safe distance from power lines and structures. The inverted V dipole antenna had yellow caution tape, marking guy wires and antenna end locations."

Ballard said that Byrne was released from the hospital on Monday, June 27 and was resting at home. Caldwell, who suffered more serious injuries, was released a day later. –ARRL Letter

HOMEBREW CHALLENGE REMINDER

The ARRL has sponsored two Homebrew Challenges in the past, designed to test our members' design and construction skills by making useful amateur gear at low cost -- and sharing their results with our members. Our first ARRL Homebrew Challenge, announced in *QST* for August 2006, required the construction of a 40 meter, 5 W voice and CW transceiver built for less than $50 of new parts. The Second Homebrew Challenge, announced in February 2009, resulted in a number of creative designs of low cost 50 W linear amplifiers to follow the transceiver -- two for about $30, as well as a multiband amplifier with many features for somewhat more.

For 2011, the ARRL has issued a challenge to build a transceiver in celebration of the (slow) return of sunspots. This challenge will be in two parts and hams can enter either or both options:

Option 1: A single band 25 W SSB and CW transceiver for 10 or 6 meters, with a prize of $200.
Option 2: A 25 W SSB and CW transceiver that can be switched between 10 and 6 meters, using one or two switches, with a prize of $300.

Instead of challenging entrants to make the transceiver at the lowest cost, the ARRL will instead challenge builders to provide the highest quality, best performance and most features within the cost target of $150 for Option 1 and $200 for Option 2. In addition to the cash prize, the winners of these challenges will have articles describing their designs in *QST* and will receive the usual page rate for the published articles. Additional entrants who meet the minimum requirements -- and have interesting design features -- may also be considered for *QST* or ARRL Web articles.

Entries for either option must be received at ARRL Headquarters **no later than November 1, 2011**. To be considered, each entrant must submit a working transceiver that is suitable for testing in the ARRL Lab and for on-the-air judging by the ARRL staff judges. Documentation required includes a priced parts list indicating the source and purchase price of each part, an article draft including a design description, construction hints, alignment instruction, block diagrams and schematic diagrams. Photographs may be provided, but final magazine photos will be taken by ARRL staff.

For more information, including specific requirements and evaluation criteria, please visit the ARRL Homebrew Challenge web page. –ARRL Letter

ARRL, NATIONAL WEATHER SERVICE UPDATE *MEMORANDUM OF UNDERSTANDING*

The National Weather Service (NWS) has updated its *Memorandum of Understanding* (*MoU*) with the ARRL (*scroll below to access a link to the document*). The updated *MoU* serves "as a framework within which volunteers of the ARRL may coordinate their services, facilities and equipment with the NWS in support of nationwide, state and local early weather warning and emergency communications function." In May, ARRL President Kay Craigie, N3KN, signed on behalf of the ARRL, and in June, NWS Office of Climate, Water and Weather Services' Director Dave Caldwell signed on behalf of the NWS. The ARRL and the NWS have had a formal working arrangement since 1986.

The NWS, in the *MoU*, acknowledges that Amateur Radio operators can be of valuable assistance in early severe weather warning and tornado spotting. Through its SKYWARN program, the NWS recognizes that Amateur Radio operators have assisted as communicators and weather spotters since the program began in the late 1960s. "In areas where tornadoes and other severe weather have been known to threaten, the NWS recruits volunteers and trains them in proper weather spotting procedures," the *MoU* states. "These dedicated citizens help keep their local community safe by conveying severe weather reports to their local NWS forecast office. SKYWARN spotters are integral to the success of our nation's severe weather warning system."

"All the National Weather Service personnel I've met throughout the country have told me how much they respect and depend on the Amateur Radio SKYWARN volunteers in their forecast areas," Craigie said. "This year's weather disasters underscore the importance of amateurs becoming trained severe weather spotters and participating in SKYWARN. It's a pleasure for me to work with the National Weather Service, both as an ARRL official and as a local SKYWARN volunteer."

Through the *MoU*, the ARRL will encourage its Field Organization, including ARES®, to "contact and cooperate with National Weather Service Warning Coordination Meteorologists for the purpose of establishing organized SKYWARN networks with radio amateurs serving as communicators and

spotters." The ARRL will also encourage its Section management teams "to provide specialized communications and observation support on an as-needed basis for NWS offices in other weather emergencies, such as hurricanes, snow and heavy rain storms, and other severe weather situations." In turn, the NWS will work with ARRL Section ARES® volunteers to establish SKYWARN networks, and/or other weather emergency and alert systems.

"The relationship between the National Weather Service and the ARRL has been a model partnership for many years," said ARRL Emergency Preparedness Manager Mike Corey, W5MPC. "The renewal of this *MoU* emphasizes the value of Amateur Radio to the NWS mission." –ARRL Letter

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GETTING READY FOR ARISSAT-1/RADIOSKAF-V OPERATION

Here are some reminders to help you get your station ready forARISSat-1/RadioSkaf-V operation. The deployment is sketchy, at best, time wise. With the uncertainty of the battery problem, until the Russians let us know that the battery is replaced (or charged) and ready to go out the door, all we can be do is be patient!

Your 2-meter FM radio or HT will work well to receive the FM voice messages and SSTV on the145.950 MHz downlink. You will need a SSB-capable receiver to copy the BPSK telemetry beacon, the CW beacons, and the linear transponder passband.

Read about the details ...

145.950 MHz FM Downlink:

FM transmissions will cycle between a voice ID as RS01S, select tele- metry values, 24 international
greeting messages in 15 languages and SSTV images. One of the messages will be a conversation
between Yuri Gagarin and ground control.

435 MHz - 145 MHz Linear Transponder:

The linear transponder will operate in Mode U/V (70 cm Up, 2m Down).
It is an 16 KHz wide inverting passband and the convention will be to TX LSB on the 435 MHz
uplink and RX USB on the 145 MHz downlink. This mode is designed to work with low power
transmitters and omni antenna.

145.919 MHz/145.939 MHz CW Beacon:

The CW transmissions will be callsign ID RS01S, select telemetry, and callsigns of people actively
involved with the ARISS program.

145.920 MHz SSB BPSK-1000 Telemetry:

The BPSK transmissions will feature a new 1kBPSK protocol developed by Phil Karn, KA9Q to be readable in low signal level conditions. The BPSK data will transmit satellite telemetry.

The ARISSat-1/RadioSkaf-V BPSK-1000 downlink is transmitted in SSB mode on 145.920 MHz. When the CW2 beacon on 145.919 MHz is active this indicates that the BPSK-1000
format is being transmitted. If the CW1 beacon on 145.939 MHz is active this indicates the backup of BPSK-400 format is being transmitted.

Transmitting at 100 mW, both BPSK rates include Forward Error Correction (FEC) and it is expected that modest quarter-wave antennas with low-loss coaxial cable will provide sufficient signal strength for decoding and display by the ARISSatTLM software.

Download the Windows ARISSatTLM free ground station soundcard demodulator and display software: http://www.arissattlm.org/download/ARISSatTLM_050_Setup.exe

Download the Mac ARISSatTLM software: http://www.arissattlm.org/download/ARISSATTLM.zip

The ARISSatTLM software user guide is available: http://tinyurl.com/42uhtyf (amsat.org)

Get your color ARISSat-1/RadioSkaf-V Frequency Guide: http://tinyurl.com/4t497t2 (amsat.org)

ARISSat-1/RadioSkaf-V Presentation Slides (~1MB) http://tinyurl.com/4n4pzkm (amsat.org) -- AMSAT NewsService

POWER COMPANIES TO EXPERIMENT WITH NOT HOLDING POWERLINES TO 60 HZ

If you are a United States radio amateur that depends on a power line synchronized clock for logging and other station operations, you might want to look toward buying a stand alone unit that does not rely on the power at your outlet being precisely 60 hertz. This is because of an upcoming yearlong experiment with the nations electric grid could un-synchronize clocks that use synchronous motors to display the time.

Since 1930, electric clocks have kept time based on the rate of the frequency of the A-C electrical current that powers them. If the frequency changes from its usual 60 hertz rate, clocks run a little fast or slow. Power companies have long taken steps to keep the frequency as close to 60 hertz as is possible but the group that oversees the U.S. power grid, the Federal Energy Regulatory Commission, is proposing an experiment that would allow more frequency variation than it does now without corrections being made.

The North American Electric Reliability Corporation runs the nation's interlocking web of transmission lines and power plants. At a June 14th company presentation it spelled out the potential effects of the change. It said that synchronous motor driven clocks or any timing device that uses the 60 Hertz power line as a time base to lock to can be off by a significant amount. On the East Coast clocks could run as much as 20 minutes fast over the year. Clocks West Coast are only likely to be off by 8 minutes during the 12 month long test.

The test is tentatively set to start in mid July. More on this upcoming experiment with the time of day can be found on line at tinyurl.com/3h6lfcn and tinyurl.com/3uzut3g along with other on-line news websites. (Various)

AVID HOMEBREWER!

Take a look at these You Tube videos made by Jeri Ellsworth. Jeri has a series of at least seven videos showing her progress at building a software defined radio. In the last few, she has put the demodulation and filtering in an FPGA. SDR without a computer!
http://www.youtube.com/watch?v=YFVgq3ZB0Mo&feature=related by JeriEllsworthjabber

SHORTS

SPACE WEATHER PREDICTION CENTER TO CONTINUE BROADCASTS ON WWV AND WWVH -- In April 2011, the Space Weather Prediction Center (SWPC) informed the public that as of September 6, 2011, it would no longer broadcast its geophysical alert message on WWV and WWVH. The ARRL has now learned that the SWPC has changed its mind and will keep broadcasting these messages that inform listeners of the solar flux, the mid-latitude A and K indices and space weather storms, both current and predicted. Due to listener feedback, the SWPC is considering updating the broadcast; in addition to providing the current daily solar flux at 2800 MHz, the SWPC is evaluating adding more frequent observations at 2695 MHz. According to the SWPC website, other improvements to the message content will also be evaluated. ==ARRL Letter

ARRL HOSTS RFI WORKSHOP FOR UTILITY COMPANIES -- On June 16-17, the ARRL hosted an RFI workshop for utility company employees. Led by Mike Martin, K3RFI, owner of RFI Services, the workshop was geared for those technicians, linemen and engineers who are responsible for solving RFI and TVI problems. Four participants from around the country made their way to Newington to take part in classroom and field instruction to learn how to best locate and solve these interference problems. Read more here.

HOLLYWOOD TAKES LIBERTIES WITH AMATEUR RADIO IN NEW COMEDY -- In *Mr Popper's Penguins* -- one of the newest films out this summer -- young Tommy Popper communicates with his father using what many reviews are calling ham radio. But while the Poppers are using a radio

tuned to 21.2460 (15 meters SSB), this frequency was not available to US hams as a phone frequency in the 1976-78 time period, as shown in the movie. Neither do the Poppers use call signs. Instead, they use handles: Young Tommy is "Tippy Toe" and Mr Popper is "Bald Eagle." Mr Popper -- who, in one transmission, is in Marrakesh -- calls his son in New York City. There is no interference or static on the frequency; it seems they are the only ones on the band. While it is exciting to see Amateur Radio on the big screen, movies such as *Frequency* and *Contact*, and television shows such as *Jericho* and *The Simpsons* have presented Amateur Radio more accurately. –ARRL Letter

60TH ANNIVERSARY OF THE NOVICE LICENSE -- This was the entry license level for amateur radio for many years. It started as a one year, not renewable license. At first the Novice sub-band was on 80M, for a short time 11 meters. 40 meters, 15 meters were added along with 2 meter phone, later 10 meters was added with phone, 2 meter was lost but 222 MHZ and 1.2 GHz added. In 1968 it was extended to 2 years and later renewable. Starting in 2000, no more new licenses were issued; though holders could renew. July 1, 1951 is when it started. That was a Sunday. The next day July 2, 1951, was when the first novice exams were given, at FCC offices. It took about 3 weeks for those licenses to arrive. If you are interested in the Novice history check out the column in QCWA Journal or to be part of the history share your novice story or post your picture on the Novice Historical Society's website, www.novicehistory.org.

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