



**INDIAN  
RIVER ARC**

P.O. BOX 237285, COCOA  
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VOLUME XLIII, NUMBER 8

# SPURIOUS EMISSIONS

AUGUST, 2017

## CLUB MINUTES

### OFFICERS

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**DAVID LERRET**  
KU0R

#### VICE-PRESIDENT

**VIRON PAYNE**  
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KK4WDD

#### DIRECTOR

**LARRY JASMANN**  
WD5CKN

#### NEWSLETTER EDITOR

**ARMANDO DELGADO**  
KN4JN

The meeting began at 7:30 PM with the pledge of allegiance.

President, Dave KU0R, was out of town, so Vice President, Viron N4VEP, ran the meeting.

Following the Pledge of Allegiance, visitor, Ron Ziegler W1RZA, was recognized. No ailing members were noted.

The July meeting minutes were published in the July newsletter. A motion was made to approve the July meeting minutes, a second was heard and the meeting minutes were approved by acclamation.

Treasurer, Larry KK4WDD, reported that we have \$1277.20 in the equipment fund and \$820.46 in the checking account. A motion was made to accept the Treasurer's report for audit, a second was heard, and the Treasurer's report was approved by acclamation.

Vice President, Viron N4VEP, reported that he is still working the after-school program.

Technical Committee: Dave K4UZM, reported that everything is working in all repeaters except the Echolink in the 145.37 MHz repeater, which is not accepting requests for access. Steve will look into the problem.

Les W9BCH, our EC, reported that the recent SET went well but participation was light. All the SET objectives were met, Central Net was run out of Dave K4UZM's house, and the NBEMS traffic went well. All the other organizations participated. Dave made a comment on

a new feature for emergency conditions that makes an automated announcement in the repeater every so often when an exercise is in progress.

Reporting for the Red Cross, Steve N4UTQ, reported nothing new from the Red Cross, other than routine activities.

Election of officers: Viron announced that this year again is election year and asked for volunteers to fill the open officer positions. Dave K4UZM volunteered to run for Director at Large, and a poll of officers present revealed that all current officers are willing to serve another term, except for the President, Dave KU0R, who was not present to give his wish.

One of our scholarship recipients, John Light, KM4ICZ, mailed the club a thank you letter which Viron read to the attending members. It was a nice response from a local youngster attending FIT. JD W4GNC requested that letters from scholarship award recipients be read to the membership, when they occur.

Dave K4UZM brought to the meeting a TV dish antenna and explained what it was for. Turns out it's a sneaky way to set up an outside 2-meter antenna that looks like a satellite TV dish antenna, which are universally accepted by HOAs. The dish surface is cut with a slit in the length of a 2m antenna that provides a vertically polarized radiation. His tests on the prototype showed good SWR's in the critical frequencies.

Del AK4EY reported that we will have a

special event station at the Coast Guard Station in Cape Canaveral this Saturday, August 5, to celebrate the 227<sup>th</sup> anniversary of the Coast Guard. We'll use call sign KC2UFO and begin operating around 10 AM, although the official Coast Guard event starts at noon. The local Coast Guard ships will be open for tours and there will be food... but no beer.

The 50-50 drawing winning ticket was found to be in the hands of Dwaine KM4HCN.

The presentation for the evening covered the latest technology being implemented by SpaceX and how it is shaping up the Space Launch industry.

Ernie K4RBD, himself a pioneer in the space launch community, commented about a movie made in 1959, *The Angry Red Planet*, in which they played an Atlas rocket launch backwards to achieve the effect of a rocket landing upright, a fiction at the time, that is today a reality.

A motion to adjourn occurred at 8:40 PM and was moved and approved.

Respectfully submitted

Steve N4UTQ Secretary

## HAPPENINGS

"APRS" is the topic of the July 6 episode of the "[ARRL The Doctor is In](#)" podcast.

The resurrected 25-MHz signal of time and frequency standard station **WWV** is now emanating from a circularly polarized turnstile antenna. WWV had used a vertically polarized antenna on 25 MHz in the 1970s. Silent since 1977, the 25-MHz signal returned to the air

on an "experimental basis" in April 2014, and it's been transmitting ever since — initially on a broadband discone until August 2015, when it switched back to a vertical, which it used until the July 7 switch to circular polarization. Read more at [www.arrl.org/news/wwv-25-mhz-signal-swapped-to-circular-polarization](http://www.arrl.org/news/wwv-25-mhz-signal-swapped-to-circular-polarization)

The five CubeSats making up the **BIRDS-1** (Joint Global Multi-

Nation Birds) constellation were deployed into orbit from the International Space Station (ISS) on July 7. Each carries an Amateur Radio payload but no transponders. Radio amateurs have been invited to join the network to assist in the data downlink and reconstruction of patchy satellite data into meaningful data. Orbit information and the operational plan of each satellite are to be made available to the

Amateur Radio community, along with software to decode the satellite data. According to the IARU, the satellites have CW, 1.2k bps AFSK FM, audio FM, and 9.6k bps GMSK downlinks on a coordinated downlink frequency of 437.375 MHz. More details at [www.arrl.org/news/birds-1-cubesats-deployed-from-iss-carry-amateur-radio-payloads](http://www.arrl.org/news/birds-1-cubesats-deployed-from-iss-carry-amateur-radio-payloads)

## HAPPENINGS

A beta release of **WSJT-X**, version 1.8.0-rc1, includes a new FT8 mode, featuring a faster turnaround, and it's already showing up on the bands. FT8 offers "sensitivity down to -20 dB on the AWGN channel," and contacts 4 times faster than JT65 or JT9. An auto-sequencing feature offers the option to respond automatically to the first decoded reply to your CQ. More information at [www.arri.org/news/new-ft8-mode-included-in-wsjt-x-beta-release](http://www.arri.org/news/new-ft8-mode-included-in-wsjt-x-beta-release).

The **Amateur Radio Parity Act** was introduced in the US Senate on July 12, marking another step forward for this landmark legislation. Senators Roger Wicker (R-MS) and Richard Blumenthal (D-CT) are the Senate sponsors. The measure will, for the first time, guarantee all radio amateurs living in deed-restricted communities governed by a homeowner's association (HOA) or subject to any private land use regulations, the right to erect and maintain effective outdoor antennas at their homes. The Senate bill, S. 1534, is identical

to H.R. 555, which passed the US House of Representatives in January.

The Solar Eclipse QSO Party runs from 1400 - 2200 UTC on August 21. Exchange a signal report and your six-character grid locator on 160 - 6 meters (not on 60, 30, 17, and 12 meters, please). You can work stations again after 10 minutes to make as many observations" (contacts) as possible. CW, RTTY, and PSK31 are preferred because automated receiving networks will record the contacts, but contacts on any

digital mode and phone are fine too. See [www.hamsci.org/seqp](http://www.hamsci.org/seqp) for scoring information, bonus points, operating guidelines, and complete rules.

The **RAC 150 Award**, in celebration of Canada's sesquicentennial, starting with the Radio Amateurs of Canada (RAC) Canada Day Contest on July 1, will have the 14 special RAC-suffix call signs activated by volunteers throughout the second half of 2017. Contacts with stations using RAC's 14 club station call signs also count toward other RAC awards, such as the worked All RAC Award. RAC stations will be on the air until the end of the year.

## ON THE AIR

**Aug 11-Aug 13, 1400Z-2359Z, KOPRT**, Haswell, CO. Deep Space Exploration Society. 50.160 14.253 7.238. QSL. Deep Space Exploration Society, 4164 Austin Bluffs Parkway #562, Colorado Springs, CO 80918.

**Aug 12, 1600Z-2300Z, NI6IW**, San Diego, CA. USS Midway (CV-41) Museum Ship. 14.320 7.250 PSK31 on 14.070 D-STAR on REF001C. QSL. USS Midway cv-41 COMEDTRA, 910 N Harbor Drive, San Diego, CA 92101.

**Jan 1-Dec 31, 0000Z-2359Z, OX90EDR**, Odense, DENMARK.

Experimenterende Danske Radioamatører. All bands, including WARC bands, all modes; on JT modes, OZ7D will be used. Participating call signs: OZ90EDR/OX90EDR/5P90EDR operating throughout 2017.

**2017 Eclipse Aug 17-Aug 21, 0500Z-0359Z, W9E**, Marion/Goreville, IL. Shawnee Amateur Radio Club and Union County Amateur Club. SSB: 14.240 7.180 3.900; CW: 80 40 20 meters; possible 160 meters depending on conditions; JT65, JT9 and PSK31 on regular frequencies.

QSL. W9E c/o Thomas Beebe, W9RY, 3540 Market Rd, Marion, IL 62959. [www.w9e.w9ry.com](http://www.w9e.w9ry.com)

**International Lighthouse Lightship Weekend Aug 19-Aug 20, 0000Z-0000Z, W2GSB**, West Babylon, NY. Great South Bay Amateur Radio Club. 14.240 7.240; satellite frequencies. QSL. GSBARC W2GSB, PO Box 1356, West Babylon, NY 11704. Fire Island Lighthouse [www.gsbarc.org](http://www.gsbarc.org)

SAMOA, 5W. Roly, ZL1BQD will be QRV as 5W0RR from

Apia from July 26 to August 15. Activity will be on the HF bands using mostly JT65 and possibly the new mode FT8. QSL to home call.

PRINCE EDWARD AND MARION ISLANDS, ZS8. David, ZS8Z is QRV from Marion Island, IOTA AF-021, until May 2018 and has been active on 20 meters using SSB between 1200 to 1300z. QSL via ZS1LS.

## The Luxemburg Effect by Armando Delgado, KN4JN

We all are familiar with radio propagation, the ionosphere layers and their effect on radio waves. We also know about radio waves interacting with each other in receivers causing cross modulation and intermodulation distortion. However, there is a different kind of cross modulation that occurs outside the radio receiver, out in the ionosphere. This particular phenomenon, called the Luxemburg effect, or Luxemburg-Gorky effect, for the locations where it was first detected, happens to AM transmissions under certain special

circumstances.

In 1933 some radio listeners in Eindhoven, The Netherlands, heard a Radio Luxemburg transmission superimposed on a transmission from a Swiss radio station in Beromunster on 652 kHz. Radio Luxembourg operated on 252 kHz, with a powerful 150 kw signal designed to provide coverage in England and northern Europe. Observers at the time realized that this cross modula-

tion phenomenon was not occurring in the receivers because multiple listeners experienced it using different radios and the stations in question were too far away for it to be due to front end overloading by a strong signal. The phenomenon was also noticed at about the same time in Gorky, Russia, involving stations west of Moscow and Radio Moscow. At the time some experts theorized that the effect was

due to an ionosphere propagation phenomenon, but could not provide an explanation. Later physicists proposed a more detailed theory. The current explanation is that the strong station's emissions disturb the ionosphere by increasing the electron activity in the medium. This interference changes the conductivity of the ionosphere at that location. As the signals from the weaker station pass over the site, they are intermittently absorbed or passed following the strong AM modulation causing an

## The Luxemburg Effect

amplitude modulation effect of the weak signal. This modulation effect in turn injects the strong signal station into the signal of the weaker station so that receivers beyond this point will hear the strong station in the weak signal transmission. The other criteria at play for the phenomenon to occur are that the two transmitters must be in a straight line with the receiving location and that the distance between the transmitters should be less than about 200 miles. Of course, the phenomenon is only associated with AM radio transmissions, generally after dark. Today not many people listen to distant AM stations at night, so the phenomenon may not be noticed as much; yet, as long as there are AM transmission there is room for the phenomenon.

Today, the Luxemburg Effect is used for radio propagation studies, particularly in the High Frequency Active Aurora Research Program's (HAARP) radio transmitters in the Arctic Circle to gauge the ionosphere's behavior under certain intense radio signals used to determine the frequency of electron collisions in the ionosphere and the fraction of energy lost by an electron during a single collision.



### Some comments on BEARS

I totally missed the mark last week, please accept my apology. What I overlooked was that many folks were totally unaware of what the Brevard Emergency Amateur Radio Service, BEARS, is all about.

BEARS is a consortium of the radio clubs here in Brevard county, with the exception of the Kennedy Space Center club. Brevard county emergency management requested that the amateur radio clubs form this organization so that when an emergency arises, the county can use BEARS as a central point of contact to dispatch our services. This is a good thing and we are not going to alter this

arrangement. BEARS is a 501(c)3 organization: they have an Employee Identification number and they have to register with the Florida Division of Corporations, just like every other radio club. They have a board of directors and offices of President, Vice President, Secretary and Treasurer. BEARS also own property. The odd thing about BEARS is they do not have any members to call their own. In principle BEARS is comprised of all the members of the constituent radio clubs that make up the BEARS organization. So if you belong to a radio club, you are already a BEARS member. This point bewilders many people. See [www.k4eoc.org](http://www.k4eoc.org) and spend some time reading Ozzie's long account of hurricane Andrew relief.

When I acquired my amateur license and joined the club in 1988, BEARS already owned a couple of donated vehicles that were outfitted to be mobile radio command posts; Comm1 and Comm2. Comm1 was a small converted shuttle bus and Comm2 was a pickup truck with a camper. Both of these vehicles were kept at Jim Bayles' W4BAL house and they were old and in constant need of repair and maintenance. Every Monday morning a group of guys would gather for coffee and donuts at Jim's house for discussion on the maintenance of these two vehicles, they spent a short period of actual or perceived work on these vehicles, and eventually ending up at the restaurant for lunch. One day Comm1 and Comm2 were gone and BEARS1 was there in their place. That was 15 years ago. A recent estimation puts the cost of maintaining BEARS1 around \$6000 per year. BEARS, as an organization, has survived mostly by donations and when strapped for cash, they dun the radio clubs.

Some club members have come to ask the question: Does BEARS really need that BEARS1 vehicle to perform the function that BEARS was created for? Remember BEARS was created to serve as an umbrella organization for all the radio clubs so that in time of emergency all the radio clubs would work together in a predetermined plan. Everybody agrees this is a good thing. But in 15 years, BEARS has not been able to figure out how to fund having the BEARS1 vehicle. The chances of that changing are slim. BEARS is the collection of the radio clubs and if the radio clubs were to direct BEARS to sell or otherwise dispose of the BEARS1 vehicle, that would have to happen. I would like to see BEARS be the organization that brings all the radio clubs together to work for the goals that make amateur radio a valuable asset serving Brevard county. Thank you very much for reading the very long email and don't forget the NBEMS practice at 4pm every Sunday!  
73  
Steve N4UTQ



### W1AW CW PRACTICE TRANSMISSIONS

7 PM EST Slow CW : 5-15  
WPM Mon, Wed, Fri

7 PM EST Fast CW: 35-10  
WPM Tue, Thu

FREQUENCIES:  
1.8025, 3.5815, 7.0475,  
14.0475, 18.0975, 21.0675,  
28.0675, 147.555



### Editor's Note:

Send comments about the Newsletter or to contribute information or articles to the Editor's email address:

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