



SPURIOUS EMISSIONS

INDIAN RIVER ARC

AUGUST, 2018

P.O. BOX 237285, COCOA FLORIDA 32923-7285

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KN4JN

CLUB MINUTES

The meeting began at 7:30 PM with members crammed in the south building hallway because the air conditioning in the north building was not working.

The meeting was led by Les W9BCH, our Emergency Coordinator, because President Dave KUOR, Vice President Viron N4VEP and Treasurer Larry KK4WDD were out of town.

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

The Treasurer's report showed \$1717.82 in checking and \$1777.55 in the Equipment Fund. A motion to approve the treasurer's report was heard, a second was heard and the treasurer's report was approved by acclamation.

Les, wearing his Emergency

Coordinator hat, reported they are holding a shelter exercise at the Melbourne fire department training ground, Saturday August 11th at 8:30 AM.

Steve N4UTQ reported for the Red Cross that our chapter of the Red Cross has been recognized for exceptional numbers of smoke detector deployments.

Following the Red Cross Report, Les presented Shaofu KN4GEI an IRARC good-guy pin for his efforts getting the clubhouse ready for Field Day, and his help working Field Day. Shaofu is sort of the general manager and caretaker of the club house.

Next Del AK4EY reported Coast Guard Day at the port is this Saturday and we would like to put on a special event station, and it will be hot. Last year we made about 80 contacts and we invited people to share their stories of Coast Guard or mili-

tary experiences. Saturday at noon there is a regular Coast Guard net on 14.237. We need some help from 10:30 AM for a few hours. We will sit next to the ice machine. There will be ships docked for tours. Shaofu volunteered to assist.

Following the business part of the meeting there was a humorous presentation about our levels of involvement in ham radio. That presentation followed by an interesting video on an infrared telescope at the South Pole station.

A motion to adjourn occurred at 8:02 PM and was moved and approved.

Respectfully Submitted

Steve N4UTQ

Secretary

HAPPENINGS

International Lighthouse Lightship Weekend (ILLW) — August 18-19 (always the third weekend in August). The 2-day event gets under way at 0001 UTC on August 18 and continues until 2400 UTC on August 19. Operation will be on all bands and modes, including satellites. Radio amateurs will activate lighthouses and lightships in dozens of countries during the

event, which came into being in 1998 as the Scottish Northern Lights Award, run by the Ayr Amateur Radio Group in Scotland.

["Contest Video Essay - A Look at Radiosport"](#) by K4ZA features many well-known contesters. It was originally produced with a grant from the Yasme Foundation, and has been placed on

YouTube with permission. Ward, NOAX, describes it this way: "With many perspectives and plenty of variety, it's kind of like mini-ham-radio-TED-talks." Thanks go to Yasme and Bob, N6TV, for making this available.

John, N8UR, has [developed a means to provide VHF+ spots to the Reverse Beacon Network](#) using RTL-SDR hardware, Raspberry Pi computers, and CW

Skimmer software. The key is in emulating a multi-band HPSDR using some additional software by N1GP running on the Raspberry Pi. He [describes his work in a slide presentation](#) (PDF). By having more VHF+ capable nodes able to spot existing beacons, more band openings may be able to be detected.

HAPPENINGS

Analog devices has released a [downloadable book](#), *Software Defined Radio for Engineers*, focusing on, well, SDRs. This 375 page tome covers theory as well as practice. Examples can be used with AD's ADALM-PLUTO SDR, and simulated with MATLAB.

The ARRL Contest Branch has announced that some contest award certificates now are [available for download](#) from the ARRL website in PDF and JPEG formats. Just enter the call sign.

Presentations from the 2018 Contest University are [now available](#), courtesy of Teri, K8MNJ, Icom America, and the CTU Professors.

2018 Hurricane Season: Some Nets to Know:

[Caribbean Emergency and Weather Net](#) - Meets daily at 1030Z and 2230Z on 3815 kHz. Offers a general calling frequency for the Caribbean Islands and their North and South American friends.

[Hurricane Watch Net](#) - 14.325 MHz (day)/7.268 MHz (night). Activated whenever a hurricane is within 300 statute miles of expected land-fall

[Intercontinental Net](#) - 7 AM to noon US Eastern Time - 14.300 MHz.

[Maritime Mobile Service Net](#) - 12 PM to 9 PM US EST or 12 PM to 10 PM EDT - 14.300 MHz - The network acts as a weather

beacon for ships during periods of severe weather.

[14.300 MHz Net Information](#) - More information about nets on 14.300 MHz.

[Salvation Army Team Emergency Radio Network](#) (SATERN) - 14.265 MHz -

[VOiP SKYWARN/Hurricane Net](#) - A weekly Prep Net is held on Sundays at 0000 UTC, which is Saturday evenings for most of North America. Join by connecting to the EchoLink WX-TALK conference server, IRLP Reflector.

"Zero Beating" is the topic of the latest (July 19) episode of the ["ARRL The Doctor is In"](#) podcast

The sun has more than just the 11-year cycle for sunspots. According to a short [article by Scientific American](#), other cycles of length 88, 200, and 2400 years have been noted. The 11-year cycle that we're most attuned to is called the Schwabe cycle, discovered in 1843 by German astronomer Samuel Schwabe. The longer-duration solar cycles were discovered from isotope information recovered from cores drilled from ice built up over the last 9,000 years.

ON THE AIR

Worked All Capitals

Aug 9-Aug 19, 1600Z-0000Z, K9S, Springfield, IL. Sangamon Valley and Lewis and Clark Amateur Radio Clubs, and Centralia Wireless Association. 15 20 and 40 meters. Certificate & QSL. Worked All Capitals - SVRC, Box 9162, Springfield, IL 62791. Other stations: K9K, W9I, and W9V. Commemorating the three communities that have served as Capital Cities for the state of Illinois. SASE for QSL. Work all four stations and receive a certificate. Work this event and received 5 bonus points toward the IL200 QSO Party. www.k9ham.org, www.w9cwa.net or www.svrc.org

DSES Annual Radio Telescope / Astronomy Open House Aug 10-Aug 12, 1800Z-2300Z, KOPRT, Haswell, CO. Deep Space Exploration Society. 14.253 7.238 146.460. QSL. Deep Space Exploration Soci-

ety, 4164 Austin Bluffs Parkway #562, Colorado Springs, CO 80918. DSES is restoring a 60-foot dish antenna for radio astronomy in southeast Colorado. Our annual open house is for sharing radio and astronomy with our local communities, and takes place during the Perseid Meteor Shower. We may operate additional bands if those are open. <http://dses.science/>

USS Midway Museum Ship Special Event: US Coast Guard Birthday

Aug 11, 1600Z-2300Z, NI6IW, San Diego, CA. USS Midway (CV-41) Museum Ship. 14.320 7.250; 14.070 (PSK31); D-STAR on REF001C. QSL. USS Midway (CV-41) COMEDTRA, 901 N Harbor Drive, San Diego, CA 92101.

60th Anniversary of the Blimp "Snowgoose"

Aug 18, 0900Z-1500Z, W1NAS, South Weymouth, MA. Shea Naval Aviation Museum. 14.250 7.250.

QSL. Steve Cohn, W1OD, 10 Hemlock Terrace, Randolph, MA 02368. This is the 60th anniversary of the Blimp "Snowgoose" flight from NAS South Weymouth, MA, to Resolute Bay on the Arctic Circle, while the USS Nautilus submarine sailed below the blimp and under the ice cap, maintaining communications throughout the voyage. The Tri-City ARC will also be operating as N1S from the pier of the Nautilus in Groton, CT in conjunction with W1NAS. Frequencies may vary depending on band conditions. QSL via W1OD w/SASE please. anapatriotsquadron.org

Fire Island Lighthouse

Aug 18-Aug 19, 0700Z-1700Z, W2NMY, Babylon, NY. Fire Island Lighthouse Radio Annex Memorial Club. 18.095 14.050 10.108 7.050. Certificate. W2NMY, 47 Hemlock Rd, Manhasset, NY 11030. LIGHTHOUSE LIGHTSHIP WEEKEND THIS CALL IS A VINTAGE CALL FROM THE FIRE IS-

LAND LIGHTHOUSE RADIO ANNEX DO NOT MISS THE CHANCE TO CATCH THIS CALL FROM WHERE IT WAS USED ORIGINALLY. berny450@aol.com or www.qrz.com/db/w2nmy

2018 Route 66 On The Air

Sep 8-Sep 16, 0001Z-2359Z, W6JBT, San Bernardino, CA. Citrus Belt Amateur Radio Club. 28.466 14.266 7.266 3.866. Certificate & QSL. Citrus Belt Amateur Radio Club, P.O. Box 3788, San Bernardino, CA 92413. Come celebrate the history of this great highway that help build America and join the clubs across the nation participating in this event using the call signs of W6A - W6U. See the host website of www.w6jbt.org for more on the rules, frequencies, certificate and QSL routes for each club participating. Hope to hear you on the air!!

The Farady Effect by Armando Delgado, KN4JN

Michael Faraday thought that light waves were electromagnetic waves. He proved this concept in 1845 by passing polarized light through a thick glass while it was influenced by a magnetic field. The polarization of the light beam shifted in proportion to the intensity of the magnetic field. This finding served as the physical foundation for James Clerk Maxwell's monumental equations on electromagnetism a few years later.

The Faraday Effect, that is, the shifting of the phase angle of an electromagnetic wave under the influence of a magnetic field, will affect radio waves as well as light waves. Radio waves traveling through or reflected from the ionosphere will come under the influence of two forms of magnetism. One is the Earth's magnetic field and the other is local magnetic fields created in the ionosphere by moving electrons, the latter being the most influential in the Faraday Effect on propagated radio waves. The end result is that the phase angle of the radio signal will get rotated.

Amateur radio transmissions in the HF frequencies are mostly horizontally or vertically polarized. As they interact with the ionosphere, their polarization shifts according to the formula

$$\beta = RM\lambda^2$$

where β = angle in radians, RM = rotation measure, a quantity proportional to the electron density of the medium and the distance the wave travels in the magnetic field, and λ = wavelength. For any given transmission frequency, λ is a constant, but RM is a variable that changes continuously due to the constant changes in the electron flow in the ionosphere. Thus, the polarization of the radio signal becomes random. Receiving antennas exhibit maximum signal detection for those with the same polarization as the antenna, but as the phase angle shifts, the intensity of the signal diminishes until it reaches a minimum at a 90°

phase angle change. Thus, at the receiving antenna the signal intensity will fluctuate in what we know as fading, or QSB in radio parlance.

Also, the angle β is directly proportional to the wavelength of the signal, which means that longer wavelengths will have greater rotational shifts than shorter wavelengths. Likewise, the length of travel of the radio wave through the ionosphere will affect β as well, intensifying the shift in polarity, a fact most hams will recognize in the more notable fading that occurs in the higher frequencies that reflect from the upper ionosphere layers. However the Faraday Effect due to free electrons diminishes rapidly at higher frequencies (shorter wavelengths) so that at microwave frequencies, used by satellite communications, the transmitted polarization is maintained between the satellite and the ground. Awareness of the Faraday Effect is one reason EME operators use assemblages of antennas in both vertical and horizontal orientation so as to maximize their reception capability. One other technique for compensating for the Faraday rotation is the use of helical antennas, since the rotating signal is not affected as much by the magnetic fields.



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, 50.350,
147.555

Upcoming ARRL Contests

September 2018
8-10 [September VHF](#)
October 2018
15-19 [School Club Roundup](#)

November 2018
3-5 [Nov. Sweepstakes - CW](#)
17-19 [Nov. Sweepstakes - Phone](#)
11/30-12/2 [160 Meter](#)

December 2018
8-9 [10 Meter](#)
16 [Rookie Roundup-CW](#)



Editor's Note:

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

olardelga@aol.com.

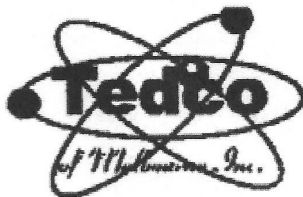
ACTIVE REPEATERS AND SIMPLEX FREQUENCIES (FM ANALOG)

REV 5/25/2018

OUTPUT FREQ.	OFFSET	ZONE	CALL	LOCATION	OWNER
145.130	-600	107.2	AB4AZ	VERO BEACH, INDIAN RIVER	AB4AZ
145.350	-600	103.5	K4OSC	St. CLOUD, OSCEOLA	K1XC
145.370	-600	156.7	W2SDC	COCOA	IRARC
145.470	-600	107.2	K4HRS	MELBOURNE	HIRAC
145.490	-600	100	WN3DHI	TITUSVILLE	NORTH NET
146.610	-600	None	W4MLB	MELBOURNE	PCARS
146.775	-600	100	K4KSC	MIMS	TARC
146.850	-600	107.2	W4MLB	PALM BAY	PCARS
146.880	-600	107.2	W4NLX	ROCKLEDGE	IRARC
146.895	-600	107.2/107.2	K4EOC	PALM BAY	EOC
146.910	-600	107.2	K4KSC	TITUSVILLE	TARC
146.940	-600	None	K4GCC	ROCKLEDGE	LISATS
146.970	-600	107.2	K4KSC	TITUSVILLE	TARC
147.075	+600	107.2/107.2	K4EOC	TITUSVILLE	EOC
147.135	+600	107.2/107.2	K4EOC	ROCKLEDGE	EOC
147.240	+600	123	KV4EOC	VOLUSIA	VARES
147.255	+600	107.2	K4DCS	PALM BAY	DCS
147.330	+600	107.2	K4NBR	TITUSVILLE	NBARC
147.360	+600	107.2	N4TDX	TITUSVILLE	NBARC
444.325	+5000	107.2	K4DCS	PALM BAY	DCS
444.375	+5000	107.2		SEBASTIAN	SARNET
444.425	+5000	107.2	W4MLB	Melbourne	PCARS
444.525	+5000	103.5/103.5	K4EOC	ROCKLEDGE	EOC
444.650	+5000	107.2	W4NLX	COCOA	IRARC
444.925	+5000	131.8	N1KSC	KENNEDY SP. CTR.	KSCARC
442.850	+5000	107.2/107.2	N4TDX	TITUSVILLE	NBARC
444.750	+5000	107.2/107.2	N4TDX	TITUSVILLE	NBARC
224.520	-1.600	107.2	N4TDX	Titusville	NBARC
PACKET STATIONS:					
145.010	WINLINK		W2PH-10	PALM BAY	DCS
145.090	PCARS		W4MLB-2	MELBOURNE	PCARS
145.770	SEDAN		K4EOC-7	PALM BAY	N2DB
145.770	SEDAN		KD4MWO-4	TITUSVILLE	N2DB
146.550	SIMPLEX		K4DCS	SOUTH REGION	DCS
147.540	SIMPLEX		K4EOC	RACES Bay	EOC
146.520	SIMPLEX			GENERAL CALL	
146.580	SIMPLEX		W4MLB	MELBOURNE	PCARS
146.480	SIMPLEX		W4NLX	CENTRAL REG	IRARC
146.595	SIMPLEX		K4KSC	NORTH REGION	TARC
146.560	SIMPLEX		NBARC	NBARC General Simplex	NBARC

Repeater in bold are owned by Brevard Emergency Management and are maintained by the county. Trustee

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